

Annotated Version of SOCIO-ECONOMIC IMPACT STUDY OF GAMBLING IN NOVA SCOTIA

June 8, 2011
SEIG Annotation Working Group

Prepared by:



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DRAFT: June 22, 2009

Cautionary note: *this document is a draft working copy which has not been accepted as final nor accurate by either the Socio-Economic Impact of Gambling Steering Committee or the Government of Nova Scotia. It has not been proofread for content, grammar, spelling, nor references. The figures, numbers, tables, and analyses need to be audited for accuracy prior to any of the information in this document being used for research purposes or decision making.*

June 8, 2011

NS Labour and Advanced Education
Preface to the Annotation of the
Socio-economic Impact of Gambling Study draft [June 22, 2009]

Further to access requests made under the Nova Scotia Freedom of Information and Protection of Privacy Act, this draft working document is being disclosed with caution. It should be noted that the document is an unfinished working draft which was not yet prepared for public release by the consultant.

More importantly, however, is the fact that textual and numerical information contained in this document has not been proofed or audited for accuracy, and source references have not been verified. Therefore the reader is cautioned that any information from this document which may be used for research purposes or decision making must be verified and audited prior to use.

The Province of Nova Scotia is not in a position to accept or reject the findings in this working draft document as presented because of the unreliability of the data.

In this annotated document, the text, tables, and figures from the original draft working copy have not been changed, corrected, or edited in any manner. The text is as it was presented by the consultant to the Steering Committee (June 22, 2009). The annotations found in text boxes throughout this version of the draft working document are neither meant to be critical nor corrective, but rather are meant to draw attention to possible concerns with regard to the use of the relevant text or tables. The annotations are not meant to be all inclusive, and the absence of annotation in any section is not to be interpreted as meaning that there are no errors or concerns with that section. Some of the annotations will be seen to be repetitive. This is intentional as there is a risk that some sections of the draft document may be viewed independently of the document as a whole. The annotations have been compiled by subject experts within government.

As well as specific comments contained within the annotation, there are some generic notes regarding the document as a whole:

- The time frame for the study, as per the consultant, is 2001-2007. However it is noted that statistics, figures, and information outside of this time frame are included in various analyses which could present problems with perception, analysis, and comparison, as well as lead to possibly skewed conclusions.*
- An error in citing the 2003 NS Prevalence Study as being completed in 2002 has resulted in data comparisons being made to other numbers from 2002, not 2003.*

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- The NS Prevalence Studies were conducted in 2003 and 2007 and are inconsistently referenced throughout this document. This could cause problems when doing comparisons with other data.*
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- *There are various inconsistencies in the use of industry terminology which can lead to confusion. As this is an unfinished working draft, the glossary and bibliography are incomplete.*
- *The methodology used to derive some of the statistics and draw certain conclusions is questionable.*
- *The inconsistent inclusion/exclusion of statistics and information regarding First Nations gambling is problematic. The draft document, as written, does not clarify the impact which First Nations gambling may/may not have on gambling in Nova Scotia.*
- *In many places though the draft document, the consultant acknowledges that conclusions cannot be made as there is not enough information available, sample sizes are too small, or significant difference does not exist. However, the consultant then continues to analyze and draw conclusions, as though the supporting information were there. This may lead the reader to believe that there is substance, correlation, or cause where none exists.*
- *The 2008 Telephone Survey represents the only primary research done for this study. The qualitative methodology used for the survey is not valid for the following reasons:*
 - *the questions asked in the survey have not been provided;*
 - *the key informants have not been identified, and therefore their expertise cannot be confirmed;*
 - *there is no indication that the key informants validated the research;*
 - *there was no theoretically accepted process provided for the analysis of the data; and*
 - *there does not appear to have been a review done against existing literature.*
- *For standardization, it appears that a style template has been used to display tables in the document. This has caused some errors as some labels have not been appropriately edited to reflect the new section (eg: VLT table headings in a table about bingo). Again, it is assumed that such errors are reflective of the fact that this is a working draft document.*
- *As per the RFP, the study as commissioned was to “establish a baseline analysis of a range of social and economic impacts that can be attributed to gambling in Nova Scotia and present a snap-shot of impacts that is analytical, factual, and objective.” Contrary to the intent of the study, much of the analysis in the draft document is cost-benefit driven.*
- *Contrary to the intent of the study, the document focuses on problem gambling, rather than providing an objective snap-shot of gambling in Nova Scotia.*

Many of these issues were identified to the consultant by the SEIG Steering Committee, and time was provided to the consultant to address them. However the consultant did not address these issues as requested. It is advised that any persons using the information or data from this working draft do so with caution.

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Executive Summary

The executive summary does not meet the requirements of the RFP. Some numbers presented in the document are drawn from small samples or have low cell counts (see specific comments, as well as the methodology related to problem gambling). Distinguishing between levels and trends is confusing (see specific comments on the executive summary).

This study into the socio-economic impacts of gambling in Nova Scotia is the first of its kind in Canada to use the new national Socio-Economic Impacts of Gambling (SEIG) framework released in February 2008. The objective of this study, commissioned by the Nova Scotia Government Department of Environment and Labour, was to establish a base-line analysis of a range of social and economic impacts that can be attributed to gambling in Nova Scotia and present a snap-shot of impacts that is analytical, factual and objective. This study was commissioned as part of a five-year strategy *A Better Balance: Nova Scotia's First Gaming Strategy* released in 2005.

The study used the national Socio-Economic Impacts of Gambling (SEIG) analytic framework developed by Anielski Management Inc., which was released in February 2008 as the blueprint for conducting the gambling impact assessments in Canada. The slightly modified version of the national SEIG framework was adopted for this study of the socio-economics of gambling in Nova Scotia across six impact domains: economic and financial; tourism and tourism; employment; health and well-being; crime, legal and justice, and; community.

The study examined the overall impact (using the six impact domains) of all regulated gambling to Nova Scotia study as well as a detailed analysis of impacts attributed to video lotteries (VLTs), casinos, ticket lotteries, bingos, harness racing, and internet gambling.

Impacts and trends in Nova Scotia were limited to the accounting period 2001 to 2007. The study relied on some primary data (e.g. financial statistics were drawn from government sources including the Nova Scotia Gaming Corporation annual reports). Financial and some economic data were the most reliable data source for this study. Measuring impacts for other domains within the SEIG framework proved to be more challenging, requiring the use of secondary data and new research.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document, this may cause inaccuracies when comparing figures or analyzing trends. Secondary research is incorrectly cited as primary research.

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The most important secondary data source were the 2003 and 2007 adult gambling prevalence studies for Nova Scotia, which provided statistics of problem gambling prevalence rates. These prevalence studies provided some, although limited, information for assessing specific impacts such as health and well-being impacts. In our attempt to fill in outstanding data gaps in the SEIG impact indicator framework, qualitative research was conducted including a telephone interview (September 2008) with problem gamblers and their families (consulting the same 2007 adult gambling prevalence survey cohort). In addition, interviews with over 20 key informants, with knowledge about various facets of the social and economic impacts of gambling in Nova Scotia, were held in June 2008 in Nova Scotia. While providing some useful information, there are limitations to the use of this data, which related mostly to interpreting results from a relatively small sample of Nova Scotia problem gamblers.

*The SEIG Study was to provide an impact of gambling in Nova Scotia and was not to focus on one particular group such as problem gamblers.
Analysis was done using small sample sizes, resulting in extrapolation issues.*

Input-output analysis was conducted to estimate some economic and employment benefits of selected gambling activities (casinos, VLT, ticket lottery) in Nova Scotia; an independent input-output analysis of harness racing was also used. Various statistical methods (linear regression analysis) were used to analyze the relationship between gambling activity and various economic and social impacts. Quantitative methods were used to examine the distribution of gambling expenditures and revenues in Nova Scotia for non-problem, low-risk and moderate-risk/problem gambler cohorts and for individual games, using the 2003 and 2007 adult gambling prevalence study data. This analysis was augmented with the results of the 2008 telephone survey of problem gamblers and their families.

The results of this study provide a snap-shot of a range of social and economic impacts of gambling in Nova Scotia between 2001 and 2007, though significant data gaps remain and will require future research. The following are the highlights and key findings of this study.

Nova Scotia's Gambling Population

- In the most recent Adult Gambling Prevalence Study for Nova Scotia for 2007, roughly 87% of Nova Scotia adults (773,000, 19 years and older) had reported having gambled in the past where as 13.0% had not gambled. Of total adult population, an estimated 80.9% (625,202 adults) of all adults in 2007 were considered to be non-problem gamblers while 3.6% (28,137) were considered low-risk gamblers. Approximately, 2.5% (18,861) were considered to be moderate-risk or problem gamblers. In general, the majority of negative impacts associated with gambling tend to be experienced by this latter cohort of moderate-risk and problem gamblers.

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- The number of estimated moderate risk and problem gamblers in Nova Scotia increased between 2002 (n=14,680) and 2007 by 4,181 adults (a 28.1% increase), according to the two previous adult gambling prevalence studies.

Statistically, “n” is used to denote “sample size”; here “n” is incorrectly used to denote “population estimate.”

- Video lottery terminals (VLTs) were cited by the 2007 gambling prevalence survey respondents as the principal source of gambling problems; roughly 62% of respondents self-reported ever having had a problem. The games with the second and third greatest impacts with respect to self-reported problems were ALC daily lottery products and any type of commercial poker.

Self-reported data has its own limitations.

In the 2007 Prevalence Study, “any poker” includes poker with friends and family (non-commercial or non-profit poker). This is out of the scope of the SEIG Study as defined in the RFP.

FINANCIAL AND ECONOMIC IMPACTS

Of the six impact domains evaluated, the financial and economic domain was the easiest to measure with publicly available financial gambling statistics. The result of our analysis highlights the importance of gambling to the financial and economic well-being of Nova Scotia.

- In 2007, over \$1,470 million was wagered on all provincial games, generating net revenues of \$351.0 million and contributing \$169.3 million to provincial government revenues. VLT wagers (\$673 million), casino wagers (\$489 million) and ALC ticket lottery wagers (\$203 million) contributed the majority (over 92%) of total wagers. This was followed by bingos (\$60.5 million), charitable lotteries (harness racing (\$32.3 million) and harness racing (\$12.0 million). Roughly \$239 million was wagered at First Nations gambling venues (namely VLTs).

The figures \$1,470 million and \$351.0 million are incorrect. It is unknown where the \$239 million number was taken from and why it is considered a “rough” number.

- Net gambling expenditures (wagers less prizes) peaked was \$ 348 million (excluding First Nation VLT net revenues) representing a 17.0% decrease from 2004.

Incorrect terminology is used. The terms “net revenues”, “net gambling revenues”, and “net gambling expenditures” are used interchangeably and inconsistently throughout the document.

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Provincial Government Gambling Revenues

Provincial revenues from gambling have declined by 13.4% (\$15.18 million) since their peak in 2004. The majority of the decline in provincial gambling revenues can be attributed to a 28.5% (-\$37.6 million) decline in VLT gambling revenues. This decline can likely be attributed to the elimination of over 1,000 VLTs in the province since 2005.

The statement regarding provincial revenues is only partially correct as other factors are not considered.

In terms of contribution to provincial government revenues, gambling revenues have fallen from 3.49% of total provincial government revenues in 2002 to 2.04% in 2007. VLT revenues made up the majority (56.1%) of net provincial gambling revenues in 2007 followed by ALC lottery sale revenues (23.9%) and casinos (19.3%). On a per capita basis, provincial gambling revenues amounted to \$181.24 per Nova Scotian in 2007, or about 7.8% of personal income taxes collected per Nova Scotian in the same year.

Gross Domestic Product

Gross domestic product (GDP) is the broadest measures of an economy's economic performance, measured in terms of the market value of all goods and services made within a nation or province.

- There are currently no official expenditure-based or industry-based GDP estimates for gambling derived either by Statistics Canada or the province of Nova Scotia.
- Using various methods to estimate a gambling GDP, we estimated an upper bound estimate of nearly \$400 million in GDP for 2007 using net gambling expenditures (wagers less prizes) in Nova Scotia as a basis of deriving a expenditure-based gambling GDP estimate. This expenditure-based gambling GDP would equate to 1.2% of Nova Scotia's total GDP in 2007 (\$32,282 million).

There are methodological issues of using consumer expenditures as a proxy for GDP because consumer expenditures are only one of the contributing factors to GDP. The relationship of consumer expenditures to total GDP will not necessarily be the same for the gambling industry as for total NS GDP. The document does not define the difference meant between the gambling GDP and the gambling industry GDP.

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- To derive an estimate of gambling industry GDP we used other provincial gambling industry estimates from Statistics Canada to estimate a Nova Scotia gambling industry GDP of \$54.0 million for 2007 or 0.16% of Nova Scotia's GDP in 2007.

There are methodological issues with using gambling estimates from other provinces to estimate Nova Scotia gambling GDP because the gambling industry structures in the provinces are not necessarily the same.

- To put the gambling industry GDP estimate into context, Nova Scotia's arts, entertainment and recreation sector contributed \$160 million in 2007 to Nova Scotia's GDP, of which the gambling sector would be a subset.

If the gambling industry is, by definition, a subset of the arts, entertainment and recreation sector, then by definition, the GDP of the gambling industry [\$400 million] cannot exceed the GDP of the arts, entertainment and recreation sector [\$160 million].

Personal Gambling Expenditures

- On a per capita basis, net gambling expenditures per adult Nova Scotian increased 38.0% from an estimated \$446.30 per adult (19 years+) Nova Scotian in 1996 to a peak of \$617.93 per adult in 2004 then declined at an average rate of 4.3% reaching \$540.34 adult gambler in 2007 or \$1,061 per Nova Scotia household.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document, this may cause inaccuracies when comparing figures or analyzing trends.

- Based on net gambling expenditures in Nova Scotia in 2007, gambling expenditures represented 1.98% of total personal expenditures on consumer goods and services by Nova Scotians.

"Net gambling expenditures" include visitors to the Province and are not limited to Nova Scotians.

- Expenditures on games-of-chance continued to increase from 2001 to 2004 as savings rates declined.

This statement implies a relationship between gambling and the decline of savings rates that does not necessarily exist.

- Examining the relationship between trends in gambling expenditures and other household expenditures, there is no clear evidence that other household expenditure

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categories have suffered a net loss as a result of gambling expenditures, particularly recreation expenditures (which actually have increased over the period 2001 to 2007).

Distribution of Gambling Expenditures by Household Income

Do some households spend more of their household income on gambling than other households?

- Based on Statistics Canada data on the Nova Scotia average household income data and average household expenditures on across five household income quintiles, the evidence shows that lower income groups (<\$22,344 average household income) spent disproportionately more of their income on games of chance (1.17% of average household income) between 2003 and 2005 than did the higher income groups (e.g. \$81,225+) who spent 0.50% of average household income. This would suggest that gambling has regressive qualities.

There is no year cited for the average household income of "<\$22,344".

- In addition, comparing trends in the Gini coefficient (a measure of income inequality across households) and net gambling expenditures between 1996 and 2006 shows that the two have followed a similar growth path (i.e. a strong statistical relationship); income inequality rising with net gambling expenditures. This does not, however, imply causality between income inequality and net gambling expenditures, but does provide an impressionistic image that as gambling expenditures increased (or decreased) so to did income inequality increase (or decrease).

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

This is not a justifiable methodology. Given the very small proportions that gaming expenditures represent for households, the analysis of the relationship with the Gini coefficient is not justified and the conclusions reached are not necessarily correct.

Expenditures by Problem Gamblers

- The 2007 gambling prevalence study shows that in 2007 moderate risk and problem gamblers contributed an estimated \$112,088,989 or 28.1% of the total provincial net revenues from gambling, low risk gamblers contributed \$47,468,291 or 11.9% of net gambling revenues and non-problem gamblers contributed \$239,335,919 or 60.0% of net gambling revenue (57.8% in 2003).
- In 2007, the moderate risk and problem gambler spent 14.1 times more on games-of-chance than the non-problem gambler.

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Consumer Surplus

Consumer surplus is an important economic impact from gambling in conventional cost-benefit analysis. It is a measure of the utility (satisfaction) consumers derive from the consumption of a good or service. There are currently no consumer surplus estimates available for Nova Scotia.

- Applying the results of the only international consumer surplus estimate for gambling from **an Australian study to Nova Scotia's gambling environment**, our study estimated a net benefit (consumer surplus) of between \$103.4 million and \$173.9 million from consumers' enjoyment of gambling in 2007. **The results need to be used with caution** since they are based on secondary analysis and not original to Nova Scotia or Canada.

As cautioned above, there are methodological concerns with the use of an Australian study to extrapolate to a Nova Scotian experience, as there is no indication that data for Australia would be similar to data for Nova Scotia.

Excess Losses by Problem Gamblers (Negative Consumer Surplus)

The excess losses sustained by the problem gambler population were calculated as the difference between what a Nova Scotia moderate risk or problem gambler actually spent (net of prizes) and what a non-problem gambler, playing for recreational and entertainment motives, would have spent. This difference is considered a proxy measure of unhealthy gambling activity or negative consumer surplus.

- Based on the 2007 prevalence study evidence, a moderate risk/problem gambler is estimated to have spent **\$6,461** in 2007 compared to \$457 for a non-problem gambler. The difference applied to the estimated population of moderate risk and problem gamblers (18,861) generates an estimated excessive loss of \$113.4 million in 2007 attributed to problem gambling. Used in the context of full cost accounting of social costs in the economy, the excess losses from problem gamblers would be treated as a negative adjustment to the provincial GDP and serve as proxy for the social cost of problem gambling.

Figure \$6,461 is inconsistent with the data in the 2007 NS Prevalence Study.

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Government Gambling Revenues

Revenues from gambling activity are an important although declining source of revenue to the Nova Scotia provincial government.

- In 2007, \$169.3 million in revenues from gambling accrued to the provincial government, 14.0% lower than in 2002. As a percentage of total provincial government revenues, gambling net revenues have fallen from 3.49% in 2002 to 2.04% in 2007.
- On a per capita basis, gambling revenues to the province have been declining since 2002 reaching \$181.24 per Nova Scotian in 2007 compared to personal income taxes, which were \$1,904 per person in 2007.
- Expressed as a percentage of personal income tax revenues, gambling revenues in 2007 were 7.8% of personal income taxes.

Government Gambling Operating Expenses

What is the relationship between government operating expenditures related to gambling and net provincial revenues from gambling activity?

- Analysis of the relationship between a dollar of operating expenditures related to government-regulated gambling and a dollar of net provincial gambling revenues showed that in 2001 \$0.73 of operating expenditures generated \$1 of provincial gambling revenues in 2001 and had fallen to \$0.39 per \$1 in net gambling revenues in 2007. This suggests that it has become less expensive to raise \$1 in provincial gambling revenues in 2007 than in previous years.

There was a change in the industry (contract with the casinos changed) which affected the revenue. This has not been noted as a factor. The change would affect the interpretation of results.

Gambling Industry Business Profits

Another key benefit of gambling is to the gambling industry in the form of profits as well as any additional profit earned by other associated industries that benefit directly or indirectly from the existence of the gambling industry.

- Commercial revenues from gambling activity doubled between 2001 (\$48.8 million) and 2006 (\$91.1 million) then declined slightly by 6.6% to \$85.1 million in 2007;

There is an inconsistent application of regulated industry vs. total industry. The data presented does not reflect the whole gambling industry. Alcohol and Gaming Division (AGD) figures do not include First Nations and Harness Racing.

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- The share of net revenues going to the gambling industry (i.e. commercial revenues expressed as a percentage of net gambling revenues), increased from 12.3% of net revenues in 2001 to 24.2% of net revenues in 2007.

Net Business Sector Growth (Business Investments)

With the introduction of legalized gambling in Nova Scotia, we would expect to see increasing investment within both gambling industries and in other industries, which are positively affected by gambling activity.

- In the absence of data on business investment changes in Nova Scotia attributed to the development of gambling industries, we examined the trends in total provincial investments in non-residential building construction (industrial, commercial, retail and institutional/government) compared with net gambling expenditures from 1997 to 2007. A visual inspection of this graph suggests there is a strong relationship between non-residential building construction and gambling activity, revealing a strong statistical correlation (R-square of 0.8143), which suggest a reasonably strong relationship. However, the results are far from conclusive regarding causality of gambling development and capital investments in Nova Scotia.

As indicated, correlation does not demonstrate causality. The use of non-residential building construction data should be limited to the sectors that are associated with gambling. This was a period with investment associated with the Sable Offshore Energy Project so growth would have been expected in the early years.

A “visual inspection of this graph” is not an appropriate methodology for indicating a strong relationship.

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Government Defensive Expenditures

Expenditures by government agencies to reduce the adverse welfare effects of environmental pollution or negative social conditions (e.g. poverty, crime) are called government defensive expenditures. In the case of problem gambling, defensive expenditures would include government expenditures allocated for problem gambling treatment, education and prevention by specific agencies responsible for problem gambling as well as incremental health, welfare and social service program expenditures from other government departments or agencies that are indirectly impacted by problem gambling.

- Total problem gambling government program expenditures almost doubled from \$2.41 million in 2002 to \$4.95 million in 2006. The highest expenditure was in 2003 at \$6.52 million.
- Expressed in terms of dollars per adult gambler, problem gambling program expenditures almost tripled from \$3.34 per adult gambler in 2002 to \$9.09 per adult gambler in 2005 then declined to \$6.71 per adult gambler in 2006.
- When expenditures are expressed in terms per moderate risk and problem gambler, Nova Scotia spent \$164.17 per moderate risk/problem gambler in 2002 and more than 1.6 times that amount (\$266.65 per moderate risk/problem gambler in 2006).
- Compared to the national average for problem gambling program expenditures per adult gambler, Nova Scotia spent 2.6 times more per adult gambler in 2005 and 1.9 more in 2006.

Inaccurate source data; an audit of figures is required. It is unknown if federal and provincial figures are both included.

Direct Government Regulatory Costs

Direct regulatory costs are those expenditures incurred by government agencies related to the regulation of the gambling industry. This would include all costs incurred by the Nova Scotia government pursuant to the Gaming Control Act of Nova Scotia.

- We were unable to isolate direct regulatory expenditures from existing government program spending. For example, in consultation with the Alcohol and Gaming Division, they were unable to account for what portion of their program expenditures and staff time is specifically dedicated to gambling-related activity.

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Bankruptcies and Financial Difficulties Associated with Gambling

Problem gamblers typically exhaust their personal financial resources by selling possessions, acquiring multiple credit cards that are often used to their limit, and often borrowing from family and friends to fund their gambling habits. These habits often lead to bankruptcy in the case of problem gamblers, resulting in cost to creditors and cost to the legal system in court time and resources. Is there evidence of the relationship between problem gambling in Nova Scotia and financial difficulties leading to potential bankruptcy?

The text contains unsourced anecdotal statements which could be applied to other forms of dependency.

- Based on the 2007 adult gambling prevalence study the average net financial losses (net expenditures) sustained by a typical moderate risk and problem gambler in Nova Scotia would be \$6,222 per gambler in 2007. Considering that the average disposable income per capita in Nova Scotia in 2006 was \$22,972, such a gambling expenditure would represent 27.1% of average disposable income, a significant financial burden.

The number “\$6,222” is unsubstantiated from the 2007 NS Prevalence Study. Incorrect interpretation of statistics (e.g., net financial loss is not the same as expenditure).

- Statistics from calls to Nova Scotia’s Help-Line showed that financial problems related to gambling represented the most importantly cited impact from gambling between 2001 and 2007; in 2007 83.6% of the callers cited financial difficulties with gambling.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.

- According to the 2003 and 2007 adult gambling prevalence studies, gambling was cited as causing either personal or household financial problems for almost 20% of moderate-risk and problem gamblers in 2002 and 14.8% of these gamblers in 2007.

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- In the 2008 socio-economic impact of gambling telephone survey conducted by Focal Research, 16.4% of moderate-risk and problem gamblers (9 out of 55 respondents) said that they have experienced financial difficulties related to gambling while 7.5% (3 out of 40) family members of a problem gambler experienced financial difficulties because of a problem gambler family member.

The SEIG Study was to provide an impact of gambling in Nova Scotia and was not to focus on one particular group such as problem gamblers. Analysis is done using small sample sizes leading to extrapolation issues. A focus on problem gamblers alone would over-index problem gambling and the results.

- The 2003 and 2007 Nova Scotia Adult Gambler Prevalence studies revealed past-year debt or financial problems experienced by adult gamblers by gambler type. The results showed that moderate-risk and problem gamblers tend to experience disproportionately greater debt or financial problems (44.6% in 2002 and 23.0% in 2007) than non-problem gamblers.
- In the 2003 survey, almost 18% of moderate-risk and problem gamblers in 2002 said that gambling had played a role in their financial debt problems compared to less than 2% of low-risk gamblers.
- Moderate-risk and problem gamblers were more likely than non-problem and low-risk gamblers to have gambled in hopes of paying off debts or bills; 25% of moderate-risk and problem gamblers from the 2003 prevalence study versus 18% in 2007.
- There is currently no evidence for Nova Scotia that links personal or business bankruptcy to problem gambling. However, a statistical analysis correlating provincial consumer bankruptcies with net gambling expenditures revealed a significant statistical relationship ($R\text{-square} = 0.9369$). This does not suggest, however, that total provincial gambling expenditures are leading to or causing an increase in consumer bankruptcies.

The use of an R-square analysis suggests a legitimacy that is unsupported.

Abused Dollars

Abused dollars represent lost gambling money acquired by the problem gambler from family, friends, or employers under false pretenses. There are no estimates of abused dollars for Nova Scotia. However, questions asked of gamblers in both the 2002 and 2007 Nova Scotia adult gambling prevalence surveys do provide some evidence, albeit not monetary, of the abuse of monies for gambling purposes including borrowing money, using credit or credit cards, using money intended for other purposes or lending money to a problem gambler. For example:

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- In the 2002 and 2007 gambling prevalence studies, 7.2% of moderate risk and problem gamblers in 2002 acknowledged borrowing money or selling something to get money for gambling. In the 2007 gambling prevalence survey, a smaller percentage (4.9%) of moderate-risk and problem gamblers acknowledged borrowing money or selling something for money for the purpose of gambling.

TOURISM AND RECREATION IMPACTS

The tourism and recreation domain recognizes the entertainment benefits from gambling activities, the gambling industry's effect on tourism, as well as the possible costs (income and employment losses) related to diverting revenues from other forms of entertainment. The following tourism and recreation impact indicators were examined:

Gambling Patronage (Out-of-Province Visitors)

“Visitation”, “visitors”, and “visits” are different concepts which should not be compared. The data set used includes Nova Scotians so data on out-of-province visitors is incorrect.

Gambling patronage (i.e. visitation rates) by **out-of-province** tourists to Nova Scotia gambling venues have an impact on the tourism and recreation sectors of an economy.

Tourist visitation statistics were only available for casinos (Halifax and Sydney) and horse racing (with limitations) from the Nova Scotia Department of Tourism, Culture and Heritage Visitor Exit Surveys. Tourist visitation statistics for other gambling venues like VLTs and bingo are not available.

- Total **visits** to both Nova Scotia casinos declined by 46.1% from a total of 3,112,265 **visitors** in **1996** to 1,678,320 in 2007 (1,433,945 fewer visitors in 2007 compared to 1996), which represents an annual rate of decline of 5.3% over this time period.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

- Less than 5% of total **out-of-province** visitors went to a casino during their visit between 1998 and 2004.
- The Sydney casino has experienced a steady decline in **visitors** falling 52.0% since **1996** (compared to 2007 **visits**) while the Halifax casino experienced a slight resurgence in **visits** between **1998** and 2001, thereafter also experiencing a steady decline.
- Between 2001 and 2007 the visits to the Halifax and Sydney casinos declined by an average of 7.8% per annum.

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- The estimated number of out-of-province visitors to Nova Scotia who visited a casino during their visit while having increased between 1996 (184,000 person-trips) and 2002 (343,000 person trips), then declined through to 2004 (the last survey reporting year) to reach 258,000 person-trips, according to the Canadian travel survey and Statistics Canada.
- Determining what percentage of total Nova Scotia gambling revenues came from out-of-province visitor expenditures was not possible.

The text states that it is not possible to determine percentages, yet proceeds to make statements.

Incremental Tourist Expenditures on Gambling Venues

Tourist dollars expended in Nova Scotia are the equivalent of exports in terms of economic benefits to the Nova Scotia economy. These constitute dollars from disposable income from out-of-province consumers or households and are thus genuine net economic inputs to the Nova Scotia economy when spent at Nova Scotia gambling venues

- In 2004 an estimated \$1.206 billion was spent¹ by out-of-province visitors, based on Statistics Canada travel survey statistics. We estimated that roughly 3.7% of tourist expenditures (\$44.0 million)² were spent (total wagered before cash prize payouts) at Nova Scotia casinos in 2004. Compared to the total estimated amount of money wagered at casinos in Nova Scotia in 2004 (\$371.1 million) this \$44.0 million contribution by tourists represented 11.8% of total wagered at Nova Scotia casinos.
- We estimate that out-of-province visitors may have contributed \$10 million to provincial net gambling revenue or 2.2% in 2004, the last year surveyed.

Incorrect assumptions about the data (includes Nova Scotia out-of-town visitor data) and the methodology used (including assumption that the percentage of expenditures would be the same as the percentage of visitors) mean the numbers cited are not valid.

¹ Statistics Canada uses the term 'reallocated expenditures' to denote household or consumer expenditures which are made by outside of the community or province of origin.

² By comparison, an economic impact study in 2007 of the Tall Ships festival of non-Nova Scotians found that only 1.3% (\$463,668) of total tourist expenditures (\$36,945,079) by an estimates 67,317 visitors to Nova Scotia was spent on the Halifax casino and on VLTs in the Halifax area (T.M. McGuire Ltd. 2007. *Tall Ships Nova Scotia Festival 2007 Economic Impact Study*. Prepared for Tall Ships Nova Scotia Festival 2007 & Waterfront Development Corporation Limited. November 13, 2007)

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Employment Impacts

The introduction of gambling venues to a community is thought to result in positive impacts on an economy through increased employment in gambling-related services and indirect jobs created elsewhere in the local economy. The gambling industry employs people directly (e.g. casinos) and indirectly such as restaurants, hotels, bars and lounges benefit from spending by gambling patrons. What has the impact of gambling development been on Nova Scotia's employment conditions?

The majority of employment benefits from gambling in Nova Scotia are likely from casinos, ticket lottery sales, and VLTs, with the latter two representing only a portion of a full-time-equivalent employee's work hours. Official employment data (full-time equivalent (FTE) positions) for Nova Scotia's gambling industry are only available for the casinos, the Nova Scotia Gaming Corporation, and a portion of the Atlantic Lottery Commission FTEs dedicated to Nova Scotia operations.

The information provided is not inclusive of total industry employment.

Net Job Creation in the Gambling Industry

Net job creation is not discussed.

Has the development of the gambling industry in Nova Scotia resulted in a net increase in new jobs? The answer is complicated since new jobs in one sector may be the result of transfers from another sector as one sector develops and another declines.

- In 2006, there were approximately 790 FTEs employed by Nova Scotia's casinos and gambling agencies or a total of 983 jobs in the gambling sector in 2006. The estimated 983 jobs or people employed in Nova Scotia's gambling industry in 2006 represented 0.22% of the 441,800 persons employed in Nova Scotia in 2006

*The number "983" does not correlate with Table 53.
Jobs presented here are a subset of the entire gambling industry.*

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- An estimated 707 FTEs (more than 90%) were employed by the Halifax and Sydney casinos (the Halifax casino employed 547 FTEs), approximately 64 FTEs were employed by the Atlantic Lottery Commission, and an additional 19 FTEs were employed by the Nova Scotia Gaming Corporation. The Alcohol and Gaming Division of the Department of Labour and Environment employed an estimated 60 FTEs in 2006, however, what proportion of these FTEs were engaged in gambling-related work is unknown.

Number is incorrect.

- Employment in the Nova Scotia's gambling sector has remained relatively unchanged, ranging from 790 FTEs in 2006 to 887 FTEs in 2002. Of the 790 FTEs employed in 2006, an estimated 96 (12.2%) were in management positions and 694 (87.8%) in service positions.

Questionable statistical analysis. This would represent a 10.9% drop.

- Although formal employment statistics do not exist related to ticket lotteries and VLTs, an input-output (I-O) analysis was undertaken to estimate the economic impacts, including direct, indirect (spin-off jobs), and total employment impacts³, of operations of ticket lottery (TL) and video lottery (VL) in Nova Scotia for the year 2007. Three different simulation analyses were considered. The results showed that somewhere between 288 direct employment person-years) and 574 more jobs were supported in 2007 by the existence of VLTs and ALC ticket lotteries in Nova Scotia.

"Indirect" and "spinoff jobs" are different concepts.

Incorrect – two simulation analyses were done for ticket lottery and three simulation analyses were done for VLTs.

In this document, person years vs. FTEs vs. jobs are not differentiated.

³ Direct impacts are those that result directly from the company's expenditures on, or purchases of, goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (due to inter-industry transactions) and induced impacts (from the repercussive effects caused by household spending and re-spending). Total impacts are the sum of direct and spinoff impacts.

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- A similar I-O analysis was conducted for casinos which revealed that an estimated 1,044 person-years (direct and spinoff) of employment were generated by the Halifax Casino operations in addition to 315 PYs (direct and spinoff) by the Sydney Casino, for a total of 1,359 PYs of employment in both Nova Scotia casinos. The renovations of the Halifax Casino in 2005 is estimated to have generated 60 PYs of direct and spinoff employment. As a percentage of the 30,200 persons employed in Nova Scotia's accommodations and food service industries in 2007, the 1,359 PYs of **casino employment** would represent 4.5% of those employed in this sector.

The employment estimates were for 2004 and 2005 not for 2007 and should not be compared. Numbers include people hired to do capital renovations (not casino employment) and which occurred in a different year than the I/O (Input/Output) analysis for the Sydney and Halifax casinos. Casino employment is not allocated to the accommodation and food services sector under Statistics Canada reporting of employment by industry.

- In a separate I-O analysis of the employment impacts from harness racing, an estimated 181 FTEs of direct and 261 FTEs of spinoff employment (total of 448 FTEs of employment) were generated by **harness racing** activities.

Harness racing data covers all aspects of harness racing industry, not just gambling.

Gambling Jobs per \$1 Million in Net Gambling Revenues

How many jobs are created in the gambling sector for every \$1 million in net gambling revenues or for every \$1 million in gambling-GDP, relative to other sectors in the economy? Using various statistical sources we estimated that:

- For every \$1 million in net casino revenues in 2006 there were an estimated 7.91 jobs (FTEs).
- For every \$1 million in net gambling revenues (all games there were 3.28 jobs (FTEs) created for government gambling business enterprises (ALC and NSGC), casinos, VLTs and ticket lotteries.
- By comparison, the arts, entertainment and recreation sector generated roughly 52.79 jobs per \$1 million in GDP generated by this sector in 2006.

Invalid "apples to oranges" comparisons are made; the calculation of jobs based on different types of revenue is not strictly comparable. Jobs per revenue cannot be compared to jobs per GDP, as they are different concepts.

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Gambling Wages

- Compared to average wages in other occupations in Nova Scotia in 2007, jobs in the gambling industry were 6.1% higher than the average wage for occupations in art, culture, recreation and sport (\$15.23/hour) and 26.8% higher than average wage for sales and service occupations (\$11.87/hour).

The average wage calculation does not cover the whole gambling industry; clarification is required as regards which parts of the industry are included.

Indirect Employment Related to the Gambling Industry

Correct term is spinoff (i.e., “indirect”, “induced”, “spin-off”, and “employment multiplier” are not synonymous terms.)

Conventional economic analysis also considers the indirect and induced or spin-off (also called employment multiplier) impact of employment of one sector on other sectors in the economy. Spin-off employment estimates were calculated as part of the I-O analysis. I-O analysis related to employment benefits were conducted for casinos, video lottery and ticket lotteries.

- The I-O results for ticket lotteries estimated that about 202 person-years of spinoff jobs were created for the year 2007.
- The I-O simulation analysis for video lottery employment estimates that between 175 (scenario 1) and 338 (scenario 2 and scenario 3) of indirect or spinoff person-years of employment were generated for the year 2007.
- As per the previous discussion of direct employment estimates for video lottery, in our opinion spinoff job estimates related to video lottery would fall somewhere between 175 (scenario 1) and 338 (scenario 2 and 3) person-years of employment since we believe it is highly unlikely that VLT venue owners.
- The results of the I-O analysis for casinos, showed an estimated 27 spinoff jobs created as a result of the renovation of the Halifax casino in 2005, 460 spinoff jobs associated with operating the Halifax casino and 144 spinoff jobs operating the Sydney casino.

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Changes in Unemployment and Underemployment

From the previous employment impact analysis, we were unable to determine whether the employment of workers within the gambling industries represent *net* or new employment (new jobs) by employing persons previously unemployed or **underemployed** or whether these new jobs are simply transfers of labour from other industries or sectors to the gambling sector.

Net or new employment is employing people who are unemployed not underemployed. Underemployment is a separate concept which is not defined here.

Productivity Losses, Absenteeism

One of the possible negative impacts of problem gambling is the effect on employment, including income or job loss, absenteeism, loss of job productivity, and other work problems.

- Trends in calls to Nova Scotia's Help Line indicated that in 2001 39 calls (or 19.0% of total help-line calls) cited negative employment impacts due to gambling. In 2002 68 calls (20.0% of all calls) cited employment impacts. This number has declined steadily to a low of **17** calls in 2007 (only 9.8% of all calls).

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.

- In the 2003 and 2007 adult gambling prevalence study, 25.0% of moderate-risk/problem gamblers said they had experienced income or job loss compared to 14.8% in 2007. However, Only 5.36% of the 56 moderate-risk/problem gamblers in the 2002 survey responded 'yes' to the previous question said that gambling had played a role.

Paragraph requires clarification.

- In the 2003 survey, when asked whether they had taken absences from work to gamble, 4 (7.3%) of 56 moderate-risk/problem gambler respondents said that they had, And 5 (9.1%) of the 56 moderate-risk/problem gamblers said they had felt less productive at work because of gambling

Unable to verify source data. Conclusions are not statistically reliable.

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Work Problems Related to Gambling

Do problem gamblers experience higher rates of work problems than non-problem or low-risk gamblers?

- Of the total sample of gamblers surveyed in the 2003 adult gambling prevalence study, 7.0% said they experienced work problems with a higher percentage of moderate-risk/problem gamblers (16.1% of these gamblers) having experienced work problems. However, of the 9 moderate-risk/problem gamblers who said they experienced work problems in 2003 only 3 (or 5.5% of the total sample of 56) said that gambling had played a role in the work problems.

Incorrect data and statistically insignificant.

HEALTH AND WELL-BEING IMPACTS

This is supposed to be an exploration of gambling and health and well-being, but instead focuses on problem gambling. No citations are provided. Anecdotal references and assumptions are made in this section.

A number of potential impacts on physical, mental and social health and well-being impact of gambling on individual gamblers, their families and society were examined. The emphasis, however, was on moderate-risk and problem gamblers intended to distinguish between healthy and unhealthy gambling behaviour. According to public health experts familiar with gambling, healthy gambling entails informed choice on the probability of winning, a pleasurable gambling experience in low-risk situations, and wagering in sensible amounts. Healthy gambling sustains or enhances a gambler's state of well-being. Conversely, unhealthy gambling refers to various levels of gambling problems.

From a health perspective, the fundamental question as to whether a gambler's experience is pleasurable and leads to an enhanced state or sense of well-being.

The challenge in this study is the lack of concrete health impacts that can be directly attributed to problem gambling. However, the 2003 and 2007 adult gambling prevalence studies did provide some insights into how, especially moderate-risk and problem gamblers, perceive or experience risk to their health as a result of problem gambling.

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Problem Gambling Prevalence Rates

Four adult gambling prevalence studies have been conducted in Nova Scotia; in 1993, 1996, 2003 and 2007. The results of these studies reveals trends in the estimated number of moderate risk and problem gamblers:

- In 1993 there were an estimated 11,678 moderate risk and problem gamblers (1.7% of the Nova Scotia adult population) and 21,274 moderate-risk gamblers (3.1% of the adult population).
- In 2007 there were an estimated 18,861 moderate risk and problem gamblers (2.4% of the adult population) and 28,137 moderate-risk gamblers (3.6% of the adult population).
- Comparing 2007 with 1993, Nova Scotia's adult population increased by 12.5% while the population of non-gamblers increased 33.4%, and the non-problem gambler population increased by 8.1%. Over the same time period, there was a 61.5% increase in moderate risk and problem gamblers.

*Accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.
Data is incorrect.*

Socio-Economic-Demographic Characteristics of Problem Gamblers

Based on Focal Research Consultants 2003 and 2007 adult gambling prevalence studies a number of demographic and other socio-economic related characteristics were found to be associated with the risk of problem gambling, namely:

- **Age:** The risk of problem gambling (8% versus 4.4%) and rates of problem gambling (2.5% versus 1.5%) continued to be twice as high among men in Nova Scotia compared to women.

This bullet refers to gender.

- **Gender:** The risk for gambling problems in 2007 declined with age. Adults 19 to 24 years of age were most likely to be at *any level of risk* for problems (12.1%) and this rate declined to 2.0% among those aged 65 years or older.

This bullet refers to age.

- **Marital status:** In 2007, adults who were single (10%), living common-law (10.5) and those separated from a spouse or partner (18.4%) had higher rates of risk for gambling problems compared to those in formally recognized marriages (4.5%).

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- **Income:** While those living in the higher income households (\$60,000 +/-year) were more likely to gamble, their overall risk levels were significantly lower (5.2%) compared with those with lower income (≈7.6%). Adults living in households with incomes over \$60,000/year had higher rates of past-year and regular casino gambling, poker, charity raffles and draws, whereas instant lottery games and bingo were more popular among those living in households with incomes less than \$30,000 per year. Daily lotteries were played equally by those with mid-to lower incomes (<\$60,000/year). The only regular playing patterns that did not vary by income were ALC weekly lottery draws and VLT gambling.
- **Education:** Roughly 31.1% of problem gamblers are university-educated or college graduates compared with 40.7% of moderate-risk gamblers. Roughly 29.5% of gamblers have less than grade 12 education while 20.9% of moderate- risk gamblers have less than a grade 12 education.
- **Work Status:** In 2007, roughly 52.5% of problem gamblers were more likely to be working full-time compared with 59.3% of moderate-risk gamblers who were working full-time. Rates of gambling problems were significantly higher for individuals who were unemployed (10.3%) and disabled (8.3%) compared to problem rates of 1.0 to 2.5% for employed individuals, students, homemakers, and retirees. Also, students were more likely to gamble (92.5%) and had the highest levels of risk of problem gambling (10.4%).

Incorrect data stated (10.3% and 8.3%).

Unable to verify data which does not match the NS Prevalence studies (1.0 to 2.5% and 10.4%).

Leisure Gains from Gambling

The capturing of information related to leisure gains from gambling is conceptually related to consumer surplus, so should be linked to the earlier discussion.

There is little empirical research into the positive impacts of gambling on well-being. For some gamblers, playing games of chance represents an escape from life's hardships and troubles and relief from loneliness or boredom. For others gambling may represent a genuine form of entertainment and therefore has leisure value. The empirical question is whether gambling, as a form of leisure activity, provides genuine utility (i.e. entertainment value) that is an improvement in personal well-being that can be measured either objectively or subjectively

- In the 2003 and 2007 Nova Scotia adult gambling prevalence studies, gamblers were asked they agreed or strongly agreed that they found playing games of chance (all games) 'fun and entertaining.'

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- Moderate-risk/problem gamblers are more likely to agree that gambling is fun and entertaining (69.7% of respondents in 2002 and 54.1% of respondents in 2007) than low-risk gamblers (65.6% and 45.1%, respectively).
- Non-problem gamblers are less likely to consider gambling fun and entertaining; only 28.9% of respondents in 2002 and 21.0% of respondents in 2007 agreed that gambling was fun and entertaining.
- In the 2008 gambler telephone survey, participants were asked how much they value gambling as an entertainment pastime. On a scale from 1 to 10 where one means 'not at all entertaining' and 10 is 'very entertaining,' 50.9% of moderate-risk/problem gamblers and 67.1% of non-problem gamblers scored in the 1-4 range (i.e. low entertainment value). This suggests that the majority of non-problem gamblers (or recreational gamblers) felt that their gambling experience had relatively low entertainment utility or value.

The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

Analysis is done using small sample sizes resulting in extrapolation issues.

- In the 2003 adult gambling prevalence study, gamblers were asked whether they felt gambling was an enjoyable part of socializing with friends or family; 33.6% of low-risk gamblers agreed or strongly agreed with this statement compared to 37.5% of moderate-risk/problem and 20% of non-problem gamblers.

Health Problems Associated with Gambling

Previous research in Canada (Manitoba and Saskatchewan) has explored the relationship between problem gambling and health problems. Researchers had found that several physical health conditions had been associated with problem gambling, including high blood pressure, ulcers, emotional problems, depression, thoughts of suicide, migraine headaches, intestinal problems, serious heart problems resulting from chronic stress, as well as repetitive movement disorders, orthopedic distress, and sexual dysfunction.

Source is not cited.

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There have been no similar studies conducted in Nova Scotia. Nor were we able to find any statistical evidence for Nova Scotia of the connection between disease rates and pre-mature mortality and problem gambling.

- The only evidence of a possible relationship between problem gambling and health comes from the Nova Scotia help-line statistics. Between 5.6% (2007) and 24.9% (2002) of all calls to the help-line cited physical health as an impact of their problem gambling experience.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.

- In the 2003 and 2007 adult gambling prevalence surveys, moderate-risk/problem gamblers were no more likely to experience health problems than non-problem gamblers. However, in 2002, 5.36% of moderate-risk/problem gamblers and 2.24% of low-risk gamblers said that gambling had played a role in their health problems. Specific health problems experienced were not identified.
- In the 2008 adult gambler telephone survey, 20.0% (11 of 55 respondents) of moderate-risk/problem gamblers said they had experienced either mental or physical health problems (such as stress, anxiety, depression, insomnia, stomach ailments, or migraine headaches). Of the same 11 moderate-risk/problem gamblers, 3 gamblers said they had sought treatment for their gambling-related health problems including calling the gambling help-line, counseling, and acupuncture

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Analysis is done using small sample sizes resulting in extrapolation issues.
Typographic error could lead to confusion (should be 11 of 55 respondents).*

Stress and Depression

- Roughly 39.2% of callers to Nova Scotia's Help-Line in 2007 cited mental health impacts related to problem gambling which is relatively unchanged since 2001.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.

- In the 2003 and 2007 adult gambling prevalence studies, moderate-risk/problem gamblers were more than twice as likely to have experienced any problems with

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depression than low-risk gamblers and more than three-times more likely than non-problem gamblers. However, only 5.63% (3 out of 56 surveyed) of moderate-risk/problem gamblers said that gambling had played a direct role in their depression.

- In the same 2003 and 2007 adult gambling prevalence studies, 17.9% (2002) and 18.1% (2007) of moderate-risk/problem gamblers said that gambling had been the cause of health problems, including stress and anxiety.

Small sample sizes.

Unable to verify 18.1%.

The 2007 NS Prevalence Study did not ask about stress and anxiety.

Suicide

Suggesting cause, or applying monetary terms, to suicide statistics is problematic due to the sensitive nature of the topic and lack of verifiable data.

Suicide is one of the most commonly cited health impacts of problem gambling in both the Canadian and international gambling research literature. Suicide is one of the top three causes of death and hospitalization in Nova Scotia amongst those 16 years and older.

There is no citation or supporting data provided.

- There are no definitive statistics on the relationship of suicide to problem gambling in Nova Scotia in the medical records (e.g. chief medical examiner reports). However, according to one expert, an estimated 6% of Nova Scotia suicides may be related to problem gambling.
- Although the actual number of suicides in Nova Scotia is not published annually and there is no definitive number of these suicides that can be directly linked to a gambling addiction, it is possible to estimate the annual gambling-related suicides ranged from a high of 6.8 in 1996 to a low of 4.0 in 2000, with the average being about 5.6 gambling-related suicides per year.

Citations are incorrect or missing. The “expert” referenced did not provide a number but provided possible sources of data for research. Because statistics are not collected in a manner that is usable, the estimates of suicides are unreliable, resulting in a lack of rigour in the methodology. Suicides are reported using whole-numbers.

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Social Isolation

Problem gamblers may experience higher rates of loneliness and gambling may lead to heightened feelings of loneliness and isolation. This may lead to the erosion of social cohesion (i.e. social capital) in communities.

- In the 2007 adult gambling prevalence study, 23.0% of moderate-risk/problem gamblers and 18.7% of low-risk gamblers experienced loneliness or increased isolation. However, of the 13 moderate-risk/problem gamblers who experienced these impacts in 2002, **only 2 (3.57% of total surveyed)** said that gambling played a role in their loneliness.

Unable to verify source data from NS Prevalence Study (“...only 2 (3.57% of total surveyed) said that gambling played a role in their loneliness”).

Substance Abuse and Gambling

There is very little if any evidence of the link between problem gambling and substance abuse (e.g. alcohol, drugs) in Nova Scotia. What evidence we did examine showed a weak relationship.

- In the 2003 adult gambling prevalence rate study, **12.5%** of moderate-risk/problem gamblers indicated that they had gambled under the influence of alcohol or other drugs.

Incorrect citation from 2003 NS Prevalence Study.

- In the same study, over 55% of moderate-risk/problem gamblers used tobacco while gambling, compared to 26.9% of low-risk gamblers and 8.3% of non-problem gamblers.
- In the 2008 adult gambler telephone survey, 5.5% (3 out of 55 respondents) of moderate-risk/problem gamblers said that they had had a substance abuse problem (such as alcohol).

Analysis is done using small sample sizes resulting in extrapolation issues.

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Psychological Impacts on Family and Friends of Gamblers

Problem gambling impacts can extend beyond the individual gambler to family, friends and work colleagues.

- In the 2008 adult gambler telephone survey, that included family members of moderate-risk/problem gamblers, 12.7% (7 out of 55 respondents) said that gambling had caused stress for their family in their recent gambling experience.
- In both the 2003 and 2007 adult gambler prevalence surveys, gamblers were asked if their friends or family worry or complain about their gambling behaviour. A greater number of moderate-risk/problem gamblers (24.6% in 2007 and 25% in 2002) experienced these psychological impacts.

The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results. Analysis is done using small sample sizes resulting in extrapolation issues.

Family Break-Up (Separation, Divorce)

The financial stresses that result from problem gambling can often lead to relational and marital stress that may lead to separation, divorce and negative impact on children.

Statement requires citation.

- In 2002, roughly 37.5% (21 out of 56) moderate-risk and problem gamblers said they had experienced relationship problems in their lives, however, of the 21 gambler respondents, 8 (or 14.3% of all 56 respondents) said that gambling had played a role in their relationship problems.
- The 2008 adult gambler telephone survey inquired more deeply into the relationship impacts of problem gambling. When asked whether gambling has ever caused marriage separation only 1 out of 55 moderate-risk/problem gamblers said they had experienced marriage separation.

Unable to verify source data from NS Prevalence Study (“...8 (or 14.3% of all 56 respondents) said that gambling had played a role in their relationship problems”). The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results. Analysis is done using small sample sizes resulting in extrapolation issues.

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Domestic Violence

- In the 2008 adult gambler telephone of the 55 moderate-risk/problem gambler respondents, 3 (or 5.5% of respondents) said that gambling had caused verbal abuse while one (2.5%) of the 40 family member respondents said they had experienced verbal abuse as a result of a problem gambler family member's gambling activity.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

CRIME, LEGAL AND JUSTICE IMPACTS

The impacts of gambling on crime and the criminal justice system, including the potential for increased criminal activity attributable to gambling, the increase in money-related crimes (e.g. theft (including property), fraud, embezzlement), the need for extra law enforcement personnel, use of loan sharks, incarceration costs, and family abuse (e.g. domestic violence, child neglect, suicide and home invasion) were explored. As well, this section includes impacts of illegal gambling and the potential effects of underground gambling in a context where gambling is illegal.

There is very little if any statistical evidence that links crime statistics to problem gambling or illegal gambling in Nova Scotia. In previous Canadian studies of the relationship between gambling and crime, researchers have found that most police records are incomplete and may be of limited use. The Halifax Regional Police and the RCMP in Nova Scotia keep different records and they do not currently keep formal records of gambling-related incidents of crime. Many crimes such as family disputes, domestic violence and abuse go unreported.

For this study, we adopted a similar, though less forensic, approach as Smith, Wynne and Hartnagel in Edmonton, to investigating the incidents of crimes committed in Nova Scotia that may be related to gambling. We requested a special police file search that was conducted by both the Halifax Regional Police and the RCMP.⁴ The Halifax Regional Police (HRP) files for 2005, 2006 and 2007 were scrutinized on our behalf by the HRP using key-word search protocols that looked for any gambling-related incidents of crime.

The methodology is such that search terms related to gambling were used to identify events. However, each event was not analysed to see to what degree the event was related to gambling. As such, the analysis incorrectly assumes 100% attribution of each event to gambling. This method overestimates gambling-related impact.

⁴ A similar scrutiny of RCMP records were not available at the time of writing this report.

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The following results were found:

- Between 2001 and 2007 the number of callers to the Help-Line who cited experiencing legal issues related to gambling problems ranged from a low of 4 (2.3% of all callers) in 2007 to a high of 16 (5.0% of all callers). While there is no obvious trend in these statistics (roughly 2-3% of all callers cite legal issues), 2007 appears to represent a significant reduction in the number of problem gamblers experiencing legal issues.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.

- The visual relationship between illegal gambling incidents and net gambling revenues does not suggest that the two trends are directly or indirectly related, however, it is of interest that statistically these two variables when correlated yields an R-squared of - 0.835, a reasonably strong statistical fit. This suggests that there appears to be a reasonable strong relationship between rising net gambling revenues (as a proxy for increased availability of legal gambling) and declines in illegal gambling crimes.

Visual analysis is not an appropriate methodology to indicate strength of relationship between variables. In statistical analysis the correlation between variables does not prove causality. Conclusions lack rigour.

- A key-word search of Halifax Regional Police records for 2005, 2006, 2007 and 2008 (year-to-date) of total crime occurrences revealed that for 2007 the primary category of gambling-related crimes was domestic violence, disputes, or abuse (23 occurrences), theft and fraud (18), other (14), suicide (7), and missing persons (6).

The SEIG study timeframe is from 2001 to 2007; the word search was done from 2005 to 2008 (year-to-date); numbers are chosen from only one year. The methodology is faulty. This is a provincial study using anecdotal Halifax Regional Police data only.

- The analysis suggests a gambling-related crime rate of 18.25 per 100,000 citizens (rates comparable to the findings by Smith, Wynne and Hartnagel for Edmonton where in 2002 there was an estimated gambling-related crime rate of 17.6 per 100,000 Edmontonians).

Unsupported and uncited data and comparison. Unable to verify findings.

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Using Illegal Means to Secure Gambling Money

- In the 2008 adult gambler telephone survey, we asked respondents whether they did anything illegal to get money to gamble. The majority (96.4% or 53 out of 55 respondents) of moderate-risk and problem gamblers said that they had not done anything illegal to secure gambling funds.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

Crime Rates Related to Gambling

Historically, there has been no meaningful evidence of a connection between increased crime rates in Nova Scotia communities and gambling venues. There is no evidence that presence of casinos in Nova Scotia has led to increased crime rates in the communities in which they are located, nor have these casinos produced a significant increase in public services such as police, ambulance and transportation.

In our analysis, we examine the possible historical relationship between specific crimes, which are believed to be associated with gambling — theft (over and under \$5,000), property crime, fraud and domestic/family disputes and violence — and changes in net gambling expenditures for Nova Scotia between 1996 and 2007.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

- We did not find a strong statistical relationship between crime rates considered to be correlated with problem gambling and net gambling expenditures.

Self-reporting using editorial statements.

COMMUNITY AND CULTURAL IMPACTS

The potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations who benefit from **gambling revenue transfers from the provincial government**, and the public attitude, beliefs, and values toward gambling by citizens were explored.

This is an incorrect statement as transfers are not provided to charities or non-profit organizations.

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Impacts on Local Charities, Non-Profit Organizations

One of the benefits of gambling to the community are gambling revenues generated by charities that are actively engaged in charitable lotteries and bingos. In addition communities, charities and community organizations benefit from the **transfer of gambling revenues from the provincial government** for community activities and programs.

This is an incorrect statement as transfers are not provided to charities or non-profit organizations.

- An examination of the trends in charitable revenues from regulated gambling between 1995 and 2007 shows that revenues increased steadily from \$14.0 million in 1995 to a peak of \$28.6 million in 2005. They have since been declining.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

- The relative importance of regulated gambling revenue benefits to non-profit organizations in Nova Scotia can only be surmised to the extent that we know what percentage of their operating revenues are dependent upon these gambling revenue streams. Unfortunately such data is unavailable for the purpose of this research.

Citizen Attitudes Towards Gambling and Gambling Venues

Public or citizen perceptions and attitudes towards gambling is a key determinant of analyzing gambling's impact on the well-being of society. The degree to which gambling is socially and culturally acceptable is important to understanding how to weight the relative positive and negative impacts on society and the economy.

Opinion polls conducted in 1999 by the Canada West Foundation of Canadian attitudes towards gambling showed that **Atlantic Canadians** preferred more restrictions on gambling, were most opposed to VLT gambling, and showed the strongest disagreement in Canada when asked if gambling had improved the quality of life in the province. 63% strongly disagreed and 82% disagreed overall.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document. Additional attitude studies were completed by AGD prior to 2000. These studies are beyond the scope of this study for Nova Scotia.

More recent opinion polls on gambling specific to Nova Scotia were not available.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

In the 2008 telephone survey conducted as part of our research, when respondents (total sample of 151) were asked about how they felt about the impacts gambling has had on their family, community and Nova Scotia society over the past 5 years, 2.0% of respondents said they felt quality of life had improved, 4.6% said they felt quality of life had declined and 93.4% said quality of life has stayed about the same. However, the same respondents expressed stronger emotions when responding to an open-ended question on how they felt gambling had impacted their own lives and the lives of others.

*Analysis is done using small sample sizes resulting in extrapolation issues.
The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.*

IMPACTS OF INDIVIDUAL GAMES

The subset (problem gamblers) is predisposed to having a particular opinion that may not be reflective of the general public.

The socio-economic impacts of specific games were also evaluated in this study, including bingo, casinos, harness racing, ticket lotteries, video lottery terminals (VLTs) and on-line or Internet gambling. The various impacts for each game were examined using the same SEIG impact assessment framework and indicators.

In most instances, with the exception of economic and financial statistics, there was insufficient data to assess impacts of gambling on Nova Scotians by individual game according to the indicators from the SEIG framework. This is because the primary source of impact data for this study, namely the adult gambling prevalence studies from 1993, 1996, 2002 and 2007, as well as our customized 2008 telephone survey, either lacked a statistically valid sample size to attribute impacts to a specific game or simply did not examine the impacts relevant to the SEIG framework.

*The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.
Analysis is done using small sample sizes resulting in extrapolation issues.
The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.*

Many of the economic and financial impacts of the individual games have been discussed in the all-games analysis description.

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The results of the individual game assessment revealed:

- The ongoing importance of VLT, ALC lottery products and casino games as the primary source of wagers, net gambling expenditures, and net provincial government gambling revenues.
- The majority of problem gamblers cite VLTs as the primary source of problem gambling. Compared with other games of chance, video lottery (VLTs) was cited as the principal cause of ongoing gambling problems (67%) or more than two-thirds of adult gamblers reporting a gambling problem versus 3%-18% for other gambling activities in 2007.
- According to the 2003 and 2007 Adult Gambling Prevalence Study results an estimated 1.60% of Nova Scotia adults (19 years and older) were moderate risk and problem VLT gamblers in 2002 and 2007 gamblers according to the CPGI classification system. That is, an estimated 12,059 adults in 2002 and 12,677 adults in 2007 had a gambling problem with VLTs.

Improper methodology. Data from separate studies cannot be combined.

- In 2007, the moderate risk and problem VLT gambler cohort (n=12,677) expended \$5,746 per gambler for an estimated total expenditure of \$72.8 million, which representing a 55.2% share of both provincial and First Nations net gambling revenues from VLTs in 2002 and 69.1% share of VLT net revenues in 2007. Also, the moderate risk and problem VLT gambler's estimated expenditures were nearly 23 times greater than a non-problem VLT gambler and 5.5 times more than a low-risk gambler.

"n" is population data and not from the Nova Scotia Prevalence Study.

- In 2007 the moderate risk and problem ALC lottery gambler cohort (n=17,934) expended \$1,168 per gambler which predict net expenditures on ALC lotteries by moderate and problem gamblers of \$20.9 million. Based on these figures, moderate risk and problem ALC lottery product gamblers were estimated to have contributed 14.0% to provincial net gambling revenues from ALC lotteries in 2002 and 11.0% in 2007.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

- In 2007 there were an estimated 7,122 moderate risk and problem casino gamblers in Nova Scotia, with a predicted average net expenditure of \$2,224 per casino gambler⁵ for an estimated contribution to provincial casino gambling revenues of \$42.0 million or an estimated 49.0% of net gambling revenues, second only to the contribution of VLT problem gamblers to net VLT expenditures (69.1% in 2007-08). The estimated number of moderate risk and problem casino gamblers in Nova Scotia in 2007 is ranked fourth after the number of ALC ticket lottery, VLT, and charitable lottery problem gamblers.

A number of methodological issues have been identified. The sample size that is reported as “n” is not the sample size. It is an unsupported estimate of problem gamblers. The sample sizes from which information is drawn and extrapolated are too small for analysis to be considered statistically sound.

Footnote missing “...casino gambler”.

CAVEATS, LIMITATIONS and FUTURE RESEARCH

Given the limitations noted, it is uncertain how conclusions have been made based on the data.

Because this study represents one of the first attempts to conduct a comprehensive socio-economic assessment of gambling in Canada using the new national SEIG framework, it comes with some risks and several caveats.

This study uses a variation of the National SEIG framework.

First, the main limitations of this study are associated with the quality and completeness of the secondary data that were gathered. Some data sets, such as the financial statements of Nova Scotia Gaming Corporation, are complete and highly accurate in their reporting of gambling revenues and expenditures. However, other data sets are incomplete and/or the data is less trustworthy.

Secondly, a related limitation stems from the acknowledgment by the original researchers themselves that their data have limitations. This is true of sources such as Statistics Canada as well as acknowledged limitations researchers conducting adult gambling prevalence surveys. Issues include small sample sizes (e.g. problem gamblers), trustworthiness of self-report data; sample being representative of only those living in private households; and possible influence of others on participants' responses to some questions. Insofar as the present study relies on these data sets, any limitations reported in the original research also apply to the use of these data in the present study.

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A third limitation, and most likely the most important for this study of socio-economic impacts of gambling, is the difficulty translating many of the quantitative or qualitative impacts of gambling into economic or monetary terms. This study was unable to calculate any monetary cost estimates associated with health or social impacts of problem gambling. Developing such monetary estimates will require years of primary economic research into gambling in Canada; some of this research is only beginning.

A fourth limitation is the challenge of attributing a portion of impact is associated with conducting any gambling socioeconomic impact assessment. Calculating etiological or attribution fractions is a central measurement issue in the science of epidemiology, as researchers strive to determine what proportion of a disease or public health problem is attributable to particular causes.

Fifth, tests of statistical significance used to explore relationships amongst the numerous quantitative study variables are limited given that most of the analyses in this study rely on reports of secondary data. In some data reports—notably the 2003 and 2007 prevalence surveys—statistical tests were conducted, including calculations of margins of error for the sample sizes; confidence intervals for responses to some survey questions; and significance correlations between some survey variable. This points to opportunities for improving prevalence study methods in future research in Nova Scotia and Canada.

Our study was thus primarily limited to a focus on the known economic and financial impacts, and some tourism/recreation, and employment impacts, of gambling to the Nova Scotia economy, as a whole, and individual households, complimented with non-monetary, quantitative and qualitative impacts from the health and well-being, legal and justice (crime), and community domains of the SEIG framework. Given the absence of objective and quantitative economic cost (and benefit) estimates of gambling's impacts in these domains of health, crime, and community, it is currently not possible to express these impacts in monetary terms without considerably new primary economic research (which is only now beginning, for example, at the University of Alberta in the Department of Economics). Consequently, to the extent that impacts are seen by some to be only valid if they are monetized, this study will appear limited.

Notwithstanding these measurement limitations, this study represents a benchmark in socio-economic impact assessment of gambling in Canada as it shows the possibility of integrating and balancing economic benefits and costs of a sector (gambling) with the non-monetary social, human health and community well-being impacts within an integrated analytic framework.

We hope it will lead to a sustained effort in Nova Scotia and Canada to building capacity to measure and evaluate more completely and objectively a broad spectrum of impacts associated with gambling in Canada.

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Part 1. Introductory Chapters

1. Introduction

1.1 Background to the Study

This study was commissioned by the Nova Scotia Government —**The Alcohol & Gaming Division** of the Department of Environment and Labour (as of April 1, 2008 named the Department of Labour and Workforce Development)⁶ —with the objective of establishing a base-line analysis of a range of social and economic impacts that can be attributed to gambling in Nova Scotia.

The study was commissioned by Nova Scotia Environment and Labour, not the Alcohol & Gaming Division.

The key strategic question of interest to Nova Scotia is: How can the measurable economic benefits of gambling be weighed or balanced against the unaccounted and often-times intangible negative and positive social and economic impacts?

The study was not meant to be a cost-benefit analysis. This is not the objective noted in the RFP and it is inappropriate to develop objectives outside the scope and intentions of the RFP.

Gambling contributes economic and financial benefits for the people of Nova Scotia and other provinces. These benefits include direct revenues to the provincial government, revenues for **First Nations communities**, employment, as well as indirect revenues such as income taxes paid by those employed in gambling-related businesses. While some of these benefits are known and measurable, many associated social, economic and environmental impacts from gambling activities, especially impacts from gambling addictions or problem gambling, have not been taken fully into account in provincial income accounts, for example, the GDP (gross domestic product) statistic and in government budgeting and decision making.

*First Nations communities are only one category of several types of VLT operations which receive gaming revenues (other categories include casinos and “bars”).
The provincial GDP accounts do not take into account many aspects of social, economic and environmental factors.*

⁶ The Department of Environment and Labour severed on April 1, 2008, to create two new departments known as the Department of Environment, and the Department of Labour and Workforce Development. The responsibilities of this study now fall under the Department of Labour and Workforce Development.

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In 2005, Nova Scotia released *A Better Balance: Nova Scotia's First Gaming Strategy*, a five-year strategy that identified the need for greater balance between the economic benefits of gambling and the government's social responsibilities to the people of Nova Scotia for overall societal well-being. This study was commissioned as part of this five-year strategy.

1.2 Purpose, Goals and Objectives

*The study was to include internet gambling which is not mentioned in "Purpose, Goals and Objectives" of this draft document.
The objectives stated here place the focus on problem-gambling, which is not consistent with the RFP. The RFP asks for "a snap-shot of [...] Impacts associated with gambling in the Province" not just those related to problem-gambling.*

A part of the overall implementation of Nova Scotia's gaming strategy, the **primary purpose** of this study is to complete a socio-economic assessment of gambling in Nova Scotia and present a snapshot of impacts that is analytical, factual and objective. Using transparent and defensible impact assessment methodologies, a number of social, health and economic impacts (positive, negative and perceptual) from regulated Nova Scotia gambling activities (video lotteries, casinos, ticket lotteries, bingos, harness racing, and internet gambling) are examined for the period 2000 to 2007. The results will provide a better understanding of the nature and extent of the impacts that gambling activity has on the people of Nova Scotia. The study is also meant to facilitate ongoing research as impact assessment methodologies specific to gambling are further developed or standardized. The results of this study may lead to more informed public policy decision making, budgeting and debate about the fiscal, economic and societal impacts of gambling in Nova Scotia.

Secondary objectives of this study are as follows:

1. Development of a problem gambling socio-economic impact assessment (SEIA) framework for measuring and reporting on a variety of economic, social and health impacts that can be attributed to gambling activity in Nova Scotia;

A focus on problem gambling is not consistent with the RFP.

2. Investigation and estimation of potential relationships between problem gambling activity and socio-economic impacts, including both positive and negative impacts on economic well-being, personal health, societal or community well-being, and crime;

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3. Estimation of the economic (monetary) costs and benefits associated with gambling in Nova Scotia using GPI (Genuine Progress Indicator) full cost-benefit accounting methodology, if and where relevant monetary estimates are available for Nova Scotia.
4. Identification of specific negative well-being impacts from problem gambling which the Nova Scotia government and other agents concerned with problem gambling may invest resources and effort to mitigate the most deleterious impacts.

The RFP asked for a balanced presentation of socio-economic impact not a concentration on impacts from problem gambling.

5. Identification of areas for new or improved research into the prevalence of problem gambling and the link between problem gambling and specific economic, social and health well-being impacts that require more rigorous investigation

The RFP asks for recommendations in measuring social and economic impacts in the future, not improved research. A focus on problem gambling is not consistent with the RFP.

This research was conducted by Anielski Management Inc., including president and economist Mark Anielski, Dr. Harold Wynne a well-known Canadian gambling-researcher, Jeff Wilson (senior research associate with Anielski Management Inc.) and Dan Rubenstein (a former senior auditor with the Auditor General's Office of Canada and an associate with Anielski Management Inc.). For more information on Anielski Management Inc. please see www.anielski.com.

1.3 Historical Development of Gambling in Nova Scotia

Gambling is not new in Canada or Nova Scotia. For centuries humans have wagered on everything from the odds of a tomorrow to the outcome of a sporting event. In Canada, such activities are regulated first and foremost by the Criminal Code of Canada. Although the Code outlaws gambling in general, it does permit the Provinces to conduct and manage certain types of gaming.⁷

Government operated gambling in the province is restricted to adults 19 years or age or older (with the exception of charity bingo) with licensing, operation and regulation pursuant to the Criminal Code of Canada and the Nova Scotia *Gaming Control Act* (1994-1995).

⁷ Alcohol and Gaming Authority. (2000). *Annual Gaming Report 1998-1999*, Volume I; p. 1-6

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The Criminal Code of Canada is the legislation that permits provinces to be involved in gaming activities. The Code defines a lottery scheme as any plan or proposal in which a person disposes of valuable property through a mode of chance. As such, a lottery scheme as defined in the Code would contain the following three elements:

1. The disposition of property (a prize).
2. Any mode of chance whatsoever involved in obtaining the prize (chance).
3. Consideration exchanged for a chance to win the prize (i.e., paying money for a chance to win a prize).

Generally speaking, under the Criminal Code of Canada, gambling is illegal. That same Code creates exceptions to this general rule, and it is under these exceptions that provincially licenced gambling occurs.

The Criminal Code of Canada creates two basic ways for the provinces to permit the conduct and management of lottery schemes. Firstly, the provincial government is authorized to conduct and manage lottery schemes alone or in conjunction with other provinces, pursuant to any applicable legislation enacted by the Province. It is under this provision, for instance, that Nova Scotia participates with the other Atlantic Provinces in carrying out lottery schemes through the Atlantic Lottery Corporation. Secondly, the Lieutenant Governor in Council can appoint provincial licensing authorities to licence others to conduct and manage lottery schemes. This allows charitable and religious organizations, fairs and exhibitions, and small scale commercial operators, to conduct and manage lottery schemes, provided they hold a provincial gaming licence.

In Nova Scotia, as elsewhere, the business of betting has grown dramatically in the past decade. In the mid-1990s, as the Province prepared to introduce casinos to the area, the government decided it was time to rewrite the provincial rules and regulations affecting games of chance. The Gaming Control Act, which became law in February 1995, established for the first time two distinct and separate organizations to handle the responsibility of gambling: one agency to operate, one to regulate.

The Nova Scotia government, and ultimately the people of Nova Scotia, are the shareholders and owners of the **gaming industry** in the Province. The industry is licensed and regulated by the Alcohol and Gaming Division of the Department of Labour and Workforce Development. **It is managed by Nova Scotia Gaming Corporation (the Gaming Corporation of NSGC).**

The Alcohol & Gaming Division (AGD) regulates charitable gambling, ALC video lottery terminals (VLTs) and ticket lotteries and casinos in the province. AGD does not regulate harness racing or First Nations gambling.

The Nova Scotia government is not a shareholder of the entire gaming industry in the province. The sentence "...managed by Nova Scotia Gaming Corporation..." lacks clarity and is incorrect given that NSGC conducts and manages lottery schemes and casinos.

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The NSGC was created as a Crown corporation, governed by the provincial *Gaming Control Act*, to continue the work of previous government departments by operating the gaming business and its financial dealings. Essentially a business vehicle for the Provincial Government, this Crown corporation is responsible for the conduct and management of Government's gaming activities, including the activities of its approved operators, the Metropolitan Entertainment Group (MEG) and the Atlantic Lottery Corporation (ALC). The NSGC's role is to ensure the gaming industry is as socially responsible as possible, while generating reasonable profits. The provincial government makes the big picture, policy decisions about how the industry will be operated in Nova Scotia. NSGC manages and implements those decisions. NSGC also oversees and manages the gaming operators who carry out the day-to-day business of gaming - Casino Nova Scotia (CNS) and Atlantic Lottery Corporation (ALC).⁸

NSGC was created through the Gaming Control Act, Part I.

The government also realized, however, that an operator should not police him and that a matter such as gambling should not be left vulnerable to political whims or outside influences. So the Gaming Control Act also established a completely separate and distinct body, a regulator to be operated at arm's length from government: the Alcohol and Gaming Authority (previously known as the Nova Scotia Gaming Control Commission).

Under terms of the Gaming Control Act, the Alcohol and Gaming Authority (the Authority) has two mandates:

1. To license and regulate gaming activities in Nova Scotia; and
2. To study and report on certain aspects of gaming and its consequence in Nova Scotia.

The first mandate requires the Authority to ensure that all aspects of gaming are conducted with honesty and integrity and that they comply with the Criminal Code and the Gaming Control Act regulations. Additionally, this mandate requires the Authority to study and report on the health, judicial, economic, social and environmental impacts such gaming is having on Nova Scotians.

Like the licensing and regulatory provisions, the research mandate, by necessity, focuses heavily on public protection. It commits the Authority to impartial study and report on all gaming activity, and to the clear and transparent presentation of its research and findings.

The Authority continues to believe that careful scrutiny and analysis of the impacts of gaming, the extent of the public's participation in it, and the sources and distributions of gambling revenues is required. It attempts to shed light on such issues in its annual statutory reports to the Minister responsible for Gaming Control Act.

⁸ Nova Scotia Gaming Corporation website <http://www.nsgc.ca/corporate.php> accessed June 6, 2009.

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Chronology of Gambling in Nova Scotia

The following provides a very brief chronology of key historical development of the gambling sector in Nova Scotia from 1969, when Canadian provinces gained the right to conduct and regulate lotteries, to 2007.

This is a non-encompassing snapshot of events as key events are missing. Incorrect dates and facts are included. Sources should be cited.

1969

- Canada's provinces gained the right to conduct and regulate lotteries

1976

- Gambling legalized in Nova Scotia with introduction of lottery tickets
- The Atlantic Lottery Corporation is established by the Atlantic Provinces to operate ticket lotteries in each of the four provinces

1991

- Video lottery terminals (VLTs) are legalized in NS and brought under government control

1993

- VLTs are restricted to liquor licensed establishments only

1995

- The *Gaming Control Act* is introduced creating the Nova Scotia Gaming Corporation and the Nova Scotia Alcohol and Gaming Authority
- Halifax Interim Casino opened on June 1
- Sydney Casino opened on August 1
- VLTs introduced on First Nations reserves

1998

- Nova Scotia Gaming Foundation established in March to fund the research and treatment of problem gambling
- The *Video Lottery Terminals Moratorium Act* introduced, limiting VLTs to 3,234 (excluding those on First Nations reserves)

1999

- *Criminal Code* amended in March legalizing craps and games with dice
- VLT Retailer Responsible Gaming Program is launched in October

2000

- Halifax Casino Nova Scotia opened on April 24

2001

- Nova Scotia's old VLTs are replaced with new ones with four responsible gaming features, new games and bill acceptors
- Lottery ticket business supported with new, modern equipment

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2002

- Canada's first (and annual) Responsible Gaming Awareness Week launched in Nova Scotia

2004

- Nova Scotia begins development of a comprehensive gaming industry strategy
- In June 2004, the ticket price for Lotto 6/49, a national lottery draw game, increased from \$1 to \$2 and the minimum jackpot doubled from \$2 million to \$4 million
- In August 2004, ALC introduced PlaySphere in Atlantic Canada, an online internet site to purchase lottery draw and sport lottery games. Recent additions to PlaySphere are interactive games including bingo (iBingo) and poker (Hold 'em Poker)

2005

- May 31, 2005, Great Canadian Gaming Corporation took over ownership and operation of the two casinos (Halifax & Sydney) in Nova Scotia
- July 1, 2005, hours of operation for VLTs in Nova Scotia were reduced with all machines shut down at midnight
- November 1, 2005, 800 machines were removed from licensed establishments throughout the province with an additional 200 machines withdrawn through attrition effectively reducing the number of government operated machines by 30% (1,000) to a total of 2,234 machines by 2006/07
- Province released Gaming Strategy – a 5 year plan to initiate change in gambling

2006

- January 1, 2006, stop button was disabled on VLTs and speed of machines was reduced by 30%
- In 2005-06 a number of new casino initiatives were launched including Responsible Gambling Resource Centres (RGRC) at both casinos and the replacement of token-based slot machines with ticket-based machines (Ticket-in/Ticket-out technology (TITO)) where patrons are given bar-coded tickets instead of tokens for redemption of winnings
- In February 2006, ALC launched Bucko, a new \$1 daily draw game with a \$20,000 top prize
- In August 2006, NSGC launched a new program with ALC to provide a suite of lottery ticket products where 100% of the profit is designated to support sports in Nova Scotia. The Support 4 Sport game was officially introduced in May 2007
- In August 2006, ALC launched GameDay Pick'em Pool, its third sports lottery

2007

- In 2006/07 live harness races decreased from 110 (2002) to 85 races due to the closure of one of the tracks. NSGC subsidy of harness racing increased from \$750,000 to \$1 million
- First Nation gambling machines (VLTs) increased by 34 machines from 560 (2002-03) to 595 machines (2007-08)

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3. Research Approach and Methodology

There are technical terms in this section (e.g., internal non-market costs, consumer surplus, or distance consumer surplus) which should be explained or referenced for clarification.

2.1 Research Issues in Assessing the Socio-Economic Impacts of Gambling

In the field of gambling studies, great interest and debate is focused on the assessment of social and economic impacts of gambling in society. Early attempts at measuring these impacts were widely criticized for being biased in favor of the pro- or anti-gambling interests that have sponsored or participated in this research (Wynne and Shaffer, 2003). Moreover, in the gambling research community, there is also much debate about how to best measure the **positive and negative effects (costs/benefits) of gambling**. For example, Eadington (2003:p,185) offers an instructive critique of studies that attempt to measure the social costs of gambling and he notes that measurement can be considered from both a narrow or broad perspective. The narrow view holds that social costs may be defined as actions which result in negative changes in aggregate social wealth; whereas, the broad view defines social costs as those which also include internal nonmarket costs that are borne by individual gamblers and their immediate families and acquaintances.

Positive and negative effects or impacts cannot be used interchangeably with costs and benefits. This study was not meant to be a cost-benefit analysis.

Whether the research perspective to assessing gambling impacts is narrow or broad, the main methodological challenges include (a) identifying impacts to measure; (b) determining the best ways to measure these; (c) identifying information (data) that needs to be gathered and analysed; and (d) determining how to interpret this information and accurately attribute positive and negative impacts within the assessment. Various gambling researchers have offered suggestions for meeting some of these methodological challenges (Eadington, 2003: Walker, 2003: Single, 2003).

Beyond these contributions, there are two main theoretical/analytical frameworks for assessing the social and economic impacts of gambling that have been recently developed. The first is a cost-benefit framework presented by Earl Grinols in his publication *Gambling in America: Costs and Benefits* (2004). This framework generates the following taxonomy for costs and benefits that Grinols suggests should be measured:

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Social Benefits

Net increases in taxes
Consumer surplus
Distance consumer surplus
Profits
Capital gains
Reduced unemployment

Social Costs

Crime
Bankruptcy
Suicide
Illness
Social services
Direct regulatory costs
Family costs
Abused dollars

While Grinols' framework is helpful in determine the cost/benefit attributes that should be measured, he provides only limited discussion of measurement methodology, data collection and analysis, and attribution of benefits and costs within the assessment.

The second analytical framework had its genesis in the *First International Symposium on the Economic and Social Impact of Gambling* held in Whistler, British Columbia in 2000 (Wynne and Shaffer, 2003). The stated purpose of the Whistler Symposium was to bring together policy makers, researchers, and other stakeholders to discuss and begin to develop an internationally acceptable set of guidelines and framework for assessing the positive and negative.

Although the goal of developing the set of guidelines and a framework was not realized at the time, the Canadian interprovincial planning committee subsequently commissioned Mark Anielski to build on the work that began at Whistler and that led to the development of the *The Socio-Economic Impact of Gambling (SEIG) Framework* completed in February 2008. The SEIG framework encompasses all the social benefit and cost elements contained in the Grinols taxonomy. Beyond this, the SEIG framework posits specific benefit/cost variables in each of six domains with measureable indicators for each. Finally, the SEIG framework offers some methodological suggestions for measuring gambling costs and benefits as well as comments on data sources that might be utilized in this assessment.

Cost-benefit terminology should be reserved for discussion of methodologies concerning monetization.

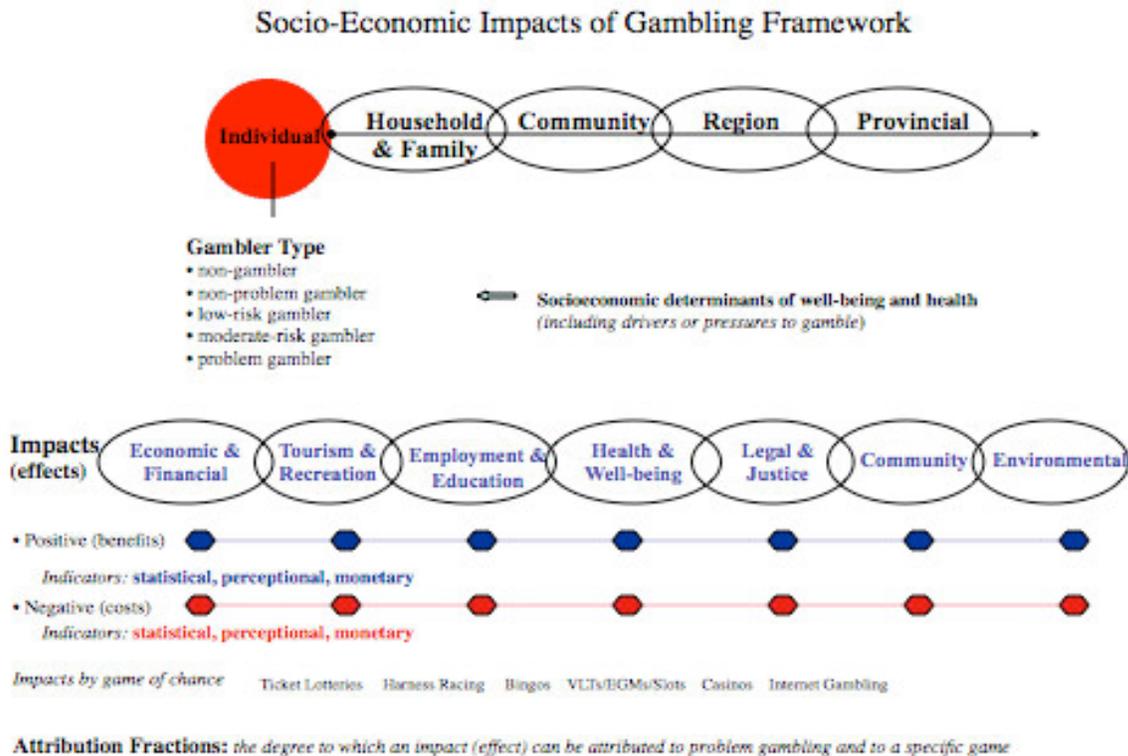
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2.2 Analytical Framework

The analytical framework that guided this study is based on the Socio-Economic Impact of Gambling (SEIG) Framework developed by Anielski (2008) for Canada (see Figure 1).⁹

Figure 1
Socio-Economic Impacts of Gambling (SEIG) Assessment Framework for Canada



Source: Anielski Management Inc. 2008. The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard.

The table presents what appears to be impacts as indicators, which is confusing as an indicator is a way to measure an impact.

Table 1 presents the SEIG analytic framework adopted for this Nova Scotia study (based on the Canadian framework), which includes six impact domains¹⁰ and specific statistical, perceptual

⁹ Anielski Management Inc. 2008. The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard.

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and monetary indicators that are measured within each. This analytical framework addresses the first challenge in conducting gambling socioeconomic impact assessments; namely, it addresses the issue of what impact domains and variables/indicators within each are being measured to provide a comprehensive overview of impact. Some domains are arguably more important than others and, within each, there may be other indicators of impact that have been overlooked. Nonetheless, this framework defines the scope of the research and provides guidance for the research process, especially with the task of identifying data requirements, sources, collection and analysis.

There is no explanation of how the SEIG Framework ties in with the deliverables in the RFP.

**Table 1
Nova Scotia SEIG Analytical Framework**

Impact Domain	Indicator
1. Economic and Financial	Gambling GDP
	Personal/household gambling expenditure
	Consumer surplus
	Distance consumer surplus
	Government gambling revenues
	Gambling industry profits
	Net business sector growth
	Negative consumer surplus
	Government defensive expenditures
	Direct regulatory costs
	Bad debts, costs to recover bad debts, and bankruptcy
Abused dollars	
2. Tourism and Recreation	Gambling patronage
	Incremental tourism expenditures
3. Employment	Net job creation in gambling industry
	Indirect employment related to gambling
	Changes in unemployment or underemployment
	Productivity losses and absenteeism
	Losses in employment in other industries
4. Health and Well-Being	Gains from gambling as a leisure activity
	Problem gambling prevalence rates
	Morbidity and disease rates
	Premature mortality rates (other than suicide)
	Stress, anxiety and depression
	Suicide
Social isolation	

¹⁰ The 'environmental' impact domain identified for the national SEIG framework was not included in the Nova Scotia gambling impact framework because this domain was not clearly articulated enough to be of use for the Nova Scotia study.

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	Loss of quality time with family, friends and community
	Substance abuse related to gambling
	Psychological impacts on family and friends of gamblers
	Family break-up (separation, divorce, impact on children)
	Domestic violence
	Citizen attitudes towards gambling
5. Crime, Legal and Justice	Reduced illegal gambling rates
	Crime rates related to gambling
	Policing and incarceration costs
	Judiciary costs
	Security costs
6. Community	Gambling revenues to charities and NGOs
	Sense of safety from gambling venues
	Loss of community cohesion (sense of community)

*The table presents what appears to be impacts as indicators, which is confusing as an indicator is a way to measure an impact.
There is no difference between household gambling expenditures and household spending on gambling, so these should not be separate indicators.*

2.3 GPI (Full Cost Accounting) Analysis

The impacts of gambling on society can also be evaluated in monetary or economic valuation terms. We propose using the GPI (Genuine Progress Indicator) accounting framework proposed in the national SEIG framework as a tool for measuring a full range of social, economic and environmental costs and benefits that are associated with gambling. GPI accounting differs somewhat from conventional cost-benefit analysis; the latter is more suitable for measuring the economic impacts of specific projects while GPI accounting considers the broader economic, social, and environmental impacts of an economic activity (such as gambling) as it pertains to macro-economic measures of progress such as the GDP (gross domestic product) ignores. The GPI accounting model was recommended in the national SEIG framework as a suitable tool for measuring economic, social and environmental impacts of gambling, in monetary terms. The key constraining factor is the availability of relevant monetary cost or benefit estimates for the various statistical impacts from the SEIG framework.

As directed by the SEIG Steering Committee, this was not to be included in the study and therefore should not be included and or used in the methodology. It is inconsistent with what was requested in the RFP.

Table 2 shows a prototype GPI accounting of gambling’s impacts that can be used to assess the full macro-economic and societal impacts of gambling for Nova Scotia in concordance with the various impact attributes in the SEIG framework in Table 1.

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Table 2
A GPI Accounting Framework for Gambling in Nova Scotia

GPI Account Attributes
BENEFITS
GDP of gambling = personal expenditures on games of chance + gambling industry business investments + government gambling-related program expenditures + exports – imports
+ Personal expenditures on games of chance (wagers net of payouts)
SOCIETAL COSTS
– Costs of problem gambling (net personal expenditures of problem gamblers in excess of non-problem gambler expenditures)
+/- Change in income and wealth inequality in a community due to the impacts of gambling (measured using the Gini coefficient or other inequity indicators).
Health and Wellness Costs
– Cost of illness related to disease due to gambling.
– Cost of suicide (thoughts, attempts and actual suicide) due to gambling.
– Cost of premature mortality due to gambling.
– Cost of lost productivity due to stress, anxiety and depression related to gambling.
– Cost of substance abuse (alcohol, drugs, tobacco) related to gambling.
– Cost of psychological distress on family (spouse, children) and friends.
– Cost of family breakdown (separation, divorce, impact on children).
– Cost of domestic violence due to gambling.
Economic and Financial Costs
– Government defensive expenditures related to problem gambling, including incremental health, welfare and social service program expenditures.
– Additional or incremental public infrastructure costs associated with gambling development.
– Cost (benefit) in property values associated with gambling industry development.
– Cost of bad debts, bankruptcy due to gambling.
– Abused dollars improperly obtained from family and friends for gambling.
Employment and Education Costs
– Cost of reduced productivity and absenteeism due to gambling.
– Cost (benefit) of unemployment and underemployment related to gambling.
Legal and Justice Costs
– Cost of crime related to gambling (policing, incarceration, judiciary and incremental security costs).
Community Costs
– Intangible cost of loss of community social cohesion due to gambling.

Benefits should be labeled as “societal benefits”.

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There are, however, considerable challenges in conducting such analysis. Most importantly empirical research or estimates of several of these benefits and costs, including accurate estimates of a GDP for gambling and many health-related and societal cost estimates either for Nova Scotia, Canada or internationally is lacking. Secondly, there is the challenge of attributing social and economic impacts of gambling to problem gambling (for example, how important, relative to other drivers, was problem gambling to a suicide?).¹¹

Footnote 11: This was not an objective of the RFP. A focus on problem gambling was not an objective of the RFP.

While the initial project proposal hoped to provide a preliminary GPI accounting of gambling's impacts on Nova Scotia, expressed in monetary terms, in the absence of empirical social and health cost estimates of key impact indicators related to gambling, it was not possible to conduct a full cost accounting of these impacts for this study. This is also the case for other provinces where empirical social cost impacts of gambling have not yet been developed. The only international exceptions we found were a study conducted in Australia in 1999 by the Australian Productivity Commission and a similar 2008 socio-economic impact analysis of gambling in Tasmania, Australia (based on the Australian Productivity Commission's 1999 study. While these two studies provide meaningful social and economic impact cost estimates, they cannot be readily applied to Nova Scotia because of differences in respective cultures and economies.

This statement is incorrect as the study was not to focus specifically on the monetary impact but also to include those impacts that could not be quantified in monetary terms.

Notwithstanding, future empirical work in the full monetary costs (and benefits) of gambling in Nova Scotia could be commissioned through academic research or other applied research initiatives by government. This research could follow similar methodologies used in a national study into the social and health costs associated with tobacco, alcohol and illegal drug abuse by the Canadian Centre for Substance Abuse in 2006.¹²

For a more detailed discussion of the methodologies for full cost accounting of gambling impacts, see the national SEIG framework report being developed by Anielski Management Inc.

¹¹ The attribution of problem gambling to all health and well-being impact indicators was our ultimate objective, however as will be noted, current reporting and data limitations that identify problem gambling as a specific driver of a health outcome generally limits any meaningful attribution analysis.

¹² The Canadian Center for Substance Abuse. 2006. *The Costs of Substance Abuse 2002*. The study is based on 2002 data which, based on data from Canada's national addictions agency, estimated the total annual cost of substance abuse in Canada to be \$39.8 billion (based on 2002 data), which represents a cost of \$1,267 to each individual Canadian.

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2.4 Data Requirements, Sources and Collection Methods

Two main challenges in assessing gambling socioeconomic impacts include (a) determining how to best measure impact indicators, and (b) identifying the data required for these measurements, along with sources for these data. To address these challenges, the research team developed a data outline based on the analytical framework, which served as a blueprint for identifying the data required to measure each indicator and the sources for obtaining these data. Table 3 provides a summary of the data sources that were utilized in the measurement of each impact indicator.

**Table 3
Summary of Data Sources**

*“Impacts” are actually “indicators”.
Data source for Gambling GDP is incorrectly referenced.
Incorrect citation of AGD for direct regulatory costs, and employment and education impacts.*

1. Economic and Financial	
Impact	Data Source
Gambling GDP	NS Alcohol and Gaming Authority annual reports; NS Gaming Corp annual reports; Canadian Gambling Digest; NS Finance input-output (I-O) analysis; Statistics Canada
Personal/household gambling expenditure	NS Gaming Corp annual reports; Statistics Canada; 2003/2007 NS gambling prevalence surveys
Consumer surplus	Statistics Canada; gambler/family member survey
Distance consumer surplus	Gambler/family member survey
Household spending on gambling	NS Gaming Corp annual reports; Statistics Canada; 2003/2007 NS gambling prevalence surveys
Government gambling revenues	NS Alcohol and Gaming Authority annual reports; NS Gaming Corp annual reports; NS Public Accounts; Canadian Gambling Digest; NS Finance I-O analysis; Statistics Canada
Producer surplus (gambling industry profits)	
Net business sector growth	
Negative consumer surplus	NS Gaming Corp annual reports; 2003/2007 NS gambling prevalence surveys
Government defensive expenditures	NS Gaming Corp annual reports; NS government departmental budgets; key informant interviews
Direct regulatory costs	NS Alcohol and Gaming Authority annual reports;
Bad debts, costs to recover bad debts, and bankruptcy	2003/2007 NS gambling prevalence surveys; gambler/family member survey; key informant interviews; NS PG Helpline annual reports; Statistics Canada
Abused dollars	
2. Tourism	
Impact	Data Source
Gambling patronage	NS Tourism and Culture reports; 2004 NS Visitor Exit Survey; 2004 GPI Atlantic <i>Costs and Benefits of Gaming</i> report; Statistics Canada; key informant interviews

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3. Employment and Education	
Impact	Data Source
Net job creation in gambling industry	NS Alcohol and Gaming Authority annual reports; NS Gaming Corp annual reports; NS Finance I-O analysis; 2003/2007 NS gambling prevalence survey; Statistics Canada; gambler/family member survey; key informant interviews
Changes in unemployment or underemployment	
Productivity losses and absenteeism	
Losses in employment in other industries	
4. Health and Well-Being	
Impact ¹³	Data Source
Gains from gambling as a leisure activity	2003/2007 gambling prevalence survey; gambler/family member survey
Problem gambling prevalence rates	2003/2007 gambling prevalence survey
Morbidity and disease rates	NS Health reports; Statistics Canada
Premature mortality rates (other than suicide)	
Stress, anxiety and depression	2003/2007 gambling prevalence survey; NS PG Helpline annual reports; gambler/family member survey; key informant interviews
Suicide	NS Health reports; key informant interviews
Social isolation	2003/2007 gambling prevalence survey; NS PG Helpline annual reports; gambler/family member; key informant interviews
Loss of quality time with family, friends and community	
Substance abuse related to gambling	
Psychological impacts on family and friends of gamblers	
Family break-up (separation, divorce, impact on children)	
Domestic violence	Halifax Region Police Service crime statistics; 2003/2007 gambling prevalence survey; gambler/family member survey; key informant interviews key informant interviews
Citizen attitudes towards gambling	Omnifacts Bristol (2005) <i>Public attitudes on Gaming in Nova Scotia</i> ; Meerkamper, E (2006) <i>Decoding Risk-Gambling Attitudes and Behaviours Amongst Youth in Nova Scotia</i> ; NS Gaming Control Commission (1996). <i>A Year in Review: Gaming in Nova Scotia</i> . 1 st Annual Report; gambler/family member survey
5. Legal and Justice	
Impact	Data Source
Reduced illegal gambling rates	Halifax Region Police Service crime statistics; 2003/2007 gambling prevalence survey; NS PG Helpline annual reports; gambler/family member survey
Crime rates related to gambling	
Policing and incarceration costs	
Judiciary costs	
Security costs	
6. Community	
Impact	Data Source

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Gambling revenues to charities and NGOs	NS Alcohol and Gaming Authority annual reports; NS Gaming Corp annual reports; Canadian Gambling Digest; key informant interviews; gambler/family member survey
Gambling revenues to other public sector institutions (e.g. schools)	
Sense of safety from gambling venues	
Loss of community cohesion	Key informant interviews; gambler/family member survey

It is apparent from this summary that the data required to measure impacts are both quantitative and qualitative in nature. Statistical data were gathered from various secondary sources. The only primary statistical data that were gathered came from a survey of gamblers and family members and this survey was designed by the research team to fill various information gaps.

Qualitative data were also gathered and these include the **perceptions of various key informants who were most knowledgeable** about various impact areas within the study. The gambler and family member surveys also included open-ended questions, which allowed the respondents to offer their views about various gambling-related issues.

The use of open-ended qualitative data and anecdotal comment from small sample size key informants suggests possible transparency and accountability issues. Incomplete identification of “most knowledgeable” persons is questionable.

For most impacts indicators, the calendar-year period 2001 to 2007¹⁴ is the analytic time-line, unless otherwise noted. In some cases, particularly for some of the financial and economic indicators, additional time series from 1996 to 2000 is included in our attempts to conduct long-term trend analysis or in our attempts to conduct preliminary attribution of analysis of two or more indicators (that is, to assess whether a trend in gambling activity may be moving in a similar direction statistically as another economic, health or societal well-being indicator).

Gambler and Family Member Survey

Most of the statistical data gathered for this study came from the secondary sources noted above (Table 3). The one exception is the gambler and family member survey, which was specifically designed to provide information that could not be obtained from any other secondary source.

The purpose of the gambler/family member survey was to compare the perceptions of moderate-risk/problem gamblers, non-problem gamblers, and family members for selected variables pertinent to this gambling socioeconomic impact assessment. The sample frame was all respondents in the 2007 Nova Scotia adult gambling prevalence survey (n=2,500). From this

¹⁴ Calendar years are used to denote the annual reporting periods. However, many financial statistics are reported on a fiscal period. For purposes of our report, for example, the fiscal period 2001/02 would be assumed to represent the calendar year 2001.

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frame, only those respondents who had agreed in the initial survey to be re-contacted for future research projects were considered. Of those who agreed to be re-interviewed, the survey sample included the following groups and inclusion criteria:

Moderate-risk/problem gamblers	= scored 1+ on the PGSI ¹⁵
Non-problem gamblers	= scored 0 on the PGSI; played monthly
Family members	= nominated by a survey respondent from other 2 groups

The final total survey sample was 151 respondents and included the following number of participants/group and response rates:

Moderate-risk/problem gamblers	= 55 (of 62 contacted; 89% response rate)
Non-problem gamblers	= 56 (of 98 contacted; 57% response rate)
Family members	= 40 (of 87 contacted; 46% response rate)
Total sample	= 151 (of 247 contacted; 61% response rate)

The telephone survey was conducted by Focal Research in September 2008 and it took from 9 to 15 minutes to complete (11 minutes on average). The survey instrument included questions that pertained to specific indicators within the analytical framework (**the questionnaires are appended to this report**).

*Small sample size; questionable methodology.
The questionnaires are not appended to the document.*

Key Informant Interviews

Throughout the research process, team members communicated in-person and by telephone and email with many people who were knowledgeable about facets of the social and economic impact of gambling in Nova Scotia. Most of these discussions were informal; however, in June 2008, Dr. Wynne traveled to Nova Scotia and conducted in-person interviews with specific key informants who were deemed to have insight and information pertinent to specific gambling impacts. Dr. Wynne met with and interviewed 20 people in the Halifax region from the following government departments, organizations and agencies:

- Nova Scotia Alcohol and Gaming Division
- Nova Scotia Gaming Corporation

¹⁵ The Problem Gambling Severity Index (PGSI) is the 9-item scale contained in the Canadian Problem Gambling Index (CPGI). Scores on the PGSI differentiate individuals as being non-problem, low-risk, moderate-risk or problem gamblers. (Ferris, J. and Wynne, H.(2001). *The Canadian Problem Gambling Index: Final Report*. Ottawa, ON: Canadian Centre on Substance Abuse).

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- Nova Scotia Health Promotion and Protection
- Nova Scotia Office of Aboriginal Affairs
- Halifax Region Police Department
- Halifax Economic Development
- Nova Scotia Department of Finance
- Nova Scotia Labour and Workforce Development
- Destination Halifax
- Transition House Association of Nova Scotia
- Chief Medical Examiner
- St. Mary's University
- Nova Scotia Gaming Foundation
- Focal Research
- Nova Scotia Debtor Assistance Program
- Casino Halifax

The use of open-ended qualitative data and anecdotal comment from small sample size key informants suggests possible transparency and accountability issues. Incomplete identification of "most knowledgeable" persons is questionable.

Some interviews were taped and notes were taken at other meetings; **interviewees were promised confidentiality**. In addition, several telephone conversations with other key informants were conducted from Edmonton as well as follow-up telephone or email contact with some interviewees to clarify their comments or to obtain further information. Dr. Wynne employed an open-ended interview approach wherein some general questions were prepared before hand, with the expectation that most conversations would take some unanticipated directions that would be beneficial. Finally, other documents were gathered from some interviewees (e.g., annual reports; statistical compilations; promotional material) and this information was also consulted during the course of conducting this research.

While interviewees may have been promised confidentiality, it should be noted that records pertaining to the study are subject to Nova Scotia access law. Interviewees representing public bodies would have no expectation of confidentiality.

Input-Output Analysis

In economics, an input-output model uses a matrix representation of a nation's (or a region's) economy to predict the effect of changes in one industry on others and by consumers, government, and foreign suppliers on the economy, in terms of GDP, employment and household income. Input-output analysis was used in this study to estimate some of the economic impacts of gambling, by specific games (casinos, video lottery, ticket lotteries, plus

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input from another independent I-O study of harness racing) in the Nova Scotia economy in terms of GDP, employment, and household income. The Economics and Statistics Division of the Nova Scotia Department of Finance conducted the I-O analysis on behalf of the project using the Nova Scotia 2003 Input-Output Model. Data was provided to the Department of Finance in vector format.

Economic impacts are divided into three components: direct; spinoff; and total impacts. Direct impacts are those that result directly from the company's expenditures on, or purchases of, goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (due to inter-industry transactions) and induced impacts (from the repercussive effects caused by household spending and re-spending). Total impacts are the sum of direct and spinoff impacts.

The paragraph above is directly quoted from the NS Department of Finance study prepared for the consultant (see Appendix 2) and is not cited.

The direct impact to provincial government revenue is derived using tax proformas developed by the Department of Finance. The tax templates are based upon the 2006 tax year. Spinoff provincial government revenue is also estimated from spinoff wages and salaries and from the tax pro forma developed by the Department of Finance. The provincial personal income tax rate on household income is based on a single wage earner with one direct dependent and two children. The proforma is developed on the basis of Nova Scotia personal income from sources proportional to the average Nova Scotian. Therefore in scenarios that involved dividend income to households, the tax proforma would not have provided accurate results and therefore was not used.

The paragraph above is directly quoted from the NS Department of Finance study prepared for the consultant (see Appendix 2) and is not cited.

No provision is made for the inclusion of corporate income tax (CIT). The businesses are considered to produce a taxable supply, which implies that they effectively do not pay HST on their business inputs.

The paragraph above is directly quoted from the NS Department of Finance study prepared for the consultant (see Appendix 2) and is not cited.

Input-output (I-O) analyzes were completed for video lottery, ticket lottery, Sydney and Halifax Casino program operations, and the Halifax Casino Capital Expenditures. The report also includes results from the Input-output analysis of harness racing conducted by the Department of Finance for the Nova Scotia Harness Racing Economic Impact Study (Canmac Economics Ltd., 2008). The I-O findings are reported in the individual gaming type sections. Complete reports are included as appendices. I-O analyzes were not completed for online gaming and

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bingo due to data availability and recognizing the small contribution these respective games provide to provincial gaming revenues.

2.5 Data Analysis

Various methods are used to present and analyse the study data. The first method involves presenting statistical data from different sources in tabular form and then interpreting the findings that were evident. For example, a summary of the number of venues and type of gambling available in Nova Scotia was provided by the Nova Scotia Gaming Corporation and other Nova Scotia government sources and are presented in Table 4. Similarly, a comparison of adult gambler participation rates for these games for the years 1996, 2003¹⁶ and 2007 was taken from the 2007 Nova Scotia Adult Gambling Prevalence Study Final Report¹⁷ and presented in Table 5. A comparative analysis of the data in these tables from two different sources shows that the number of VLTs was reduced from 3,234 in 2003 to 2,275 in 2007 and that VLT participation rates likewise dropped from 19% in 2003 to 14% in 2007. This suggests that the reduction in the number of VLTs likely had an impact on reducing VLT gambling participation rates.

The statement does not take into account other factors influencing VLT participation rates.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

The intent of this section is to comment on general approaches to data analysis, thus it is not appropriate to present results.

Footnote 16: the time frame (April 2002 to June 2002) is an incorrect assumption; the correct time frame is April 2002 to June 2003.

Footnote 17: the time frame (January 1, 2007 to the end of September 2007) is an incorrect assumption; the correct time frame is October 2006 to December 2007.

A second method for analyzing statistical data involves collecting data from secondary sources deriving indicators and conducting statistical analysis to discern potential statistical correlations between indicators to discern potential interrelationships. A master file, was developed and

¹⁶ The 2003 Adult Gambling Prevalence Study prepared by Focal Research for Nova Scotia Health Protection and Promotion involved a survey conducted over the period April 11, 2003-June 13, 2003. However respondents were asked to recall their gambling activity from one year prior (that is in the period April 2002-June 2002). Therefore, for the purposes of our study, we assume that the prevalence study results are relevant to the government financial data for the fiscal period April 1, 2002 to March 31, 2003 .

¹⁷ The 2007 Adult Gambling Prevalence Study prepared by Focal Research in 2008 for Nova Scotia Health Promotion and Protection involved a survey of gamblers over the period October 5, 2007 to December 31, 2007. Respondents were asked to recall their gambling activity and frequency 'over the last year.' We assume that this meant they were being asked to recall a period that may have extended from January 1, 2007 to the end of September 2007. For the purposes of our study, therefore, we assume that the prevalence study results relates to the fiscal period 2007/08.

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separate MS Excel® spreadsheets and analyses for the following data in the categories listed were then conducted:

The table below is not titled and should include a column showing data source.

Demographic
1995-2007 Nova Scotia population profile
Gambling Revenues and Expenditures
1993-2007 NSGC financial statements
2001-2008 Nova Scotia VLT revenues, expenditures, # machines, # venues
2000-2007 Casino Nova Scotia revenue by game
1997-2008 Nova Scotia First Nations VLT revenue
2001-2008 Alcohol and Gaming division expenditures
2000-2007 Atlantic Lottery Corp sales in Nova Scotia
2001-2007 Canadian Pari-Mutuel Agency financial statements
Personal Expenditures on Gambling
1997-2006 Nova Scotia household spending
1995-2006 Income/savings/expenditure
1981-2006 Personal/disposable income
2001-2005 Consumer expenditure
1995-2007 Nova Scotia Consumer Price Index
1981-2004 Business and consumer bankruptcies
1995-2006 Gini (income inequality) coefficients
Provincial Public Accounts
2001-2008 Provincial revenues
1997-2005 Nova Scotia charitable donations
2004-2005 Input/output analysis (casinos)
Gambling and GDP
1995-2007 Nova Scotia GDP and implicit price indices
2000-2007 Nova Scotia gambling GDP estimates
1995-2007 Nova Scotia GDP expenditure-based statistics
2001-2007 GDP by sector statistics
Employment
1997-2005 Jobs by industry
1997-2006 Labour force survey
1997-2006 Absentee rates for full-time employees
Tourism
1996-2006 Canadian travel survey
2004 Nova Scotia casino visitor exit survey
Community
2001-2006 NSGC community contributions
2001-2007 Nova Scotia Gaming Foundation financial statements
Problem Gambling

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2003/2007 NS gambling prevalence survey - expenditure by gambler subtype
2001-2007 PG Helpline data analysis
2001-2006 Casino Nova Scotia voluntary exclusions
Gambling and Crime
1995-2006 Nova Scotia crime statistics
2005-2008 Halifax region crime statistics
2001-2004 Halifax and Sydney casino security and surveillance expenditures

The results of these analyses are presented throughout this report. Where appropriate and feasible, statistical tests of significance were conducted using the correlation coefficient function in Microsoft Excel to explore the strength of relationships between variables.

It is incorrect to say “that statistical tests of significance were conducted using the correlation coefficient function ... to explore the strength of relationships between variables.” Correlation coefficients measure the degree of relationship between variables, and do not provide a test of statistical significance. Significance tests are calculated separately.

The final quantitative analysis method involves using the SPSS computer program to examine the primary statistical data gathered in the 2003 and 2007 Nova Scotia adult gambling surveys.¹⁸ In both surveys, the nine-item Problem Gambling Severity Index from the CPGI is used to differentiate non-problem, low-risk, moderate-risk and problem gamblers. In the present study, analyses of these survey data include comparing the responses of gamblers in these subtypes for various study variables. For example, the total self-reported annual expenditure on individual games (e.g., VLTs) is calculated for each gambler sub-type and this calculation is used to estimate the amount of provincial revenues per game that might reasonably be attributable to problem gamblers versus non-problem gamblers.

For some game types the sample size of problem gamblers is too small to draw statistically reliable conclusions.

The SPSS program is also used to analyse the statistical data gathered in the gambler and family member survey. Responses for each of the 151 participants were included in the same SPSS file, which allowed for comparisons between the three main groups—moderate-risk/problem gamblers, non-problem gamblers and family members. Wherever possible, statistical tests of significance were conducted in the analysis of both the 2003/2007 prevalence surveys and gambler/family member surveys to explore the strength of relationships between variables of interest.

¹⁸ 2003 Nova Scotia Gambling Prevalence Study. Nova Scotia Office of Health Promotion Final Report. June 2004. 2007 Adult Gambling Prevalence Study. Nova Scotia Health Protection and Promotion.

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Qualitative data include Dr. Wynne's interview tapes and notes and responses to open-ended questions in the gambler and family member survey. These tapes, notes and responses were examined and pertinent opinions and comments are included in this report where appropriate.

As neither criteria, questions, nor responses from the small sample size telephone survey are included in this document, audit and/or analysis of the results is not possible.

2.6 Delimitations and Limitations

The scope of the Nova Scotia socioeconomic impact study is delimited in three main ways, namely: (a) the study timeframe for examining impacts is for the period 2001 to 2007; (b) the study relies on examining secondary data, with the exception of the gambler and family member survey and key informant interviews; and (c) the focus is on six main types of gambling, including bingo, casinos, harness racing, ticket lottery, video lottery and on-line gambling. During the course of conducting this study, it became apparent that some of the data needed to assess impacts identified in the original analytical framework were not available. These data included: health, welfare and social services expenditures associated with problem gambling; capital gains to consumers; public infrastructure costs; incremental tourism expenditures; indirect employment related to gambling; property values proximal to gambling venues; and other similar data. As a result, the original analytical framework was reduced in scope, to the extent that one entire impact domain (environmental) was removed, as were some impact variables within the seven domains (e.g., capital gains to consumers; health, welfare and social service expenditures, public infrastructure). The final scope of the assessment is circumscribed in the analytical framework presented in section 2.2.

1) The first main limitations are associated with the quality and completeness of the secondary data that were gathered. Some data sets, such as the financial statements of Nova Scotia Gaming Corporation, are complete and highly accurate in their reporting of gambling revenues and expenditures. However, other data sets are incomplete and/or the data is less trustworthy. For example, the Nova Scotia visitor exit surveys only track casino visits and not visits to other gambling venues (e.g., horse race tracks, bingo halls), and it is not clear how or what data are gathered in-situ, thus calling into question the quality of the data.

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2) Secondly, a related limitation stems from the acknowledgment by the original researchers themselves that their data have limitations. For example, Statistics Canada data are typically reported with a number of corresponding limitations (e.g., small sample sizes in some cells, low response rates, issues of representativeness of samples). In a similar vein, the Focal Research team acknowledged three limitations to the 2007 adult gambling prevalence surveys, including: trustworthiness of self-report data; sample being representative of only those living in private households; and possible influence of others on participants' responses to some questions. Insofar as the present study relies on these data sets, any limitations reported in the original research also apply to the use of these data in the present study.

Missing reference to 2003 NS Prevalence Study. Incorrect citation of both studies.

3) A third limitation, and most likely the most important for this study of socio-economic impacts of gambling, is the difficulty translating many of the quantitative or qualitative impacts of gambling into **economic or monetary terms**. Because the assessment of gambling impacts on society is a relatively new field of economic research and analysis, there are few if any concrete or quantitative economic value estimates for most of the impact indicators or variables we examined within the SEIG framework. This is true not only for Nova Scotia but for other provinces as well, who are currently examining gambling's socio-economic impacts (e.g. Alberta, British Columbia, Ontario). The reality is that this new area of socio-economic assessment of gambling's impacts in economic or monetary value terms will require years of primary research in order to come up with objective economic measures or in other words, a full cost accounting.

*This is not a cost-benefit analysis study.
Using the terms "economic and monetary" is confusing as the study also talks about economic impacts.*

Our study was thus primarily limited to a focus on the known economic and financial impacts, and some tourism/recreation, and employment impacts, of gambling to the Nova Scotia economy, as a whole, and individual households, complimented with non-monetary, quantitative and qualitative impacts from the health and well-being, legal and justice (crime), and community domains of the SEIG framework. Given the absence of objective and quantitative economic cost (and benefit) estimates of gambling's impacts in these domains of health, crime, and community, it is currently not possible to express these impacts in monetary terms without considerably new primary economic research (which is only now beginning, for example, at the University of Alberta in the Department of Economics). Consequently, **to the extent that impacts are seen by some to be only valid if they are monetized, this study will appear limited.**

This statement is inconsistent with the RFP which acknowledges that there is a lack of data/methods to monetize all impacts. This is not a cost-benefit analysis.

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Notwithstanding these economic valuation limitations, this study represents a benchmark in socio-economic impact assessment of gambling in Canada as it shows the possibility of integrating and balancing economic benefits and costs of a sector (gambling) with the non-monetary social, human health and community well-being impacts within an integrated analytic framework.

This is not a cost-benefit analysis study.

4) A fourth limitation is the challenge of attributing a portion of impact is associated with conducting any gambling socioeconomic impact assessment. Calculating etiological or attribution fractions is a central measurement issue in the science of epidemiology, as researchers strive to determine what proportion of a disease or public health problem is attributable to particular causes.¹⁹ For example, factors that cause a person to commit suicide are complex and likely multi-faceted. In this study, the relationship between a gambling problem and suicide is clearly of interest, as it has been argued that can be a regrettable outcome of problem gambling. However, even when a gambling problem is implicated in a suicide, it is often unclear whether other factors may also have contributed to this tragic outcome (e.g., alcohol abuse, psychiatric disorders, job loss, relationship loss). Although a cost estimate of a gambling-related suicide has been calculated from available secondary data in this study, this estimate is limited as it is unlikely that problem gambling is the only contributory factor.

Suggesting cause, or applying monetary terms, to suicide statistics is problematic due to the sensitive nature of the topic and lack of verifiable data.

5) Finally, tests of statistical significance used to explore relationships amongst the numerous quantitative study variables are limited given that most of the analyses in this study rely on reports of secondary data. In some data reports—notably the 2003 and 2007 prevalence surveys—statistical tests were conducted, including calculations of margins of error for the sample sizes; confidence intervals for responses to some survey questions; and significance correlations between some survey variables. The results of these significance tests for the 2003 and 2007 prevalence surveys are reported in the present study, where appropriate. Similarly, tests of statistically significant correlations are also reported for some of the gambler and family member survey data; however, given the relatively small sample sizes and corresponding low cell counts in some tables, it is not possible to conduct statistical tests in some instances.

It is inappropriate to report data from small samples or low cell count, due to its statistical non-representativeness.

¹⁹ Friis, R. and Sellers, T. (1996). *Epidemiology for Public Health Practice*. Gaithersburg, MA: Aspen Publishers. pp.242-244

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In gambling socioeconomic impact studies it would be most desirable to be able to say with assurance that a particular impact was clearly caused by one or more variables. However, at best in these types of studies, it is only possible to state with any confidence that there is an association between a particular variable and an impact indicator (e.g., the relationship between suicide and problem gambling). To the extent that the present study is unable to establish clear statistical causality with any certainty between impact indicators and study variables, this research is limited. Notwithstanding these limitations, the study does attempt to provide an **impressionistic portrait of the relationship** between one or more impact variables and gambling activity, by contrasting trend graphs. However, these parallel images of trends should not be misinterpreted as implying a casual relationship.

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3. Context and Overview of Gambling in Nova Scotia

3.1 Gambling Industry Governance, Operation and Regulation²⁰

The operating and regulatory framework for regulated gambling in Nova Scotia has evolved over the past 15 years. In understanding what is in place today it is useful to look at the underlying legislative and governance mechanisms for commercial gambling in Nova Scotia.

The Nova Scotia Government (ultimately the people of Nova Scotia) is the shareholder and owner of the gambling industry in the Province. Cabinet may make policy decisions about the Province's involvement in gambling or limitations or changes in gambling. The Government has ultimate responsibility for overall gambling policy.

The Nova Scotia government is not a shareholder of the entire gaming industry in the province.

The legislative framework for commercial gambling is established by the Legislative Assembly of Nova Scotia. This section focuses on the legislative framework that defines the roles of the operator and regulator of commercial gambling in the province.

Information in this paragraph is incorrect.

The starting point is the legislation enacted by the province when the Federal Government liberalized the *Criminal Code*. Each province that wanted to engage in commercial gambling had to develop its own act. Nova Scotia enacted a comprehensive piece of legislation called the *Gaming Control Act*.

This is an incomplete reference which does not take into account the other forms of gaming nor does it provide time context.

²⁰ Sources: Mini Advisory Panel on Ticket Lottery Controls. October 2007. *Report on: Controls and Regulation of Atlantic Lottery Corporation Ticket Lotteries in Nova Scotia*, Report to Minister of Labour and Environment. Web site of Nova Scotia Gaming Corporation. 14 May 2008. (<http://www.nsgc.ca>). Web site of the Alcohol and Gaming Division. 14 May 2008. (<http://www.gov.ns.ca/lwd/agd/history.asp>).

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The purpose of the *Gaming Control Act* (the *Act*) was to:

- (a) establish a framework for conducting, managing, controlling and regulating casinos and other lottery schemes so as to increase the level of sustainable economic activity within the Province and increase the net revenue of the Province;
- (b) ensure that casinos and other lottery schemes are conducted in a socially responsible manner; and
- (c) ensure that any measures taken with respect to casinos and other lottery schemes are undertaken for the public good and in the best interests of the public and, without limiting the generality of the foregoing, to minimize the opportunities that give rise to problem gambling and other illnesses, crime and social disruption.

Compared to other provincial gaming control acts, the Nova Scotia legislation contains more normative guidelines to guide the implementation of commercial gambling. For example, *Section 2* of the *Act* makes specific mention of the objectives of increasing “sustainable economic activity and net revenue of the Province, of conducting lottery schemes “in a socially responsible manner” and of measures being undertaken with respect to lotteries “for the public good and in the best interests of the public.” In elaborating on “the public good” and “the best interests of the public” subsection 2(c) of the *Act* specifically mentions minimizing “problem gambling and other illnesses, crime and social disruption.” There is no specific mention of protection of players (Mini Advisory Panel on Ticket Lottery Controls, 2007).

Part I of the *Gaming Control Act* established the Nova Scotia Gaming Corporation to develop, conduct and manage ticket lottery schemes operated in Nova Scotia by the Atlantic Lottery Corporation, as well as casinos. *Part II* of the *Act* gave the Alcohol and Gaming Division the duty to ensure that lotteries operated by the Atlantic Lottery Corporation in Nova Scotia and conducted and managed by the Nova Scotia Gaming Corporation are conducted and managed in accordance with the *Act* and regulations (Mini Advisory Panel on Ticket Lottery Controls, 2007).

Information in paragraph is incomplete.

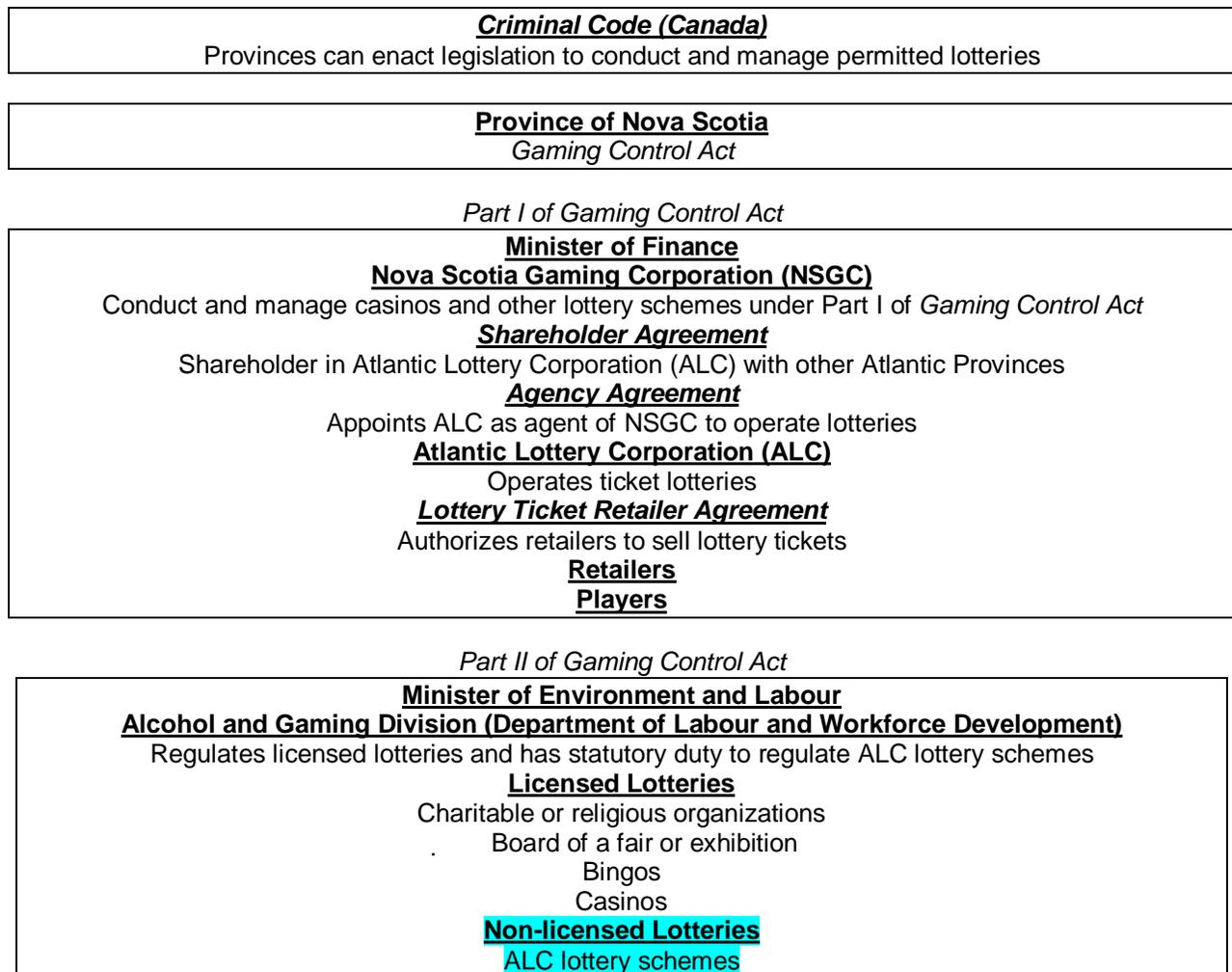
Figure 2 provides an overview of the essential legal structure for commercial gambling in Nova Scotia. As illustrated, other governance mechanisms have been put in place pursuant to the basic enabling legislation.

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Figure 2

Roadmap of Governance of Gaming in Nova Scotia



Source: Mini Advisory Panel on Ticket Lottery Controls, 2007, modified slightly by author.

*ALC offers licensed lotteries; there are no legal, non-licensed lotteries.
Figure is incomplete, as it does not include all types of gambling.
Questionable source reference.*

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In order for the Nova Scotia Gaming Corporation to carry out its responsibility under *Part I* of the *Act* to conduct and manage non-licensed ticket lottery schemes (i.e. 6/49, Super 7, Keno etc., along with a wide variety of Scratch N' Win tickets) on behalf of Nova Scotia, the Nova Scotia Gaming Corporation has entered into an agency agreement with the Atlantic Lottery Corporation. The agency agreement authorizes the Atlantic Lottery Corporation to run the actual day-to-day operations of the ticket lottery schemes (including marketing and advertising ticket games, ticket distribution, oversight of retail ticket sales and retailer agreements, awarding of prizes, and auditing responsibilities). These agreements are illustrated in Figure 2.

Information in this paragraph is incorrect, incomplete, and misleading as to jurisdiction.

Two separate and distinct statutory entities, reporting to two different cabinet ministers have been created and given separate and distinct gaming oversight responsibilities in relation to Atlantic Lottery Corporation ticket lotteries. The Nova Scotia Gaming Corporation, reporting to the Minister of Finance, was given operational and management oversight responsibilities. The Alcohol and Gaming Division, reporting to the Minister of Environment and Labour, was given regulatory oversight responsibilities. Nova Scotia has not created a Crown agency charged with the licensing and regulatory function.

Information in this paragraph is incorrect and incomplete, and misleading as to jurisdiction.

The Nova Scotia Gaming Corporation was established when the Province became involved in casinos. The Corporation was also given management oversight responsibilities in relation to ticket lotteries, which had been operated in Nova Scotia since 1976 by the Atlantic Lottery Corporation.

Information in the second line above is incomplete (does not include VLTs or casinos).

The objects of the Nova Scotia Gaming Corporation were to:

- (a) develop, undertake, organize, conduct and manage casinos and other lottery schemes on behalf of the Province or on behalf of the Province and another province of Canada;
- (b) provide for the operation of casinos and any business that the Corporation considers reasonably related to operating a casino, including any business that offers goods or services to persons playing games of chance in a casino;
- (c) ensure that lottery schemes conducted and managed by the Corporation are conducted and managed in accordance with the Criminal Code (Canada) and this Act and the regulations; and
- (d) do such other things in respect of lottery schemes, as the Minister or the Governor in Council may from time to time require.

Information is not sourced.

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In understanding the relationship between the Nova Scotia Gaming Corporation and the Alcohol and Gaming Division under the *Gaming Control Act*, it is important to note that *Subsection 24(1)* (e) requires the Corporation to report “forthwith” to both the Minister of Finance and to the Alcohol and Gaming Division “any defect, abuse, illegality or criminal activity in relation to ...lottery schemes.” This reporting requirement is an indication of the regulatory oversight role that the Alcohol and Gaming Division is given under *Part II* of the *Act* in relation to the Nova Scotia Gaming Corporation (Mini Advisory Panel on Ticket Lottery Controls, 2007).

As noted, the *Gaming Control Act* established the purpose of the Nova Scotia Gaming Control Commission (now the Alcohol and Gaming Division of the Department of Labour and Workforce Development). The purpose of the Commission [now Alcohol and Gaming Division] was to regulate and control casinos and other lottery schemes and to administer this Part in the public interest and in accordance with the principles of honesty and integrity.

Section 56 of the *Gaming Control Act* set out the specific duties assigned to the Alcohol and Gaming Division. The Division was to:

- (a) perform such duties as are imposed upon it by this Act or the regulations;
- (b) ensure that casinos and other lottery schemes conducted and managed by the Corporation are conducted and managed in accordance with this Act and the regulations and the Criminal Code (Canada);
- (c) carry on a continuous study of the operation and administration of casinos, other lottery schemes and gaming control laws in effect in other jurisdictions, including the Criminal Code (Canada), that may affect the operation and administration of casinos or other lottery schemes in the Province;
- (d) carry on a continuous study of the public interest and reaction of residents of the Province to existing and potential features of casinos, other lottery schemes and games of chance;
- (e) carry on a continuous study of the social, health, justice, economic and environmental impact of casinos and other lottery schemes;
- (f) make recommendations to the Minister for changes to this Act and the regulations to correct any defect, abuse, illegality or criminal activity in relation to casinos and other lottery schemes; and
- (g) submit annually to the Minister a report respecting the matters referred to in clauses (b) to (f) (Mini Advisory Panel on Ticket Lottery Controls, 2007).

Citation is done incorrectly. Source from Gaming Control Act.

Against this legislative backdrop, the role of the Division has evolved and changed since its inception in 1995. The Nova Scotia Gaming Control Commission was established on April 4, 1995, as a result of the introduction of the *Gaming Control Act*. At that time, the Nova Scotia

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Gaming Control Commission assumed the administrative, licensing, and inspection responsibilities of the Nova Scotia Liquor Licence Board, the duties of the Nova Scotia Lottery Commission, and the Nova Scotia Amusements Regulation Board. This merger was finalized in an Order In Council dated July 15, 1997 and resulted in an organizational name change to the Nova Scotia Alcohol and Gaming Authority.

On April 14, 2000, the structure of gaming regulation in Nova Scotia was re-organized by disbanding the seven member Board of the Alcohol and Gaming Authority. The adjudicative functions of the Alcohol and Gaming Authority were then assigned to the Utility and Review Board, and the licensing and compliance functions to the Minister of the Department of Environment and Labour. For that purpose, the Department of Environment and Labour created the Alcohol and Gaming Division.

In 2009, the former Department of Environment and Labour was split into two departments: the Department of the Environment and the Department of Labour and Workforce Development. The Alcohol and Gaming Division is now part of the new Department of Labour and Workforce Development

3.2 Gambling Availability, Accessibility and Participation Rates

There are seven forms of legalized gambling in Nova Scotia, including: inter-provincial tickets and lotteries, VLTs, casinos, bingos, charitable lotteries and raffles, First Nation gambling activities (exclusively leased VLT machines from the province), and harness racing.

*Band Councils have agreements regarding VLTs which are not “exclusively leased”.
The seven forms of legalized gambling do not match the RFP requirements.*

According to the most recent statistics (Table 4), there were 2 casinos, with 962 slot machines and 51 table games in 2007. There were 177 fewer slot machines in casinos in 2007 than at the peak of 1,139 slots in 2004. There were 391 venues (bars, lounges) containing 2,230 VLTs (excluding First Nations) plus 595 First Nation VLTs (on reserves). There were a total of 1,020 fewer VLT machines in Nova Scotia (including First Nation VLT machines) in 2007 than in 2003 when there were a total of 3,845 machines. In 2007 there was a VLT accessibility rate of 3.8 VLT machines per 1,000 adults aged 19 years and older, 27% lower than in 2003 when there were 5.3 VLT machines available per 1,000 adults.

*Incorrect number according to AGD statistics.
No citation for source of statistics used. “Accessibility rate” is not defined.*

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Table 4

Number of Gambling Venues and Machines Accessible to Nova Scotians

	2002	2003	2004	2005	2006	2007
Casinos	2	2	2	2	2	2
slots at casinos	1,099	1,130	1,139	1,128	1,051	625 Halifax 337 Sydney 962 Total
gaming tables	56	49	48	50	51	40Halifax 13 Sydney 53 Total
VLTs retailers (bars and lounges), including First Nations (FN)	617	573	555	486	469	409 (non-FN) 43 (FN) 452 Total
# of VLTS (non-FN)	3,234	3,234	3,218	2,344	2,275	2,230
# of VLTs (FN)	560	611	602	568	560	595
Lottery ticket retailers	1,329	1,324	1,321	1,306	1,269	1,252
Bingo venues	n/a	n/a	305	n/a	n/a	n/a
Bingos licenses	544	569	318	300	561	547
Breakopen tickets	65	23	90	21	n/a	n/a
Other/raffles	1,146	1,081	957	1,034	n/a	n/a
Horse racing	10	8	11	14	14	14
Race tracks	3	3	3	3	2	2
Teletheatres	7	5	8	11	12	12

Notes: n/a.: not available

Source: Nova Scotia Gaming Corporation 2002-03; 2003/04; 2004/05; 2005/06, 2006/07 and 2007-08 fiscal year. Bingo licenses statistic from 2002-03 to 2007-08 Nova Scotia Annual Gaming Reports (Nova Scotia Alcohol and Gaming Division). First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2008 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

*Numbers do not match AGD statistics (refers to “slots at casinos”).
There are inaccuracies in 2002 and 2006 according to AGD stats (refers to “gaming tables”).
There are inaccuracies in 2002, 2003, 2006, and 2007 according to AGD (refers to bingo licences).
The number of gaming tables (53) provided in table is inconsistent with number provided in text.
The number of VLTs retailers (452) provided in table is inconsistent with number provided in text.
“other/raffles” is not an industry term.
Statistics do not correspond to industry statistics.*

Note: annotation pertaining to this table continues on next page.

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Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs. It is difficult to determine accuracy of source. (refers to VLT Retailers, Lottery Ticket Retailers, Bingo Revenues, Breakopen tickets, horse racing, other raffles [it is noted that only 2004 matches AGD data]).

There were 1,252 retail lottery ticket outlets in 2007²¹ down from a high of 1,329 in 2002. Since bingos are now exclusively run by charitable organizations, no statistics are available on the number of bingo venues. However, bingo licenses issued had been in steady decline from 569 issued in 2003 to 300 issued in 2005/06 (a 47 % decrease); that number rose sharply to 547 bingo licenses issued in 2007-08.²² The number of other raffles remained relatively unchanged since 2002; there were 1,034 raffles in 2005/06, the most recent year of reporting. In terms of horse racing, there were two race tracks in 2007 and 12 teletheatres for watching horse racing or harness racing.

*Incorrect number of bingo licenses according to AGD statistics.
Footnote 22: Incorrect source: NSGC does not report on charitable bingo.
Incorrect raffles statistic according to AGD stats.
Harness racing and teletheatre statistics are incorrect.
Uncited source.*

Adult Gambler Participation Rates

Terms “participation” and “prevalence” are incorrectly used interchangeably.

In 2003, 89.3% of adults in Nova Scotia reported gambling at least once over the past year (see Table 5). In 2007 there was a slight decline to 87.0% of the number of Nova Scotia adults (641,051 adults) who had gambled at least once in the past year. However, the average amount spent in the past year per adult grew from \$577 per adult in 2003 to \$609 per adult in 2007²³

Citation is incorrect. It is not referencing the correct previous footnote “ibid p.71.”

²¹ Nova Scotia Gaming Corporation (December 2007). Fact Sheet on Gambling. Retrieved at: <http://www.nsgc.ca/files/factsongambling/Gambling%20in%20NS.December%202007.pdf> NSGC

²² Based on current statistics from the Nova Scotia Gaming Corporation 2007-08 Annual Report.

²³ Ibid. p. 71.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

In 2003, based on the **Canadian Gambling Index (CPGI)**, of those Nova Scotia adults (89.3% of all adults) who gambled in 2003 roughly 82.4% (about 605,000) gambled with no problems (i.e. no risk of problem gambling). Roughly 4.8% of the adult population (about 35,000) were defined in the moderate-risk or low-risk category, 1.3% (about 8,500) were considered at moderate risk of experiencing a problem with gambling and 0.8% (about 6,500) have a gambling problem or are defined as a problem gambler. Therefore, in 2003 roughly 6.9% of the adult population (about 50,000 adults) scored at some level of risk of problem gambling.²⁴

The correct title is the “Canadian Problem Gambling Index (CPGI)”.

In 2007 there were fewer adult gamblers who were at risk of problem gambling. In 2007, using the CPGI, 80.9% (about 625,000 adults) of adult gamblers (87% of the adult population) had no gambling problem. **Roughly 3.6%** (about 28,000 adults) were moderate-risk of problem gambling, while 1.6% (about 12,368 adults) were considered at moderate-risk of problem gambling and **0.9%** (about 6,957 adults, were considered to be problem gamblers.²⁵ Therefore, in 2007 there were fewer adults (6.1% of adults or 47,000 adults) at some risk of problem gambling than in 2003.

Numbers should be correlated with those in the NS Prevalence Studies.

²⁴ Focal Research Consultants Ltd. 2004. *2003 Nova Scotia Adult Gambling Prevalence Study*.

²⁵ Estimates of number of VLT adult players are derived from Nova Scotia Health Promotion and Protection. 2008. *2007 Nova Scotia Adult Gambling Prevalence Study*, Study conducted by Focal Research, April 2008; p. 71

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The decline in gambling activity (i.e. adults (19 years +) who had gambled in the last year) between 2003 and 2007 occurred across all games, with the exception of daily lottery ticket draws and scratch'n win lottery tickets (see Table 5). Of all games of chance, the most common games played in 2007, in order of prevalence, were lottery tickets (77.6% of adults), charity raffles/draws (50.5% of adults), 50/50 draws (34.0% of adults), casino gambling (17.2% of adults), VLTs (13.6% of adults), bingo (11.6% of adults), poker (8.9% of adults), sports betting (6.9% of adults), games of skill (1.8% of adults), horse racing/harness racing (1.3% of adults), and internet gambling (0.2% of adults). From 2003 to 2007, the most statistically significant decrease in participation rates occurred for games of skill, sports betting, casino slot machines, VLTs, casino gambling, bingo, charity raffle/draws, and 50/50 draws. The most statistically significant increase in gambling participation rates occurred for daily lottery tickets.²⁶

Order of having gambled in the last year is not prevalence. Source: Table 26: Gambling Involvement by Type of Gambling Activity (Total Adults) (refers to "prevalence").

Instant win – inconsistent with prevalence study; missing "breakopens".

The paragraph above reports findings that analysis was not completed for in the NS Prevalence Studies.

"Statistically significant" is used out of context as a qualitative comment. It is incorrect to say 'most statistically significant - values are statistically significant or not depending on whatever p-value cut-off is chosen. Only changes which are statistically significant should be reported.

²⁶ Nova Scotia Health Promotion and Protection. 2008. 2007 Nova Scotia Adult Gambling Prevalence Study, Study conducted by Focal Research, April 2008. P. 71-72.

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Table 5

Gambling Prevalence Rates: The Percentage of Nova Scotia Adults (19 years +) Who Gambled in the Last Year, Ranked by Highest Prevalence Rate per Game in 2007
1996, 2002, and 2007, Nova Scotia

*This table shows participation rates, not prevalence rates.
 Source: Table 26: Gambling Involvement by Type of Gambling Activity (Total Adults).*

Type of Gambling	1996 (n=801)	2002(n=2800) ¹	2007 (n=2500)
Any Gambling	92%	89.3%↓	87.0%↓
Lottery Tickets Total	73%	79.1%	77.6%
Weekly Lottery Draws	n.a.	71.4%	69.9%
Scratch'n Win	n.a.	48.4%	49.8%
Breakopens	n.a.	14.2%	12.0%↓
Daily Lottery	n.a.	6.4%	13.8%↑
Instant Tickets (Scratch 'n Wins, breakopens)	65%	50%↓	52%
Charity Raffle/Draws	68%	64.5%↓	50.5%↓
50/50 Draws	n.a.	39.3%	34.0%↓
Casino Gambling	n.a.	23.3%	17.2%↓
Casino Slot Machines	29%	22.2%↓	15.5%↓
Casino Table Games	6%	4.4%↓	3.6%
Video Lottery (VLTs)	21%	19.0%	13.6%↓
Bingo	14%	15.3%	11.6%↓
Poker (non-Casino)	n.a.	-	8.9%
Sports Betting Total	n.a.	10.8%	6.9%↓
Games of Skill	n.a.	4.6%	1.8%↓
Horse Racing/Harness Racing	n.a.	1.3%	1.3%
Internet Betting/Gambling	n.a.	0.2%	0.2%

Source: Nova Scotia Health Promotion and Protection. 2008. 2007 Nova Scotia Adult Gambling Prevalence Study, Study conducted by Focal Research, April 2008. P. 51-53. 1996 figures are from The 2003 Nova Scotia Gambling Prevalence Study, commissioned by the Nova Scotia Office of Health Promotion. June 2004.

Notes:

1. The results of the 2003 prevalence study relate to activity in the 2002 calendar year.

n.a. (not available)

Shading indicates significant differences among risk segments (p<.05)

↑↓ Arrows indicate the direction of significant change within each risk segment over measurement periods (2003 vs 2007 (minimum p <.05: one-tailed test; p<.10 for two-tailed test).

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3.3 Gambling Finances

3.3.1 Overall Financial Trends

Gambling activity by Nova Scotia households has an economic impact on the provincial economy including impacts on provincial government revenues, commercial gambling industry, First Nation communities, charities and other organizations that receive a share of gross revenues from games.

Over the study period 2001 and 2007, the total amount wagered increased 18.06% from \$1,236 million in 2001 to \$1,458 million in 2007(excluding harness racing²⁷ and First Nation VLT gambling). Prizes cashed out have increased 31.6% between 2001 and 2007. As a result of prize payouts increasing faster than total wagered, net gambling revenues²⁸ declined by -11.3% (Table 6) between 2001 and 2007. The prize cash-out rate (prize money paid out as a percentage of total wagered) increased from 68.3% in 2001 to 76.1% in 2007.

*Footnote 28: Incorrect reference regarding “gross revenue” as used by AGD (refer to AGD Annual Gaming Reports).
The terms “net gambling revenue” and “net gambling expenditure” are incorrectly used interchangeably.
Misleading use of double negative “declined by -11.3%”
Conclusions made on incomplete data sets.*

Over the same time period, commercial revenues (revenues retained by gambling venue operators) increased by 74.4% while charitable revenues increased by 7.0 % and operating expenses related to gambling activity fell by 50.3%.

The break in statistical data series should be acknowledged. A change in the casino operating contract resulted in reductions in operating costs.

²⁷ In order to ensure consistency in reporting gambling financial statistics (consistent with previous gambling impact studies such as the 2007 Adult Gamblinb Prevalence Study) harness racing financial statistics are not included in the aggregate analysis and are dealt with separately in the Harness Racing section of this report. Harness racing revenues do not contribute directly to provincial revenues from gambling.

²⁸ The term “gross revenue”, which is the gross amount wagered less prizes or amount won by players and before disbursements to operating expenses, commercial revenue and charitable revenues, is used in the Annual Gaming Reports . Throughout this report we use the term “net gambling revenue” as an alternative.

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Table 6
Trends in Gambling Financial Statistics, 2001-2007

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Total Wagered ⁽¹⁾	1,236,149	1,444,496	1,477,579	1,561,769	1,503,352	1,520,949	1,458,133
Prizes	843,702	1,035,928	1,089,025	1,154,477	1,109,005	1,151,579	1,110,112
Net Gambling Revenue ⁽²⁾	392,447	408,568	388,554	407,292	394,347	369,370	348,021
Operating Expenses	133,827	134,444	130,568	131,645	93,944	73,457	66,530
Commercial Revenue	48,792	52,823	52,677	53,154	85,568	91,113	85,079
Charitable Revenue	25,342	24,365	22,960	26,960	28,634	28,536	27,107
Provincial Revenues ⁽³⁾	184,486	196,936	182,349	195,533	186,201	176,264	169,305
First Nation Venues							
Total Wagered	82,200	117,500	154,200	180,430	190,265	211,492	239,037
First Nation Venue							
Prizes	61,000	89,500	119,500	140,275	148,092	168,384	191,107
First Nation Net Revenues ⁽⁴⁾	21,200	28,000	34,700	40,155	42,172	43,108	47,930

Note: n/a means information was not available. 1. Total wagered excludes harness racing and First Nations VLT gambling revenues and expenses. 2. In the Annual Gaming Reports net gambling revenues are referred to as “gross revenues”; we use the term “net gambling revenue” throughout this report to refer to total wagered less prize payouts. Net gambling revenue is also interchangeable with ‘net gambling expenditures’ by Nova Scotia gamblers. 3. Provincial Net Revenues exclude luxury taxes from harness racing. 4. First Nation Net Revenues does not net out an administrative fee for lease of VLT machines from the provincial government, which in 2007, for example, was \$3.1 million.
Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008; VLT numbers are from Nova Scotia Gaming Corporation. First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2008 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

*“Revenue” is not synonymous with “expenditure”.
First Nations Band Councils do not have “leases”, they have gaming agreements. There is no known source of data on First Nations gaming expenses.
Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.*

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The long term trend analysis (1997 to 2007) showed that net gambling expenditures — the difference between total amount wagered or gambled less the total amount of cash prizes won by players — grew by of 5.4% per annum between 1997 (\$314.0 million) and 2002 (\$408.6 million), which was the peak in net gambling expenditures in Nova Scotia(see Figure 3)²⁹. Since 2004 net gambling expenditures have been declining at an average rate of -5.1% per annum reaching \$348.0 million in 2007. However, in 2007, net gambling expenditures on all games was 10.8% higher than in 1997. In comparison the total Nova Scotia adult population rose by 5.3% over the same period, which is well below the proportionate increase in gambling expenditures.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

The percentile 5.4% is incorrect.

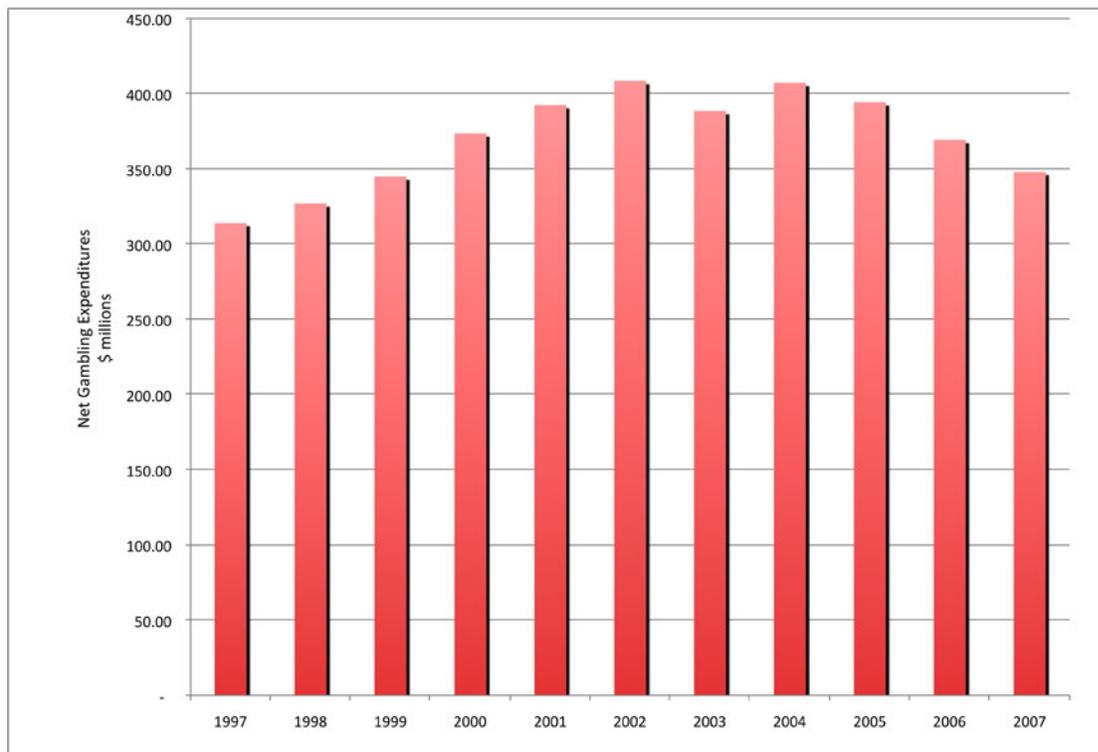
The term “net gambling expenditure” is not synonymous with “net gambling revenue”.

²⁹ Net gambling expenditures includes First Nations VLT net gambling expenditures.

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Figure 3
Net Gambling Expenditures on Gambling Activities in Nova Scotia, 1997-2007.



Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 1997-2008

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

“Revenue” is not synonymous with “expenditure”.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

Presenting the gambling revenue statistics on a per capita basis reveals the relative importance of the gambling sector to the provincial government, charities and the commercial gaming sector (see Table 7). For example, in 2007 net gambling expenditures (excluding harness racing and First Nation VLT expenditures) were \$372.55 per Nova Scotian, revenues to charities from gambling were \$29.02 per capita, revenues to commercial gaming operations were \$91.08 per capita and provincial government revenues from gambling were \$181.24 per capita. In all cases, gambling revenues per capita were lower in 2007 than in previous years, showing a general decline since 2004. To put the 2007 gambling revenue statistics into perspective, consider that in 2007 Nova Scotians paid \$1,847 per capita in personal income taxes, \$1,842, \$1,615 per capita in sales taxes, and \$153 per capita in tobacco taxes. (see Table 13 in the report).

Population source is not cited.

The “per capita” is a per total Nova Scotia population as opposed to population aged 19 and older which is the age of the population which can gamble.

Incomplete information: “\$1,842”

**Table 7
Gambling Revenue Statistics per Nova Scotian, 2001-2007**

\$/capita	2001	2002	2003	2004	2005	2006	2007
Net Gambling Revenues, excluding FN net revenues	420.90	437.20	414.89	434.23	421.32	395.03	372.55
Charitable Revenues	27.18	26.07	24.52	28.74	30.59	30.52	29.02
Commercial Revenues	52.33	56.52	56.25	56.67	91.42	97.44	91.08
Provincial Revenues	197.86	210.74	194.71	208.47	198.93	188.51	181.24
Nova Scotia Population	932,389	934,507	936,513	937,960	935,990	935,050	934,147

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008. Nova Scotia population statistics are from Statistics Canada, CANSIM Table 051-0001, accessed October 23, 2008.

Note: These figures exclude harness racing and First Nations VLT gambling expenditures.

The “per capita” is a per total Nova Scotia population as opposed to population aged 19 and older which is the age of the population which can gamble. This concept is not consistent with first paragraph under 3.3.2 (adult population 18+) used by Statistics Canada.

Inconsistent treatment of First Nations data – it is included sometimes, excluded at others, with no rationale or justification.

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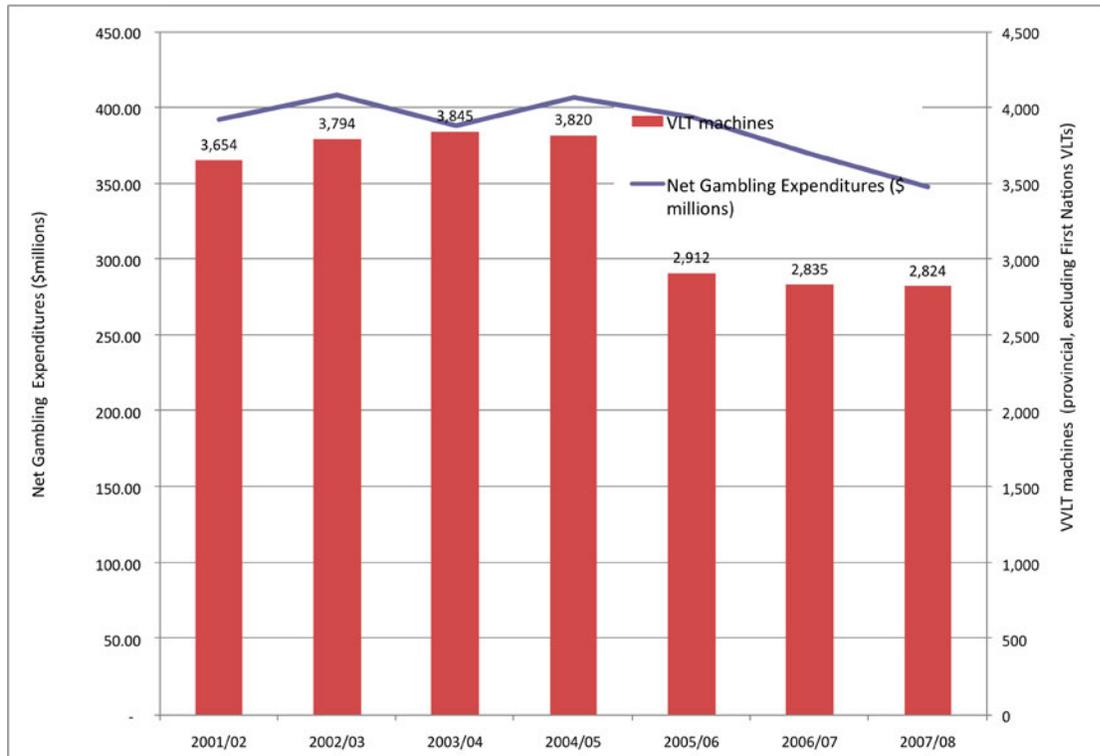
One of the main drivers of declining net gambling revenues may be the decrease in the number of VLT machines in the province. Figure 4 compares net gambling revenues with the change in the number of VLTs. Since a peak of 3,845 VLT in 2003 there has been 1,021 VLT machines removed (a 26.6% reduction in machines) while net gambling revenues between 2003 and 2007 have declined by 6.5%. This may suggest a lag effect or delay between the effects of removal of almost a third of all provincial VLT machines and net gambling expenditures. Our analysis also shows that while the number of all VLT machines (including First Nation VLTs) per 10,000 adults has declined from its peak of 52.9 per 10,000 adults in 2003 to 38.2 machines per 10,000 adults, the total net expenditures per VLT machine (provincial and First Nation) actually grew from \$44,452 per machine in 2000 to \$77,053 per machine in 2005 (a 69.5% increase), the year in which over a thousand provincial VLT machines were removed. Since then total expenditures per VLT machine has declined reaching \$66,809 per machine, on average. However, there is a growing disparity between expenditures on provincial VLT machines and First Nation VLT machines; in 2007 the average First Nation VLT machine generated \$80,691, on average, compared with \$63,111 per provincial VLT machine or about 28% more per machine.

While the decrease in VLTs may impact a decrease in revenue, without further data and analysis it is speculative to conclude that this is the main driver in the decrease of net gambling revenue. People may have shifted gambling expenditures to venues either on-line or out-of-province which cannot be captured in the net gambling revenue data. It is inappropriate to compare the number of VLTs to net gambling revenues for the province. Text references all VLTs including First Nations VLTs, while Figure 4 does not include First Nation VLTs. The data range for VLT numbers (2003-2007) is inconsistent with data range for net expenditures (2000-2005). The "per 10,000 adult" measurement differs from the previous "per capita" measurement and the following "per 18+" measurement. VLT removal number is incorrect. Calculations in text do not correlate using the numbers in Table 7 (net gambling revenue).

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Figure 4
Net Gambling Revenues versus Video Lottery Terminals (VLTs)



Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000/01-2007-08

It is inappropriate to compare number of VLTs to net gambling revenues for the province. Source is incomplete (AGD is not the source of VLTs). Table incorrectly reports exclusion of First Nations VLTs.

3.3.2 How Nova Scotia Compares with Other Provinces

According to Statistics Canada, 2005 Nova Scotia (\$485/capita) ranked 6th nationally behind ranks behind Alberta (\$750/capita), Saskatchewan (\$653/capita), Manitoba (\$623/capita), Newfoundland (\$496/capita), Quebec (\$489/capita) and tied with Ontario (\$485/capita)

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(Statistics Canada, 2007) in 2005 in terms of net gambling revenues³⁰ per capita (18 years +).³¹ Only British Columbia, New Brunswick, and PEI ranked lower. In 2005, Nova Scotia generated \$362 million in net gambling revenues, fourth lowest in Canada, and a 'net profit' (net income of provincial governments from total gambling revenue, less operating and other expenses) of \$169 million, also the fourth lowest in Canada.³² Also in 2005, Nova Scotia (5.4%) ranked fifth among provinces in percentage of total annual government revenues derived from gambling, behind Alberta (6.3%), Ontario (6.0%), Manitoba (5.9%), Saskatchewan (5.6%).³³

*Per capita concepts are different from those noted in Table 7.
Data is for 18+ when age of majority differs across provinces and it is unknown which types of games and supply of games will differ.*

3.3.3 Nova Scotia Gambling Wagers (2001 to 2007):

In Nova Scotia, gambling wagers on provincial, non-First Nation games of chance has increased 17.7% between 2001 and 2007 while gambling wagers on First Nation VLT machines has increased by an estimated 190.8% since 2001. In 2007 Nova Scotians wagered \$1,470 million on all gambling on provincial, non-First Nations games of chance plus an additional estimated \$239 million was spent on First Nation VLT machines for a total bet of \$1,709 million by Nova Scotians. The total bet on charitable lotteries has increased 153.7%, on casinos the bet has increased by 37.4%, and on VLTs the bet has increased 16.9% since 2001. At the same time the total bet on bingos has decreased 30.7%, bets on harness racing have decreased by 6.4%, and bets on ALC ticket lotteries have decreased by 0.5%.

*The cited increase in gambling wagers on First Nations VLT machines does not mention the increase in the number of those First Nations VLT machines during the same period.
Mistakes in Table 8 may impact numbers presented in this paragraph.
The 2007 wager is incorrect (exclusive of First Nations and harness racing).*

³⁰ Total revenue from wagers on government-controlled lotteries, casinos and VLTs, minus prizes and winnings.

³¹ Statistics Canada. 2007. Perspectives on Labour and Income: Gambling. Statistics Canada Catalogue No. 75-001-XIE. May, 2007, p. 2..

³² Ibid.

³³ Ibid.

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The total amount wagered on games of chance is an indicator of the effort households expend as part of their disposable income. Examining the trends in total amount of wagered more closely, the total amount wagered on all games of chance (Table 8) in Nova Scotia has increased steadily at an average of 10.4% per year from \$1,331 million in 2001 (which includes \$82 million wagered at First Nation gambling venues, namely First Nation video lottery terminals (VLTs)) to a high of \$1,755 million in 2004 (including \$180.4 million wagered at First Nation gambling venues). Since 2004, total wagered has declined 2.9% reaching \$1,705 million (including an estimated \$239.0 million at First Nation gambling venues) in 2007.

Mistakes in Table 8 may impact numbers presented in the paragraph above.

**Table 8
Total Amount Wagered on Regulated Gambling in Nova Scotia, 2001-2007 (\$ thousands)**

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Casinos	\$356,005	\$366,604	\$356,255	\$366,391	\$371,077	\$489,109	\$488,995
Video Lottery Terminals	\$575,750	\$767,519	\$821,481	\$895,076	\$819,962	\$717,153	\$673,048
Bingos	\$87,254	\$84,853	\$74,817	\$73,076	\$72,290	\$67,359	\$60,490
ALC Lottery Ticket Sales	\$204,421	\$212,259	\$206,281	\$200,471	\$210,677	\$215,124	\$203,334
Charitable lotteries	\$12,719	\$13,261	\$17,745	\$26,755	\$29,346	\$32,204	\$32,266
On-line gambling	n.a.						
Total Wagered	\$1,248,962	\$1,458,024	\$1,490,392	\$1,575,102	\$1,516,918	\$1,532,845	\$1,470,131
<i>Other Games</i>							
Harness racing	\$12,813	\$13,528	\$12,813	\$13,333	\$13,566	\$11,896	\$11,998
First Nation Gambling Venues	\$82,200	\$117,500	\$154,200	\$180,430	\$190,264	\$211,492	\$239,037
Total Wagered, including Harness Racing and First Nation Gambling	1,331,162	1,575,524	1,644,592	1,755,532	1,707,183	1,744,338	1,709,168

Notes: n.a.: not available.

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports. Harness racing data is from The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. First Nations data is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2008 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs)

Mistakes in Table 8 may impact numbers presented in preceding two paragraphs. The number for the 2003 Bingos is incorrect. Total wagers do not add to above figures in all cases. Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.

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- Risk category terminology used in this draft document is not consistent with the NS Prevalence Studies which use the following categories: non-gamblers, non-problem, at-risk, and problem gambling.

The increase in total wagered on First Nation gambling machines has been greater than increases in the amount wagered on other provincial games of chance. Total wagered at First Nation gambling venues, which come from video lottery terminals (VLTs)³⁴, has increased steadily at an annual average rate of 20.7% per year between 2001 to 2007 from \$82.2 million in 2001 to an estimated \$239.0 million in 2007.

Methodology and reason for estimate is unspecified.

Footnote 34: First Nations VLTs are not leased or rented, but are subject to agreements.

To put these gambling wager statistics into perspective, the amount of money wagered by households on all games of chance, including First Nation gambling venues, (before prize money payouts) expressed as a percentage of total provincial revenues has ranged from 18.5% in 2007 to 27.8% in 2002.

Errors in Table 8 could affect the statistics in this paragraph.

The writing is misleading--comparing 2007 to 2002 (should be 2002 to 2007).

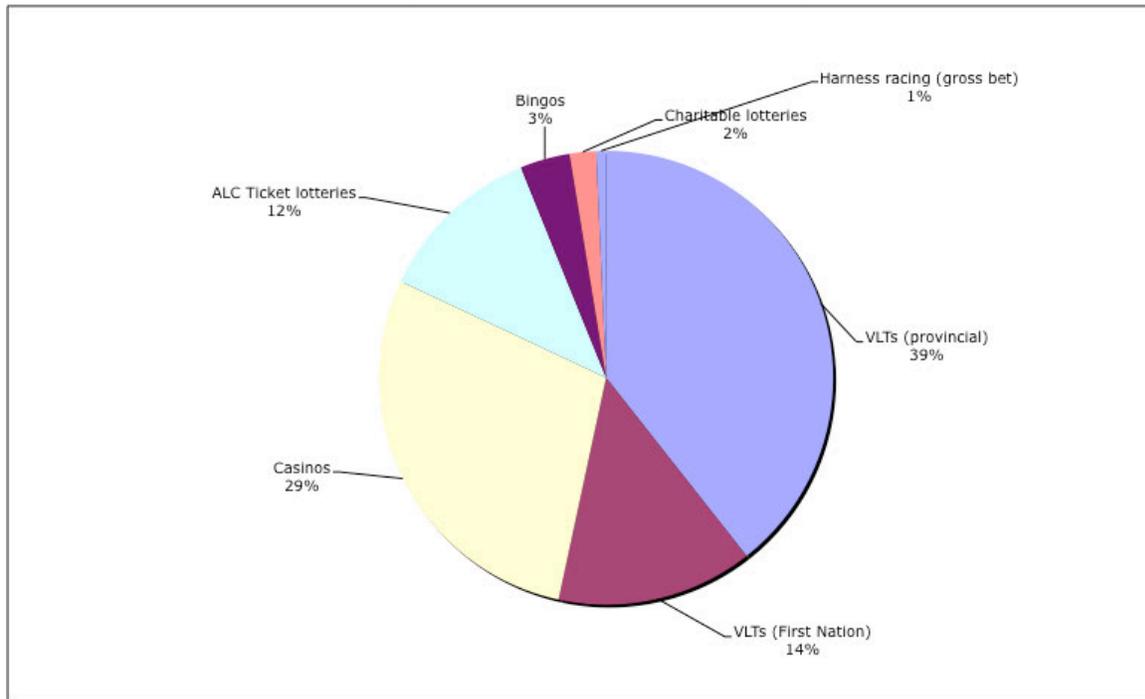
³⁴ In 2001 there were an estimated 449 First Nation VLT machines which are rented from the Gaming Corporation through the Atlantic Lottery Corporation. In 2007/08 there were an estimated 594 First Nation VLT machines.

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Figure 5

Breakdown of Total Wagered by Game, 2007 (Total Wagered = \$1,709,168,643)



Note: Includes harness racing gross bet figures, which are not reported in the Annual Gaming Report.
Source: Nova Scotia Government. Annual Gaming Report 2007-08. Harness racing data is from The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. First Nations data for 2007 is from [Nancy McInnis-Leek \(Office of Aboriginal Affairs\)](#).

*Statistics for First Nations VLTs in Figure 5 do not correlate with the text given below.
It is unclear if each game's total wager is consistently calculated.
Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.*

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Of the \$1,709 million wagered in 2007, the greatest amount was wagered on VLTs (\$673 million in 2007), which accounted for 39% of total wagered (see **Figure 5**) followed by \$489 million on casinos (29%), \$239 million on **First Nations VLTs (24%)**, \$203 million on ticket lotteries (12%), \$60 million **on charitable bingos (4%)**, \$32 million on charitable lotteries (2%) and \$12 million on harness racing (1%). The amount wagered on First Nation VLT machines (594 machines) is estimated at \$239 million in 2007, representing more than **35%** of the total wagered on provincial, non-First Nation VLT machines (**2,230** machines).

*First Nation VLTs are inappropriately treated in isolation of other venues as regards inclusion/exclusion in statistics and tables given in this document.
The number for “First Nations VLTs (24%)” does not match numbers in the figure.
The number for “charitable bingos (4%),” does not match numbers in the figure.
Incorrect numbers given for provincial non-First Nation VLT machines.*

The games with the most dramatic changes in total wagered are provincial, non-First Nation VLT machines which increased 55.5% from \$575 million in 2001 to its peak of \$895 million in 2004 and then declined almost 25% to reach \$673 million in 2007. This is likely due to a reduction in the number of VLT machines; in 2003 there were as many as 3,234 VLT machines (non-First Nation) and by 2007 there were **2,230** VLT machines, a decline of **1,004** machines. However, in contrast to the provincial VLT gambling situation, the amount wagered on First Nation VLT machines has continued to increase with 594 machines on First Nation reserves

*Incorrect numbers given for provincial non-First Nation VLTs and decline of VLTs machines.
Rationale not provided for reduction of VLTs (policy decision noted in 2005 Gaming Strategy).*

Per Capita Gambling Financials:

The total amount wagered (both provincial and First Nation gambling) per **Nova Scotia citizen** has increased by 23.9% since 2001 (see **Figure 6**) from \$1,861 per capita in 2001 reaching a peak of \$2,399 wagered per capita in 2004 and since declining to \$2,310 per capita. Prize cash-outs have followed a similar trend rising from \$1,278 per capita in **2001** and reached a peak of \$1,802 per capita in **2006/07**, for a 41.0% increase. The net effect has been that net revenues from gambling have been in steady decline since a peak of \$616 per capita in 2004 to a low of \$539 per capita in 2007.

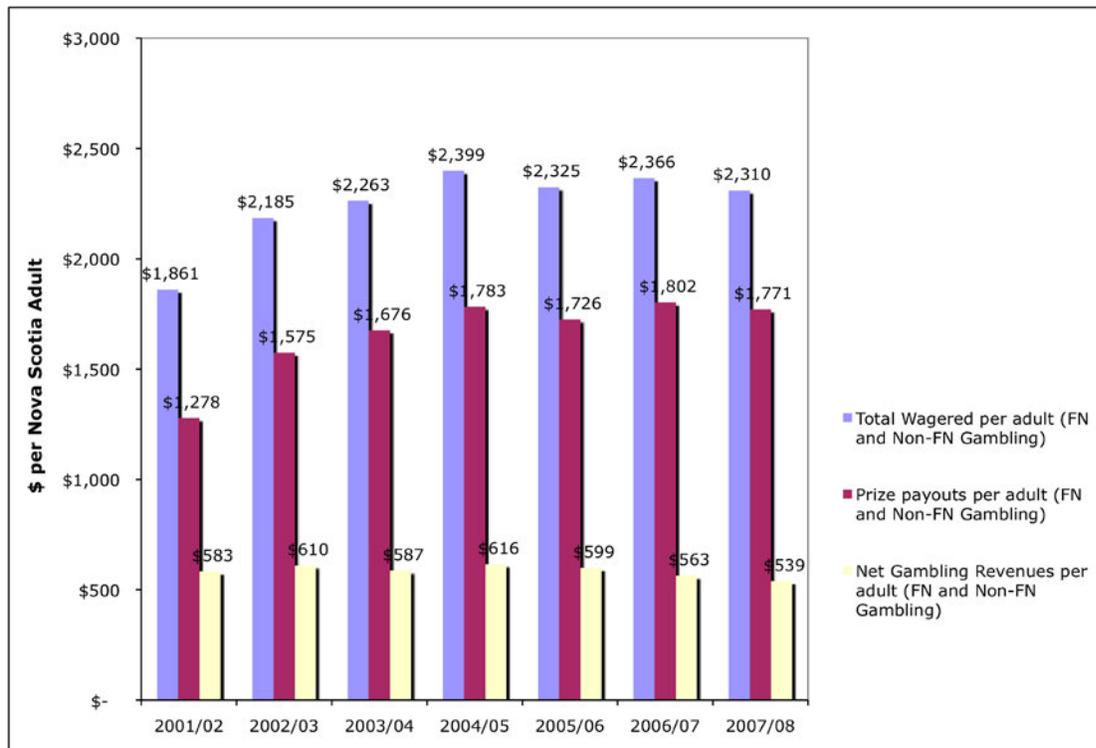
Information cannot be verified due to multiple sources, mixed time references, and undefined “Nova Scotia citizen”.

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Figure 6

Average Wagered, Prizes and Net Gambling Expenditure per Nova Scotia Adult (19 years +), 2001-2007



Sources: Nova Scotia Department of Environment and Labour, Alcohol and Gaming Division. Annual Gaming Reports 2001-2008. Statistics Canada (adult population statistics). First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2008 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

Note: 1. Includes harness racing and First Nation gambling venues. 2. 2007-08 First Nations gaming revenues, prizes and net revenues are estimated based on changes over the previous accounting period 2005/06 to 2006/07.

Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs. Notes in citation are not referenced in the Figure 6. First Nations data for 2007/08 is estimated and no methodology is noted.

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The overall trends suggest that gambling activity, when expressed in terms of the amount wagered on a **per capita basis** and in terms of profitability, peaked in 2004 and has been experiencing a slow decline since then. As previously noted, this decline may be attributed, in part, to the reduction in the number of VLT machines from a high of **3,845 machines in 2003** to **2,824 in 2007**, although while the number of machines has declined by 26.6% since 2003 the net gambling expenditure per adult has declined by 8.1% since 2003.

The term, "per capita basis" has not been used consistently throughout this document, requiring definition and source.

First Nation VLTs are inappropriately treated in isolation of other venues as regards inclusion/exclusion in statistics and tables given in this draft document.

Incorrect numbers provided.

3.3.4 Nova Scotia Net Gambling Revenues (2001 to 2007):

While the total amount wagered has increased since 2001, net gambling revenues (amount wagered less prizes paid out) on provincial, non-First Nation games of chance declined 11.3% between 2001 and 2007. However, net gambling revenues to First Nations from First Nation VLT gambling has increased by 125% **since 2001**. A decrease in net gambling revenues has occurred for each game, with the exception of charitable lotteries; the **decreases** have been **-34.4%** for bingos, **-16.7%** for casinos, **-13.4%** for VLTs, **-10.0%** for harness racing, **-8.2%** for ALC ticket lotteries. **Charitable lotteries net revenues increased 151.0% since 2001, due primarily to the introduction of the hospital lottery.** These declines are due mostly to an increase in the percentage of wagers that are cashed out as prizes rather than a change in the amount wagered.

Statistical writing may lead to possible confusion.

This paragraph should have noted that the increase in First Nations VLTs would have influenced the increase in net gambling revenues to First Nations.

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Net gambling revenues (total wagered less prize cash-outs, including First Nations and harness racing) rose from \$418.1 million in 2001 to a peak of \$452.2 million in 2004 and has since declined to \$399.7 million in 2007 (Table 8). Figure 7 shows that all games have experienced a decline in net revenues (with the exception of First Nation VLTs and charitable lotteries), with provincial VLT net revenues having experienced the greatest absolute decline. The losses in provincial VLT net gambling revenues occurred after the removal of over 1,000 VLT machines in 2005 and 2006 (this represented a 25.8% reduction in the number of VLT machines compared to 2004). The only increase has been in First Nation VLT net revenues (up 124.6%) and charitable lotteries (up 151.0%), when comparing 2007 with 2001 net revenues.

Reference to Table 8 should be Table 9.

This paragraph should have noted that the increase in First Nations VLTs would have influenced the increase in net gambling revenues to First Nations.

**Table 9
Net Gambling Revenues, Nova Scotia, 2001-2007 (\$ thousands)**

	2001	2002	2003	2004	2005	2006	2007
Casinos	102,017	99,886	86,365	84,994	85,388	89,404	84,944
Video Lottery Terminals	162,588	181,904	183,063	200,229	182,205	151,304	140,738
Bingos	23,105	21,331	18,269	17,493	17,992	16,930	15,146
ALC Lottery Ticket Sales	97,784	98,291	91,640	90,507	93,074	94,374	89,744
Charitable lotteries	6,953	7,156	9,217	14,069	15,688	17,358	17,449
On-line gambling	n.a.						
Subtotal Net Gambling Revenues (excluding harness racing and FN VLT gambling)	392,447	408,568	388,554	407,292	394,347	369,370	348,021
First Nation (FN) Gambling	21,200	28,000	34,700	40,154	42,172	43,108	47,930
Venue Net Gambling Revenues							
Harness racing	3,269	3,420	3,255	3,318	3,341	2,930	2,942
TOTAL Net Gambling Revenues	418,138	441,154	427,186	452,231	440,879	416,296	399,724

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007-08 Harness racing data is from The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs. History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2008 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs). Harness racing net revenues are estimated based on the difference between gross bet, association revenues, provincial taxes and the federal government levy.

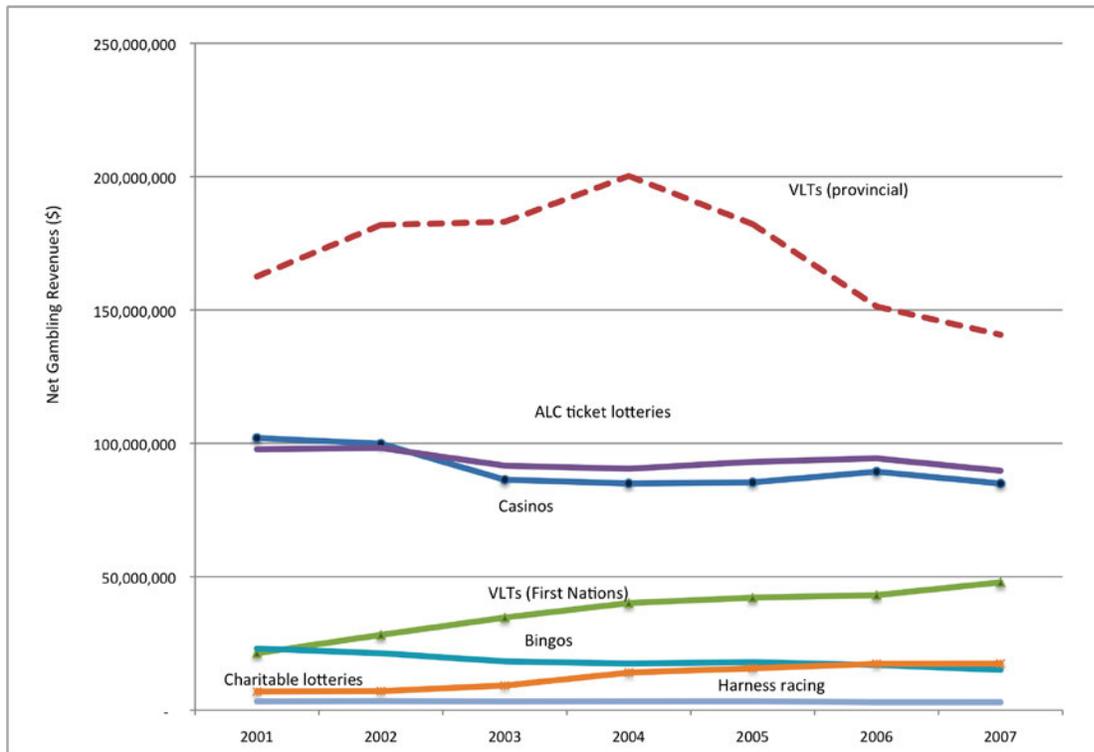
Provincially regulated on-line gambling wagers are included in ALC lottery ticket sales.

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Figure 7
Net Gambling Revenue Trends, Nova Scotia 2001-2007



Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007-08. Harness racing data is from The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2008 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

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Table 10 shows the changes in prize money paid out or cashed-out between 2001 and 2007. The games with the largest cash-out by value in 2007 are VLTs (\$532 million), casinos (\$404 million), ALC ticket lotteries (\$113 million), bingos (\$45 million), charitable lotteries (approximately \$15 million) and harness racing (\$6 million). Prize cash-out on VLTs on First Nation reserves were an estimated \$191 million in 2007. The greatest increase in prize cash-out

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was for charitable lotteries, which increased 157 % from 2001 to 2007. Casino prize cash-outs increased steadily and in 2007 was 59 percent higher than in 2001. VLT prize cash-outs rose from \$413 million in 2001 to a peak of \$695 million in 2004 and declined to \$532 million by 2007. Bingo prize cash-outs have experienced the greatest decrease at 29 percent lower in 2007 than in 2001. For harness racing, prize cash-outs have remained relatively unchanged as have prizes for ALC ticket lotteries.

Methodology for calculating the First Nations VLT prize cash-outs is not noted.

**Table 10
Gambling Prize Money Paid Out, Nova Scotia, 2001-2007 (\$ thousands)**

	2001	2002	2003	2004	2005	2006	2007
Casinos	253,988	266,718	269,890	281,397	285,689	399,705	404,051
Video Lottery Terminals	413,162	585,615	638,418	694,847	637,757	565,849	532,310
Bingos	64,149	63,522	57,548	55,583	54,298	50,429	45,344
ALC Lottery Ticket Sales	106,637	113,968	114,641	109,964	117,603	120,750	113,590
Charitable lotteries	5,766	6,105	8,528	12,686	13,658	14,846	14,817
On-line gambling	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Subtotal Prize Money	843,702	1,035,928	1,089,025	1,154,477	1,109,005	1,151,579	1,110,112
Harness racing	7,551	7,615	6,008	8,548	7,211	6,244	6,075
First Nation Gambling Venue Prize Money	61,000	89,500	119,500	140,275	148,092	168,384	191,107
TOTAL Prize Money including First Nations	912,253	1,133,043	1,214,533	1,303,301	1,264,308	1,326,207	1,307,294

Notes: n.a.: not available.

Source: Nova Scotia Government. [Alcohol and Gaming Authority. Annual Gaming Reports](#). Harness racing data is from The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. First Nations data for 2001 to 2006 is from [Ernest Walker, Office of Aboriginal Affairs](#), History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2008 First Nations data is from Nancy [McInnis-Leek \(Office of Aboriginal Affairs\)](#).

Provincially regulated on-line gambling wagers are included in ALC lottery ticket sales. Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.

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3.3.5 Nova Scotia Provincial Gambling Revenues (2001 to 2007):

Between 2001 and 2007 there has been a drop of \$15.2 million (-8.2%) in provincial revenues from gambling activities implying a reduction in profitability; in 2007 the Nova Scotia Government realized \$169.3 million in revenues (excluding taxes from harness racing) from gambling activity compared with \$185.9 million in 2001. Since the peak in 2004, provincial government revenues from gambling have fallen 17.0%. Between 2006 and 2007 net provincial revenues from gambling declined 3.9 %. Provincial gambling revenues from casinos has increased 28.8% since 2001 while provincial revenues from VLTs has decreased by 14.9%, revenues from bingos have decreased 35.0%, revenues from ALC ticket lotteries have decreased 12.2%, while revenues from charitable lotteries has increased 167.8%. Gambling revenues to First Nation bands from First Nation VLT machines has increased by 123% since 2001 reaching \$44.8 million in 2007.

Implication of profitability is unsupported.

Assessing changes in provincial government revenues from gambling is an important aspect of analyzing the impacts of gambling, as a publicly regulated sector. Differences in operating costs, licensing agreements, retailer commissions, and other associated factors influence the amount of revenue returned to the province by the various types of gambling activities. In 2001 about 47.0% of net revenues from gambling (excluding First Nation VLT revenues) was taken as net revenue to the province, which remained relatively unchanged at 48.6% in 2007.

The last sentence is unclear: "net revenue to the province" means provincial revenue from gaming.

Of the \$169.3 million in net provincial gambling revenues in 2007 retained by the provincial government (after operating expenses, commercial revenues and charitable revenues distribution) VLTs contributed 56.1% (\$94.9 million), ALC ticket lotteries 23.9 percent (\$40.4 million), casinos 19.3 % (\$32.7 million), followed by bingos (charitable) 0.5% (\$907 thousand), and charitable lotteries 0.2% (\$308 thousand) (Table 11 and Figure 8),.

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Table 11
Net Provincial Revenues from Gambling, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Casinos	25,416	32,480	24,738	25,582	27,735	31,528	32,737
Video Lottery Terminals	111,513	117,945	117,872	132,555	117,392	95,703	94,935
Bingos	1,396	1,388	1,179	1,118	1,090	1,074	907
Harness racing (provincial taxes) ¹	n.a.						
ALC Lottery Ticket Sales	46,046	45,001	38,389	36,024	39,601	47,643	40,418
Charitable lotteries	115	122	171	254	273	316	308
On-line gambling	n.a.						
Subtotal Net Provincial Gambling Revenues	184,486	196,936	182,349	195,533	186,201	176,264	169,305
First Nation Gaming Revenues to Bands	20,074	26,754	32,700	37,105	39,039	39,954	44,815

Notes: 1. Harness racing does not generate direct gambling tax revenues to the provincial government, however, the provincial government does levy an amusement tax as per the *Theatres and Amusements Regulations*, which amounts to 11% of the gross bet. The amusement tax is not included in this table of net provincial revenues from gambling and is instead treated as another form of provincial tax revenues as per the public accounts..

Net provincial revenues refers to total amount of net revenue to the province of Nova Scotia after prizes, operating expenses, retailer commissions, and other associated costs are removed.

n.a.: not available.

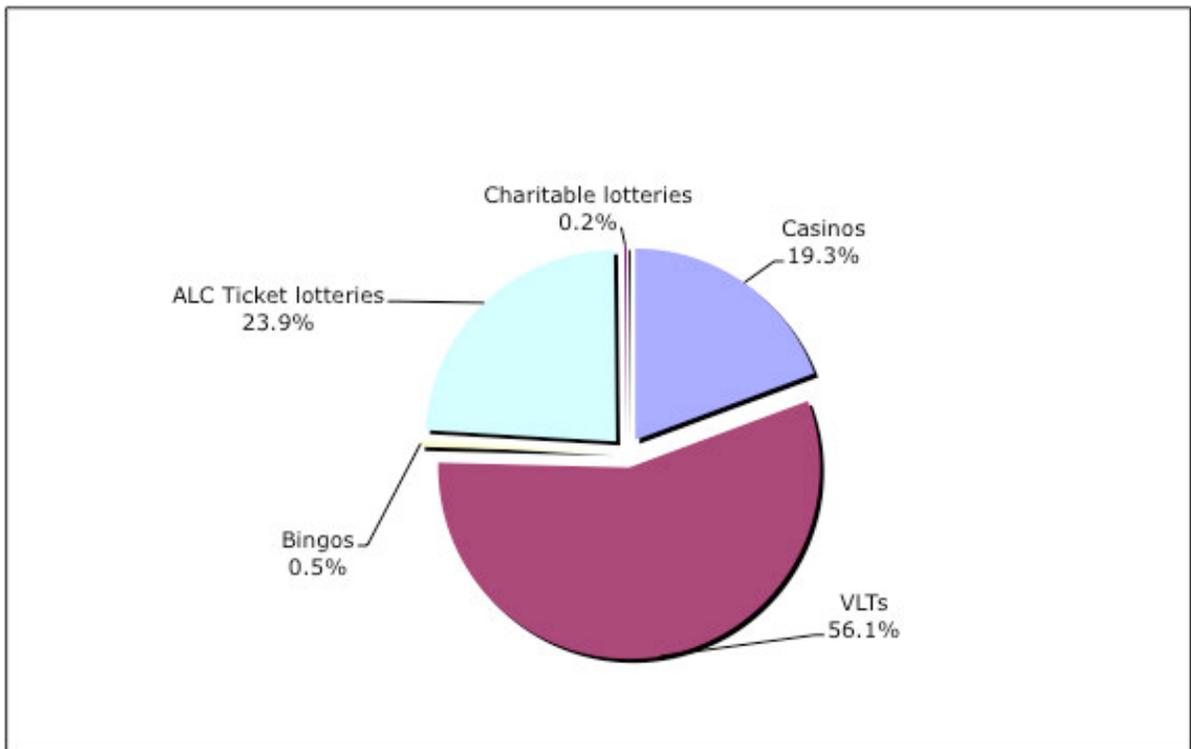
Source: Nova Scotia Government. Alcohol and Gaming Authority, *Annual Gaming Reports*. First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, *History of First Nation Gaming in Nova Scotia*, Background Document. August 2007; 2007 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

Provincially regulated on-line gambling wagers are included in ALC lottery ticket sales. Unaudited statement with regard to amusement tax. Provincial Government revenues associated with charitable lotteries are licencing fees in addition to percentage of total wager. Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.

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Figure 8
Provincial Government Gambling Revenue Source by Game, 2007



Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Report 2007-2008.

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3.3.6 Value of Provincial Gambling Revenues by Game per Nova Scotia Citizen

Consider the relative value of provincial gambling revenues per Nova Scotia citizen. The analysis in Table 12 shows that the highest value of gambling revenues per capita (based on total provincial population) was from VLTs (\$101.63 per capita in 2007) followed by ALC ticket lotteries (\$43.27 per capita), and casinos (\$35.04 per capita). Other games, including bingos and charitable lotteries, generate less than one dollar per capita of provincial revenues. Harness racing and on-line gambling contribute no net revenues to the provincial government. In total all games of chance contributed between \$181.24 per capita in 2007 to \$208.47 per capita in 2004. In addition, consider to the relative value of First Nations net revenues (after administrative costs) to various bands amounts to roughly \$47.98 per capita (total provincial population) or \$5,719 per First Nation citizen (on reserve population with VLTs)³⁵ in 2007.

Definition of "Nova Scotia citizen" is required (adult vs. total). Treatment of Nova Scotia citizen is not consistent between Figure 6 and paragraph preceding Figure 6 and Table 12.
Inappropriate use of the concept "per First Nation citizen" as First Nation VLT gaming is not restricted to First Nation communities and is available to the general population over 19 years of age.
Provincially regulated on-line gambling wagers are included in ALC lottery ticket sales.
Misleading comparison of statistics; missing source.

³⁵ There were an estimated population of 8,696 First Nations people living on reserves in 2007. In 2006 there were an estimated 7,836 First Nations people living on reserves with VLT machines based on Mi'kmaq Resource Centre. 2008. Cape Breton Univeristy. Population data accessed at <http://mrc.uccb.ns.ca>.

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Table 12
Provincial Government Revenues from Gambling, by Game, per Nova Scotia citizen, 2001 to 2007
(dollars per capita).

	2001	2002	2003	2004	2005	2006	2007
Casinos	\$27.26	\$34.76	\$26.42	\$27.27	\$29.75	\$33.72	\$35.04
Video Lottery Terminals	\$119.60	\$126.21	\$125.86	\$141.32	\$125.42	\$102.35	\$101.63
Bingos	\$1.50	\$1.49	\$1.26	\$1.19	\$1.16	\$1.15	\$0.97
ALC Ticket lotteries	\$49.38	\$48.15	\$40.99	\$38.41	\$42.31	\$50.95	\$43.27
Charitable lotteries	\$0.12	\$0.13	\$0.18	\$0.27	\$0.29	\$0.34	\$0.33
On-line gambling	0	0	0	0	0	0	0
All Games	\$197.86	\$210.74	\$194.71	\$208.47	\$198.93	\$188.51	\$181.24
First Nation Gambling Venues	\$21.38	\$28.40	\$34.90	\$39.56	\$41.71	\$42.73	\$47.98

Notes: n.a.: not available. The value per Nova Scotian from First Nation Gaming is based on net revenues from VLTs retained by the First Nation bands and calculated on a per capita (total provincial population) basis.
 Source: Calculated based on raw data from Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports. First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2007 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

Provincially regulated on-line gambling wagers are included in ALC lottery ticket sales. First Nation Gambling Revenues (cited as "Venues" in table) should not be included as they are not Nova Scotia Provincial Government Revenues. Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.

This analysis is instructive when comparing net revenues from gambling, as an economic activity of households, relative to other taxes collected by governments on a per capita and per household basis. The following Table 13 compares budgeted 2007 per capita government tax revenue data per capita relative to net provincial gambling revenues. What is clear is the relative magnitude of gambling revenues (\$181 per capita or \$470 per household) relative to other tax instruments, which are higher than tobacco taxes (\$153 per capita or \$396 per household) but lower than liquor sale revenues from the NS Liquor Commission (\$211 per capita or \$547 per household). Put another way, provincial government gambling revenues represent about 10% of provincial income taxes collected.

It is unclear how data is calculated on a per household basis. The revenue data used in Table 13 and referred to in this paragraph was out of date at the time this draft document was submitted. Incorrect reference to the NS Liquor Corporation. Comparisons are out of context and lead to the belief that gambling revenues are a tax. Additionally, the last sentence is incorrect.

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- The NS Prevalence Studies were conducted in 2003 and 2007 and are inconsistently referenced throughout this document. This could cause problems when doing comparisons with other data.
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Table 13

Comparisons of Provincial Revenues by Source per Nova Scotia Citizen, 2007

Select Revenue Categories	Revenue per capita (2007)	Revenue per household (2007)
Income taxes (provincial)	\$ 1,842	\$19,519
Sales tax	1,615	4,771
Petroleum royalties	440	1,140
Nova Scotia Liquor Commission	211	547
Tobacco tax	153	396
Provincial Government Gambling Revenues	181	470
First Nation Gambling Revenues to Bands	44	113

Source: Calculated based on 2007-08 budget forecast from Province of Nova Scotia. Department of Finance. Budget Forecast Update. August 9, 2007. Nova Scotia population statistics are from Statistics Canada, CANSIM Table 051-0001.

Definition of “Nova Scotia citizen” is required (adult vs. total). Treatment of per capita is not consistent in this document. Source of household data is not noted. The revenue data used in Table 13 was out of date at the time this document was submitted, when more recent data was available. First Nation revenues to Band Councils are not a provincial revenue source. It is unclear if the per capita and per household information includes First Nation and/or total Nova Scotia population.

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3.3.7 The Profitability of Gambling to the Provincial Government

It is possible to calculate what we might call the *effective profitability rate* or margin on relative returns or amount of gambling money retained by the provincial government after prize cash-outs, operating expenses and disbursements to commercial revenues and charitable revenues are covered.³⁶ The effective profitability rate is calculated by taking the net provincial government gambling revenues retained as a percentage of the sum of net revenues (total wagered less prize payouts), plus disbursement of operating expenditures, commercial revenues, and charitable revenues. This is a measure of the efficiency of revenue retention from **gambling activities by Nova Scotians** considering all other costs and disbursements to other beneficiaries (e.g. charities, commercial operators, operations). **As an example, in 2007 net provincial government revenue from gambling were \$169,305,000 divided by the total of net revenues (\$348,021,000), plus disbursement to operating expenses (\$66,530,000), commercial operator revenues (\$85,079,000) and charitable revenues (\$27,107,000) for a subtotal of \$526,737,000, yielding an effective profitability rate of 32.2% for all games of chance for 2007.** A summary of the estimated implicit tax rate for each game and all games is shown in Table 14

*Operating expenses (\$66,530,000), commercial operator revenues (\$85,079,000) and charitable revenues (\$27,107,000) are double-counted as they are included in the net revenues (\$348,021,000).
Gambling activities cannot be extrapolated by Nova Scotians (should be by people gambling in Nova Scotia).*

³⁶ Some economists (namely, Vaillancourt and Roy), who have studied the economics of gambling for Canada, have argued that what we are calling a “profitability rate” is effectively the implicit tax rate on gambling by governments who regulate gaming activities. According to the American Tax Foundation because governments have a monopoly on the provision of legal gambling activities and have the discretion to set prize payout rates on games (e.g. video lotteries, government ticket lotteries, casinos, and bingos) and because they recover more of the amount wagered by gamblers than it costs to provide the games of chance (i.e. operating expenses), plus the redistribution of some of these profits to commercial gaming venues, and charities, the net gambling revenues retained by the provincial government from the gambling population constitutes an implicit tax on gambling. What makes this form of gambling revenue a tax is that much of the revenue government’s retain goes to general revenues and government programs that are unrelated to gambling, which generated the revenues. Legalized gambling in Nova Scotia meets this definition of an implicit tax, with the tax built (as a percentage of net wagered, after prize payouts) into each legalized game of chance even though this tax is not explicitly revealed to the gambler when they play games. To be an explicit tax, like a sales tax, gamblers would, in principle, have to be given a receipt after they have played a VLT, played bingo, table games at a casino, or purchased a government lottery ticket that showed how much they wagered, how much they won in prizes, and how much of their net losses (in the case of a net loss) went to operating expenditures, to the commercial gaming venue (e.g. VLT venue or casino), to charities and to provincial government revenues.

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Table 14

The Effective Profitability Rate of Nova Scotia Games of Chance, in % terms, 2001 to 2007.

	2001	2002	2003	2004	2005	2006	2007
Casinos	14.2	19.4	16.7	17.7	19.4	21.4	23.9
Video Lottery Terminals	52.2	48.0	47.5	49.5	47.5	46.3	50.9
Bingos	3.1	3.4	3.3	3.3	3.1	3.3	3.1
Harness racing	27.5	27.8	27.6	28.4	28.7	28.8	28.9
ALC Ticket lotteries	30.8	29.7	26.5	24.8	27.0	33.8	29.1
Charitable lotteries	0.8	0.9	0.9	0.9	0.9	0.9	0.9
On-line gambling	n.a.						
All Games	30.8	31.8	30.9	31.8	30.7	31.4	32.2
First Nation Gaming Venues	88.8	90.1	89.0	85.8	86.1	86.4	87.8

Notes: n.a.: not available.

Source: Calculated based on raw data from Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports. Harness racing data is from The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2007 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

Methodology is incorrect resulting in incorrect numbers.

First Nation VLTs are inappropriately treated in isolation of other venues as regards inclusion/exclusion in statistics and tables given in this draft document.

First Nation Gambling Revenues is cited incorrectly as "Venues" in Table 14.

Provincially regulated on-line gambling wagers are included in ALC lottery ticket sales.

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When the analysis is conducted by specific game of chance, then results show the diversity of profitability rates from a high of 50.9 % for VLTs, 29.1 % for ALC lottery tickets, 28.9% for harness racing, 23.9 % for casinos, 3.9 % for bingos and 0.9 % for charitable lotteries. The greatest increase in profitability rates has been for casinos rising from 14.2% in 2001 to 23.9% in 2007. The profitability rates for other games have remained relatively constant with no clear trend. We have also estimated a profitability rate for First Nation gambling using a formula that compares net VLT revenues to First Nation bands (total wagered less cash prizes less administrative fees paid to the provincial government) relative to the net revenues (total wagered less cash prizes) plus administrative fees. For example in 2007 we estimate a profitability rate of 87.8 % based on net VLT revenues to bands at \$44.8 million as a percentage of net revenues (\$47.9 million) plus administrative fees (\$2.3 million). These are higher than the rates for other provincial games of chance administered by the provincial government.

*Methodology is incorrect resulting in incorrect numbers.
Figures cited in text do not match figures in Table 15.*

3.3.8 First Nations Gambling Trends

First Nations gaming operations are subject to independent agreements with the province that fall outside of the Alcohol and Gaming Division and are regulated by independent band gaming commissions (11 out of 13 Mi'kmaq communities participate in these agreements with the province). VLTs are rented from the NSGC, through the Atlantic Lottery Corporation, and service includes access to responsible gambling programs and other supports available to all video lottery site holders in the province.

*Band Councils have agreements regarding VLTs which are neither leased nor rented.
Incorrect number.*

Gambling venues contribute significant financial benefits to First Nation communities in Nova Scotia. Gambling venues are almost exclusively video lottery terminals (VLTs). In 2001 there were 416 video lottery terminals, which had risen to 594 in 2007; a 42.8% increase (Table 15).³⁷ In 1997-98 a total of \$40.22 million was wagered on 403 First Nation VLTs with a net revenue of \$11.65 million and a net \$1.0 million went to administration costs resulting in band revenues of \$10.65 million. In 2007 a total of \$239.0 million was wagered on 594 VLT machines generating \$44.81 million in First Nation band revenue, a 321% increase relative to 1997.

³⁷ Data from the Nova Scotia Gaming Corporation.

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Table 15
First Nation VLT Gambling Statistics, 1997-2007

Year	Cash In (total wagered)	Cash Out (prizes)	Prizes as % of Total Wagered	Net Revenue	Admin. Fee (to province)	Band VLT Revenue (to band)
1997	40,217,919	28,565,935	71.0%	11,651,983	1,005,091	10,646,893
1998	51,888,712	37,196,206	71.7%	14,692,507	1,031,685	13,660,822
1999	59,764,275	43,177,905	72.2%	16,586,369	1,031,510	15,554,859
2000	65,137,338	46,880,021	72.0%	18,257,317	1,211,362	17,045,955
2001	82,200,000	61,000,000	74.2%	21,340,304	1,266,392	20,063,931
2002	117,500,000	89,500,000	76.2%	28,216,404	1,462,712	26,739,832
2003	154,200,000	119,500,000	77.5%	34,720,179	2,019,768	32,684,915
2004-	180,429,915	140,275,402	77.7%	40,154,513	3,049,481	37,088,450
2005	190,264,517	148,092,119	77.8%	42,172,398	3,133,050	39,022,872
2006	211,492,299	168,383,945	79.6%	43,108,354	3,154,207	39,954,147
2007	239,037,331	191,107,155	79.6%	47,930,176	3,114,287	44,815,889

Source: Data for 1997-2006 are from Ernest Walker, Office of Aboriginal Affairs, special data request, August 2007. Data for 2007 is from Nancy McInnis-Leek, Office of Aboriginal Affairs, special data request for 2007-08 fiscal year, October 2008.

“Cashout” and “prizes” are different concepts.

Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.

The amount wagered per First Nation VLT machine reached a high of \$402,420 in 2007 (about 33% higher than non-First Nation VLTs which averaged \$301,815 per VLT machine), average prize payout of \$321,729 (a 79.9% payback efficiency rate) and net revenues (before administrative costs) of \$80,691 per VLT machine. Therefore First Nation VLT machines generated \$75,448 or 19.5% more per VLT machine than non-First Nation machines in the province in 2007 (average net revenue of \$63,111 per provincial VLT machine).

First Nation VLTs are inappropriately treated in isolation of other venues as regards inclusion/exclusion in statistics and tables given in this document.

The Office of Aboriginal Affairs made commitments in the Nova Scotia Gaming Strategy (2005) to reduce the number of VLTs and negotiations are currently underway with a number of First Nation communities to become more consistent with the Provincial Gaming Strategy.

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The contribution that First Nation VLTs and gambling venues makes to provincial gambling activities is important. The inclusion of First Nations video lottery gambling information is limited to financial statistics, including wagers, prize payouts and net revenues, to provide a comprehensive accounting of all provincial gambling opportunities and activities. No other impact analysis was conducted related to First Nations gambling venues.

First Nations gambling revenue is not accrued to Provincial Government revenues.

3.3.9 Disbursement of Gambling Revenues to Problem Gambling Treatment, Responsible Gambling Initiatives and Other Governments

The Nova Scotia Government has made significant investments in initiatives for the treatment, research and awareness prevention of problem gambling. According to statistics (Table 16) collected by the Canadian Partnership for Responsible Gambling, total investment in problem gambling treatment, research and awareness programs rose steadily from \$5,261,000 in 2003 to a peak of \$6,519,601 in 2004, the year in which total wagered peaked in Nova Scotia at \$1,755 million and the number of VLT machines (including First Nation VLT machines) peaked at 3,845 in 2003. In 2006 (the most recent statistics) problem gambling health-related spending had fallen to 4,947,289 or 31.7% lower than in 2004.

*Source required.
Total investments may not be captured here.*

While government problem gambling investments have declined, the gambling industry investments in responsible gambling initiatives have increased substantially (over 3.1 times) from \$1,006,541 in 2003 to \$3,143,000 in 2006/07.

Considering the combined investments of both government and industry in problem gambling initiatives, the total investment has grown from \$6,267,541 in 2003 to \$8,090,829 in 2006/07 or a 29.1% increase.

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The relative impacts of these initiatives on reducing the incidence and number of problem gamblers in Nova Scotia are not readily discernable. We might expect real decreases in the actual number of problem gamblers in Nova Scotia as a direct measure of success. However, consider that the estimated population of 'moderate risk' and 'problem gamblers' between 2003 and 2007 (using the adult gambler prevalence studies) **actually increased from 14,680 in 2003 to 18,861 in 2007**. While this represents an absolute increase of 28.5% more 'moderate risk' and 'problem gamblers', the increase is not statistically significant since the incidence of these gambler types changed only marginally, from 2.1% of all gamblers surveyed in 2003 to 2.5% of gamblers surveyed in 2007. The increase in the estimated number of these problem gamblers occurred even though the number of VLT machines in the province (including First Nations VLTs) decreased by 26.5%. Measuring the relative returns on both government and industry investment in prevention and responsible gambling initiatives remains a challenge for empirical measurement that will require further research.

Data source is not cited.

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Table 16
Disbursements of Gambling Revenues to Charity, Problem Gambling and Responsible Gambling Initiatives, 2002 – 2006.

	2002	2003	2004	2005	2006
Charity	\$39,000	\$35,000	\$50,000	\$53,000	n.a.
Problem Gambling (Health)	\$2,410,000	\$5,261,000	\$6,519,601	\$4,698,400	\$4,947,829
Treatment	n.a.	\$3,305,000	\$2,193,665	\$3,726,412	\$2,514,723
Research	n.a.	\$578,000	\$3,167,000	\$140,367	\$815,973
Awareness Prevention	n.a.	\$1,126,000	\$856,491	\$626,999	\$1,396,339
Other	n.a.	\$252,000	\$302,445	\$204,622	\$220,794
Responsible gambling initiatives (industry)	n.a.	\$1,006,541	\$1,651,055	\$2,793,611	\$3,143,000
Percent of government gambling revenue distributed to problem gambling	1.22%	2.89%	3.33%	3.59%	2.81%
National average	0.85%	0.99%	1.10%	1.30%	1.30%
Amount of Nova Scotia government spending on problem gambling per capita in Nova Scotia.	\$2.58	\$5.62	\$6.95	\$5.02	\$5.29
National average (\$ per person)	n.a.	n.a.	n.a.	\$3.44	\$3.47
Distributions to Federal and Municipal Governments					
Federal *	\$1,606,899	\$1,604,741	\$1,637,000	\$1,666,000	\$1,662,000
Municipal	\$0	\$0	\$0	\$0	\$0

* Note: 2007 data was not available at the time of our study. 1). Federal distributions refer to the annual payments that each provincial lottery corporation makes to the Government of Canada under a 1979 agreement that the latter would withdraw from the lottery field. The provinces pay, on a combined basis annually, \$24 million in 1979 dollars (adjusted for inflation). 2). Some figures for percent of government gambling revenue distributed to problem gambling and amount of dollars distributed to problem gambling per person have been revised with current Nova Scotia data and may vary slightly from those reported in the Gambling Digest Source: Canadian Partnership for Responsible Gambling. Gambling Digest. 2002-03; 2003/04; 2004/05; 2005/06 fiscal year (preliminary data).

Data source appears to be missing a year which calls into question the validity of the table. Multiple tables appear to be sourced and should have been noted. The data reported in the Canadian Gambling Digest may not adequately reflect expenditure by the province.

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When we considered the percentage of government spending on problem gambling programs as a percentage of net government revenue derived from gambling (Table 15 the numbers suggest a relative increase from only 1.22% in 2002 to 3.59% in 2005 and falling off to 2.81% in 2006. Compared to national averages of other provincial governments, the Nova Scotia government spends considerably more (e.g. 1.30% national average in 2006/07 compared to Nova Scotia's 2.81%).

*Table 15 referenced should be Table 16.
Data not sourced.*

The Nova Scotia government also spent about 52% more per capita (\$5.29 per capita) on problem gambling initiatives in 2006/07 than the national average (\$3.47 per capita).

Use of "per capita" is not consistent throughout this document.

3.4 Problem Gambling

The SEIG Framework uses the Canadian Problem Gambling Index's (CPGI) Problem Gambling Severity Index (PGSI) to categorize gamblers, ranging from the non-gambler to the problem-gambler. The CPGI arose from a collaborative effort among the Canadian Provinces to validate and put into practice a standard instrument for measuring problem gambling in the Canadian population. In 1997, the Inter-Provincial Task Force on Problem Gambling commissioned the Canadian Centre on Substance Abuse to conceptualize and develop the project. The Canadian Problem Gambling Index (CPGI) was validated in 2001 (Ferris & Wynne, 2001) and found to have good reliability. The measure has been designed to capture gambling involvement, behavioural indicators of problem gambling, cognition related to problem gambling, consequences of problem gambling, and the environmental factors and correlates of problem gambling. The CPGI, being designed for use in broad based population surveys, does not incorporate estimates of pathological gambling but rather focuses on estimates of risk for problem gambling consistent with community health objectives surrounding both prevention and treatment.

What is a problem gambler? The proportion of a population diagnosed or identified as problem gamblers depends on the definition used to categorize and then estimate this group of people. A definitive categorization of problem gambling (or national consensus) does not exist in Canada. In the Canadian Inter-Provincial Task Force on Problem Gambling's report, *Measuring Problem Gambling in Canada* (Ferris, Wynne & Single, 1999: 57)³⁸, problem gambling is

³⁸ Ferris, J., Wynne, H. & Single, H. (1999). *Measuring Problem Gambling in Canada. Phase I final report to the Canadian Inter-Provincial Task Force on Problem Gambling*. Ottawa, ON: Canadian Centre on Substance Abuse.

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defined as “gambling behavior that creates negative consequences for the gambler, others in his or her social network, or for the community”.³⁹

Operationally, in general population surveys, respondents qualify as problem gamblers if they score above a predetermined threshold on one of the commonly used problem gambling screens or indexes; for example, answering yes to five or more of the ten DSM IV “persistent and maladaptive gambling behaviors” or scoring 8 or higher on the Canadian Problem Gambling Index (CPGI). The CPGI is calculated differently than the DSM IV⁴⁰ in that there are four possible answers to the nine problem gambling severity questions. An answer of “never” = 0, “sometimes” = 1, “most of the time” = 2, and “almost always” = 3. Based on this scoring method, a respondent’s index can range from 0-to-27, and the cutoff point for registering as a problem gambler is a score of 8 or above.

The five PGSI categories and their measurement scores are identified as follows:

1. **Non-Gambling:** No score on the CPGI; This group has not gambled in the past 12 months and registers no score on the CPGI.
2. **Non-Problem Gambling:** Most have responded “never” to most of the indicators of problem gambling behavioural problems. These may be frequent gamblers with heavy involvement in terms of time or money, but have not experienced any adverse consequences of gambling. Their CPGI score is zero;
- 3.
4. **Low Risk Gambling:** These respondents will have one or more “sometimes” or “more often” responses to indicators of problem gambling behaviour problems, but are not likely to have experienced any adverse consequences from gambling. They may be at risk if they are heavily involved in gambling and respond to at least two correlates of problem gambling. Their CPGI score is between 1 and 2.
5. **Moderate Risk Gambling:** These respondents will have one or more “most of the time” or “always” responses to indicators of behaviour problems and may or may not have experienced any adverse consequences from gambling. They may be at risk if they are heavily involved in gambling and respond to at least three or four correlates of problem gambling. Their CPGI score is between 3 and 7; and

³⁹ Anielski Management Inc. 2008. *The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard*. p. 117.

⁴⁰ DSM IV stands for Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision, also known as DSM-IV-TR. It is a manual published by the American Psychiatric Association (APA) that includes all currently recognized mental health disorders. The coding system utilized by the DSM-IV is designed to correspond with codes from the International Classification of Diseases, commonly referred to as the ICD.

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6. **Problem Gambling:** This group has experienced adverse consequences from their gambling and may have lost control of their behaviour. Their involvement in gambling can be at any level but the key is these players cannot adhere to pre-set time or spending limits. Their CPGI score is between 8 and 27.

These CPGI classifications are determined using a set of questions in a telephone interview. The full survey instrument consists of 33 items assessing gambling participation, problems, correlates, and demographics. However, identification of risk for problem gambling is assessed using the following nine scored items comprising the Problem Gambling Severity Index (PGSI):

Thinking about the past twelve months.....

1. Have you bet more than you really could afford to lose?
2. Have you needed to gamble with larger amounts of money to get the same feeling of excitement?
3. When you gambled, did you go back another day to try and win back the money you lost?
4. Have you borrowed money or sold anything to get money to gamble?
5. Have you felt that you might have a problem with gambling?
6. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
7. Have you ever felt guilty about the way you gamble, or what happens when you gamble?
8. Has gambling caused you any health problems, including stress or anxiety?
9. Has your gambling caused any financial problems for you or your household?

Each question has four response options including never (scored as 0), sometimes (scored as 1), most of the time (scored as 2), and almost always (scored as 3) (Figure 9). To score the CPGI, the nine items are summed to arrive at a total score ranging from value of zero (0) to 27, and interpreted using the following risk continuum:

Figure 9
Canadian Problem Gambler Index

CPGI Score	Risk Categories
0	Non-Problem
1-2	Low Risk
3-7	Moderate Risk
8+	Problem Gambler

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

In Nova Scotia there have now been four prevalence studies undertaken to measure gambling problems; 1993, 1996, 2003, and 2007 conducted by Focal Research Ltd. The 1993 and 1996 studies used the SOGs gambling classification system while the 2003 and 2007 prevalence studies used the CPGI gambler classification system. In other Canadian jurisdictions adopting the CPGI for measurement of risk for problem gambling, tracking of gambling prevalence was adjusted to yield more meaningful comparisons with SOGs based estimates. For comparative purposes, the results of all four studies in Nova Scotia were re-classified to include three primary gambler categories: non-problem; low risk and moderate risk/problem.

The 1993 and 1996 studies were not conducted by Focal Research. The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document. This may cause inaccuracies when comparing figures or analyzing trends.

The following Table 17 shows the estimated trends in the number of non-problem, low-risk and moderate risk and problem gamblers in Nova Scotia 1993-2006 based on prevalence studies conducted in 1993, 1996, 2002, and 2007. In 2007, out of 773,000 Nova Scotia adults (aged 19 years and older), an estimated 13.0% (100,799) of the adult population were not gamblers while 87% of adults who had reported having gambled in the past. Roughly 80.9% (625,202 adults) of all adults in 2007 were rated as non-problem gamblers, while 3.6% (28,137) were considered low-risk gamblers and 2.5% (18,861) were considered to be moderate-risk or problem gamblers.

Table 17

Annotations for Table 17 are found on next page.

Trends in Gambler Types for Nova Scotia Adult Population, 1993, 1996, 2002 and 2007.

Survey Year	Gambler Subtype				Total Adults ⁴¹
	Non-Gamblers	Non-Problem Gamblers	Low Risk Gamblers	Moderate-risk and Problem Gamblers	
Percentage of Population					
1993	11%	84.2%	3.1%	1.7%	100%
1996	8.0%	86.5%	3.6%	1.9%	100%
2002	10.7%	82.4% ↓	4.8% ↑	2.1%	100%

⁴¹ There is a discrepancy in the estimated adult population for Nova Scotia from the prevalence studies and official Statistics Canada adult population statistics (19 years and older) for the years 2003 and 2007. For example, in 2001 (the relevant reporting year for the 2003 prevalence study) there were 715,998 adults according to Statistics Canada compared with 734,000 estimated in the prevalence study. In the 2007 prevalence study, the adult population estimate is 773,000 compared to Statistics Canada's adult population estimate of 736,840 for the reporting year 2006. The discrepancy may be due to new or revised Statistics Canada population figures subsequent to the completion of both the 2003 and 2007 prevalence studies by Focal Research Consultants.

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2007	13.0%	80.9%	3.6%↓	2.5%	100%
Population Estimates					
1993	≈75,563	≈578,398	≈21,295	≈11,678	686,933
1996	≈55,899	≈604,409	≈25,155	≈13,276	698,739
2002	≈79,381	≈605,812	≈35,127	≈14,680	≈734,000
2007	≈100,799	≈625,202	≈28,137	≈18,861	≈773,000
% change 1993-					
2007	33.4%	8.1%	32.1%	61.5%	12.7%
Margin of Error around the estimates					
1993	±2.15%	±2.51%	±1.19%	±0.83%	n.a.
1996	±1.87%	±2.35%	±1.28%	±0.93%	n.a.
2002	±1.14%	±1.41%	±0.79%	±0.53%	n.a.
2007	±1.32%	±1.54%	±0.73%	±0.61%	n.a.
Sample Size					
1993	n=89	n=682	n=25	n=14	n=810
1996	n=65	n=701	n=29	n=15	n=810
2002	n=299	n=2311	n=134	n=56	n=2800
2007	n=326	n=2022	n=91	n=61	n=2500
Maximum Margin of Error within each subgroup					
1993	±10.39%	±3.75%	±19.6%	±26.19%	±3.44%
1996	±12.16%	±3.70%	±18.19%	±25.30%	±3.44%
2002	±5.67%	±2.04%	±8.47%	±13.10%	±1.85%
2007	±5.43%	±2.18%	±10.27%	±12.55%	±1.96%

Sources: Nova Scotia Department of Health. 1993. Prevalence Study on Problem Gambling in Nova Scotia (1993). Conducted by Omnifacts Research.; Nova Scotia Department of Health. 1996. Prevalence Study on Problem Gambling in Nova Scotia (1996). Conducted by Baseline Market Research Ltd.; Nova Scotia Office of Health Promotions and Addictions Services. 2004. 2003 Nova Scotia Gambling Prevalence Study. Conducted by Focal Research. Nova Scotia Health Promotion and Protection. 2008. 2007 Nova Scotia Adult Gambling Prevalence Study, Study conducted by Focal Research, April 2008. Because the 2003 adult gambling prevalence study asked survey respondents to recall their gambling activity for the **period April 1, 2002-June 13 2002**, we assume that the relevant fiscal year data comparison would be gambling expenditures for the fiscal period April 1, 2002 to March 31, 2003.

Shading indicates significant differences among gambler subtypes (p<.05)

↑↓ Arrows indicate the direction of significant change over time (p <.05). For non-gamblers and non-problem gamblers, significant changes refer to the combined percentages (i.e., 95.2% for 1993 vs. 93.2% for 2003).

† CPGI scores for moderate risk and problem gamblers have been combined for the 2003 and 2007 surveys. The CPGI was used in the 2003 and 2007 surveys while the SOGS was used in the 1993 and 1996 surveys. Focal Research provided a calculation for equating CPGI and SOGS scores so that prevalence rates could be compared for all four surveys. This procedure is described in the 2003 Nova Scotia survey final report. All data in this table have been taken from the 2007 survey final report except for population estimates, MOE estimates, and sample sizes for the 1993 and 1996 surveys, which were calculated from information provided in the 2007 report.

Incorrect citations; incorrect data period;the accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document. This may cause inaccuracies when comparing figures or analyzing trends.

Footnote 41: the population discrepancy is due to revised Statistics Canada estimates.

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The prevalence rate of problem gamblers has increased over time both in terms of total estimated number of Nova Scotia adults and in terms of the percentage of the total adult population. In 1993, for example, there were an estimated 11,678 moderate risk and problem gamblers (1.7% of the adult population) and 21,274 moderate-risk gamblers (3.1% of the adult population). In 2007 there were an estimated 18,861 moderate risk and problem gamblers (2.5% of the adult population) and 28,137 moderate-risk gamblers (3.6% of the adult population). Comparing 2007 with 1993, Nova Scotia's adult population increased by 12.5% while the population of non-gamblers increased 33.4% and non-problem gamblers increased by 8.1%. Over the same time period, there was a 61.5% increase in moderate risk and 'problem gamblers' and a 32.1% increase in the moderate-risk gambler population.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

The number of estimated moderate risk and problem gamblers in Nova Scotia increased between 2002 (n=14,680) and 2007 by 4,181 adults (a 28.1% increase), according to the two previous adult gambling prevalence studies.

"n" is population data and not from the Nova Scotia Prevalence Study.

Type of Gambling Activity Associated with Self-Reported Gambling Problems

According to the recent 2007 Adult Prevalence Gambling Study video lottery terminals (VLTs) were cited by survey respondents as the principal source of gambling problems; roughly 62% of respondents (n=58) self-reported ever having had a problem with their VLT gambling while 67% of the gamblers who still have a gambling problem (n=33) identified VLT gambling as their **primary problem** (see Figure 10). The games with the second and third greatest impacts with respect to self-reported problems were ALC daily lottery products and any type of **commercial poker**.

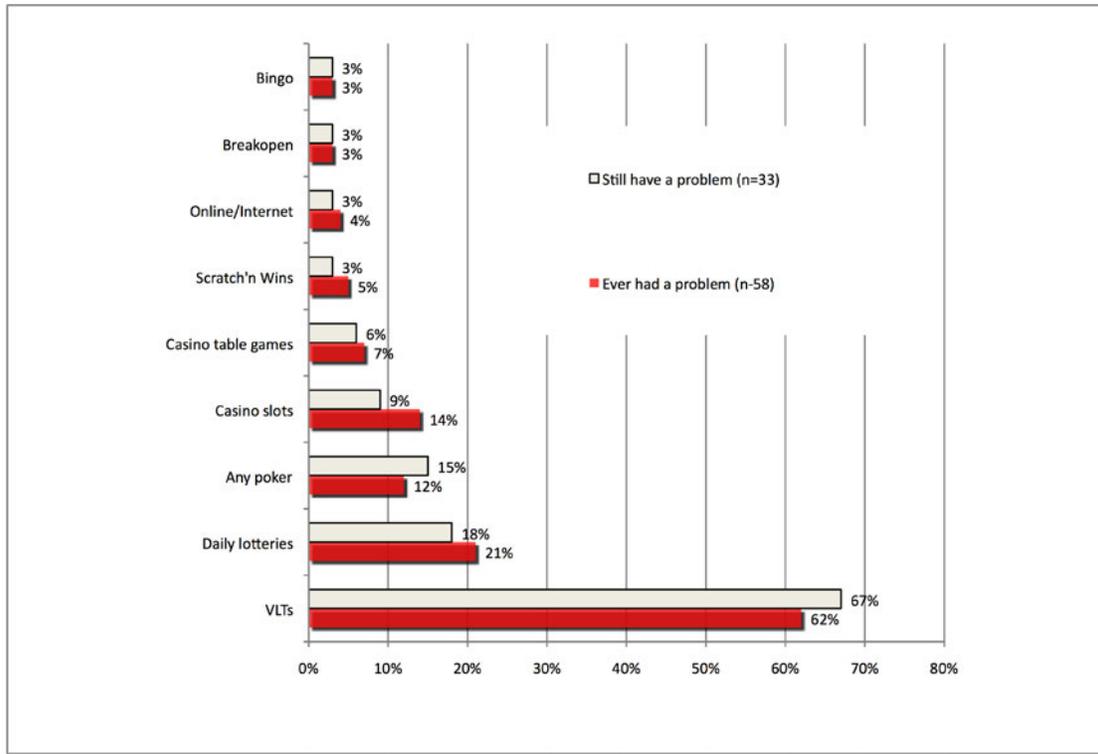
*The survey asked whether the respondent had a problem or still had a problem, not whether it was their primary problem.
"Commercial poker" requires definition.*

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Figure 10

Type of Gambling for Past and Current Self-Reported Gambling Problems (2007)



Source: Nova Scotia Health Promotion and Protection. 2008. *2007 Adult Gambling Prevalence Study*. April 2008, p. 49.

Incorrect source citation.

Figure 10 includes gaming that is outside the scope of the RFP.

Data used for "Scratch 'n' Wins" are incorrect.

In addition, the 2007 prevalence study, similar to the 2003 study, showed that the vast majority (81%) of those who self-reported ever had a problem with gambling were associating the problem with only one form of gambling (1.9% of adults), 10% indicated problems with two type of gambling activities (0.2% of adults) and only 9% (0.2% of adults) reported problems with 3 or more forms of gambling.

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Gambling Expenditures by Gambler Type

Based on the 2003 and 2007 Nova Scotia Gambling Prevalence Study (Nova Scotia Health Promotion, Addictions Services) conducted by Focal Research, it is possible to estimate the total annual net gambling expenditures and per gambler net expenditures by gambler type for the games of interest to this study (casinos, VLTs (including First Nations), bingo, charitable lotteries, ALC ticket lotteries and harness racing)⁴². The following Table 18 is a comparative analysis of the Nova Scotia 2003 and 2007 prevalence studies for average net gambling expenditure (by gambler type), population estimates and predicted provincial net revenues by gambler type.⁴³

*The sample sizes to produce expenditures of per gambler by game are too small to be statistically sound, and this was noted by the 2007 NS Prevalence Study.
Footnote 42 lacks clarity as it is incomplete.
Footnote 43 contains incorrect date.*

Table 18
Nova Scotia Average Gambling Expenditure and Population Estimates (Past Year Gamblers) for Lottery Tickets, Bingo, Casinos, VLTs (including First Nations), Charitable Lotteries, and Harness Racing, 2002 and 2007

Survey Year	Gambler Subtype				Total Adults
	Non-Gamblers	Non-Problem Gamblers	Low Risk Gamblers	Moderate-risk and Problem Gamblers	
Percentage of Population					
2002	10.7%	82.4% ↓	4.8% ↑	2.1%	100%
2007	13.0%	80.9%	3.6% ↓	2.5%	100%
Population Estimates (adults ≥ 19 years)					
2002	83,886	600,307	35,127	14,680	734,000
2007	113,167	613,144	28,137	18,552	773,000
Average Net Gambling Expenditure/Player²					
2002-03	\$0.00	\$385.86	\$1,622.81	\$7,612.43	\$615.88
2007-08	\$0.00	\$406.52	\$1,874.24	\$6,222.16	\$632.63
Provincial Net Revenue Estimated from Sample					
2002/02 ³	\$0	\$231,634,435	\$57,004,397	\$111,750,517	\$400,389,349
2007-08	\$0	\$249,258,145	\$52,735,599	\$115,433,496	\$417,427,240
Provincial Net Gambling Revenue (Actual)⁴					

⁴² It should be noted that the 2003 and 2007 prevalence studies include other games of chance including Sport Select, and other sports bets where data which are not considered in this study.

⁴³ As previously noted, while the 2003 adult gambling prevalence study used a survey conducted in the year 2003, the survey respondents were asked to recall their gambling activity one-year prior, that is for the period April 1, 2002- June 13 2002. While Focal Research and our study, which uses their research results, refers to '2003' as the reporting year, we in fact are referring to the previous fiscal period 2002-03 and therefore have used the respective financial and gambling expenditure data for the fiscal period April 1, 2002 to March 31, 2003.

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2002-03 ³	\$0	\$255,428,166	\$62,643,868	\$123,081,966	\$441,154,000
2007-08	\$0	\$239,834,400	\$47,567,156	\$112,322,444	\$399,724,000
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002 ³	0%	57.9%	14.2%	27.9%	100%
2007	0%	60.0%	11.9%	28.1%	100%
Margin of Error around the population estimates					
2002	±1.14%	±1.41%	±0.79%	±0.53%	n.a.
2007	±1.32%	±1.54%	±0.73%	±0.61%	n.a.
Sample Size					
2002	n=299	n=2311	n=134	n=56	n=2800
2007	n=326	n=2022	n=91	n=61	n=2500
Maximum Margin of Error within each subgroup (50% point estimate)					
2002	±5.67%	±2.04%	±8.47%	±13.10%	±1.85%
2007	±5.43%	±2.18%	±10.27%	±12.55%	±1.96%

□ Shading indicates significant differences among gambler subtypes (p<.05)

↑↓ Arrows indicate the direction of significant change over time (p <.05).

CPGI scores for moderate risk and problem gamblers have been combined for the 2003 and 2007 surveys. **All data in this table were taken from the 2007 survey final report except for population estimates and population net gambling expenditure estimates which were calculated from information presented in this table.**

² Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or losses).

³ Because the 2003 adult gambling prevalence study asked survey respondents to recall their gambling activity for the period **April 1, 2002-June 13 2002**, we assume that the relevant fiscal year data comparison would be gambling expenditures for the fiscal period April 1, 2002 to March 31, 2003.

⁴ Includes harness racing and First Nations VLT net expenditures.

Source: 1. Focal Research Consultants Ltd. 2004. **2003 Nova Scotia Adult Gambling Prevalence Study**. Prepared for Nova Scotia Office of Health Promotion. June, 2004 2. Focal Research Consultants (2008). **Nova Scotia Adult Gambling Prevalence Study. Final Report**. Prepared for Nova Scotia Health Promotion and Protection. April, 2008.

*Note #1 is confusing. Citation needs to be researched and figures audited.
In Note #3, the period of recall is incorrect.
The methodology used is questionable.*

Based on these estimates in 2002 there were an estimated 14,680 Nova Scotia adults who were moderate-risk and problem gamblers with average net gambling expenditures⁴⁴ of \$7,612.41 per gambler yielding a total estimated \$111.7 million in net gambling expenditures in 2002. By comparison, in 2007 there were an estimated 26.4% more moderate-risk and problem gamblers (18,552) with an average net expenditure of \$6,221.87 per gambler (a 18.3% decrease over 2003) contributing an estimated \$115.4 million in net gambling expenditures in 2007 (a 3.3% increase over 2003).

*Numbers need to be researched and figures audited. Some figures do not match those in Table 18.
Footnote 44: The terminology used does not match the terminology used by government.*

⁴⁴ Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e. out-of-pocket or "losses"). This figure will differ from an estimate of the average gross revenues (net wagered less prizes) per capita using government gambling statistics.

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In 2002 (based on the 2003 adult gambling prevalence study) there were an estimated 35,127 low-risk (or moderate-risk) gamblers with average net gambling expenditures of \$1,622.81 per gambler totaling about \$57.0 million in net gambling expenditures in the year 2002. By comparison, in 2007 there were nearly 20% fewer low-risk gamblers, an estimated 28,137, yet with higher average net gambling expenditures of \$1,874.24 per gambler (a 15.5% increase over 2003) for a total net gambling expenditure of \$52.7 million in 2007 (a 7.5% decrease from 2003).

Some figures do not match those in Table 18.

There were an estimated 600,307 non-problem gamblers in 2002 with average net gambling expenditures of \$385.86 per gambler for a total net gambling expenditure (predicted by the sample) of \$231.6 million in the year 2002. In contrast, in 2007 there were 2.1% more non-problem gamblers (613,144) with average net gambling expenditures of \$406.52 (a 5.3% increase over 2003) for a total net expenditure by non-problem gamblers of \$249.2 million in 2007 (a 7.8% increase over 2003).

From this analysis the average net expenditure of the moderate risk and problem gambler in 2002 was roughly 19.7 times greater than a non-problem gambler while in 2007 the ratio was 15.3 times greater.

The analysis also estimates that in 2007 roughly 28% of provincial net gambling revenues came from moderate-risk and problem gamblers, 12% from low-risk gamblers and 60% from non-problem gamblers.

Assuming that the estimated distribution of net expenditures by gambler type also applies to actual provincial net gambling revenues (total wagered less prizes) we estimate that in 2007 of the total \$399.7 million in total net gambling revenues, 613,144 non-problem gamblers contributed \$239.3 million (60%), 28,137 low-risk gamblers contributed \$47.5 million (12%) and 18,552 moderate-risk and problem gamblers contributed \$112.1 million (28%).

It should be noted that these predicted net gambling expenditure figures from the 2002 and 2007 prevalence studies will differ from the provincial government total wagered and net revenues from the Annual Gambling reports for the respective fiscal reporting years (2002-03 fiscal year for the 2003 prevalence study and 2007-08 fiscal year for the 2007 prevalence study). For example, the 2003 prevalence study predicted \$400,389,349 in net gambling expenditures for the fiscal year 2002-03, while actual net gambling revenues (as reported by government sources) were \$441,154,000 (which includes casinos, VLTs (including First Nations), ALC ticket lotteries, bingos, harness racing and charitable lotteries) for the 2002-03 fiscal year. Therefore the actual net revenue predicted by the 2003 prevalence study sample was 90.7% of actual 2002-03 net gambling revenues.

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For the 2007 prevalence study the predicted net gambling expenditures were \$417,427,240 compared to net revenues reported in the 2007-08 Annual Gambling report of \$399,724,000. Therefore the actual net revenues predicted by the 2007 prevalence study sample was 105.8% over-estimated. These two statistics – predicted net gambling expenditures (prevalence study) and net gambling revenues (government statistics) – are not necessarily comparable for two reasons. First, the predicted net gambling expenditure estimate from the prevalence studies refers to money wagered, not counting winnings or net losses. Secondly, prevalence study considers more games of chance than the government statistics, including legal games of skills, day trading and stock trading, games of skills and others.

The calculation of predicted net gambling expenditures is an important figure in the report. However, given the difference in definitions and estimates, there should be range in the numbers estimated. [e.g. currently the predicted numbers are out almost 10% in 2002-03 and 6% in 2007]

3.5 Community Attitudes Towards Gambling and Problem Gambling

Public attitudes towards gambling have been changing with the introduction of legalized gambling opportunities such as casinos and VLTs. In a 1996 survey on attitudes towards Video Lottery Terminals (VLTs) by the Nova Scotia Gaming Control Commission, 70 % of Nova Scotia citizens surveyed were opposed to video lottery, compared to 63% opposed in 1993.⁴⁵

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

In a 2005 survey by Omnifacts Bristol Research⁴⁶ Nova Scotians were asked "When you think of the number of problem gamblers in Nova Scotia, how significant an issue is problem gambling?." In the survey 69% of those Nova Scotia citizens surveyed said that problem gambling is either significant (rating of 7) to very significant (rating of 10), on a scale from 1 (not at all significant) to 10 (very significant). Roughly 36% of those surveyed said they strongly disapprove or disapprove of gambling activities being available in Nova Scotia. When asked whether they would prefer (very significantly or significantly) that VLTs were reduced or eliminated in Nova Scotia even if it meant "higher taxes for me", 54% agreed.

Approval (those who strongly approve or approve) of various gambling activities varied in this 2005 survey from:

- 20% approval for internet gambling

⁴⁵ The Nova Scotia Gaming Control Commission. 1996. *A Year in Review: Gaming in Nova Scotia*. The First Annual Report. 1995-96.

⁴⁶ Omnifacts Bristol Research. 2005. *Public Attitudes on Gaming in Nova Scotia*. February 25, 2005. ISBN # 7073-1006.

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- 25% video lottery
- 52% slot machines
- 58% table games
- 63% harness racing
- 77% office pools
- 84% Lotto 64/9 or Scratch
- 85% bingos
- 93% charity lottery

In a survey of youth conducted by Eric Meerkamper in 2006, 48% of males and 33% of females aged 15-20 said they agreed or strongly agreed with the statement: “gambling is popular with people my age.”⁴⁷

While these are not definitive societal attitudes towards gambling they suggest that public opinion is mixed towards access to more gambling opportunities.

⁴⁷ Meerkamper, Eric. 2006. *Decoding Risk - Gambling Attitudes and Behaviours Amongst Youth in Nova Scotia*. An independent research report funded by the Nova Scotia Gaming Corporation. September 27, 2006.

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4. Economic and Financial Impacts

4.1 Introduction

In this section of the report we analyze a host of economic and financial of gambling using a range of data sources and analysis methods. Our objective was to consider the impact of gambling on economic patterns or trends, including gambling expenditures, economic impacts on individual gamblers and their households, impacts on the overall economy (measured in terms of GDP impacts), impacts on businesses, and fiscal impacts on government.

From an economist's perspective gambling, like most industries or activities, has an array of economic and other impacts. The economic impacts could include:

- a net increase in economic output, including a net increase in consumption spending;
- a shift in expenditure between sectors (a gross not a net impact);
- investment spending within the gambling industries and in other industries;
- transfer payments from the industry to the community (gambling taxes, licence payments, and voluntary community contributions);
- employment within the gambling industries and in other industries; and
- consumer surplus.⁴⁸

An economic impact only implies that some shift has occurred in the pattern of economic activity. Such a shift could represent a real increase or decrease in regional income (i.e. GDP) or consumer welfare (utility or well-being); however it could represent a shift between forms of expenditure by households or shifts in economic activity between one sector and another. **The critical question** in the economic analysis of gambling as an economic activity is:

Has the introduction of legalized gambling in Nova Scotia resulted in a 'genuine net welfare' impact, a 'marginal' increase in consumer welfare (i.e. utility) or regional income (GDP) or do these impacts represent mere transfers of consumer/household expenditures out of either disposable income or savings from one expenditure category (e.g. food, recreation) to another (gambling)?

"Critical question" cited here are out of scope for the terms of reference provided in the RFP.

As the recent 2008 social and economic impact of gambling study 2008 study for Tasmania, Australia notes:

⁴⁸ The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.99

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Economists treat any shift between sectors as irrelevant in terms of **net economic impact**. From the point of view of the welfare of the population as a whole, it doesn't matter whether expenditure occurs in one sector (or on one good/service) rather than another, provided that this spread of expenditures represents the rational choices of the consumer rather than a response to compulsion (whether legal, illegal, or through addiction).⁴⁹

The concept "net economic impact" is too restrictive for determining the "impact" of gambling.

The challenge is to empirically demonstrate a net economic benefit, that is, the extent to which there has been a net increase in individual welfare (e.g. increased real income, increased enjoyment of recreation, etc.) as a result of the change, relative to the next most favourable alternative (this is called the opportunity cost). This is ultimately the desired outcome of the analysis of economic and financial impacts of gambling in Nova Scotia.

For the purpose of this study, we use the following suite of economic and financial impact indicators that were developed as part of the national SEIG framework.

- Gambling GDP
- Personal expenditures on gambling
- Household spending on gambling
- Consumer surplus
- Negative consumer surplus (problem gambler expenditures in excess of non-problem gambler)
- Distance surplus
- Government gambling revenues
- Producer surplus (gambling industry profits)
- Net business sector growth/investment
- Consumer capital gains due to gambling development
- Government defensive expenditures to mitigate gambling impacts
- Direct regulatory costs related to gambling industry
- Bad debts, costs to recover bad debts, and bankruptcies
- Abused dollars

These indicators were meant to provide the most comprehensive portrait of the economic impacts, positive and negative, statistical, perceptual and monetary, of gambling as an economic activity. We use this framework for assessing the impacts for all gambling activity in Nova Scotia. We have attempted to populate each of the above economic and financial impact indicators with data, where available.

⁴⁹ Ibid.

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4.2 Gambling GDP

Gross Domestic Product – the market value of all final goods and services produced within a country in a given period of time – is the broadest measure of the economic impact or benefit of economic activity or an economic sector in an economy. The Gross Domestic Product for an economy is calculated on either the basis of expenditure or output of households, businesses and governments combined (expenditure-based GDP), or based on the income generated by households, businesses and governments.

While there are no official GDP statistics for gambling prepared by Statistics Canada, we have estimated an expenditure-based gambling GDP using two methodological approaches: a) using personal consumption expenditures on gambling as the basis of estimating a gambling GDP, and b) **an industry-based GDP estimate** for Nova Scotia's gambling industry using other provincial gambling industry GDP statistics from Statistics Canada, as proxies for Nova Scotia. In addition, as part of this project, input-output analysis was conducted for casinos, video lottery terminals, and ALC lottery ticket sales. A separate independent I-O analysis of harness racing was completed by Canmac Economics Ltd. in September of 2008. These studies provided some game-specific gambling GDP estimates, but did not cover all games-of-chance in Nova Scotia.

This paragraph contradicts second sentence under "Gambling Industry GDP". Statistics Canada does produce Gambling GDP but it is not reported by provinces consistently because of confidentiality issues.

There is a need to define the scope of industry represented by the Gambling GDP as it may be inconsistent with Statistics Canada's definition of Gambling Industry GDP.

According to the Canadian SEIG framework,⁵⁰ it would be possible to derive a GDP estimate for the gambling sector by using the conventional GDP accounting practices. GDP, the broadest measure of economic output in an economy, would, in theory, be calculated for gambling (as an economic activity of households) as follows (all figures expressed in monetary terms):

GDP for an industry is generally calculated using a factor incomes or value-added approach.

Personal consumption expenditures (PCE) on 'games of chance' from the household expenditure survey]

plus **net government expenditures** related to gambling

plus **government gross capital investment** related to gambling

plus **business gross capital investment** (gambling industry) investments

⁵⁰ Anielski Management Inc. 2008. *The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard*. p. 67

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plus **business investments in inventories** related to the gambling industry
 plus **exports**, related to the gambling industry (if any)⁵¹
 less **imports**, related to the gambling industry (if any)

In Nova Scotia’s provincial income accounts, from which the GDP is derived, personal consumption expenditures are by far the most important contribution to GDP (although completely offset by the value of imports of goods and services which is deducted in the GDP calculus). In 2007, for example, personal consumption expenditures totaled \$23,391 million representing 70.3% of total provincial GDP, followed in importance by exports of goods and services (47.4% of GDP), net government expenditures (31.4% of GDP), and business gross capital formation (18.9% of GDP) (Table 19). The value of imports of goods and services, which are deducted in measuring the GDP, amounted to \$21,818 million or 71.6% of the value of GDP.

Table 19
Nova Scotia Gross Domestic Product, Expenditure-Based by Component, 2007

Expenditure Category	\$ millions	% of GDP
Gross Domestic Product (GDP)	33,282	100.0%
Personal expenditure on goods and services	23,391	70.3%
+ Net government current expenditures	10,466	31.4%
+ Government gross fixed capital formation	933	2.8%
+ Government investment inventories	1	0.0%
+ Business gross capital formation	6,287	18.9%
+ Business investment in inventories	212	0.6%
+ Exports of goods and services	15,760	47.4%
- Imports of goods and services	-23,818	71.6%

Source: Statistics Canada table 384-0002 - Gross Domestic Product (GDP), expenditure-based, provincial economic accounts, adjusted from chained 2002 dollars to current dollars using GDP Implicit Price Index (2002=100) for Nova Scotia.

⁵¹ It may be argued that expenditures on gambling by government and the gambling industry already implicitly includes export and import expenditures.

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Gambling GDP, Personal Expenditure-Based

To determine a genuine estimate of the contribution of gambling, as an economic activity, would require an accurate accounting of the top three most important contributors to GDP namely, personal expenditures by gamblers (all households), government current expenditures related to gambling, and business gross capital investments related to the gambling sector (the export and import categories of gambling GDP would likely be either a mute issue or difficult to calculate). Of these three key attributes of GDP, personal expenditures by households on games of chance would be the most likely figures available for estimating GDP; government expenditures directly or indirectly directed are difficult to disentangle from contribution of gambling expenditures by persons or households and estimates of gambling industry gross capital investments may be difficult to account for.

Notwithstanding these challenges, we could generate a lower-bound gambling GDP estimate using total personal expenditures on gambling given the important weight of personal consumption expenditures in Nova Scotia's GDP, capturing an estimated 70% (or more) of gambling's actual contribution to GDP. In theory, because household expenditures go directly into the calculation of the GDP, the expenditures of games of chance by households would make up a majority of a gambling GDP estimate, if one existed, albeit a conservative lower-bound estimate.

Personal consumption can include gambling occurring outside the Province of Nova Scotia; it does not include gambling undertaken by non-residents of Nova Scotia.

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Statistics Canada keeps a record of household expenditures (see next section of our report) on games-of-chance expenditures as a discrete expenditure category (separate from recreation and culture expenditures).⁵² Games-of-chance expenditures are based on self-reporting by households of net expenditures (total wagered less cash prize payouts) as part of Statistics Canada household expenditure surveys. However, as we will show in the following section on personal expenditures on gambling, expenditures on games-of-chance reported by **Statistics Canada** are considerably lower than the actual net gambling revenues reported by the Nova Scotia government. This suggests a significant under-reporting by households in the Statistics Canada survey. For example, in 2005 the total reported consumer expenditures on games-of-chance from Statistics Canada amounts to an estimated \$115.7 million while the net gambling expenditure reported by the Nova Scotia government was \$440.9 million.⁵³ This would suggest that households reported only 26.3% of what was actually spent (as reported by the provincial government) on gambling in 2005.

Methodology issues: Caution must be exercised when using a data sample; as well literature in prevalence studies indicates there is an issue about recall of gambling expenditures in surveys. [Reference: http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30] The use of government-reported figures on the amount wagered would be a relatively accurate consumption figure vs. the recollection of householders.

⁵² Statistics Canada reports personal and household expenditures on 'games of chance' (one of the data series in household and personal expenditure profiles) based on the difference between the amounts wagered by gamblers net of payouts for government controlled slot machines, VLTs, casinos, lotteries and bingos. There is also a second series of data for pari-mutuel betting that includes wagers net of payouts on horse racing.

⁵³ Some of this discrepancy can be explained by tourist gambling expenditures that are included in the Nova Scotia net gambling expenditure statistics but precisely how much tourists spent on gambling in Nova Scotia is unknown.

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Using the Statistics Canada household survey results for total household expenditures on games-of-chance would imply that in 2005/06, for example, a lower-bound gambling GDP estimate would amount to \$115.7 million or 0.21% of the provincial GDP in 2005/06 (Table 20). However, by comparison, using the provincial net gambling expenditure statistic for the same reporting year 2005/06 would have resulted in a gambling GDP figure of \$439.9 million or a figure equivalent to 1.39% of provincial GDP. Thus using current Statistics Canada expenditure data on games-of-chance would tend to underestimate the importance of gambling to the provincial GDP. However, if the total expenditures on games-of-chance were adjusted upwards based on provincial net gambling expenditures statistics this would also raise the total provincial GDP figure and thus result in a lower ratio of gambling expenditures to GDP that is more likely to be similar to the current estimates (using Statistics Canada household expenditure survey data); thus a range of 0.21% to 0.28% of the provincial GDP being driven by household spending on games-of-chance. Moreover, with gambling expenditures under-reported by households, the current provincial GDP figures are undoubtedly lower than they should be.⁵⁴

At the time of submission of this draft document to the Steering Committee, more current data was available from Statistics Canada.

Number does not match the number quoted in previous paragraph.

Use of provincial gambling expenditures would automatically account for Nova Scotian's expenditures outside the Province and non-Nova Scotian expenditures within the Province.

⁵⁴ It should be noted that the net gambling expenditure figures from the provincial financial records would also include expenditures by non-residents or out-of-province visitors which are difficult to disentangle from the total since it is not known how much visitors actually spend in Nova Scotia gaming venues.

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Table 20
Gambling GDP Estimate Based on Personal Expenditure Data (Statistics Canada and Nova Scotia Government Sources) and as a percentage of Provincial GDP.

	2001	2002	2003	2004	2005	2006	2007
1. Gambling GDP (based on Statistics Canada provincial data), \$ millions	89.3	106.1	99.8	104.3	115.7	n.a.	n.a.
Gambling GDP as % of Nova Scotia provincial GDP (based on Statistics Canada)	0.28%	0.28%	0.22%	0.22%	0.21%	n.a.	n.a.
2. Gambling GDP (using net gambling expenditures), \$ millions	418.1	441.1	427.2	452.2	440.9	416.3	399.7
Gambling GDP as % of Nova Scotia provincial GDP (using net gambling expenditures)	1.61%	1.63%	1.48%	1.50%	1.40%	1.30%	1.20%
Nova Scotia provincial GDP, \$ millions	25,905	27,082	28,864	29,979	31,566	32,029	33,282

Notes: n.a. not available

Source: Derived by Anielski Management Inc. from Statistics Canada data (CANSIM Table 379-0025), gross revenue data (Nova Scotia Government).

Should be reported as personal expenditure data as a percentage of total GDP. The variation in the two data sources is an indication of an issue with methodology. Label citations should be audited prior to use of Table 20. Data was available for 2006 and 2007 at the time that this draft document was submitted. Beginning with the 2006 SHS, Statistics Canada revised its methodology and thus revised data for 1997 to 2005. This results in incorrect numbers being used in Table 20. GDP data used for comparison should be at market not basic prices if using consumer expenditures.

The bottom line is that we currently do not have an accurate accounting of the full contribution of gambling as an economic activity of households, government and business makes to the Nova Scotia economy. However, the data we do have shows that, as a household expenditure or economic activity, expenditures on games of chance have been declining since 2001 reaching a low of 1.20% of current GDP in 2007.

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Gambling Industry GDP

Although an accurate gambling GDP estimate using household expenditure data does not exist, there is another way of accounting for the importance of gambling as an industry to provincial GDP. Statistics Canada does produce some provincial GDP gambling industries (NAICS⁵⁵ 713200) estimates, however, only for British Columbia, Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and New Brunswick (these estimates are for 2003 only). We should clarify that Statistics Canada generates monthly gambling industry GDP estimate using a value-added accounting approach measuring the net economic value of the output (revenues) less intermediate input (expenditures) to derive a net output (equivalent to profit estimates) or the GDP figure. This industry-based GDP figure differs from an estimate of GDP for gambling based on household-expenditures; the latter will likely yield a higher value since it includes both household expenditures on gambling, industry investment, and government expenditures, plus any imports and exports related to gambling, as an economic activity.

The gambling industry only includes those industries whose primary business is gambling (i.e., it excludes bars, hotels, restaurants and horse racing tracks).

The factor approach to the calculation of GDP by industry (valued-added) is not equivalent to profits estimates but also includes wages.

Confusing explanation. Imports and exports are not added. "Net output" or "profit estimates" should be worded as "value added" to be equal to GDP. (refers to "This industry-based....economic activity.")

The data used to estimate personal gambling expenditure are not based on household expenditure surveys but rather are derived using confidential data on gross gambling receipts and gross payouts or prizes that are taken from confidential provincial government data for the gambling industry. These statistics are reported on a monthly, quarterly and annual basis at a national and provincial level. Statistics Canada also reports on the distribution of net gambling expenditures according to the following categories: casinos, VLTs, bingos, and lotteries

⁵⁵ NAICS stands for the North American Industry Classification System which is used as a nomenclature for industry types by statistical agencies, including Statistics Canada.

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Notwithstanding these methodological challenges, we prepared an industry-based gambling GDP estimate for Nova Scotia using other provincial 'gambling industry' GDP figures reported by Statistics Canada in 2003. Ideally, we would have wanted a true gambling GDP estimate using the aforementioned traditional GDP calculus, however, we are limited by the unreliable Statistics Canada data on provincial personal consumption expenditures on 'games of chance',⁵⁶ unreliable gambling industry investment statistics, and inadequate government public expenditure data on government contributions to the development of the provincial gambling industry.

A source citation is required to clarify which statistics and data are in question.

To derive an estimate of gambling industries GDP (NAICS code 713200) we compared the other provincial gambling industries GDP estimates for 2002 and 2003 from Statistics Canada compared to the respective government operated and charity gambling revenues (or net gambling revenues in Nova Scotia terms) in that same year, expressed as a percentage. The provincial average GDP gambling industries/net provincial gambling revenues for 2002 was 16.0% and 15.2% in 2003. Using these national ratios or percentages we applied these to Nova Scotia's net gambling revenue figures for 2002 and 2003, and assumed the same 15.2% coefficient applied to all subsequent years 2003 to 2007 for Nova Scotia.

Before this methodology is applied, some analysis is required to determine if the structure of the Nova Scotia industry is the same and/or if net gambling revenues should be equated.

⁵⁶ We explain later in the report why we believe Statistics Canada's household expenditure survey for expenditures on 'games of chance' significantly underestimate (or households under-report) the actual gaming expenditures by households when considered actual net gaming revenues from provincial government statistics.

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The results of our analysis are shown in Table 21.

Table 21

Gambling Industry GDP, Provincial GDP and Gambling GDP as a percentage of Provincial GDP.

\$ million	2001	2002	2003	2004	2005	2006	2007
Gambling Industry GDP estimate	64.8	67.5	58.3	61.1	61.2	56.8	54.0
Provincial GDP	25,905	27,082	28,864	29,979	31,566	32,029	33,282
Gambling Industry GDP as % of Nova Scotia provincial GDP	0.25%	0.25%	0.20%	0.20%	0.19%	0.18%	0.16%

Source: Derived by Anielski Management Inc. from Statistics Canada data (CANSIM Table 379-0025), gross revenue data (Nova Scotia Government).

Statistics Canada Gambling GDP does not include industries whose primary activity is not gambling such as harness racing tracks, bars and restaurants. It was unclear if an adjustment was made for this calculation of GDP.

Note that these numbers will have been revised since the draft document was submitted, changing the calculation of the estimates.

Using this method, the results suggest that in 2007-08 gambling contributed an estimated \$54.0 million to the province's GDP of \$33,282 million or 0.16 % of the provincial GDP in 2007. The estimated gambling GDP as a share of provincial GDP has been declining since 2002, when it reached 0.28% of provincial GDP; by 2007 gambling GDP had declined to 0.18% of provincial GDP.

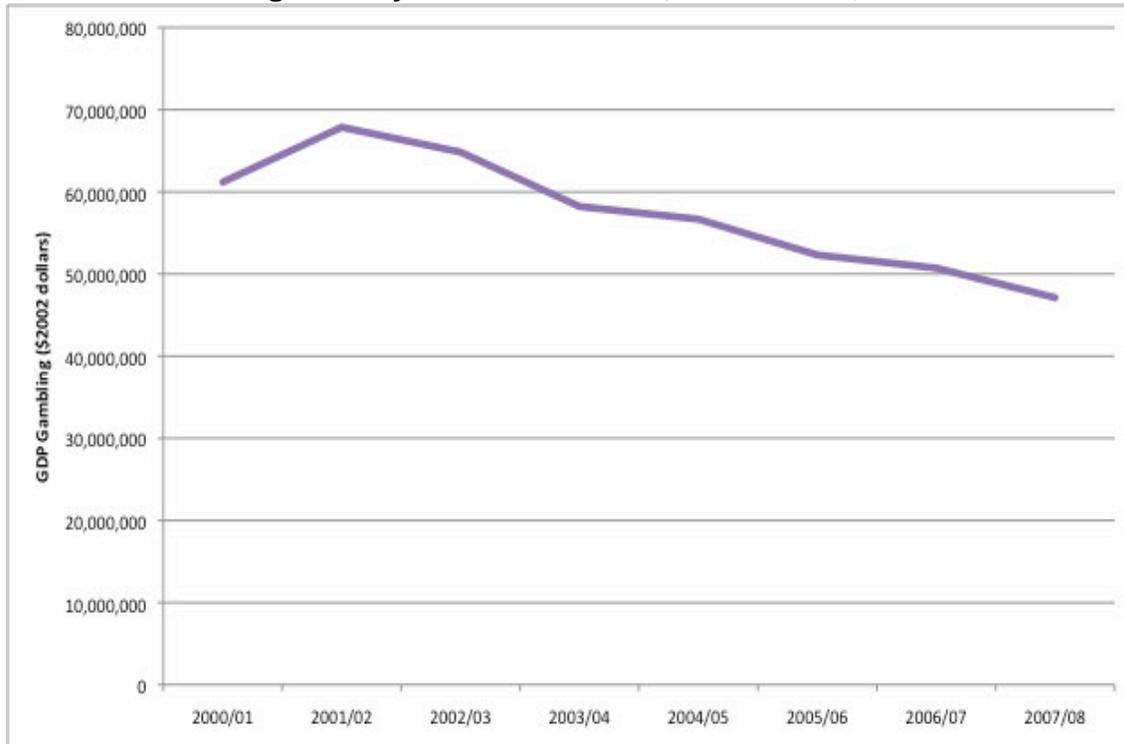
The three different estimates for GDP should suggest that there are data/methodological issues. Since the gambling industry, as defined by NAICS, is a subset of the arts, entertainment and recreation sector, the GDP estimate of that sector is an upper bound of the estimate. According to data reported in this document that was \$160 million in 2007. Data in paragraph does not match Table 21.

As per the declines in personal expenditure-based gambling GDP estimates, our estimates of real gambling industry GDP — GDP expressed in inflation-adjusted 2002 dollars — shows that it has been in steady decline (an average rate of -5.9% per year) since it's peak of \$67.8 million in 2001 reaching an estimated \$54.0 million (Figure 11). By comparison, net gambling revenues, expressed in real 2002 dollars, declined at an average rate of 2.9% per year over the same time period 2001 to 2007.

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Figure 11
Estimated Gambling Industry GDP' Nova Scotia, 2002 Dollars, 2000-01 to 2007-08.



Source: Estimated by Anielski Management Inc. based on analysis of other provincial GDP of gambling industries (NAICS 71320) figures relative to government operated gambling and charity gambling revenues then applied to Nova Scotia gambling and charity gambling revenues.

Labels are for fiscal year in this chart, however the actual data was by calendar year. Questionable methodology.

To put the estimated \$54 million contribution of the gambling sector in 2007 to provincial GDP into perspective, consider the following contributions of other industries or sectors to the Nova Scotia economy:

- Arts, entertainment and recreation sector: \$160 million (0.70% of provincial GDP)
- Dairy production: \$ 55 million (0.24% of provincial GDP)
- Waste management/remediation services: \$ 66 million (0.29% of provincial GDP)
- Religious organizations: \$ 73 million (0.32% of provincial GDP)
- Mining and oil and gas extraction: \$665 million (2.89% of provincial GDP)

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These estimates should be used with caution, since as previously noted, they only consider gambling industries relative to other industries in the economy and do not necessarily represent a complete gambling GDP, since they leave out household gambling expenditures and government expenditures related to gambling. However, there is current no official gambling GDP prepared by Statistics Canada. **Thus we must rely on this estimate** which likely underestimates the true contribution of gambling as a household and industry activity in the broader economy.

By definition an income or expenditure approach to GDP yields the same GDP measurement. If the GDP is at factor prices rather than market prices then the difference is indirect taxes and subsidies.

Input-Output GDP Estimates for Specific Games

Input-output (I-O) modeling was conducted by the Nova Scotia Department of Finance for Anielski Management Inc. for the employment, household income, GDP, and government tax revenue impacts of casinos, VLTs, and ALC lottery tickets. A separate independent I-O analysis of harness racing was completed in September 2008. The results are described in the individual game sections of this report and methodologies for the I-O analysis in Appendix 2.1-2.3.

GDP was deliberately left out of NS Finance's input output modeling for video lotteries and ticket lotteries impact as they were not reliable estimates given the model.

GDP estimates for VLT and ticket lottery gambling were rejected by the Nova Scotia Department of Finance, **in the absence of a suitably robust and stable output-GDP multiplier associated with VLTs operating expenses (as was done with GDP estimates for casinos).**

This is not the reason that the GDP estimate was rejected by the NS Department of Finance. NS Finance did not use the GDP estimate from video lotteries and ticket lotteries due to the methods in which the NS Input Output Model calculates GDP; there is nothing that indicates the multiplier would be unstable or non-robust.

The casino I-O analysis results generated **GDP estimates** for the incremental economic impact of a) the \$4.1 million Halifax Casino renovations in 2005, b) the Halifax Casino annual operating expenditures of \$35.9 million in 2004, and c) the annual operating expenditures of \$11.5 million of the Sydney Casino. The estimated benefits to provincial GDP of the combined annual operations of the Halifax and Sydney Casinos is estimated at **\$73.6 million**. Assuming these GDP benefits apply to the year **2007**, the two Nova Scotia casinos contributed an estimated 0.22% (\$73.65 million) to Nova Scotia's \$33,296 million GDP in 2007.⁵⁷ These GDP

⁵⁷ Nova Scotia's GDP in 2007, at current dollar value, was \$33,296 million from Statistics Canada CANSIM Table 384-002 - Gross Domestic Product (GDP) at basic prices, accessed November 26, 2008.

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estimates for casinos appear high relative to our previous gambling industry GDP estimate for all games of \$54.0 million. However, these estimates, as a percentage of the expenditure-based gambling GDP of \$399.7 million (2007), would suggest that casino gambling contributed 18.7% to our estimated provincial gambling GDP for all games. This seems reasonable given that casino gambling net expenditures were 21.3% of total net gambling expenditures for all games (including harness racing and First Nations VLT gambling net expenditures) in 2007.

*There was an error in the original study so the GDP numbers are incorrect. GDP should be reported as direct GDP. This statistic from Table 104 includes spinoff GDP impacts and the impact of the 2005 renovations.
It cannot be assumed that GDP estimates in 2004 would apply to 2007.
This does not match the GDP reported in Tables 20 and 21 even though it is GDP as basic prices. Carrying forward this analysis with an incorrect GDP number compounds the error in GDP estimates.
Degree of “incrementality” is not assumed by the input output model.*

The horse and harness racing I-O analysis for both direct and spinoff employment benefits generated a GDP estimate of \$16.448 million in GDP (at factor cost) for racing track operations, racing track simulcast, and racing breeder/owner impacts.

It is unclear if the GDP figure includes spinoff GDP.

The I-O GDP estimates provide a partial accounting of the GDP impacts of gambling to Nova Scotia. Future I-O analysis for the entire Nova Scotia gambling sector would seem feasible in future studies.

4.3 Personal Gambling Expenditures

Personal (Consumer) Gambling Expenditures

From an economic perspective, an economic activity can only have a net economic impact if it leads to a higher level of expenditure than would otherwise have been the case (in the absence of that expenditure option being available), either through attracting export income (e.g. through increasing international tourism), or if there is some externality that increase the efficiency of the economy.

This should not be limited to international tourism.

There are a few issues to consider when analyzing the impact of consumer spending on gambling or games-of-chance. The first consideration is whether this economic choice of expending income (either from disposable income or savings) on gambling activity represents a

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shift from one expenditure category (e.g. food or shelter) to games-of-chance (as a discrete choice) or a shift within an existing expenditure category related to gambling (e.g. recreation expenditures). If \$1 in spending on gambling represents a shift within the economy, as a whole, then the net effect on the provincial economy is likely to be 0, even if one sector (e.g. gambling industry) is more profitable than another.⁵⁸ However, if the consumer whose expenditure has shifted gets a consumer surplus (a genuine increase in his or her economic utility from the expenditure) from a new product (i.e. legalized gambling such as a VLT) then from an economic perspective that is a net gain to the economy (the concept of consumer surplus will be discussed in the following section on Consumer Surplus).

The second consideration is whether expenditures on games-of-chance were derived from disposable income or savings. It is legitimate to seek to discover where available income was derived from savings or disposable income. If expenditures are coming from disposable income this may suggest a rational choice by the consumer, however, if expenditures are derived from savings then this might be considered an irrational choice. More importantly, if expenditures are being made in the situation of negative savings rates, a serious question of irrational choice arises.

The decision to categorize spending from savings as an irrational choice needs to be justified. Savings represent delayed expenditures which at some point will be spent.

A third consideration is whether the gambling expenditures represent a rational choice by the consumer or whether they come from problem gamblers, therefore are 'irrational' choices which result in what economists call an induced (involuntary) expenditure and social harms caused by problem gambling. As we will examine later, genuine utility (improved welfare conditions) by the consumer may be realized in the case of a rational and recreational adult gambler, however, when gambling behaviour and expenditures exceed a rational or normal recreational level, that is, the consumer becomes a problem gambler, then the expenditures and thus contribution of these expenditures to genuine economic well-being are in question. A problem gambler could be said to impose two sources of externalities in the economy in the form of induced (or involuntary) expenditures (over and above what might be considered normal recreational expenditures on games-of-chance) and social harms or costs caused by the problem gambling which are imposed on society. It is thus legitimate to examine whether this induced or involuntary expenditure has come from expenditure switching from other household or personal expenditure categories or from other sectors in the economy, reduced growth in expenditures in other sectors or from reduced savings.

⁵⁸ The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.100

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The total net expenditures on gambling (e.g. losses minus winnings or total wagered less prizes) in Nova Scotia initially rose from \$311.8 million in 1996 to a peak of \$450.8 million in 2004 (also the peak in the number of VLT machines in the province) and have been in decline since reaching \$398.9 million in 2007.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

If gambling has an effect on household spending, then it should be noticeable in provincial income accounts, namely total personal expenditures on goods and services, for Nova Scotia prepared by Statistics Canada. Figure 11 shows net gambling expenditures following a similar upward trend as total personal expenditures from 1996-2002, however, between 2003-2007 the net gambling expenditures decline while total consumption expenditures continue to increase.

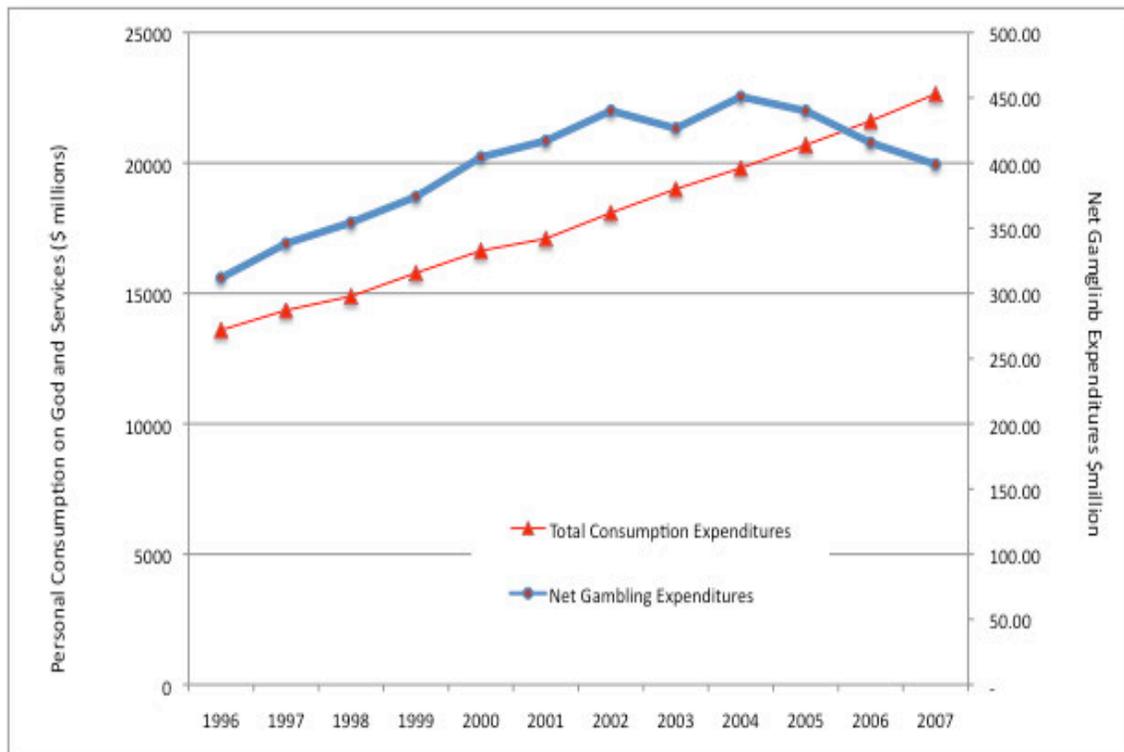
More detailed information is required to justify this statement.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document; incorrect figure notation.

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Figure 12
Total Personal Expenditures (Goods & Services) vs. Net Gambling Expenditures
1996-2007, Nova Scotia



Source: Personal consumption expenditure data is from Statistics Canada CANSIM Table 384-0002. Net gambling expenditure data is from net gambling expenditure data is from Nova Scotia Department of Environment and Labour, Alcohol and Gaming Division. Annual Gaming Reports 1996/97-20007/08.

On a per capita basis, net gambling expenditures per adult Nova Scotian increased 38.0% from an estimated \$446.30 per adult (19 years+) Nova Scotian in 1996 to a peak of \$617.93 per adult in 2004 (Table 22). Since 2004 per adult net gambling expenditures have been falling by an average -4.3% per annum reaching \$540.34 adult gambler in 2007.

The data source includes expenditures from people who do not live in Nova Scotia. It should not be interpreted as a measure of per capita Nova Scotia expenditure.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

When gambling expenditures (based on provincial net gambling revenue statistics) are related to total personal expenditures on all goods and services (as reported by Statistics Canada), gambling represents between 1.95% (2007) and 2.43% (2002) of personal expenditures (Table 22).⁵⁹ Net gambling expenditures as a percentage of personal expenditures has been declining since 2002 (Figure 12).

Misleading reference (Figure 12 reference should be Table 22).

Table 22

Note: Annotation for Table 22 is on next page.

Average Net Gambling Expenditures (net of prizes) per Adult Relative to Average Disposable Income per Adult, Nova Scotia, 2001 to 2007.

	2001	2002	2003	2004	2005	2006	2007
Average net gambling expenditure (gross wagered net of prize money) per N.S. adult. ¹	\$584.57	\$611.87	\$587.92	\$617.93	\$600.39	\$564.64	\$540.34
Net gambling expenditure as % of total personal expenditure on consumer goods and services. ³	2.44%	2.43%	2.25%	2.28%	2.13%	1.92%	1.76%
Average disposable income per N.S. adult	\$27,178	\$27,715	\$28,223	\$28,938	\$29,990	\$31,158	n.a.
Average net gambling expenditure as % of disposable income. ²	2.30%	2.36%	2.22%	2.27%	2.13%	1.94%	n.a.
Average savings per N.S. adult	\$ 558	\$79	-\$377	-\$567	-\$ 852	- 946	n.a.

Notes: n.a. data not available. Average net gambling expenditures per Nova Scotia adult are derived from financial statistics from the Alcohol and Gaming Division Annual Reports (2001/02 to 2007/08). Population statistics are from Statistics Canada CANSIM Table 051-0001, accessed October 23, 2008.

Sources: 1. Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2001-2008; 2. Statistics Canada Table 384-0012 - Sources and disposition of personal income, provincial economic accounts. 3. Statistics Canada Table 384-0002 - Gross Domestic Product (GDP), expenditure-based, provincial economic accounts

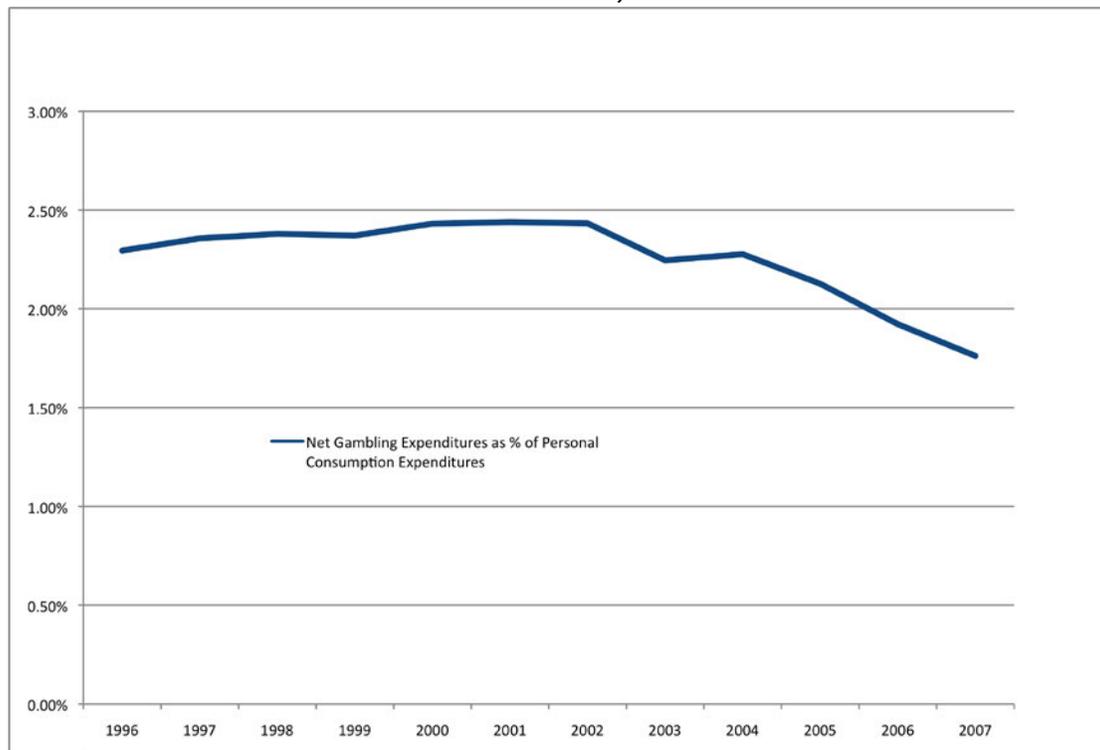
⁵⁹ The net gambling expenditures are based on Nova Scotia government gaming report statistics (based on net gambling revenues) and are not directly comparable to 'games of chance' expenditures reported by Statistics Canada in the Nova Scotia household expenditure surveys. This discrepancy is examined in more detail later in our report.

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Average net gambling expenditure as a percentage of average disposable income is incorrect . The Statistics Canada tables do not present the information on a per capita basis. Since data was manipulated it should have been noted. It is unclear what is meant by “net gambling expenditures.”

Figure 13
Net Gambling Expenditures as a Percentage of Personal Expenditures on Consumer Goods and Services, 1996-2007.



Sources: 1. Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 1996-2008; 2. Statistics Canada Table 384-0012 - Sources and disposition of personal income, provincial economic accounts. 3. Statistics Canada Table Table 384-0002 - Gross Domestic Product (GDP), expenditure-based, provincial economic accounts

It is difficult to determine whether money spent on games of chance came out of disposable income or savings, without asking gamblers directly as part of a prevalence study or household expenditure survey. We did, however, analyze the trends in disposable income, gambling expenditures, as a percentage of disposable income, and changes in savings rates by Nova Scotians to determine if there was any possible statistical relationship. For example, the

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average net gambling expenditures per adult as a percentage of disposable income (after taxes) per adult has remained relatively constant between 2001 and 2006 with a high of 2.36% in 2002 and a low of 1.94% in 2006 (Table 22). This shows that gambling has historically represented a small share of disposable income.

Data issues with Table 22 affect data in the text.

Second, as Nova Scotia gambling expenditures rose steadily from 1996 (\$311.8 million) to its peak in 2004 (\$452.2 million), there was a decline in personal savings falling from \$853 million in 1996 to a negative savings of -\$884 million in 2006 (see Figure 13)⁶⁰. Expressed on a per adult basis, the average savings rate per Nova Scotia adult in 1996 was \$1,220, which represented a savings rate of 8.5% of disposable income. By 2004, the average savings rate had declined to a negative savings rate of $-\$726$ per adult or $-(2.7\%)$ of disposable income. By 2006 savings rates had fallen even further to a low of $-\$1,199$ per adult or $-(4.1\%)$ of disposable income. A negative savings rate suggests that the average Nova Scotian is debt financing his or her economic livelihood. Nova Scotians continue to spend money on games of chance while savings rates have declined; this does not imply a causal relationship between the two.

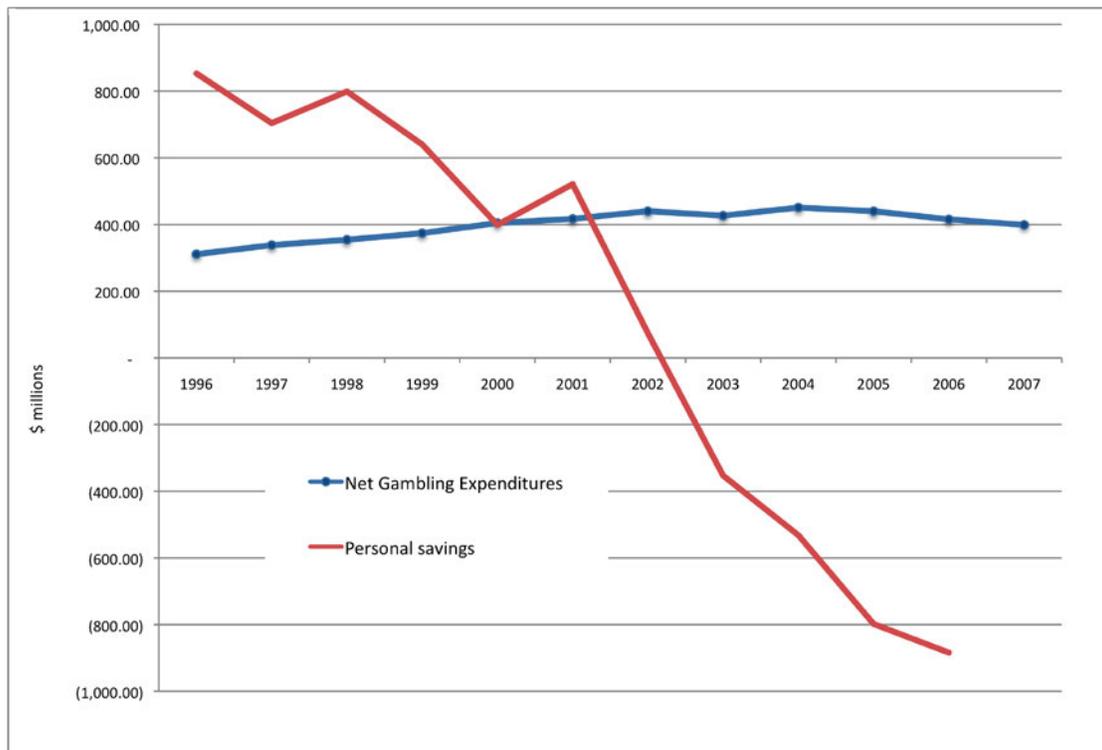
*Numbers are improperly expressed (misuse of bracket and negative sign).
Correlation between Figure 13 and text could be misleading.*

⁶⁰ The contrasting of net gambling expenditures and personal savings provides an impressionistic image of these two statistics but does not imply causality or a statistical relationship.

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Figure 14
Net Gambling Expenditures vs. Personal Savings,
1996- 2007



Source: 1. Personal savings data for Nova Scotia is from Statistics Canada (CANSIM) Table 384-0012 - Sources and disposition of personal income, provincial economic accounts. 2. Net gambling expenditure data is from Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2001/2002 to 2007/2008.

Household Gambling Expenditures

Note: Annotation for this section is on next page.

When gambling expenditures are examined on a household basis, the average net gambling expenditures per household increased 5.6% from \$1,160 per household in 2001 to \$1,226 per household in 2004 (see Table 23). Since 2004 net gambling expenditures per household have fallen reaching \$1,061 per household in 2007. Compared to 2001 the average net expenditures on gambling per household was 8.6% lower than in 2007. Table 23 also compares Statistics Canada household expenditure survey data for expenditures on 'games of chance' (losses net of prizes or winnings). The discrepancy between the net expenditures per household figures

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derived from provincial gambling financial statistics and those reported by [Statistics Canada](#) in the household survey data is readily apparent.⁶¹

This data should not be interpreted as spending per Nova Scotia household as it includes expenditures from people who live outside of Nova Scotia.

Literature in prevalence studies indicates that there is an issue about recall of gambling expenditures in surveys. The comments below would pertain to the household survey which is self-reported data on annual expenditures.

"Gambling Expenditures

In most studies based on the use of self-reported survey, estimates of gambling expenditure are highly inaccurate frequently accounting for 60% or less of actual gambling revenues (Azmiar 2005). This is largely due to the nature of gambling expenditures and the tendency for gambling prevalence surveys to focus on gathering general monthly estimates of the amount spent (e.g. 'what' people think they spend) rather than referencing to actual behaviours that may be in memory (e.g. recall of amount spent last time played).

In a study examining self-reporting of household purchases in Nova Scotia, individuals were found to have inherently more difficulty in remembering and reporting gambling expenditures than accurately recalling large consumer purchases such as televisions or appliances (MacDonald, McMullan & Perrier, 2004). This can be attributed to the repetitive nature of the activity, variations in expenditures depending on game outcomes, variations in frequency of involvement across respondents and the relatively smaller amounts associated with per purchase expenditure." http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30

⁶¹ During our analysis we discovered a significant discrepancy between two Statistics Canada data sources for gambling expenditures between the games-of-chance expenditures from the annual household expenditure survey and gambling expenditures per capita (adults 18+ years) found in Statistics Canada's *Perspectives on Labour and Income* gambling statistics publications (Statistics Canada Catalogue no. 75-001-XIE). For example, for 2005, the household expenditure survey for Nova Scotia estimates average \$320 per household on games-of-chance (i.e. all gambling expenditures) which would equate to a total gambling expenditure for all Nova Scotia households of \$119.5 million (based on 373,480 households in 2005) while the "Gambling" publication (Cat. No. 75-001) reports average per capita (adults 18 years +) of \$485 which would equate to a total gambling expenditure for all Nova Scotia of \$356.1 million (note that actual gambling expenditures based on net gambling revenues reported by the Nova Scotia Gaming Corporation for 2005/06 was \$440.9 million, including harness racing and First Nations VLTs). We were unable to resolve the discrepancies between the two StatsCan sources, however, which may be a result of two different data sources; the household expenditure survey and the National Accounts, Public Institutions (Financial management statistics) which is the source of the per capita (adult) gambling expenditures (these statistics are most likely drawn from Nova Scotia public accounts data). This has consequences to how we estimate gambling GDP; the higher per capita gambling expenditures derived from Statistics Canada's Public Institutions accounts will generate gambling GDP estimates closer to those estimated using Nova Scotia Gaming Corporation financial statistics for net gambling revenues.

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Table 23

Note: Annotation for Table 23 continues on next page.

Average Household Net Gambling Expenditures (net of prizes) based on Nova Scotia Government Gambling Financial Statistics versus Average Household Gambling Expenditure reported by Statistics Canada for Nova Scotia (Statistics Canada figures are in brackets), 2001 to 2007.

	2001	2002	2003	2004	2005	2006	2007
Casinos, VLTs and slots	\$735 (\$75)	\$775 (\$102)	\$734 (\$91)	\$771 (\$85)	\$716 (\$186)	\$639 (\$86)	\$599 (n.a.)
Bingos	\$64 (\$121)	\$59 (\$155)	\$50 (\$98)	\$48 (\$92)	\$49 (\$69)	\$45 (\$63)	\$40 (n.a.)
Harness racing (horse racing)	\$12 (n.a.)	\$13 (n.a.)	\$11 (n.a.)	\$13 (n.a.)	\$12 (n.a.)	\$10 (n.a.)	\$10 (n.a.)
ALC Ticket lotteries	\$271 (\$138)	\$273 (\$158)	\$252 (\$176)	\$247 (\$150)	\$251 (\$173)	\$253 (\$158)	\$238 (n.a.)
Charitable lotteries	\$19 (\$24)	\$20 (\$31)	\$25 (\$28)	\$38 (\$39)	\$42 (\$35)	\$46 (\$34)	\$40 (n.a.)
On-line gambling	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
First Nations VLTs	\$58	\$78	\$96	\$109	\$114	\$115	\$127
All Games	\$1,160 (\$248)	\$1,218 (\$294)	\$1,168 (\$276)	\$1,226 (\$288)	\$1,184 (\$320)	\$1,109 (\$251)	\$1,061 (n.a.)
Number of Nova Scotia households	360,020	363,385	366,750	370,115	373,480	376,845	376,481

Notes: n.a.: not available. Italicized household numbers are estimated between census periods.

Source: Based on Statistics Canada household expenditure data CANSIM Table 62F0032 and Gross Revenue (total wagered less prizes) data from Nova Scotia Government, Alcohol and Gaming Authority, Annual Gaming Reports.

Number of private dwelling households are from Statistics Canada 2001 and 2006 Census; other years are estimated. Harness racing data is from The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. First Nations data for 2001 to 2006 is from Ernest Walker, Office of Aboriginal Affairs, History of First Nation Gaming in Nova Scotia, Background Document. August 2007; 2007 First Nations data is from Nancy McInnis-Leek (Office of Aboriginal Affairs).

Numbers in this table do not correlate with the various data as sourced.

Data was available for 2006 and 2007 at the time that this draft document was submitted.

Beginning with the 2006 SHS, Statistics Canada revised its methodology and thus revised data for 1997 to 2005. This results in incorrect numbers being used in Table 20.

GDP data used for comparison should be at market not basic prices if using consumer expenditures.

CANSIM table 62F00032 does not exist.

Citation should reference the source of the data not the name of a staff person who provided it; the data is neither collected, verified, nor generated by the Office of Aboriginal Affairs.

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The Nova Scotia government gambling statistics include expenditures made by people living outside of Nova Scotia so it would not be strictly comparable as the Statistics Canada data only includes Nova Scotians.

First Nation VLTs are inappropriately treated in isolation of other venues as regards inclusion/exclusion in statistics and tables given in this draft document.

Table 24 shows the ratio of both figures showing that the implied average gambling household expenditures, using provincial gambling financial statistics, are between 3.7 times (in 2006) to 4.68 times (in 2007) the games of chance net expenditures reported by Statistics Canada for the average Nova Scotia household. Therefore, Statistics Canada surveys appear to be underreporting actual average household expenditures, which implies that households themselves are not reporting or able to report their actual gambling expenditures, net of prizes. This discrepancy also may be due to several additional factors including: a) under-reporting of gambling expenditures (net of prizes) by households in the Statistics Canada household survey or b) over estimation of average wagered figures per Nova Scotia VLT adult gambler given that our analysis is based on total wagered statistics (which include non-resident expenditures).

Methodology issues: caution must be exercised when using a data sample; as well, literature in prevalence studies indicates there is an issue about recall of gambling expenditures in surveys. [Reference: http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30]

Table 24
Ratio of Average Household Gambling Expenditures (net of prizes) based on Nova Scotia Government versus Average Household Gambling Expenditure reported by Statistics Canada for Nova Scotia, 2001 to 2007

	2001	2002	2003	2004	2005	2006	2007
Casinos, VLTs and slots	9.80	7.60	8.07	9.07	3.85	7.43	n.a.
Bingos	0.53	0.38	0.51	0.52	0.70	0.72	n.a.
Harness racing (horse racing)	n.a.						
ALC Ticket lotteries	1.97	1.73	1.43	1.65	1.45	1.60	n.a.
Charitable lotteries	0.80	0.64	0.91	0.98	1.21	1.37	n.a.
On-line gambling	n.a.						
All Games	4.68	4.14	4.23	4.26	3.70	4.42	n.a.

Notes: n.a.: not available.

Source: Based on Statistics Canada household expenditure data CANSIM Table 62F0032 and "Gross Revenue" (total wagered less prizes) data from Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08.

CANSIM Table 62F0032 does not exist as cited.

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Table 25 puts gambling expenditures in the context of other Nova Scotia household expenditures. In 2005 Statistics Canada reported that the average \$320 per household games-of-chance expenditures (\$119.8 million for all Nova Scotia households) represented a mere 0.6% of total household expenditures. To put this into context, total expenditures on recreation goods and services was \$1,164 million in 2005 or 5.7% of total household expenditures. In a similar study for Tasmania (Australia), gambling expenditures represented 2.4% of total consumption expenditures in 2005, which is described as a small share of consumption expenditures. Even if Statistics Canada figures are grossly underestimating actual household expenditures on gambling (using Nova Scotia government net gambling revenues figures would suggest household gambling expenditures were 2.2% of 2005 total consumption expenditures⁶²), gambling expenditures are unlikely to have a significant impact on overall consumer spending and thus the aggregate Nova Scotia economy. However, it is possible that gambling expenditure may have an impact on other categories of spending (e.g. recreation expenditures).

*More current data was available at the time the draft document was submitted.
 Figures provided in Footnote 62 do not match Table 23.
 No need for this comparison, as the data sources and calculations may differ.*

Table 25
Average Nova Scotia Household Expenditures, 2005 (\$/household)

More current data was available at the time the draft document was submitted.

Expenditure Category	\$/household 2005	% of total expenditures	% change between 2001 and 2005
Total expenditure	56,105		15.5%
Food	6,403	11.4%	14.2%
Shelter	10,097	18.0%	13.3%
Principal accommodation	9,465	16.9%	11.9%
Rented living quarters	1,744	3.1%	9.9%
Owned living quarters	5,295	9.4%	10.5%

⁶² If we were to use the net gambling expenditures per household or per capita, which are derived from Nova Scotia government-reported net gambling revenue statistics (which are 3.9 times higher than Statistics Canada figure), this would suggest that the average Nova Scotia household spent \$1,185 on all 'games-of chance' in 2005 which is the equivalent of 18.5% of what the average household spent on food (\$6,403 per household), 56.8% of what households spent on clothing (\$2,087 per household), and 70.0% of expenditures on private health care.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

Water, fuel and electricity for principal accommodation	2,427	4.3%	16.9%
Other accommodation	632	1.1%	37.6%
Household operation	3,081	5.5%	16.0%
Communications	1,299	2.3%	23.0%
Child care expenses	346	0.6%	7.2%
Pet expenses	449	0.8%	29.9%
Other	987	1.8%	5.9%
Household furnishings and equipment	1,607	2.9%	5.9%
Clothing	2,087	3.7%	3.8%
Transportation	7,922	14.1%	13.9%
Private transportation	7,377	13.1%	12.7%
Public transportation	545	1.0%	33.1%
Health care	1,693	3.0%	25.2%
Personal care	965	1.7%	11.4%
Recreation	3,219	5.7%	9.6%
Reading materials and other printed matter	263	0.5%	1.2%
Education	1,012	1.8%	30.1%
Tobacco products and alcoholic beverages	1,468	2.6%	18.4%
Tobacco products and smokers' supplies	829	1.5%	20.5%
Alcoholic beverages	640	1.1%	16.0%
Games of chance (net)	320	0.6%	29.5%
Miscellaneous expenditures	901	1.6%	29.4%
Total current consumption	41,038	73.1%	13.9%
Personal taxes	10,207	18.2%	17.6%
Personal insurance payments and pension contributions	3,388	6.0%	21.1%
Gifts of money and contributions	1,471	2.6%	39.6%

Source: Statistics Canada. Consumer Spending Survey. Catalogue Number 62-002-XWE.

Improperly cited catalogue 62-002 titled Consumer Spending Survey does not exist.

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Analyzing trends in personal expenditures, Statistics Canada household survey statistics for the period 2001 to 2005 shows that expenditures on games-of-chance rose 29.5%⁶³ in this period while recreation expenditures rose 9.6%, tobacco and alcohol expenditures rose 18.4% and total personal expenditures rose 15.5%. It is not possible to conclude that rising gambling expenditures has resulted in decreases in recreation spending; if anything recreational spending has also been rising though much less than gambling expenditures (see Figure 15). The possible relationship between changes in gambling expenditures and other household expenditure categories is difficult to discern without the use of regression analysis to model the trend of each category of expenditure and to test whether the level of gambling expenditure has a statistically significant impact on it.⁶⁴

Footnote 63: revised data available at the time was not used.

Revised data available at the time was not used. Calculations will be incorrect.

⁶³ We note that while Statistics Canada 'games of chance' expenditure data suggests a 29.5% increase between 2001 and 2005, using provincial government reported net gambling expenditures data suggests that gambling expenditures by all Nova Scotia households only rose 5.5% comparing 2005 to 2001. Using net gambling expenditure data would suggest that recreation expenditures by households rose faster than gambling expenditures; indeed, as previously noted net gambling expenditures have been declining since 2005.

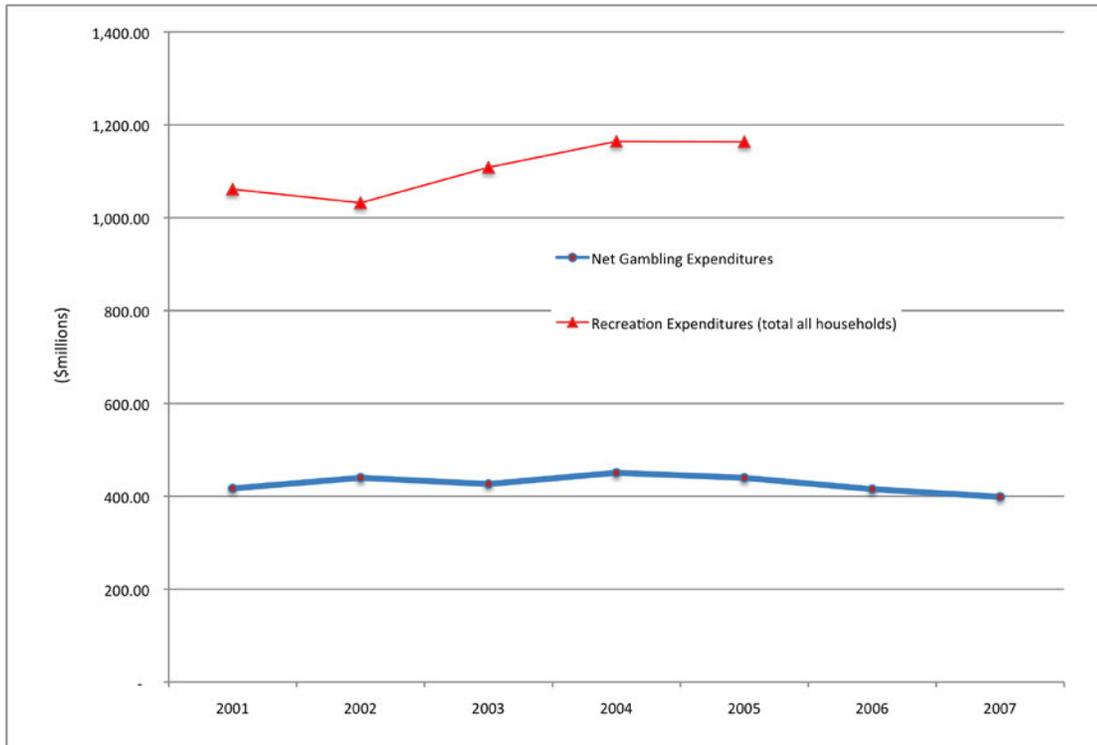
⁶⁴ While desirable, this type of expenditure analysis was beyond the scope of this study.

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Figure 15
Household Recreation Expenditures vs. Gambling Expenditures

Data from two different sources is used: survey data from NS household expenditure, and actual data of expenditures made in NS (includes expenditures made by people resident outside of NS).



Source: Statistics Canada. [Consumer Spending Survey, Catalogue Number 62-002-XWE](#). Net gambling expenditure data is from Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2001-2008

Source does not exist as cited. Revised recreational expenditures not used.

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What can we conclude? We would concur with the conclusion of the 2008 Tasmanian study that gambling, based on the average household, does not appear to have a net economic impact on Nova Scotia from household expenditure on gambling. Nor is there clear evidence that other household expenditure categories have suffered a net or significant loss as a result of gambling expenditures, particularly recreation expenditures (which actually have increased over the period 2001 to 2007). However, this does not suggest that there are not individual gamblers and their households who because of problem gambling behaviour experienced significant shifts in household expenditures or significant constraints on disposable income or savings. These problem gambling economic impacts are dealt with separately in our analysis. Nor does our analysis suggest that there are no individual businesses in the Nova Scotia economy, which have suffered negative effects from shifts in customer spending who choose to spend more money on gambling.

*The Tasmanian study cannot be used to draw conclusions about Nova Scotia.
Text does not match data in Figure 15.*

Distribution of Gambling Expenditures by Household Income

Do some households spend more of their household income on gambling than other households? If poorer households (low income) spend disproportionately more of their disposable income on gambling than wealthier households, this would be an indicator that gambling is regressive in nature. The revenue that is lost by lower-income gamblers is likely to have a greater impact on their ability to meet basic needs than that lost by wealthier gamblers. This, in turn, has impacts for society as a whole. If expenditures are unequally distributed, so likely are the impacts of problem gambling.

Using Statistics Canada Nova Scotia average household income data and average household expenditures on gambling (all games of chance) we assessed the distribution of gambling expenditures as a percentage of average household income by five household income quintiles. Table 26 shows lower income groups (<\$22,344 average household income) spent disproportionately more of their income on games of chance (1.17% of average household income) between 2003 and 2005 than did the higher income groups (e.g. \$81,225+) who spent 0.50% of average household income. This would suggest that gambling has regressive qualities and should be of concern in Nova Scotia from a social equity perspective.

2007 data was available; underlying data in prior years had been revised – these figures may not be correct.

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Table 26
Average household expenditures on games of chance as % of average household income by quintile income group (figures in %)

	2003	2004	2005	2006	2007
Lowest quintile, 0-\$22,344	0.98	0.92	1.17	n.a.	n.a.
Second quintile (5), \$22,355-36,842)	0.91	1.27	0.84	n.a.	n.a.
Third quintile (5); \$36,843-55,000	0.56	0.79	0.72	n.a.	n.a.
Fourth quintile (5); \$55,001-81,224	0.53	0.42	0.36	n.a.	n.a.
Highest quintile (5), \$81,225+	0.28	0.26	0.50	n.a.	n.a.
All Households	0.50	0.53	0.57	n.a.	n.a.

Notes: n.a.: not available.

Source: Based on Statistics Canada household expenditure data [CANSIM Table 62F0032](#)

*Data was available for 2006 and 2007 in December 2008; Data revisions may not have been captured.
 Improperly cited. CANSIM table 62F0032 does not exist.*

Some economists have argued that gambling revenues collected by governments is a form of implicit taxation, since government's license, regulate and collect revenues from the majority of legal gambling activity. From every dollar wagered by a Nova Scotia household, a portion is guaranteed to be returned to the provincial government, depending on the odds of winning for each game. A tax, whether explicit (e.g. income tax) or implicit, is considered progressive if the rate of taxation as a percentage of income is equitably distributed across all income groups. A tax is considered regressive if one income group pays more in taxes as a proportion of their average income as another income group. A Canadian study by Vaillancourt and Roy (2000) for the Canadian Tax Foundation, determined that the implicit tax on gambling for all forms of gambling in Canada for the period 1996 was regressive; that is lower income households (<\$20,000 per year) on average spent a greater portion of their income (1.5%) on gambling than other income groups (e.g. \$80,000+ income households gambling/income ratio was 0.4%). This uneven distribution of gambling expenditures by households is a sign in economics of the regressive nature of expenditure.

Incorrect definition of a progressive tax system.

We also compared trends in net gambling expenditures with the Nova Scotia Gini coefficient, the most commonly used measure of income inequality. The Gini coefficient is an index which ranges from 0 (minimum income inequality across all income groups) to 1.00 (maximum income

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inequality); that is, the higher the Gini coefficient numerically the greater the income inequality in a society.⁶⁵ Using a Gini coefficient for after-tax family income for Nova Scotia compared with changes in net gambling expenditures (Figure 15) shows that income inequality has followed a similar path as net gambling expenditure growing from 0.364 in 1996 to a peak of 0.376 in 2002 and then declining slightly to 0.374 in 2006. We calculated a R-square of 0.8242 when correlating net gambling expenditures and the Gini index suggesting a relatively strong statistical fit between the two variables. This graph does not imply causality between income inequality and net gambling expenditures (i.e. that one factor drives the other), per se, but does provide an impressionistic image that as gambling expenditures increased (or decreased) so to did income inequality increase (or decrease).

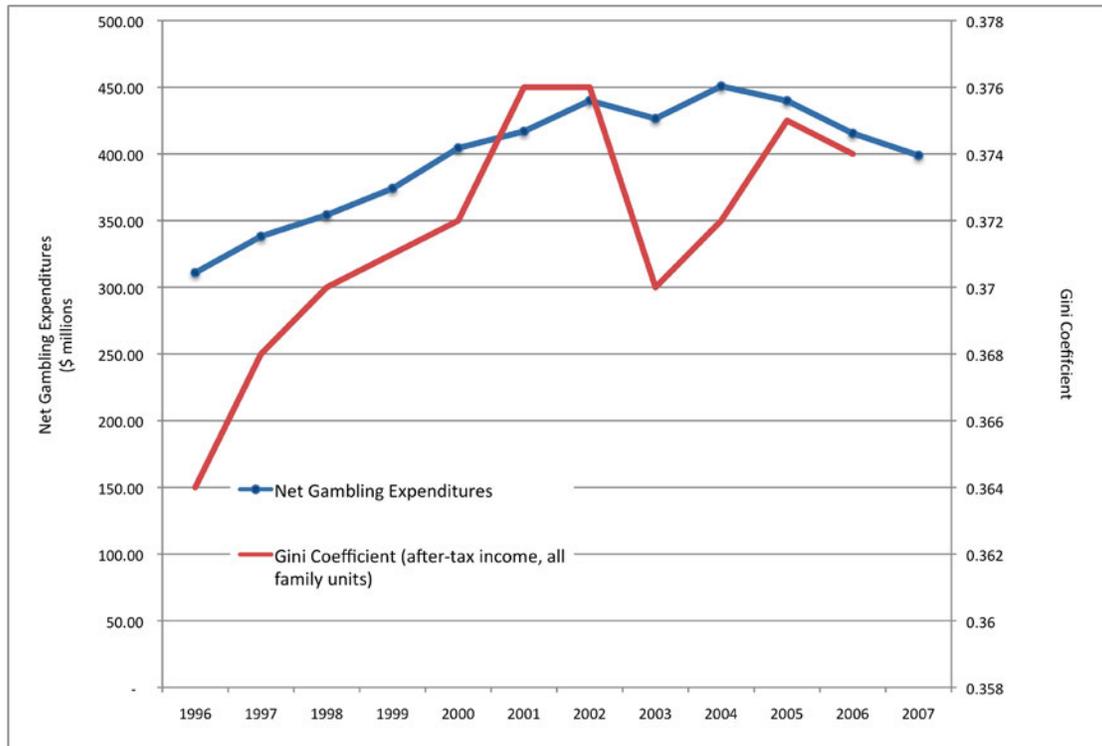
*While the conclusions of regressivity are supported by table 25, the results related to the Gini coefficient should be treated with more caution.
It is unclear whether it was an “R-square” or “correlation coefficient” that was calculated. This relationship could be explained by a time trend also driving these variables.
Given the small proportion that gambling represents in terms of household income, it does not seem reasonable that there would be such attributability to gambling for income equality.*

⁶⁵ According to Statistics Canada, the Gini coefficient is a number between zero and one that measures the relative degree of inequality in the distribution of income. The coefficient would register zero (minimum inequality) for a population in which each member received exactly the same income and it would register a coefficient of one (maximum inequality) if one member received all the income and the rest received none. Even though a single Gini coefficient value has no simple interpretation, comparisons of the level over time or between populations are very straightforward: the higher the coefficient, the higher the inequality of the distribution, and vice versa.

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Figure 16
Net Gambling Expenditures vs. Gini Coefficient (After-Tax Family Income Inequality),
Nova Scotia, 1996-2007.



Source: Gini coefficient data for after-tax income, all family units for Nova Scotia is from Statistics Canada, CANSIM, Table 202-0705 - Gini coefficients of market, total and after-tax income, by economic family type. Net gambling expenditure data is from Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2001-2008.

Data is based on an economic family unit. Figures do not correspond to AGD. While the conclusions of regressivity are supported by Table 25, the results related to the Gini coefficient should be treated with more caution. It is unclear whether it was an "R-square" or "correlation coefficient" that was calculated. This relationship could be explained by a time trend also driving these variables. Given the small proportion that gambling represents in terms of household income, it does not seem reasonable that there would be such attributability to gambling for income equality.

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Net Gambling Expenditures by Gambler Subtype

Table 27 shows estimates of the distribution of average net gambling expenditures per gambler by CPGI gambler subtype, using the 2003 and 2007 adult gambling prevalence studies. Assuming the same relative distribution of estimated net gambling expenditures from the prevalence studies by gambler subtype we then **predict** or estimate the distribution of net revenues from gambling (as per government financial statistics) by gambler subtype, both in total dollars and on a dollar per gambler basis.

The term “predict” is incorrect, it should be “estimate”.

Table 27
Net Gambling Expenditures by Gambler Subtype Predicted by 2002 and 2007 Adult Gambling Prevalence Studies and Estimated based on Net Revenues from Gambling

Survey Year	Gambler Subtype				Total Adults
	Non-Gamblers	Non-Problem Gamblers	Low Risk Gamblers	Moderate-risk and Problem Gamblers	
Average Net Gambling Expenditure per Gambler ² (all games), based on prevalence studies					
2002	\$0	\$427.07	\$1,787.47	\$6,981.41	\$646.72
2007	\$0	\$457.58	\$2,244.78	\$6,461.14	\$700.11
Provincial Net Revenue Estimated from Sample					
2002-03	\$0	\$258,724,131	\$62,788,459	\$102,487,099	\$423,999,688
2007-08	\$0	\$286,081,250	\$63,161,280	\$121,863,530	\$470,616,033
Provincial Net Gambling Revenue (Actual)					
2002-03	\$0	\$255,428,166	\$62,643,868	\$123,081,966	\$441,154,000
2007-08	\$0	\$239,834,400	\$47,567,156	\$112,322,444	\$399,724,000
Distribution of Gambling Expenditures by Gambler					
2002	0%	57.8%	14.3%	28.0%	100.0%
2007	0%	60.0%	11.9%	28.1%	100.0%

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated average net gambling expenditures by gambler subtype for 2007 are equivalent to those in the 2007 Adult Gambling Prevalence Study.

Note: ² Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or losses).

Data in Table 27 do not consistently match Footnote 66, Appendix 4-Table 2 or 2007 NS Prevalence Study. Reference to “provincial net gambling revenue (actual)” in table labels may lead to an incorrect interpretation. It is not clear how these figures are calculated using the NS Prevalence Studies. Information is not reflective of NS Prevalence Studies as regards definitions and inclusions.

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The results show that in 2007 an estimated 18,861 moderate risk and problem gamblers spent an estimated \$6,461.14 per gambler, an estimated 28,137 low risk gamblers spent an average of \$2,244.78 per gambler, and an estimated 625,202 non-problem gamblers spent an average of \$457.58 per non-problem gambler. The average estimated expenditures per all adult gamblers is estimated at \$700.11 per gambler.⁶⁶

Footnote 66: Needs elaboration as to why estimates differ.

In 2007, the average low-risk gambler spent on average 4.9 times more than the average non-problem gambler while the moderate risk and problem gambler spent 14.1 times more on average than the non-problem gambler. The analysis also suggests that in 2007 moderate risk and problem gamblers contributed an estimated \$112,088,989 or 28.1% of the total provincial net revenues from gambling (28.0% in 2002), low risk gamblers contributed \$47,468,291 or 11.9% of net gambling revenue (14.3% in 2002) and non-problem gamblers contributed \$239,335,919 or 60.0% of net gambling revenue (57.8% in 2003).

*Figures in text cannot be found in Table 27.
Year comparison is not consistent.*

To put these expenditures into perspective, the gambling expenditures by an average moderate risk or problem gambler of \$6,461 in 2007 represented 11.5% of the average Nova Scotia household total spending (\$56,105) in 2005 (or more than two times what the average household spends on household operations costs).

Year comparison is not consistent.

⁶⁶ Our estimates differ somewhat from the 2007 Adult Gambling Prevalence Study conducted by Focal Research due to slightly different methodological protocols. For example, Focal Research estimated that those gamblers classified as Non-Problem gamblers spent \$458 yearly (our estimate is \$406 per year), Moderate-risk gamblers spent five times that amount (\$2,256 yearly), whereas we estimated low-risk spent \$1,874 per year, and Moderate to Severe Problem gamblers spent \$6,414 yearly (compared to our estimate of \$6,222 per year).

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4.4 Consumer Surplus

Consumer surplus is an important economic impact from gambling in conventional cost-benefit analysis. It is a measure of the utility (satisfaction) consumers derive from the consumption of a good or service;⁶⁷ the difference between the amount which the consumer pays for a good or service, and the maximum amount which the consumer would have been prepared to pay. Economists to measure the societal benefits to consumers from lower prices of a good or service often use consumer surplus.⁶⁸ In the case of gambling, the consumer surplus associated with a game of chance would, in theory, be the additional amount of money a gambler would be willing to pay for greater access to gambling opportunities.

Footnote 68: What is “stand tax revenues”?

Currently, there are no consumer surplus estimates for gambling for Nova Scotia or other Canadian provinces.⁶⁹ That is, there are no demand functions for gambling that would require determining the price-quantity relationship for each game of chance at various prices. Estimating consumer surplus for gambling would require conducting surveys of adult gamblers as to their willingness to pay more than the current price for available games of chance.

In a Canadian study, Vaillancourt and Roy (2000) estimated consumer surplus for 1990 and 1995 using the Australia Productivity Commission (APC) consumer surplus estimates for Australia for 1999, assuming Australian gambling demand functions are the same as Canada's. The APC estimate yielded a low estimate of consumer surplus equivalent to 37% of net gambling revenue (revenues after prize payouts) and a high estimate of 66% of net gambling revenue.⁷⁰ A range of low and high estimates for the consumer surplus of gambling are made based on an assumption that a proportion of the net revenue from gambling represents the price or consumer surplus enjoyed by gamblers. Using the Australian low and high consumer surplus

⁶⁷ The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.103

⁶⁸ According to Vaillancourt and Roy (2000) other societal benefits considered in measuring the economic benefits of gambling would include government gambling revenue and additional stand tax revenues that are associated with gambling activity. (Vaillancourt, Francois and Alexandre Roy. 2000. *Gambling and Governments in Canada, 1969-1998: How Much? Who Plays? What Payoff?* Special Studies in Taxation and Public Finance. Canadian Tax Foundation. p. 45

⁶⁹ Vaillancourt and Roy (2000), p. 45. Economist Douglas Walker (2006) notes that there are still no meaningful estimates of consumer surplus related to gambling although Earl Grinols (2004) does estimate distance consumer surplus; an estimate of the amount a gambler is willing to pay to travel an extra distance for a gambling experience. (Source: Anielski Management Inc. 2008. *The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard*. p. 128

⁷⁰ The APC assumes that the rate of return (net revenue) for any particular form of gambling can serve as a proxy value for the price that gamblers are willing to pay for the utility gained from gambling (i.e. consumer surplus). Net revenue is effectively net profit: the amount taken in minus winnings paid back, which in theory should match surveys of consumer expenditures on gambling.

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estimates (using percentages of net gambling revenue), Vaillancourt and Roy (2000) estimated that the consumer surplus from gambling in Canada in 1995 ranged from a low of \$1.929 billion to a high of \$3.441 billion based on \$5.214 billion in net gambling revenue in 1995. Since Canada has no data on the price of gambling in casinos or on VLTs, Vaillancourt and Roy estimated consumer surplus for gambling using government statistics on net government revenue from gambling (the amount of gambling money taken in from gamblers net of winnings or payouts). However, they did not net out negative consumer surplus of problem gamblers and did not account for net revenue from charity casinos or bingos, or revenue from pari-mutuel betting (horse racing).

Masterman-Smith et al. (2001) point to the weakness in the assumption by Vaillancourt and Roy (2000) that the rate of return on gambling (i.e. net revenue) serves as a reasonable proxy for the price measure of a person's willingness to pay for gambling.⁷¹ They note that for most gambling products, the price is not known to the gambler and its derivation as a concept after the fact does not help in measuring the consumer surplus.

In a recent 2008 study of the social and economic impacts of gambling in Tasmania, Australia, economists estimated a consumer surplus for gambling following the original Australia Productivity Commission (1999) methodology. The Tasmanian study treats only that portion of problem gamblers expenditure, which they would make in the absence of a problem as a source of consumer surplus, classifying expenditure by problem gamblers above the level for non-problem gamblers as excessive losses.⁷² This is based on an assessment that some of the expenditure of problem gamblers is induced by the problem, rather than being a rational choice. Four pieces of information are needed in order to calculate the consumer surplus from gambling:

- the total expenditure;
- the estimated shares from problem and non-problem gamblers;
- the estimated level of expenditure which problem gamblers would make if their consumption decision were fully rational (e.g. if they were not problem gamblers); and
- the price elasticity of demand for gambling.

The Tasmanian study (following Hawke (2000)⁷³) used a price elasticity of demand of 0.8 for non-problem gamblers and 0.36 for problem gamblers in their low elasticity scenario and 1.3 and 1.0 respectively in our high elasticity scenario. This yielded a low elasticity and high elasticity level of consumer surplus related benefit of between A\$71.5 million (high elasticity) and A\$120.2 million (low elasticity). A net benefit of A\$71 to A\$120 million (approximately

⁷¹ Masterman-Smith, H., S. Martin and J. McMillen. (2001). *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR). p. 14

⁷² The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.241

⁷³ Hawke, A. (2000). *Measuring the impact of gambling: An economist's view*. Hawke Institute Working Paper Series No. 4.

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C\$63.8-\$107.8 million) from consumer enjoyment of gambling was estimated, which was incorporated in the calculation of the total benefit from gambling.

Although there is no willingness-to-pay price data for Nova Scotia for various games of chance, using both low and high price elasticity of demand coefficients⁷⁴ derived from the Tasmanian study it is possible to estimate very crude consumer surplus estimate for gambling in Nova Scotia. The Tasmanian study uses a method that employed estimated expenditure of non-problem gamblers and low-risk gamblers and only the ‘rational’⁷⁵ level of expenditure for problem gamblers.

*It is inappropriate to use Tasmanian data as a proxy for Nova Scotia.
Footnote 75: Is this “rational” or “rationale”?*

Our preliminary estimates suggest that there is a net benefit (consumer surplus) of between \$103.4 million and \$173.9 million from consumers’ enjoyment of gambling in 2007, though this must be balanced with the estimate of excess losses of problem gamblers, which is estimated in the next section of our study (Table 28).

Table 28
Estimated Consumer Surplus from Gambling for Nova Scotia, Low and High Elasticity Estimates, 2001 to 2007, \$ millions

	2001	2002	2003	2004	2005	2006	2007
Low elasticity	181.8	191.8	186.0	196.5	191.8	181.1	173.9
High elasticity	108.1	114.1	110.6	116.9	114.0	107.7	103.4

Source: Estimated by Anielski Management Inc. based on low and high elasticity coefficient derived from the 2008 *The Social and Economic Impact Study into Gambling in Tasmania*.

No elasticity measurements exist for NS. It is inappropriate to use Tasmanian data as a proxy for Nova Scotia.

These estimates must be considered with great caution. First, they are based on secondary analysis and are not original to Nova Scotia or Canada. Second, we would heed Masterman-Smith et.al. (2001) caution that because the actual ‘price’ of playing a game of chance is not truly known or revealed to a gambler it would be difficult to ask a genuine question of a gambler’s willingness-to-pay over-and-above the actual price paid.

Given the methodology used, results are questionable and should not be included.

⁷⁴ These price elasticity estimates must be used with considerable caution since they are based on the Tasmanian statistics which are do not necessarily represent Nova Scotia gambling conditions or gambler economic behaviour.

⁷⁵ ‘Rationale’ refers to the amount of money a non-problem gambler would spend on games of chance as a genuine form of entertainment or recreation value.

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4.5 Negative Consumer Surplus (Excess Losses by Problem Gamblers)

In the 2008 Tasmanian social and economic impact of gambling study, an estimate of the excess losses by problem gamblers was derived as a proxy for the negative consumer surplus associated with problem gamblers. The excess losses sustained by the problem gambler population were calculated as the difference between what the problem gamblers actually spent (net of prizes) and what the gamblers would have spent if they were non-problem gamblers playing for recreational motives.⁷⁶ This estimated excess loss serves as a proxy measure of unhealthy gambling activity, which, in the 2008 Tasmanian social and economic impact study, were treated as a deduction against consumer surplus estimates in their cost-benefit analysis.

For this Nova Scotia study, the excess losses by problem gamblers is calculated as the difference between the average estimated gambling expenditures (losses) of a non-problem gambler and the average estimated expenditure (losses) of the moderate-risk and problem gambler (CPGI 3+). These per gambler expenditure figures are applied to the estimated gambler population, by CPGI, to derive a total expenditure estimate and subsequently, a total estimated excess loss, by problem gamblers. The rationale for this measurement of negative consumer surplus is that we are trying to attribute gambling expenditures to the unhealthy or problem gambling activity in society and treat these expenditures as a monetary expression of the disutility (a proxy for the harmful effects) associated of problem gambling. The logic follows that these expenditures should not be counted as positive additions to measures of economic progress, namely the **GDP**, and either removed from official GDP statistics or treated as a discrete societal cost line item in a full cost accounting of economic progress.⁷⁷

GDP is designed to measure economic output in monetary terms not to express value judgments on the type of expenditure.

This assumes that all non-problem gamblers are **rational** in their gambling activities and that they enjoy genuine entertainment value or utility from playing games of chance and where expenditures are not sufficiently excessive. It also assumes that moderate risk and problem gamblers tend to spend an unhealthy portion of their household income on games of chance relative to other non-problem gamblers.

"Rational" is undefined and inappropriate to quantify (as applied to this paragraph and Tables 29 and 30).

⁷⁶ The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.123

⁷⁷ This is the GPI-accounting logic that has been developed by some economists who have attempted to develop these alternative measures of economic progress that take social and environmental costs more fully into account in national income accounting system from which GDP is derived.

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Table 29

Excess Losses Estimates per Problem Gambler, Nova Scotia, 2002 and 2007

\$/gambler	2002	2007
Estimated average expenditures of non-problem rational gamblers	\$427	\$457
Estimated average expenditure of moderate risk/problem gamblers	\$6,981	\$6,461
Estimated excess loss of a problem gambler	-\$6,554	-\$6,461

Source: Estimated by Anielski Management Inc. based on 2003 and 2007 adult gambling prevalence studies for Nova Scotia.

Table 30

Estimated Total Excess Losses by all Problem Gamblers, Nova Scotia, 2002 and 2007

	2002	2007
Estimated total expenditures of non-problem rational gamblers	\$321,512,590	\$349,242,530
Estimated total expenditures of moderate risk/problem gamblers	\$102,487,099	\$121,863,530
Estimated rationale expenditure of moderate risk/problem gamblers	\$6,269,388	\$8,489,024
Excess losses of moderate risk/problem gamblers	-\$96,217,711	-\$113,374,506

Source: Estimated by Anielski Management Inc. based on 2003 and 2007 adult gambling prevalence studies for Nova Scotia.

Our estimates for 2002 (Table 29) shows that the average moderate-risk and problem gambler experienced excess losses of \$6,554 (the difference between \$6,981, the average expenditure by a moderate risk/problem gambler, and \$427, the average expenditure of a non-problem gambler). In 2007 the excess losses by a moderate risk/problem gambler was estimated at \$6,461 per gambler (Table 29).

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Expressed in total excess losses (Table 30) sustained by the total number of moderate-risk and problem gamblers, these excess losses are estimated at \$96.2 million in 2002 and \$113.4 million in 2007. As per the 2008 Tasmanian study, the 2002 losses of \$96.2 million could be used as partial or total offsets against the 2003 consumer surplus estimates ranging from \$114.1 million (low elasticity) to \$191.8 million (high price elasticity); the 2007 excess loss of \$113.4 would go to partially or fully offset the 2007 consumer surplus estimates ranging from \$103.4 million (low price elasticity) to \$173.9 million (high price elasticity).⁷⁸

No elasticity measurements exist for NS. It is inappropriate to use Tasmanian data as a proxy for Nova Scotia.

From a GPI, full cost accounting perspective, excess losses from problem gamblers would be treated as a negative adjustment to the provincial GDP and serve as proxy for the social cost of problem gambling. This is based on the rationale that healthy or non-problem gambling expenditures would be considered a genuine contribution to economic welfare, as a form of entertainment value. However, unhealthy or problem gambling expenditures would be viewed as disingenuous contribution to economic progress and thus should be left out of the provincial GDP. For example, if, based on our earlier estimates, the gambling GDP for Nova Scotia was estimated at \$399.7 million in 2007, then in a GPI account we would reduce this figure by the estimated \$113.4 million in excess losses sustained by Nova Scotia's problem gamblers.

GDP is designed to measure economic output in monetary terms not to qualify value judgments regarding type of expenditure.

4.6 Distance Consumer Surplus

Originally proposed by U.S. economist Earl Grinols, distance consumer surplus is a measure of the willingness of a gambler to pay for incremental costs to travel from their home to a specific gambling venue. Distance consumer surplus is the benefit of improved access and proximity (distance) to the venue for a consumer of games of chance. Measuring distance consumer surplus addresses the question: How much would you (a gambler) be willing to pay each year to have the opportunity to gamble in a venue (e.g. casino) nearby, compared with having to travel to an alternative venue a greater distance from your home? The closer the venue, the lower the gambler's distance travel and time-use cost and, thus, the greater his or her distance benefit due to the location of the gambling venue.⁷⁹

⁷⁸ The 2008 Tasmanian study estimated excess losses of A\$91 million represent a larger offset of consumer surplus estimates that range from A\$71 million to A\$120 million.

⁷⁹ Anielski Management Inc. 2008. *The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard*. p. 132

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Unfortunately such empirical work has not been completed in Canada. This would require new economic research using travel cost surveys and analysis to derive distance surplus estimates. Grinols (1999) estimated an upper limit for direct consumer distance benefits of casinos of US\$50 per adult gambler when no allowance is made for the significant portion of revenues from problem and pathological gamblers. When these revenues from problem gamblers are netted out, then the consumer distance benefit falls to US\$34 per adult gambler.

In the 2008 socio-economic impact of gambling telephone survey conducted by Focal Research the question was asked: How far would you be willing to travel (locally) to gamble on your favorite game? The results (Table 31) show that about 50% of both moderate-risk/problem and non-problem gamblers traveled between 1 and 10 kilometers to gamble. However, moderate-risk and problem gamblers are more willing to travel longer distances to gamble than non-problem gamblers; 53.7% of moderate-risk/problem gamblers are willing to travel 16 kilometers or more to gamble compared with 36.5% of non-problem gamblers who are willing to travel the same distances. Four moderate-risk/problem gamblers out of 54 respondents (7.4% of moderate-risk/problem gamblers) are willing to travel over 100 kilometers to gamble while none of the non-problem gamblers are willing to travel such distances.

The data in Table 31 indicates that the differences are not statistically significant; therefore the reader should be cautioned not to draw a conclusion from this paragraph.

Table 31
Distance Willing to Travel to Gamble (2008)

		Completed which survey		Total	
		Moderate-risk & Problem	Non Problem Reg.		
Distance Willing to Travel to Gamble	1 to 5 km	Count	9	18	27
		% within completed which survey	16.7%	34.6%	25.5%
	6 to 10 km	Count	14	12	26
		% within completed which survey	25.9%	23.1%	24.5%
	11 to 15 km	Count	3	3	6
		% within completed which survey	5.6%	5.8%	5.7%
	16 to 20 km	Count	10	6	16
		% within completed which survey	18.5%	11.5%	15.1%

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21 to 25 km	Count	2	2	4
	% within completed which survey	3.7%	3.8%	3.8%
26 to 30 km	Count	5	5	10
	% within completed which survey	9.3%	9.6%	9.4%
31 to 35 km	Count	1	0	1
	% within completed which survey	1.9%	.0%	.9%
36 to 50 km	Count	3	2	5
	% within completed which survey	5.6%	3.8%	4.7%
51 to 100 km	Count	3	4	7
	% within completed which survey	5.6%	7.7%	6.6%
100 km or more	Count	4	0	4
	% within completed which survey	7.4%	.0%	3.8%
Total	Count	54	52	106
	% within completed which survey	100.0%	100.0%	100.0%

Differences not significant

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

The results of this survey represent a first step towards a full accounting of distance surplus. What the survey did not evaluate was the full costs, including the economic value of time, which would require a more rigorous survey of gambler experience. This would require future empirical research that would entail a full travel cost accounting of each gambler surveyed. A full travel cost accounting would require an accounting of time use by each respondent to travel to and from the gambling venue from the gambler's home, time spent gambling, the costs of transportation to the venue (whether private vehicle, public transit or other mode of transport), and any other costs incurred to engage in the gambling activity. In addition, a willingness-to-pay survey (that would inquire into a gambler's willingness to spend more resources, time, and money than is currently expended for a marginally improved gambling experience) could be

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conducted to provide input to generate genuine consumer surplus estimates. This again, would require new primary research in Nova Scotia that could supplement future prevalence studies.

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4.7 Government Gambling Revenues

Government gambling revenues are the net revenues to government from gambling activity, namely total wagered less prize money less operating expenditures and disbursement commercial gambling enterprise and charitable revenues. The majority of regulated gambling revenues that accrue to the provincial government go to provincial general revenues through the Nova Scotia Gaming Corporation. All profits from regulated gambling (including ticket lottery, video lottery, and casino revenues) go directly back to Nova Scotia taxpayers, helping to pay for government programs and services including, healthcare, roads and schools.⁸⁰ In 2007-08, for example, the NSGC's profits were \$153.6 million (of which nearly \$17 million was Win tax revenues), which was transferred to general revenues of the Nova Scotia Government. What is unclear, from an examination of the provincial public accounts, is how gambling revenues are allocated to specific government programs. Also, the gambling profits transferred to the provincial general revenue accounts as reported by the NSGC were generally lower than the net provincial gambling revenue reported in the annual reports of the Alcohol and Gaming Division unit of the Department of Environment and Labour.⁸¹

AGD and NSGC financial figures reconcile. See 2007-2008 AGD Annual Gaming Report, various tables, and Statement of Income and Payment to Province in 2007-2008 NSGC Annual Report.

- AGD:
 - VLT Provincial Revenue = \$94,935
 - Casino Provincial Revenue = \$32,737
 - ALC Lotteries Provincial Revenue = \$40,418
- NSGC:
 - VLT Provincial Revenue = \$94,935 (140,738 – 45,803)
 - Casino Provincial Revenue = \$32,737 (71,198+22,789-60,303-17,936+16,989 win tax)
 - ALC Lotteries Provincial Revenue = \$40,418 (203,334-162,916)

⁸⁰ Nova Scotia Gaming Corporation. *Annual Report 2007-08*, p.3

⁸¹ We noted a discrepancy between the net provincial gaming revenues reported by the Alcohol and Gaming Division and the net income from gambling activities in the Nova Scotia public accounts. There is no official gambling revenue line item in the public accounts, only an account of the *net income from government business enterprises*, namely gambling revenues transferred (in the form of a payment) from the Nova Scotia Gaming Corporation to general revenues of the Nova Scotia Government. In terms of the gaming revenue discrepancy between the NSGC figures and those net provincial revenues reported by the Alcohol and Gaming Division, for 2007-08 for example, net provincial revenues were \$169.3 million compared to the \$153.6 million (includes win tax revenues) reported by the NSGC. The NSGC figure includes revenues from casinos, VLTs and ticket lottery sales but does not including charitable bingo revenues (\$0.9 million), charitable lottery revenues (\$0.3 million) and harness racing revenues \$1.3 million) to the province (which totaled \$2.5 million in 2007-08). Moreover, the NSGC financial statements report \$0.4 million for *other NSGC revenue*, -\$3.0 million for NSGC 'responsible gaming expenses', -\$3.6 million for NSGC 'other expenses', and -\$8.3 million for NSGC *distributions to community programs*. Taking these factors into consideration, the AGD and NSGC financial statistics can be reconciled.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

Historically gambling revenues have contributed over three percent of total government revenues in the years 2000 to 2003. However, net gambling revenues to the provincial government have been in steady decline since their peak of \$196.9 million in 2002-03; in 2007 they had fallen to \$169.3 million or 14.0% lower than in 2002 (see Table 32). As a percentage of total provincial government revenues, gambling net revenues have fallen from 3.49% in 2002 to 2.04% in 2007.

**Table 32
Net Revenues to Nova Scotia Government from Gambling**

	2001	2002	2003	2004	2005	2006	2007
Provincial Government Gambling Revenues (\$000) (1)	184,486	196,936	182,349	195,533	186,201	176,264	169,305
Total Provincial Government Revenues (\$000) (2)	5,514,989	5,642,935	5,672,996	6,056,421	6,988,311	7,527,529	8,293,069
Provincial Government Gambling Revenues as % of Total Provincial Government Revenues	3.35%	3.49%	3.21%	3.23%	2.66%	2.34%	2.04%
Provincial Gambling Revenues per capita (\$/capita)	197.86	210.74	194.71	208.47	198.93	188.51	181.24

Notes: 1. Net revenues from gambling include provincial tax revenues from harness racing; these exact figures do not appear in the Nova Scotia Public Accounts. Only Nova Scotia Gaming Corporation revenues appear in the Public Accounts under *Government Business Enterprise*, which tend to be lower than the 'provincial revenues' from gambling figures, which come from the Department of Environment and Labour, Annual Gaming Reports. 2. Total provincial revenues are from the Nova Scotia Public Accounts.

Source: Nova Scotia Public Accounts for fiscal years 2001 to 2007-08. Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2001/02-2007/08. Nova Scotia Government Annual Reports 2001/02 to 2007/08.

Source notes are confusing: numbers are from AGD, not NSGC, and do not include harness racing or First Nations gambling.

As previously noted of the \$169.3 million in net provincial gaming revenues retained by the provincial government in 2007, VLTs contributed 56.1% (\$94.9 million), ALC ticket lotteries 23.9 percent (\$40.4 million), casinos 19.3 % (\$32.7 million), followed by charitable bingos 0.5% (\$907 thousand), and charitable lotteries 0.2% (\$308 thousand); harness racing does not

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contribute any net gambling revenues to the provincial government, except in the form of the luxury tax previously noted.

Nova Scotia does not have a “luxury tax” on harness racing.

Relative to other sources of provincial revenues (see Table 33), gambling revenues are only slightly higher than tobacco tax revenues (\$145 million). Expressed as a percentage of personal income tax revenues, gambling revenues in 2007 were 7.8% of personal income taxes. On a per capita basis, gambling revenues to the province have been declining since 2002 reaching \$181.24 per Nova Scotian in 2007 compared to personal income taxes, which were \$1,904 per person in 2007 (see Figure 16).

Table 33
Comparisons of Provincial Revenues by Source, 2007

Government Revenues by Component	Nova Scotia Government Revenues 2007 (\$ millions)
Personal income taxes (provincial)	\$ 2,168
Sales tax	1,484
Federal equalization payments	1,464
Other Federal contributions	1,583
Petroleum royalties	400
Other revenues (excluding tobacco taxes)	1,663
Government Business Enterprises	344
Tobacco tax	145
Total Provincial Revenues	9,252
<i>Provincial Government Gambling Revenues</i>	<i>169¹</i>

Note: 1. Gambling revenues that accrue to the Nova Scotia government are not specifically identified in the Public Accounts but are most likely included in the Nova Scotia Gaming Corporation revenues under *Government Business Enterprises* revenue figures.

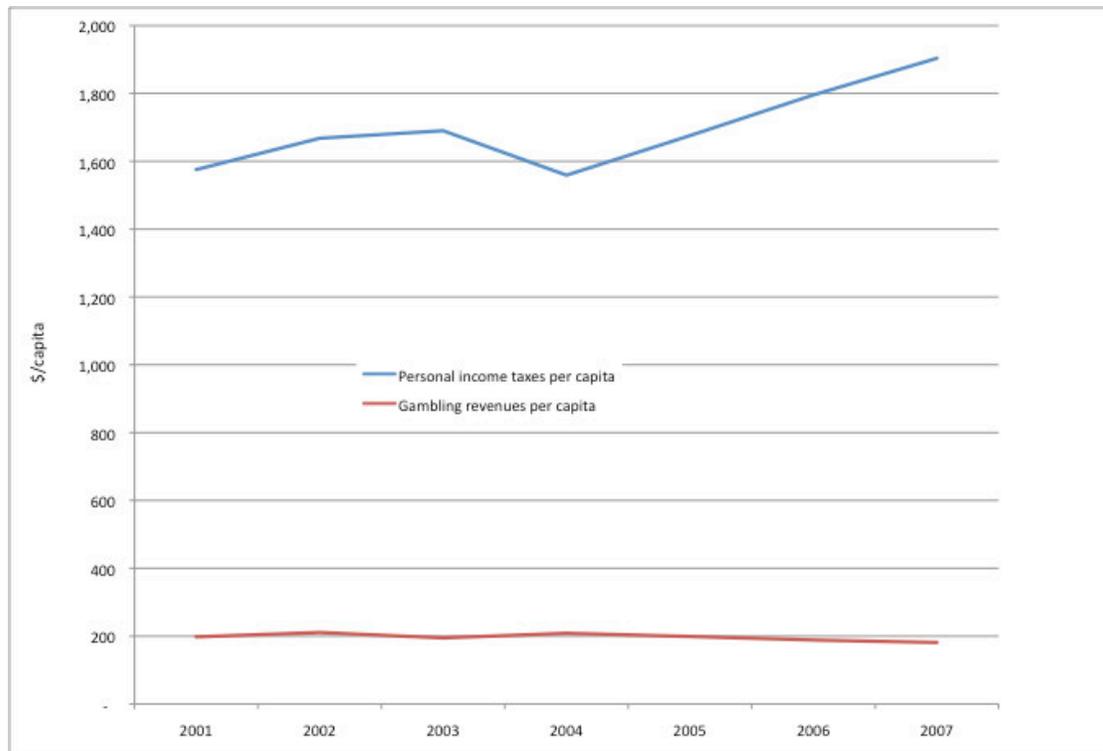
Source: Nova Scotia Public Accounts, 2007-08, Volume 1. Provincial Government revenues are as per reported in the Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Report, 2007/08.

Incorrect source.

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Figure 17
Nova Scotia Provincial Gambling Revenues per capita versus Personal Income Taxes per capita
2000-2007



Source: Nova Scotia Public Accounts, 2000/01-2007/08, Volume 1. Provincial Government gambling revenues are as per reported in the Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01 to 2007/08.

Population figures not sourced.

Data does not match the per capita data noted in the Nova Scotia Public Accounts Vol 1 fiscal year ended March 31, 2008.

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Government-related Operating Expenditures relative to Provincial Gambling Revenues

What is the relationship between government operating expenditures related to gambling and net provincial revenues from gambling activity? Gambling operating expenses⁸² – the operating expenses of primarily the Nova Scotia Gaming Corporation, a Crown corporation which manages the business of gambling in Nova Scotia -- can be viewed as the public sector cost of facilitating the business of legalized gambling activities including casinos, video lottery and ticket lottery. Table 34 shows the relationship between a dollar of operating expenditures and a dollar of net provincial gambling revenues. These have varied from a high of \$0.73 of operating expenditures per \$1 of provincial gambling revenues in 2001 to a low of \$0.39 in 2007. This suggests that it has become less expensive to raise \$1 in provincial gambling revenues in 2007 than in previous years.

The break in series caused by a new agreement with the casinos should be noted as data are not strictly comparable.

This analysis should not be interpreted as the government being more or less efficient or more effective at generating provincial gambling revenues.

⁸² These government-related gambling operating costs incurred by the Nova Scotia Gaming Corporation are distinct from the regulatory expenditures of the Alcohol and Gaming Division of the Ministry of Labour and the Environment. Operating expenses by the Nova Scotia Gaming Corporation include marketing, lease and amortization, salaries and benefits, telecommunications and other expenses used to manage the business of gaming which includes casinos, video lottery and ticket lottery.

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Table 34
Government-related Gambling Operating Expenditures relative to Provincial Gambling Revenues, 2001 to 2007

	Nova Scotia Government Gambling Revenues (\$ thousands)	Government-related Gambling Operating Expenditures (\$ thousands)	Ratio of Gambling Operating Expenditures and Gambling Revenues
2001	184,486	133,827	0.73
2002	196,936	134,444	0.68
2003	182,349	130,568	0.72
2004	195,533	131,645	0.67
2005	186,201	93,944	0.50
2006	176,264	73,457	0.42
2007	169,305	66,530	0.39

Note: 'Operating expenditures' reported in the annual reports of the Alcohol and Gaming Division relate to the operating expenditures of the Nova Scotia Gaming Corporation (a Crown corporation) which is responsible for the business of gambling in Nova Scotia, which includes managing video lottery, ticket lottery and casino games.

Source: Provincial Government revenues from gambling and operating expenditure data are as per reported in the Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2001/02 to 2007/08.

The break in series caused by a new agreement with the casinos should be noted as data are not strictly comparable.

4.8 Gambling Industry Business Profits

Another key benefit of gambling is to the gambling industry in the form of profits as well as any additional profit earned by other associated industries that benefit directly or indirectly from the existence of the gambling industry. For purposes of this study we use commercial revenue (payments to the gambling industry out of net revenues) as a proxy for producer surplus. In contrast to government gambling revenues, commercial revenues from gambling activity doubled between 2001 (\$48.8 million) to 2006 (\$91.1 million). They declined slightly by 6.6% to \$85.1 million in 2007 (see Table 35).

The share of net revenues going to the gambling industry (i.e. commercial revenues expressed as a percentage of net revenues), has increased significantly from 12.3% of net revenues in 2001 to 24.2% of net revenues in 2007. At the same time, under a new casino licensing contract, the casino operators are now responsible for paying operating expenses.

The casinos' authority to operate is provided by an operating contract, not a licencing contract.

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Table 35
Commercial Revenues to Nova Scotia Gambling Industry from Gambling

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Commercial revenues from gambling	\$48,792	\$52,823	\$52,677	\$53,154	\$85,568	\$91,113	\$85,079
% of total Net Revenues from Gambling going to Commercial Gambling Venues.	12.3%	12.8%	13.6%	13.1%	21.5%	24.5%	24.2%

Note: Excludes net revenues retained by harness racing associations.

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007/08. Nova Scotia Government Annual Reports 2001/02 to 2007/08.

The break in series caused by a new agreement with the casinos should be noted as data are not strictly comparable.

4.9 Net Business Sector Growth (Business Investments)

With the introduction of legalized gambling in Nova Scotia, we would expect to see increasing investment within both gambling industries (e.g. casinos) and in other industries, which are positively affected by gambling activity. Investments could include casino facilities (including upgrades), the installation of VLT machines in bars and lounges (and First Nation reserves), and the installation of ticket lottery sales stands in convenience and grocery stores throughout the province. There may also be significant investment that is indirectly linked to gambling, such as bars or lounges using VLT revenues to upgrade their venue. At the same time some of this investment may flow outside of the province for the purchase of resources to support the gambling industry.

Capital investment would seem like the most obvious economic benefit from gambling. However, there are two problems with focusing on investment spending: a) reliable data on investment related to gambling does not exist and b) provincial statistics (or data from Statistics Canada) do not provide detailed figures for investment that are broken down by industry, with the exception of capital expenditures by casino operators available from the NSGC.

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The 2008 Tasmanian socio-economic impact of gambling study noted that economic theory would suggest that the level of gambling expenditure is unlikely to have an impact on investment in an economy. In other words, any investment related to gambling (e.g. VLT machines in bars) would not represent a net increase since economic theory would predict that there will be a substantial switching effect or diversion of resources (including capital) from other sectors or investment options to gambling given the finite pool of resources for construction and development.⁸³

This analysis does not take into account other factors (e.g..casino renovation and construction expenditures)

Also, increased consumption spending in the gambling sector by households out of disposable income and switching from other household expenditure categories may result in a fall in investment in other sectors in the economy or switching from one sector to the gambling sector. Also, as previously noted, if gambling expenditure is funded by reductions in personal saving then this will increase the cost of investment, and potentially reduce the ability of individuals to borrow funds to invest as they have fewer assets.⁸⁴

Unless investment is by unincorporated businesses, the ability of individuals to borrow funds to invest does not relate to the topic of business investment.

In the 2008 Tasmanian study the hypothesis that ‘the increases in net gambling expenditure will not have had a net impact on total investment in Tasmania’ was tested by examining trends in investment expenditure (both total investment and investment in nonresidential construction) in Tasmania from 1984 to 2007. The hypothesis is that had gambling been a significant factor in net investment, a change in the trend or level in net investment might have been seen around the time when hotels and clubs were licensed for EGMs. Using statistical analysis, the study found that “there is not a statistically significant shortrun relationship between gambling expenditure and business investment (e.g. if gambling expenditure increases above its trend rate there is no consistent process whereby investment increases or decreases to return to their long-run relationship). There is however a long-run statistically significant negative relationship between gambling and business investment.”⁸⁵ That an increase in gambling expenditure appeared to decrease business investment, was a surprising conclusion of the analysis. The researchers noted that the result should be treated with caution “as there is no clear transmission mechanism which could explain the relationship.”

⁸³ The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.102-103.

⁸⁴ Ibid. p. 103.

⁸⁵ Ibid. p.120.

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The Tasmanian study concluded that "there is, at best, no evidence that the increase in gambling expenditure led to an increase in the level of private sector investment, and thus the net benefit related to investment expenditure included in the calculation of the net impact of gambling is \$0.00."⁸⁶

Following a similar approach for Nova Scotia, the trends in total provincial investments in non-residential building construction (industrial, commercial, retail and institutional/government) were graphically compared with net gambling expenditures from 1997 to 2007 (see Figure 17). A visual inspection of this graph suggests there is a strong relationship between non-residential building construction and gambling activity. A simple statistical correlation of these two variables reveals an R-square of 0.8143, which suggests a reasonably strong relationship. Figure 18 contrasts total private investment (capital and repair) for Nova Scotia to net gambling expenditures showing an even stronger visual relationship with an R-square from correlation analysis of 0.9158. However, as previously noted, these graphs and our analysis are far from conclusive about causality; they simply provide an impressionistic perspective on an issue that would require more rigorous empirical research and analysis. Nevertheless, our preliminary findings stand differ significantly from the Tasmanian study even though the gambling sector is relatively more important economically to the Tasmanian economy than it is to the Nova Scotia economy.⁸⁷

Correlation analysis of non-residential construction and gambling expenditures is not correct. The Tasmania study adjusted for time effects using econometric analysis, which allows adjustment for time trends, in order to come to their conclusions. This text relies on a correlation coefficient to make conclusions, and it is very clear from Figure 18 [incorrect reference to Figure 17 in text] that there is a strong trend that needs to be controlled for, before talking about the relationship between the variables; "visual inspection" does not justify results.

⁸⁶ Ibid.

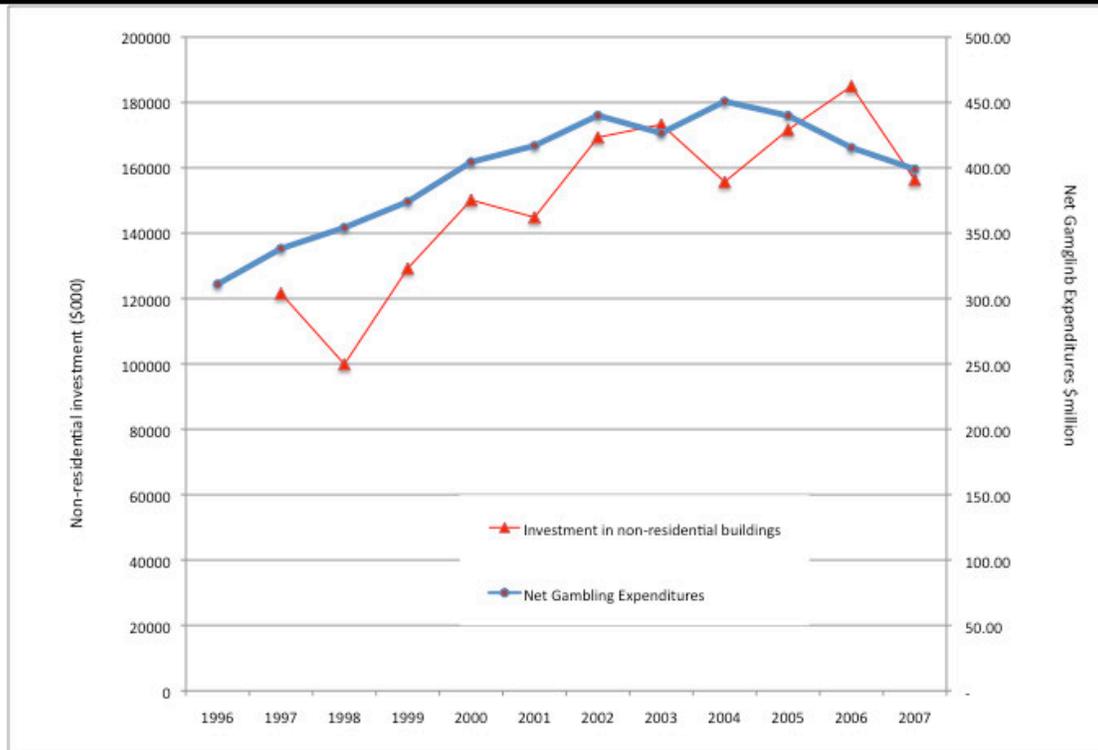
⁸⁷ For example, in 2006/07 gambling taxation revenues amounted to 11.5% of total Tasmanian government tax receipts compared with only 2.14% for Nova Scotia in 2006/07.

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Figure 18
Investments in Non-residential Building Construction vs. Net Gambling Expenditures, 1997-2007,
Nova Scotia

Only commercial non-residential building construction data should have been used.



Source: Net-residential investment in building construction data is from Statistics Canada, CANSIM Table 026-0016. Net gambling expenditures are the Nova Scotia Department of Environment and Labour. [Alcohol and Gaming Division. Annual Gaming Reports, 1997/98 to 2007/08.](#)

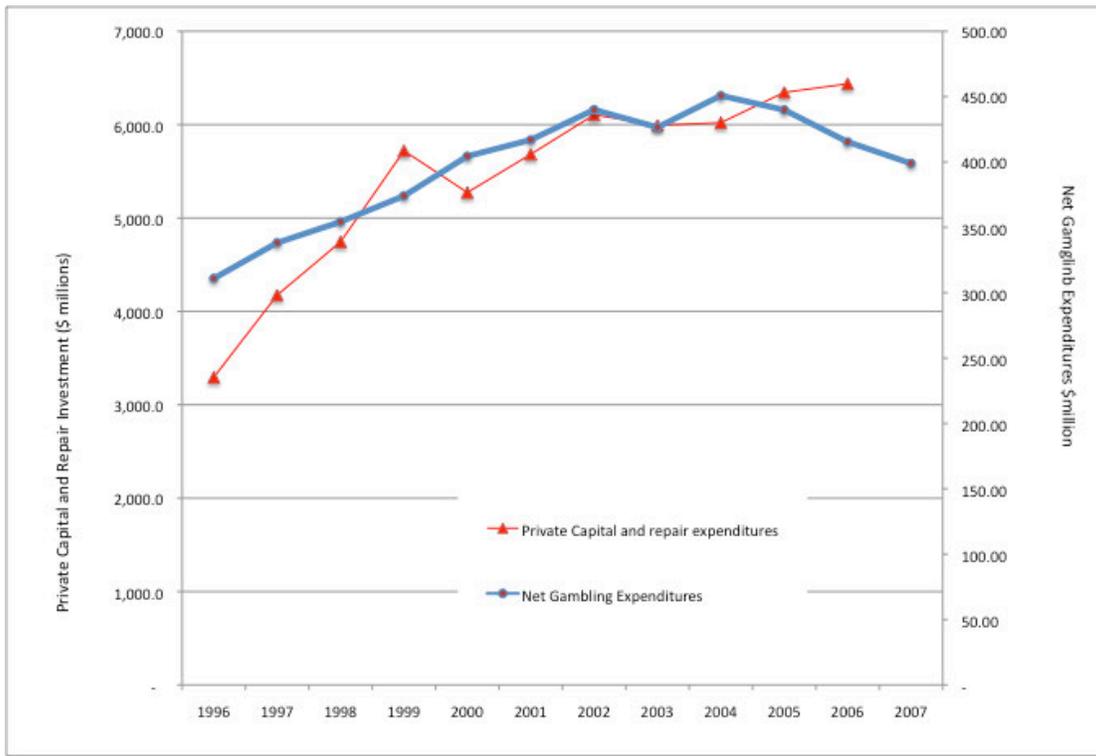
Net gambling expenditures do not correspond to AGD data.

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Figure 19

Private Capital and Repair Investment vs. Net Gambling Expenditures, 1997-2007, Nova Scotia



Source: Private investment in capital and repair data is from Statistics Canada, CANSIM Table 032-0002. Net gambling expenditures are the Nova Scotia Department of Environment and Labour, Alcohol and Gaming Division, Annual Gaming Reports, 1997/98 to 2007/08

Net gambling expenditures do not correspond to AGD data.

4.10 Government Defensive Expenditures

Expenditures by government agencies to reduce the adverse welfare effects of environmental pollution or negative social conditions (e.g. poverty, crime) can be called defensive expenditures. In the case of problem gambling, defensive expenditures would include government expenditures allocated for problem gambling treatment, education and prevention by specific agencies responsible for problem gambling as well as incremental health, welfare and social service program expenditures from other government departments or agencies that are indirectly impacted by problem gambling.

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Government expenditures on health-related problem gambling treatment, research, awareness prevention and other programs are available, however, they are not disaggregated by game of chance. **Table 36** provides data on total problem gambling government program expenditures, showing a doubling since 2001 from \$2.41 million in 2002 to \$4.95 million in 2006 (data was not available for fiscal year 2007). The highest expenditure was in 2003 at \$6.52 million.

Expressed as a percentage of net provincial revenues from gambling, problem gambler program expenditures increased from 2.16% of net gambling revenues in 2002 to 5.53% in 2004 and then declined slightly to 4.21% in 2006/07.

Expressed in terms of dollars per adult gambler, problem gambling program expenditures almost tripled from \$3.34 per adult gambler in 2002 to \$9.09 per adult gambler in 2005 then declined to \$6.71 per adult gambler in 2006. Compared to the national average for problem gambling program expenditures per adult gambler, Nova Scotia spent 2.6 times more per adult gambler in 2005 and 1.9 more in 2006.

Government expenditures are not only directed at those who are problem gamblers or those who gamble, but also at the <19 population. Expenditures include costs for prevention as well as treatment.

When expenditures are expressed in terms of the estimated population of moderate risk and problem gamblers, based on the 2003 and 2007 adult gambling prevalence studies, Nova Scotia spent \$164.17 per moderate risk/problem gambler (**n=14,680** from 2003 prevalence study) in 2002 and more than 1.6 times that amount (\$266.65 per moderate risk/problem gambler (**n=18,861** from 2007 prevalence study) in 2006.

“n” is commonly recognized as sample size for a study. This was not the sample size.

In addition to government problem gambler program spending, the gambling industry has increased its spending on responsible gambling initiatives. In 2002 the gambling industry spent \$1,006,541 on responsible gambling programs increasing steadily to reach \$3,143,000 in 2006.

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Table 36
Nova Scotia Government Spending on Problem Gambling Health-related Programs, 2001-2007

\$ thousands	2001	2002	2003	2004	2005	2006	2007
N.S. Government Spending on Problem Gambling Programs	n.a.	\$2,410	\$5,261	\$6,519	\$4,698	\$4,947	n.a.
Treatment	n.a.	n.a.	\$3,305	\$2,193	\$3,726	\$2,514	n.a.
Research	n.a.	n.a.	\$578	\$3,167	\$140	\$815	n.a.
Awareness Prevention	n.a.	n.a.	\$1,126	\$856	\$627	\$1,396	n.a.
Other	n.a.	n.a.	\$252	\$302	\$205	\$221	n.a.
Program spending as a percentage of net revenues to government from gambling.	n.a.	2.16%	4.46%	5.53%	3.54%	4.21%	n.a.
Problem Gambling Programs Expenditures per adult gambler (19 yrs+)	n.a.	\$3.34	\$7.24	\$8.91	\$9.09	\$6.71	n.a./
\$ per estimated moderate risk problem Expenditure per estimated moderate risk and problem gambler	n.a.	\$164.17	n.a.	n.a.	n.a.	\$266.65	n.a.

Source: Canadian Partnership for Responsible Gambling. Gambling Digest. 2002-03; 2003-04; 2004-05; 2005-06; 2006-07

Source does not include all of NS government spending on problem gambling prevention and treatment programming.

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4.11 Direct Regulatory Costs

Direct regulatory costs are those expenditures incurred by government agencies related to the regulation of the gambling industry. This would include all costs incurred by the Nova Scotia government pursuant to the Gaming Control Act of Nova Scotia. Regulatory cost can be stratified by the type of gambling activity (casinos, VLT venues, bingos) and by the extent of responsibilities of the regulatory agencies.

Within the Nova Scotia government the Nova Scotia Gaming Corporation, reporting to the Minister of Finance, has operational and management oversight responsibilities. The Alcohol and Gaming Division, reporting to the Minister of Environment and Labour, has regulatory oversight responsibilities. We would thus expect to focus our accounting of regulatory costs to focus on the proportion of the Alcohol and Gaming Division's expenditures (including salaries and time-use), which are dedicated to the gambling sector or industry. For example, in 2007-08 an estimated \$4,503,000 was budgeted for the Division's work, however, how much was spent on gambling-related regulatory responsibilities is not known.⁸⁸ For example, in consultation with the Alcohol and Gaming Division, they were unable to account for what portion of their program expenditures and staff time is specifically dedicated to gambling-related activity. For sake of illustration, the total regulatory expenditures of \$4.5 million for the entire Alcohol and Gaming Division in 2007-08 represented 2.5% of total net provincial revenues (\$170.6 million) from gambling in 2007-08.

Statement is misleading as it implies that all expenses are related to gaming. In addition, it notes that the figures are not available, yet figures have been provided. Inclusion of all AGD expenditures is incorrect.

4.12 Bankruptcies, Financial Difficulties, and Bad Debts

The connection between gambling and the bankruptcy rate is not always clear partly because gamblers often do not report gambling as a cause of bankruptcy, as it could affect their bankruptcy status. Empirical studies show that problem gamblers consistently have high rates of debt and declare bankruptcy at much higher rates than lower-risk gamblers and non-problem gamblers (Hayward, 2004:134). Problem gamblers typically exhaust their personal financial resources by selling possessions, acquiring multiple credit cards that are often used to their limit, and often borrowing from family and friends to fund their gambling habits. These habits often lead to bankruptcy in the case of problem gamblers, resulting in cost to creditors and cost to the legal system in court time and resources.

Bankruptcy may result from many factors, of which problem gambling could be one.

⁸⁸ Nova Scotia Environment and Labour Business Plan 2007-08.

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Financial Difficulties Related to Gambling

Our previous estimates of the average net financial losses due to gambling by the typical problem gambler in Nova Scotia of \$6,222 per moderate-risk and problem gambler in 2007, suggests that such losses can put enormous financial pressure on both individual gamblers and their families. Considering that the average disposable income per capita in Nova Scotia in 2006 was \$22,972⁸⁹, thus a net gambling expenditure of \$6,222 by a problem gambler would represent 27.1% of average disposable income or 28.7% of average household expenditures per capita (\$21,667). Contrast this expenditure with other household expenditures; in 2005 the highest expenditures (per capita) were for personal taxes (\$3,942 or 18.2% of household expenditures), shelter (\$3,899 per capita or 18.0% of household expenditures), transportation (\$2,848 per capita or 14.1% of household expenditures) and food (\$2,472 per capita or 11.4% of household expenditures).

The source cited does not provide disposable income on a per capita basis. No indication if this is per person or per person 19+. The per capita statistics do not link with the concepts in the rest of the sentence. This paragraph compared different years (2007 data to 2005) which is not appropriate.

Statistics from the Nova Scotia Help-Line suggest that financial problems related to gambling represent the most importantly cited impact between 2001 and 2007 (Table 37). In 2004 98% of the total calls (298 calls) cited financial problems; in 2007 83.6% of the callers cited financial difficulties with gambling.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.

⁸⁹ Statistics Canada CANSIM Table 384-0013, provincial economic accounts.

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Table 37
Help-Line Calls Citing Financial Difficulties Due to Gambling

	2001	2002	2003	2004	2005	2006	2007
n = total callers who experienced problems due to gambling	206	346	290	298	433	277	171
Number of callers to the NS addictions services and helpline citing financial difficulties due to gambling	188	320	274	291	411	254	143
Percentage of total calls citing financial problems from gambling	91.0%	92.0%	94.0%	98.0%	95.0%	91.7%	83.6%

Source: Nova Scotia Office of Health Promotion Problem Gambling Services. Problem Gambling Help Line. 2001-05 Annual Reports. 2006 and 2007 data is from Nova Scotia Office of Health Promotion Problem Gambling Services; Problem Gambling Help Line. Year to Date Synopsis and Monthly Statistical Reports December 2006 and December 2007.

The subset of problem gamblers is unrepresentative of general population. Open cases vs. total calls to help line which is incorrect. The representation of callers to the Problem Gambling Help Line is incorrect. Data refers to only first time callers for whom a case is opened.

According to the 2003 and 2007 adult gambling prevalence studies, gambling was cited as causing either personal or household financial problems for almost 20% of moderate-risk and problem gamblers in 2002 and 14.8% of these gamblers in 2007 (Table 38).

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Table 38
Gambling Caused Financial Problems

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	
Gambling has caused any financial problems for you or your household ²				
2002 Survey	0%	0%	19.6% (12)	0.002% (12)
2007 Survey	0%	0%	14.8% (9)	0.001% (9)

Shading indicates significant differences among gambler subtypes (p<.05)

↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).

¹ CPGI scores for moderate risk and problem gambles have been combined.

² Combined responses of "most of the time" and "almost always" from four point scale that includes "sometimes" and "never."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection.

These numbers are not reflected in the prevalence studies and the question was not asked in the 2007 study.

In the 2008 socio-economic impact of gambling telephone survey conducted by Focal Research, 16.4% of moderate-risk and problem gamblers (9 out of 55 respondents) said that they have experienced financial difficulties related to gambling while 7.5% (3 out of 40) family members of a problem gambler agreed with this statement (Table 39). However, none of the moderate-risk and problem gamblers had experienced these financial difficulties during the past year.

Analysis is done using small sample sizes resulting in extrapolation issues.

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Table 39
Experienced Financial Difficulties Related to Gambling

Have you ever experienced financial difficulties related to gambling?		Completed which survey			Total
		Non Problem Reg.	Moderate-risk & Problem	Family Members	
No	Count	56	46	37	139
	% within completed which survey	100.0%	83.6%	92.5%	92.1%
Yes	Count	0	9	3	12
	% within completed which survey	.0%	16.4%	7.5%	7.9%
Total	Count	56	55	40	151
	% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences significant ($p \leq .01$)

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

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Cautionary note re: 2008 Telephone Survey (see also comment in preface):

Analysis is done using small sample sizes and anecdotal responses resulting in extrapolation issues. The information provided is not defensible. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

In the same 2008 telephone survey (Question 10b) respondents were asked to describe the financial difficulties they experienced in open-ended questions. The input was as follows:

Can you describe these financial difficulties?

Moderate-risk/Problem Gamblers (n=50)

- Spent my bill money and my savings on the VLT's, then I went bankrupt.
- I had spent more over time than what I thought I had spent. Short on a few bills a few times.
- I was spending more on the slots than I should have and I couldn't pay my bills.
- A car repossessed because of gambling and overdue bills because I'm still paying off.
- I went bankrupt. I lost my home and everything I had. Credit card debt, loan debt, you name it.
- Well I spent all my savings that I had and run up my credit cards to the maximum and then some.
- I over spent and got behind on bills.
- Just spending all of my money on VLT's and I couldn't pay my bills.
- Well I was financially broke and ended up going bankrupt, because we were behind in our bills, the mortgage and loan payments because I was playing the VLT's.

Family Member (n=40)

- We had to go without things to help him get out of debt, because of all the money he owed and lost from gambling. He lost his car and whatever savings he had.
- He spent our bill money on VLT's and we got behind on our bills, so we had to borrow money to pay bills and then arrange to pay that back.
- We went bankrupt, because of my wife's gambling and you can't go any lower than that. We couldn't afford to pay a bill.

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Cautionary note re: 2008 Telephone Survey (see also comment in preface):

Qualitative analysis is done using small sample sizes and anecdotal responses resulting in extrapolation issues. The information provided is not defensible. Questionable methodology as regard to the qualitative telephone survey. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

In the same 2008 telephone survey, the question was asked as to the financial costs that were experienced as a result of problem gambling.⁹⁰ Respondents, including the moderate-risk/problem gambler and family members, were also asked how much money the problem gambling condition cost their family. The five responses by the moderate-risk/problem gamblers reveal the severe impact of bankruptcy, depletion of savings, and loans from family members.

What types of financial costs did you experience (Q28a)?

Moderate-Risk/Problem Gamblers (5 responses out of n=50 respondents):

- Parents helped me with money. They lent me money to pay bills.
- We went bankrupt, you can't get any financially lower than that. Lost my home and car.
- I spent all my savings I had in the bank and I wish I had that money now.
- One particular time playing blackjack I lost everything I had in my pocket. I had to borrow money from my mom to pay a loan payment of \$900.
- We went bankrupt in the end, our credit is ruined.

Family Members (2 responses out of n=40 respondents):

- We (my wife and I) had to take out an extra loan to pay off his bills and stop creditors from calling. We also used cash advances from our own credit cards to help him out.
- Going bankrupt is a financial cost in itself, because we were at a point we couldn't pay our mortgage, our loan or our credit cards. We couldn't keep up financially.

⁹⁰ Question 28a and 28 by from Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008.

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When asked how much money did the problem gambling situation cost the family, the following monetary costs were noted by each of the five moderate-risk/problem gamblers: \$900, \$1,000, \$8,000, \$45,000, and \$100,000. Of the two family member responses one family member identified a financial cost of \$2,000 while another said the cost to their family was \$10,000. These suggest that problem gamblers can experience significant financial losses or costs to themselves and their households; significant in terms of average household disposable incomes for Nova Scotia. Such losses can impose significant financial and emotional stress on households.

This statement needs to be balanced with the fact that only 16.4% of the moderate risk and problem gamblers, and 7.5% of the family members, reported financial difficulties relating to gambling.

Debt problems

Experiential data drawn from the 2003 and 2007 Nova Scotia Adult Gambler Prevalence studies revealed past-year debt or financial problems experienced by adult gamblers by CPGI gambler type. The results of our analysis (Table 40) showed that moderate-risk and problem gamblers tend to experience disproportionately greater debt or financial problems (44.6% in 2002 and 23.0% in 2007) than non-problem gamblers. However, low-risk gamblers also experienced some debt or financial problems (26.9% in 2002 and 27.5% in 2007).

Table 40
Experienced Problems with Debt of Finances in Past Year

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
In past year have you experienced any problems with debt or financial problems? ²				
2002 Survey	11% (255)	26.9% (36)	44.6% (25)	12.6% (316)
2007 Survey	8.7% (75) ↓	27.5% (25)	23% (14) ↓	9.8% (214) ↓

Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate risk and problem gamblers have been combined.
² Response scale "yes/no."

Table 41 shows that in the 2003 survey, almost 18% of moderate-risk and problem gamblers in 2002 said that gambling had played a role in their financial debt problems compared to less than 2% of low-risk gamblers, the results being statistically significant.

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Table 41: Gambling Played Role With Debt Problems

Survey Question/Year	Gambler Subtype (past year gamblers)			
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	Total Past Year Gamblers
	(2002 n=255) (2007 n=)	(2002 n=36) (2007 n=)	(2002 n=25) (2007 n=)	(2002 n=316) (2007 n=)
Did gambling (yours or others) play a role with debt problems ²				
2002 Survey	0.17% (4)	1.49% (2)	17.86% (10)	0.002% (16)
2007 Survey	--- *	--- *	--- *	--- *

Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate risk and problem gambles have been combined.
² Combined response of "yes" for "self," "someone else," and "both."
 * Not asked in the 2007 Survey
 Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection.

Numbers are inconsistent with the prevalence studies; "n" is different.

Moderate-risk and problem gamblers were more likely than non-problem and low-risk gamblers to have gambled in hopes of paying off debts or bills (Table 42); 2002 25% of moderate-risk and problem gamblers compared to 18% in 2007.

**Table 41
Gamble to Pay Off Debts or Bills**

Survey Question/Year	Gambler Subtype (past year gamblers)			
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	Total Past Year Gamblers
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
I sometimes gamble in the hopes of paying off debts or bills ²				
2002 Survey	3.9% (90)	15% (20)	25% (14)	0.5% (66)
2007 Survey	2.1% (43) ↓	5.5% (5) ↓	18.1% (11) ↓	2.7% (59) ↓

Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate risk and problem gambles have been combined.
² Combined responses for scores of 4 and 5 on a five point scale ranging from "1 – strongly disagree" to "5 – strongly agree."
 Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection.

Numbers are incorrect and require an audit prior to use.

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Bankruptcies

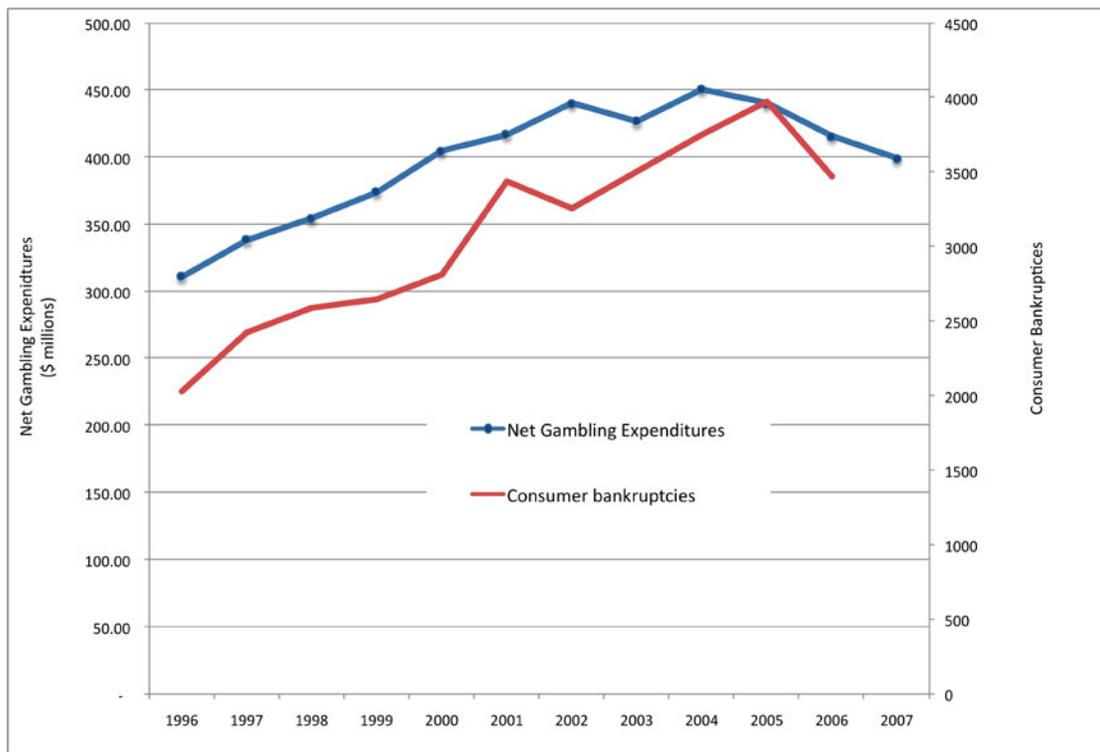
One of the most common financial impacts from problem gambling is the financial pressures on personal or household financial well-being, which could lead to personal (consumer) bankruptcies. While the direct relationship between problem gambling and consumer bankruptcies is not known, we compared the trends in total provincial consumer bankruptcies with net gambling expenditures (Figure 20). The visual image suggests a relatively strong relationship between the two variables; we calculated an R-square correlation of 0.9369, the highest correlation of any of the impact variables we analyzed in the study. This does not suggest, however, that total provincial gambling expenditures are leading to or causing an increase in consumer bankruptcies only that both indicators have trended in the same general direction. More in-depth research would be required to delve more deeply into the nature of each individual consumer bankruptcy; this was beyond the capacity and scope of this study.

The reference to “visual image suggests a relatively strong relationship” is inappropriate. Despite the disclaimer that gambling expenditures may not be responsible for consumer bankruptcies, it is inappropriate to include the correlation measure and to comment on its strength. It leaves an impression that there is a causal relationship.

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Figure 20
Consumer Bankruptcies versus Net Gambling Expenditures, 1996-2007, Nova Scotia



Source: Consumer bankruptcies data is from Statistics Canada (CANSIM) Table 1770001. Net gambling expenditure data is from Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2001-2008;

Net gambling expenditures does not correspond to AGD data.

Based on our own inquiry into Nova Scotia bankruptcy statistics and consultation with key informants familiar with bad debts, including financial credit counselors, we were unable to establish a clear causal link between problem gambling, bad credit and personal bankruptcy rates.⁹¹ Bankruptcy statistics do not disaggregate incidences by key financial drivers. Thus we

⁹¹ Historically, in a 1997-1998 study, the Nova Scotia Alcohol and Gaming Authority interviewed bankruptcy trustees and found that the majority could not definitively identify gambling problems as a cause of bankruptcy, since many other factors, such as job loss and unemployment, over-extension of credit, poor financial management skills, marital problems, and alcohol and drug use, could be contributing factors.

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were also unable to isolate VLT problem gambling-related debt problems. However, in one Canadian assessment, it was estimated that between 5% and 10% of all personal bankruptcy cases in New Brunswick (2001) could be attributed to gambling problems.⁹²

Incorrect interpretation of the research document, as there was no attribution of personal bankruptcy to gambling in New Brunswick in it.

In the 2008 Nova Scotia socio-economic impact of gambling telephone survey conducted by Focal Research, 5.5% (3 out of 55 respondents) of moderate-risk and problem gamblers reported that they had declared bankruptcy because of gambling in the past few years; only 1 family member (2.5% of family member respondents) had experienced bankruptcy related to a family member with a gambling problem (Table 43). None of the 3 moderate-risk and problem gamblers had declared bankruptcy in the past year because of gambling.

*Incorrect figures in text.
Analysis is done using small sample sizes resulting in extrapolation issues. Table 43 indicates differences are not significant. The study was meant to assess the industry holistically and not focus on problem gamblers alone which would over-index problem gambling and results.*

**Table 42
Ever Declared Bankruptcy (2008)**

Have you ever declared bankruptcy because of gambling?			Completed which survey			Total
			Non-Problem Reg.	Moderate-risk & Problem	Family Members	
Ever Declared Bankruptcy	No	Count	52	56	39	147
		% within completed which survey	94.5%	100.0%	97.5%	97.4%
	Yes	Count	3	0	1	4
		% within completed which survey	5.5%	.0%	2.5%	2.6%
Total		Count	55	56	40	151
		% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences not significant

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

⁹² Citizens' Committee on Destination Gaming and D. Bourgeois (Chairperson). (2001). *The Potential Economic, Social, and Image Impacts of a Casino in Moncton*. Moncton [New Brunswick] City Council.

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The Costs of Bad Debts and Bankruptcy:

Economists do not agree on how the cost of bad debts and bankruptcy should be treated in economic analysis. Some argue that unpaid debts and bankruptcies should be considered as transfers from the creditor to the debtor and therefore not a social cost. However, money spent to recover the bad debt or process the bankruptcy (e.g. legal costs, court time, and bill-collector fees) is considered a social cost since that money could have had an alternative use.⁹³ Other economists point out that, while bad debt and bankruptcy may not enter into traditional economic analysis, they should still be measured and tracked in order to inform gambling policy.⁹⁴ Some economists argue against traditional economic logic and suggest that unrecoverable debt of problem gamblers in bankruptcy court proceedings should be considered as a social cost, particularly since evidence shows that many problem gamblers actually pay little of their debts.⁹⁵

Previous US and Canadian studies point to future options for research and analysis for Nova Scotia. In a Canadian study by Ladouceur, problem gamblers in Gamblers Anonymous in Canada were found to have had debts at bankruptcy averaging from Cdn\$75,000- \$150,000.⁹⁶ In U.S. studies, average gambling-related current debt levels of treated problem gamblers ranged from US\$39,000 in Wisconsin⁹⁷ to \$114,000 in Illinois.⁹⁸ In these same U.S. studies, between 18% and 28% of males in treatment for problem gambling and 8% of females in treatment had declared bankruptcy. Grinols (2001) found that 20% of problem gamblers had filed for bankruptcy as a result of gambling losses.⁹⁹ In another US study, Gerstein et al.'s National Opinion Research Center study found almost 19% of pathological gamblers and 10% of problem gamblers had declared bankruptcy, versus a rate of 5.5% and 4.2% respectively among low-risk and non-problem gamblers.¹⁰⁰ A 2004 U.S. study showed that between 1990 and 1999, the cumulative growth rate in individual bankruptcies in 250 US counties with casinos

⁹³ Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212.

⁹⁴ Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

⁹⁵ Thompson, W. N., R. Gazel and D. Rickman. (1996). *The Social Costs of Gambling in Wisconsin*. Wisconsin Policy Research Institute Report, 9(6), 1-44.

⁹⁶ Ladouceur, R. (1996). The Prevalence of Pathological Gambling in Canada. *Journal of Gambling Studies*, 12(Summer), 129-142.

⁹⁷ Thompson, W. N., R. Gazel and D. Rickman. (1996). *The Social Costs of Gambling in Wisconsin*. Wisconsin Policy Research Institute Report, 9(6), 1-44.

⁹⁸ Lesieur, H. R. and C. W. Anderson. (1995). *Results of a 1995 Survey of Gamblers Anonymous Members in Illinois (N=184)*: Illinois Council on Problem and Compulsive Gambling.

⁹⁹ Grinols, E. and D.B. Mustard. (2001). Business profitability versus social profitability: Evaluating the social contribution of industries with externalities, the case of the casino industry. *Managerial and Decision Economics* 22 (1-3): 143-162.

¹⁰⁰ Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago.

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was more than double the growth rate of bankruptcies in non-casino counties with similar household incomes, population and population densities.¹⁰¹

In the 1999 **Australian Productivity Commission** study, the average value of lifetime debt per problem gambler in counseling was estimated at A\$10,045 (lifetime estimates assume that gambling problems last 8.9 years) for a total gambling-related debt transfer of A\$26 million annually.¹⁰² The cost per bankruptcy, which represents fees to the Insolvency and Trustees Service, was estimated at A\$4,000 for a total cost of gambling-related bankruptcies of \$1.3 million each year.

The study by the Australian Productivity Commission cannot be readily applied to Nova Scotia without applied research studies.

In addition to statistical data on unpaid debt and bankruptcy rates, other financial indicators would be useful to collect when examining the financial implications of problem gambling, including gambling expenditures (losses), the ratio of net gambling expenditures to income, the debt created by gambling, and the amount of money borrowed to gamble, based on indirect evidence from surveys.¹⁰³ One approach proposed by Gerstein et al. (1999) for determining the negative impact of gambling on financial problems (or any other negative impact of gambling) is to first determine the expected rate of this impact among non-problem gamblers, then determine the rate experienced by problem gamblers, and finally determine whether the difference is larger than might be expected due to chance or confounding demographic and socio-economic variables.¹⁰⁴

While these are useful benchmarks for Nova Scotia we do not feel they can be readily applied to bankruptcy conditions in Nova Scotia without applied research studies, which was beyond the scope and resources of this study.

¹⁰¹ Goss, E. and E. Morse. (2004). *The Impact of Casino Gambling on Bankruptcy Rates: A County Level Analysis*. Creighton University.

¹⁰² Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

¹⁰³ Goss, E. and E. Morse. (2004). *The Impact of Casino Gambling on Bankruptcy Rates: A County Level Analysis*. Creighton University.

¹⁰⁴ Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago.

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4.13 Abused Dollars

Abused dollars represent lost gambling money acquired by the problem gambler from family, friends, or employers under false pretenses.¹⁰⁵ Two examples are: stealing that is never reported because the thief is a relative and money loaned under duress, that is never repaid. Abused dollars represent a cost to the non-gambling population. According to Grinols and Mustard (2001), to the extent that abused dollars represent purchases of gambling services that are inefficiently sub-optimal from the gambler's perspective or create market inefficiencies, a significant portion represent a social cost to society as a whole. Grinols and Mustard (2001) show a range of abused dollar estimates from several US studies (Table 15) from a low of US\$240 per problem gambler (Leg Research Council, SD) to a high of US\$14,354 per problem gambler by Politzer et al. (1981). Some economists would disagree with the inclusion of abused dollars, noting that they are technically redistributions among individuals in a household or community and should not therefore be included as a cost.

There are no estimates of abused dollars for Canada or for Nova Scotia. However, questions asked of gamblers in both the 2002 and 2007 Nova Scotia adult gambling prevalence surveys do provide some evidence, albeit not monetary, of the abuse of monies for gambling purposes including borrowing money, using credit or credit cards, using money intended for other purposes or lending money to a problem gambler. The responses to these questions from both gambling prevalence studies can be augmented with the responses to the 2008 problem gambler telephone survey.

Table 44 reveals that in 2002 and 2007 while none of the non-problem and low-risk gamblers said that they borrowed money or had sold anything to facilitate their gambling, 7.2% of moderate risk and problem gamblers in 2002 acknowledged borrowing money or selling something to get money for gambling. In the 2007 gambling prevalence survey, a smaller percentage (4.9%) of moderate-risk and problem gamblers acknowledged borrowing money or selling something for money for the purpose of gambling.

¹⁰⁵ Anielski Management Inc. 2008. *The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard*. p. 137

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Table 43
Borrowed or Sold Anything to Get Gambling Money

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
You borrowed money or sold anything to get money to gamble. ²				
2002 Survey	0%	0%	7.2% (4)	0.1% (4)
2007 Survey	0%	0%	4.9% (3)	0.1% (3)

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gambles have been combined.
² Combined responses of "most of the time" and "almost always" from four point scale that includes "sometimes" and "never."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

In the 2002 (from the 2003 prevalence survey), 7.2% of moderate-risk and problem gamblers said they used credit or credit cards to get money to gamble. The question was not asked in the 2007 gambling prevalence survey (Table 45). A large percentage of moderate-risk and problem gamblers (16.1%) said that they had used money intended for another purpose to gamble (Table 46). The same question was not asked in 2007.

Table 44
Used Credit or Credit Cards to Get Gambling Money

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
Used credit or credit cards to get money for gambling. ²				
2003 Survey	0%	0.7% (1)	7.2% (4)	0.1% (3)
2007 Survey ³	---	---	---	---

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gambles have been combined.
² Combined responses of "most of the time" and "almost always" from four point scale that includes "sometimes" and "never."
³ A different scale was used in the 2007 survey so 2003 and 2007 results are not comparable.

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

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Table 45
Used Money Intended For Another Purpose While Gambling

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	
Used money intended for another purpose while gambling. ²				
2003 Survey	0%	0.7% (1)	16.1% (9)	0.4% (10)
2007 Survey ³	---	---	---	---

- █ Shading indicates significant differences among gambler subtypes (p<.05)
- ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
- ¹ CPGI scores for moderate-risk and problem gamblers have been combined.
- ² Combined responses of "most of the time" and "almost always" from four point scale that includes "sometimes" and "never."
- ³ A different scale was used in the 2007 survey so 2003 and 2007 results are not comparable.

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Lending money to a problem gambler was more pervasive across all gambling subtypes in both 2002 and 2007 (Table 47). In 2003 2.6% of non-problem gamblers surveyed said they had lent money or given financial support to someone with a gambling problem at any time while in 2007 4.2% of non-problem gamblers said that they had provided some form of support. Low-risk and moderate-risk/problem gamblers were more likely to have lent money or financial support; 12.7% of low-risk gamblers in 2002 and 11.0% in 2007. Moderate-risk and problem gamblers were the most likely to have given financial support to another problem gambler; 23.2% in 2002 and 16.4% in 2007.

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Table 46
Lent Money or Financial Support to Problem Gambler

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=427) (2007 n=470)	(2002 n=57) (2007 n=33)	(2002 n=34) (2007 n=27)	
Ever lent money or financial support to someone with a gambling problem. ²				
2003 Survey	2.6% (60)	12.7% (17)	23.2% (13)	0.01% (90)
2007 Survey	4.2% (84)	11.0% (10)	16.4% (10)	0.01% (104)

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

In terms of giving non-monetary support, the percentages of gamblers from all subtypes was slightly lower than in the case of monetary support (Table 48). For example, of non-problem gamblers 2.5% said they gave non-monetary support in 2002 compared to 3.3% in 2007. Of low-risk gamblers 9.7% said they gave non-monetary support in 2002, which declined to 6.6% in 2007. Of moderate-risk and problem gamblers, 12.5% said they provided non-monetary support in 2002, which increased slightly to 13.1% in 2007.

Table 47
Given Non-Monetary Support to Problem Gambler

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=427) (2007 n=470)	(2002 n=57) (2007 n=33)	(2002 n=34) (2007 n=27)	
Ever given non-monetary support (e.g., groceries, baby sitting) or help to someone with a gambling problem. ²				
2003 Survey	2.5% (58)	9.7% (13)	12.5% (7)	0.01% (78)
2007 Survey	3.3% (67)	6.6% (6)	13.1% (8)	0.01% (81)

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

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In the 2008 telephone survey, none of the non-problem gamblers said they had borrowed money for gambling purposes from family or friends in the past year. Only 1 moderate-risk and problem gambler surveyed said they had borrowed money from family or friends while one family member of a moderate-risk/problem gambler said that they experienced lending money to a family member who is a problem gambler. When asked how much they borrowed, the single moderate-risk/problem gambler respondent said they had borrowed at least \$1000 but which was not under false pretenses. The one family member who responded positively to the question, noted that \$500 had been borrowed and was obtained under false pretenses.

*Analysis is done using small sample sizes resulting in extrapolation issues.
The study was meant to assess the industry holistically and not focus on problem gamblers alone,
which would over-index problem gambling and results.*

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5. Tourism and Recreation Impacts

5.1 Introduction

The tourism and recreation domain recognizes the entertainment benefits from gambling activities, the gambling industry's effect on tourism, as well as the possible costs (income and employment losses) related to diverting revenues from other forms of entertainment. The gambling industry often notes that earnings from tourism have positive impacts on the economy, raising income for businesses, which translates into tax revenues for government, increased wages and employment. Tourists can come from other Canadian provinces, US or international locations. In Nova Scotia, the Halifax and Sydney casinos are likely tourist-destination gambling venues that would attract out-of-province tourists.

Assessing the tourism benefits of all forms of gambling is difficult given the lack of gambling-related tourism data for Nova Scotia. The exception is tourist visitation statistics for the Halifax and Sydney casinos. Unfortunately of the provincial tourism data that is available, including trend data in overall tourism numbers and visits, cannot be easily disaggregated to determine what factors influenced the choice of visiting Nova Scotia and specifically gambling opportunities as a destination choice.

Any analysis of tourism is also complicated by what counts as an actual benefit from an economic perspective. For example, from a provincial economy perspective, only additional spending associated with out-of-province tourists should be considered an economic benefit.¹⁰⁶ The rationale is that –Nova Scotians would have spent their money on something else other than gambling in the absence of gambling venues or opportunities. There may, however, be localized community benefits of gambling activities in terms of preventing leakages of local spending to other provinces or countries. This raises the issue of whether Nova Scotia's gambling venues have a 'comparative advantage' over other Canadian, US or international gambling venues that attract out-of-province tourists. The extent to which the availability of gambling venues in Nova Scotia play a role in an out-of-province tourist's decision to visit Nova Scotia is not well understood.

¹⁰⁶ The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.143

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5.2 Impact Indicators

The impact of gambling activity on tourism and impact indicators were developed as part of the national SEIG framework as a tool for creating a comprehensive portrait of the economic impacts, both positive and negative, statistical, perceptual and monetary, of gambling as an economic activity. We use this framework for assessing the impacts for all gambling activity in Nova Scotia. We attempted to populate each of the following indicators with data:

- Gambling patronage (out-of-province visitors)
- Incremental tourist expenditures on gambling venues
- Income and employment losses sustained by other entertainment and recreation tourism-related industries.

Given data limitations, the income and employment losses sustained by other recreation industries was not analyzed.

5.3 Gambling patronage (out-of-province visitors)

Gambling patronage (i.e. visitation rates) by out-of-province tourists to Nova Scotia gambling venues have an impact on the tourism and recreation sectors of an economy. The national SEIG framework identified the following gambling patronage-related tourism impact indicators:

- Gambling tourist rate
- Percentage of patrons/visitors from outside the region/community/province making day or overnight trips to a local gambling venue
- Tourists citing gambling as primary reason to visit region
- Overnight trips made by local residents to other regions with gambling venues
- Tourist/visitor expenditures on gambling venues

These indicators were analyzed for Nova Scotia gambling, however, tourist visitation statistics are only available for casinos (Halifax and Sydney) and horse racing (with limitations) from the Nova Scotia Department of Tourism, Culture and Heritage Visitor Exit Surveys. Data on non-resident tourist visitations for VLT gambling, bingos, ticket lottery sales and harness racing are not available.

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Table 49 shows the total visitors (including domestic or local Nova Scotians and out-of-province visitors) to Nova Scotia casinos. Figure 20 shows the trend in total number of visitors (i.e. headcounts) to Nova Scotia casinos between 1996 and 2007. Total visits to both Nova Scotia casinos declined by 46.1% from a total of 3,112,265 visitors in 1996 to 1,678,320 in 2007 (1,433,945 fewer visitors in 2007 compared to 1996), which represents an annual rate of decline of 5.3% over this time period. The Sydney casino has experienced a steady decline in visitors falling 52.0% since 1996 (compared to 2007 visits) while the Halifax casino experienced a slight resurgence in visits between 1998 and 2001, thereafter also experiencing a steady decline. Between 2001 and 2007 the visits to the Halifax and Sydney casinos declined by an average of 7.8% per annum. The Halifax casino, which experienced the bulk of Nova Scotia casino patronage (67% in 2007) experienced the greatest absolute decline in visitors, a 41.0% drop comparing 2007 to 2001. The Sydney casino (with 33% of total Nova Scotia casino visitors in 2007) experienced a 34.4% drop in visitors.

“Visitors” and “visits” are different concepts which should not be compared or used interchangeably.

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Table 48
Nova Scotia Casino Visitors and Out-of-Province Visitors, 2001-2007

	2001	2002	2003	2004	2005	2006	2007
Number visitors to Nova Scotia casinos, including both local/domestic and tourist visits. (1)	2,750,326	2,583,889	2,488,806	2,217,696	2,116,666	1,886,798	1,678,320
Number visitors to Halifax casino	1,911,188	1,780,693	1,722,635	1,450,482	1,441,755	1,311,656	1,127,879
Number visitors to Sydney casino	839,138	803,196	766,171	767,214	674,911	575,142	550,441
Number of out-of-province person-trips to Nova Scotia casinos (2)	315,000	343,000	254,000	258,000	n.a.	n.a.	n.a.
Out-of-province visitor person trips as % of total casino visitors (estimates) (3)	11.5%	13.3%	10.2%	11.6%	n.a.	n.a.	n.a.

Notes: 1. The number of visitors to Nova Scotia casinos is from the Nova Scotia Department of Environment and Labour, Alcohol and Gaming Division statistics and include both domestic and out-of-province visitors. 2. The number of out-of-province travelers visiting casinos is based on Statistics Canada Canadian travel survey, which asked whether a visit to Nova Scotia included a visit to a Nova Scotia casino; data was not available for the period 2005-2007. 3. The ratio of out-of-province visitor trips to total casino visitors is based on two different statistical sources and two different empirical results and is thus only a rough estimate of what percentage of total casino visitors were from out-of-province.

Sources: Nova Scotia Department of Environment and Labour, Alcohol and Gaming Division statistics, annual reports 2001-2007. Statistics Canada Canadian travel survey, activity participation (person-trips), CANSIM Table 426-0006. n.a. data was not available for the years 2005-2007.

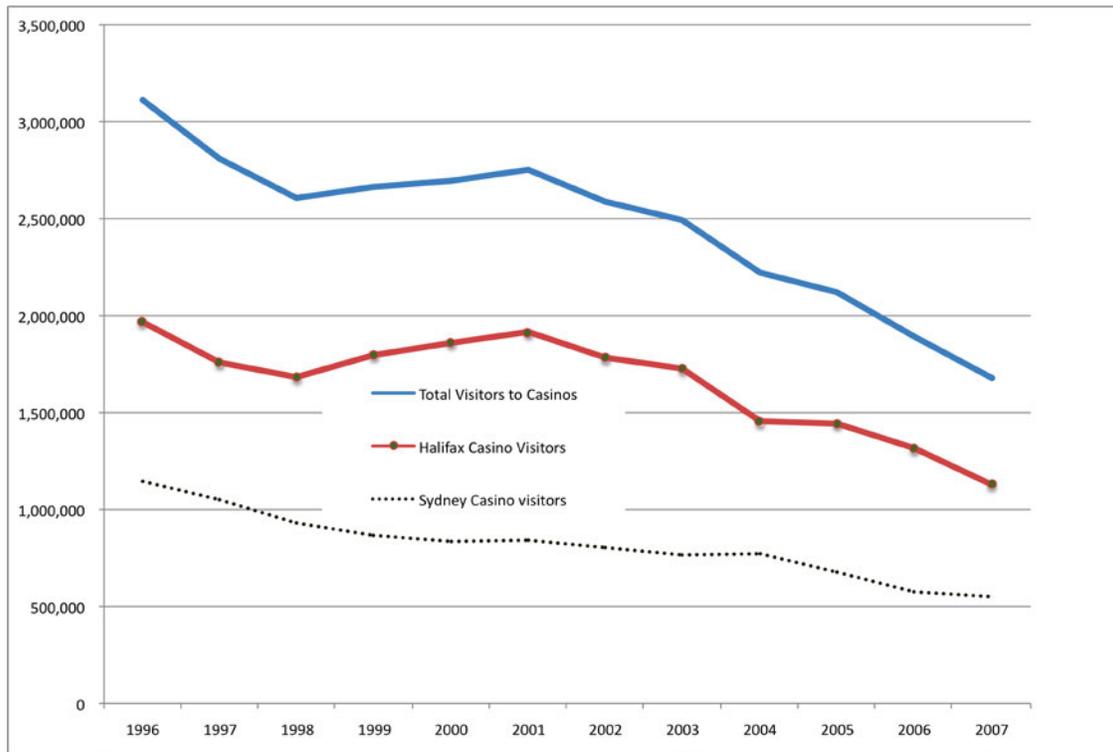
“Visitors” and “visits” are different concepts which should not be compared or used interchangeably. The data set used included Nova Scotians so data on out-of-province visitors is incorrect.

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Figure 21

Total Visitors to Nova Scotia Casinos, 1996-2007



Source: Nova Scotia Department of Environment and Labour. 2006. Alcohol and Gaming Authority. Annual Gaming Reports 1996-2007

“Visitors” and “visits” are different concepts which should not be compare or used interchangeably.

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The estimated number of **out-of-province visitors to Nova Scotia** who visited a casino during their visit while having increased between 1996 (184,000 person-trips) and 2002 (343,000 person trips), then showed **declines** through to 2004 (the last survey reporting year) to reach 258,000 person-trips, according to the Canadian travel survey and Statistics Canada, (Table 50). Of total person-trips to Nova Scotia from out-of-province tourists between 1996 and 2004, the percentage who visited a casino has ranged from 2.7% in 1999 (when there were 7,006,000 tourist person-trips to Nova Scotia) to 4.5% in 2001 (when there were 7,019,000 person-trips), according to Statistics Canada data; the most recent reporting year, 2004, shows that 3.7% of visitors visited a casino.¹⁰⁷ The year 2002 recorded both the highest total tourist person-trips to Nova Scotia and the highest recorded person-trips to Nova Scotia casinos by tourists. However, since 2002, person-trips to Nova Scotia casinos have been in steady decline. By contrast, person-trips to Nova Scotia bars and nightclubs (many of which contain VLT machines) more than doubled between 1996 and 2003 and then experienced a sharp 18% decline in 2004.¹⁰⁸

“Visitors” and “visits” are different concepts which should not be compared or used interchangeably. The data set used included Nova Scotians so data on out-of-province visitors is incorrect. It is inaccurate that a decline occurred from 2002 to 2004. Footnote 107 is incomplete.

¹⁰⁷ It should be noted that in 2004 and 2005

¹⁰⁸ Tourism surveys do not inquire about whether a visit to a bar or nightclub was motivated by the existence of VLTs thus it would be difficult to attribute any of the bar or nightclub tourist person-trips to VLTs.

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Table 49
Total Tourist Person-trips to Nova Scotia, Out-of-Province Visitors Who Went to a Casino, Bar or Nightclub and Estimated Reallocated Expenditures on Casinos, 1996-2004.

Data set included Nova Scotians so numbers are overstated.

Year	Total Tourist Person-trips to Nova Scotia	Went to a bar, nightclub (person-trips)	Went to a casino (person-trips)	Person trips that went to a casino (Nova Scotia total)
1996	5,626,000	340,000	184,000	3.3%
1997	n.a.	n.a.	n.a.	n.a.
1998	6,485,000	386,000	182,000	2.8%
1999	7,006,000	384,000	190,000	2.7%
2000 *	7,034,000	602,000	258,000 ¹⁰⁹	3.7%
2001	7,019,000	764,000	315,000	4.5%
2002	8,287,000	821,000	343,000	4.1%
2003	7,164,000	827,000	254,000	3.5%
2004	7,066,000	677,000	258,000 ¹¹⁰	3.7%

Notes:
 Data for 2005-2007 was not available. Estimates of reallocated

expenditures for casinos assumes the same ratio of on total reallocated by tourists to Nova Scotia divided by total person-trips to Nova Scotia from out of province multiplied by the person-trips to a casino by visitors.

Source: Statistics Canada, Table 426-0006 - Canadian travel survey, activity participation, by province of destination, annually (Person-trips) and Table 426-0001 – Canadian travel survey, domestic travel , by province and census metropolitan areas (person-trips).

n.a.- data not available

* The interim casino in Halifax opened in 1995; the permanent Halifax Casino opened in April of 2000.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

In the text and Footnote 110: Statistics Canada conducted the Travel Activity and Motivation of Canadian Residents survey.

¹⁰⁹ In a 2000 exit survey by Nova Scotia Tourism and Culture, an estimated 241,717 out-of-province visitors said they had visited a casino, one or more times in 2000, which represented 17.0% of a total of 1,421,864 visitors to Nova Scotia in 2000.

¹¹⁰ In a 2004 visitor exit survey conducted Nova Scotia Tourism and Culture, an estimated 202,806 out-of-province visitors said they had visited a casino in 2004, which represented 16.1% of a total of 1,255,860 visitors to Nova Scotia in 2004. Also, in 2007 the Ontario Ministry of Tourism published a travel survey (Travel Activity and Motivation of Canadian Residents) conducted in 2004 and 2005, in conjunction with other provinces including Nova Scotia. Over the two-year period (2004 and 2005) the survey found that a total of 640,320 travelers to Nova Scotia had visited a casino; this would equate to an average annual visitor rate of 320,160 visitors in 2004 and 2005.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

In 2004 and 2005 visitor exit travel surveys were conducted by the Ontario Ministry of Tourism (MITs) on behalf of the Government of Nova Scotia and other provincial governments, which provided alternative visitor statistics (overnight trips) on Canadian and American visitors to Nova Scotia who visited either a casino or horse racing (Table 51). The survey results are not directly comparable to Statistics Canada data in terms of person-trips and the survey was only conducted in 2004 and 2005. The MITs survey results show much higher casino visitation numbers (an average of 712,579 overnight visits per year 2004 and 2005 compared to 258,000 person-visits from the Statistics Canada travel survey source) and much higher overnight visitation rates to casinos (29% of total Canadian and American traveler overnight visits) than the Canadian travel survey source for Statistics Canada (which suggests only 3.7% of total tourist person-visits visited a casino in 2004).¹¹¹ The MITs survey also shows that American travelers are more likely (34% of total overnight American visits) to visit casinos than Canadian travelers (25% of total overnight Canadian visits) to Nova Scotia. The survey also provides evidence of overnight visits to horse racing venues, with 3% of total overnight visits to Nova Scotia in 2004 and 2005. The MITs surveys provide greater insight into the whether gambling, as an activity, was a main motivation for tourist visits. According to the results, 6% of Canadian tourist overnight visits and 15% of American tourist overnight visits to Nova Scotia were motivated by their desire to visit a casino (or 10% on average for both Canadian and American tourists). Americans are more likely to identify a casino as their primary motivation for their trip. In terms of horseracing, a smaller percentage (1% of Canadian and 1% of American tourists) said their primary motivation for the trip to Nova Scotia was to go to a horse race.

The Ontario Ministry of Tourism conducted analysis on its province's behalf. The number of overnight visitors, including out-of-town Nova Scotians, who went to a casino or horseracing venue, is not found in the source report. The methodology used to arrive at that estimate is not valid.

¹¹¹ While the MITs travel survey reports higher overnight trips to Nova Scotia casinos, the survey reports far lower overnight trips to Nova Scotia by out-of-province travellers compared to the Canadian travel survey for Statistics Canada (CANSIM Table 426-0001). For example for the year 2004 the Statistics Canada there were an estimated 10,886,000 visit nights, 7,066,000 person-trips, and 7,189,000 person-visits reported; comparing visit nights with the MITs overnight trips average of 2,436,854 suggests that Statistics Canada figures might be 2.9 times greater.

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Table 50

Overnight trips by Out-of-Province Visitors During 2004 and 2005 Who Went to a Casino or Horse Races.

Travellers	Number of overnight trips to Nova Scotia	% of overnight trips to Casino	Estimated total trips to casino	Percentage of trips where going to casino was a main motivation of their trip	Estimated total trips where the main motivation of their trip was to visit a casino
Canadian	2,576,708	25%	644,177	6%	154,602
American	2,297,000	34%	780,980	15%	344,550
Total travellers	4,873,708	29%	1,425,157	10%	499,152
Total travellers (annual)	2,436,854		712,579		249,576
Travellers	Number of overnight trips to Nova Scotia	% of overnight trips to Horse Races	Estimated total trips to Horse Races	Percentage of trips where going to horse races was a main motivation of their trip	Estimated total where the main motivation of trip was to attend Horse Races
Canadian	2,576,708	3%	77,301	1%	25,767
American	2,297,000	3%	68,910	1%	22,970
Total travellers	4,873,708	3%	146,211	1%	48,737
Total travellers (annual)	2,436,854		73,106		24,369

Notes: Because the survey period is over two years, 2004 and 2005 it would be necessary to determine annual visitor volumes; in the absence of more information we have assumed that equal distribution of total visitors attributed to 2004 and 2005.

Source: Government of Ontario Ministry of Tourism. 2007. Travel Activity and Motivations of Canadian Residents. March 2007.

*The number of overnight visitors, including out-of-town Nova Scotians, who went to a casino or horseracing venue is not found in the source report. The methodology used to arrive at that estimate is not valid.
The American study is not cited.*

Did the opening of the new Halifax Casino on April 24, 2000 have a measurable impact on tourist visits to Halifax or Nova Scotia?¹¹² Examining trends in both tourist visits to Nova Scotia casinos and specifically to Halifax between 1998 and 2004, using Statistics Canada data, reveals that person-trips to Nova Scotia casinos increased 32.9% between 2000 (the opening of Halifax's new casino) and 2002 while person-trips to Nova Scotia increased 20.9% (see **Figure**

¹¹² An interim casino in Halifax was first established in 1995.

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21). However since 2002 (to 2004) the number of tourist person trips declined by 24.8% for Nova Scotia casinos and declined 18.3% for Halifax tourist person trips. These statistics do not suggest that the Halifax casino was the primary driver of rising tourist visits between 2000 and 2002 nor can the declining visitation numbers since 2002 be explained without examining other drivers that underlie tourist behaviour, including economic conditions such as currency exchange rates.¹¹³

The number of overnight visitors includes out-of-town Nova Scotians.

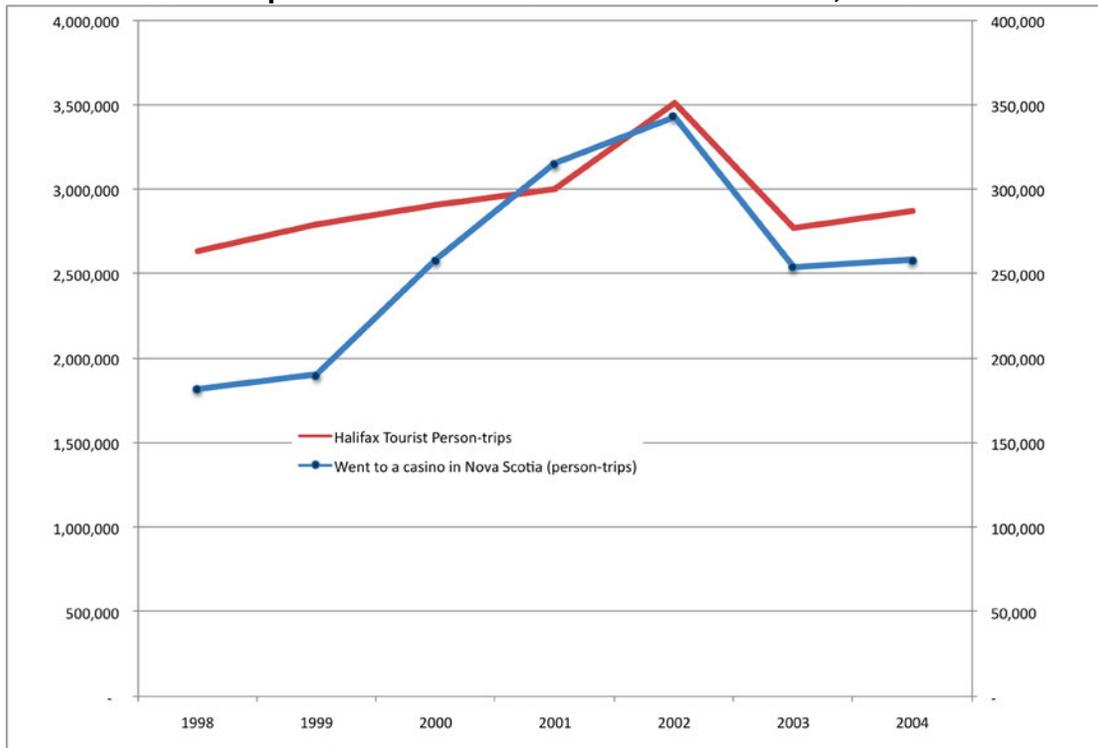
¹¹³ US-Canadian dollar exchange rates did fluctuate considerably between 1998 and 2004. For example, the average exchange rate fell from roughly \$Can 0.69 per US\$1 in 1999 to Can\$0.66/US\$ by the end of 2000, then fell further reaching C\$0.63/US\$ by the end of 2001 remaining at \$0.63/US\$ through to December 2003 then began rising appreciably over 20% reaching C\$0.77/US\$ by December 2003 and then rose a further 7.8% reaching C\$0.83/US\$ by December 2004. The tremendous appreciate of the value of the Canadian dollar against the US dollar could have had a significant dampening affect on US tourist visits. In summary, compared to our tourist trend analysis, the Canadian dollar lost 4.5% of its value between 2000 and 2002 and then gained 31.7% of its value between 2002 and 2004 against the US dollar.

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Figure 22

Tourist Trips to Nova Scotia Casinos and to Halifax, 1998-2004



Source: Statistics Canada, Table 426-0006 - Canadian travel survey, activity participation, by province of destination, annually (Person-trips) and Table 426-0001 – Canadian travel survey, domestic travel , by province and census metropolitan areas (person-trips).

Data set includes Nova Scotian residents.

When contrasting the trend in net gambling revenues and **out-of-province visits** to Nova Scotia casinos (Figure 22), both show a declining trend between 2004 and 2007. Total visitors to Nova Scotia casinos also follow a similar declining trend, which began in 2001. While not as high as other correlation coefficients previously analyzed, the statistical correlation between these two variables is rather strong with an R-square of 0.68, which suggests that the variance in gambling revenues can be partly explained by out-of-province **visitation rates**.

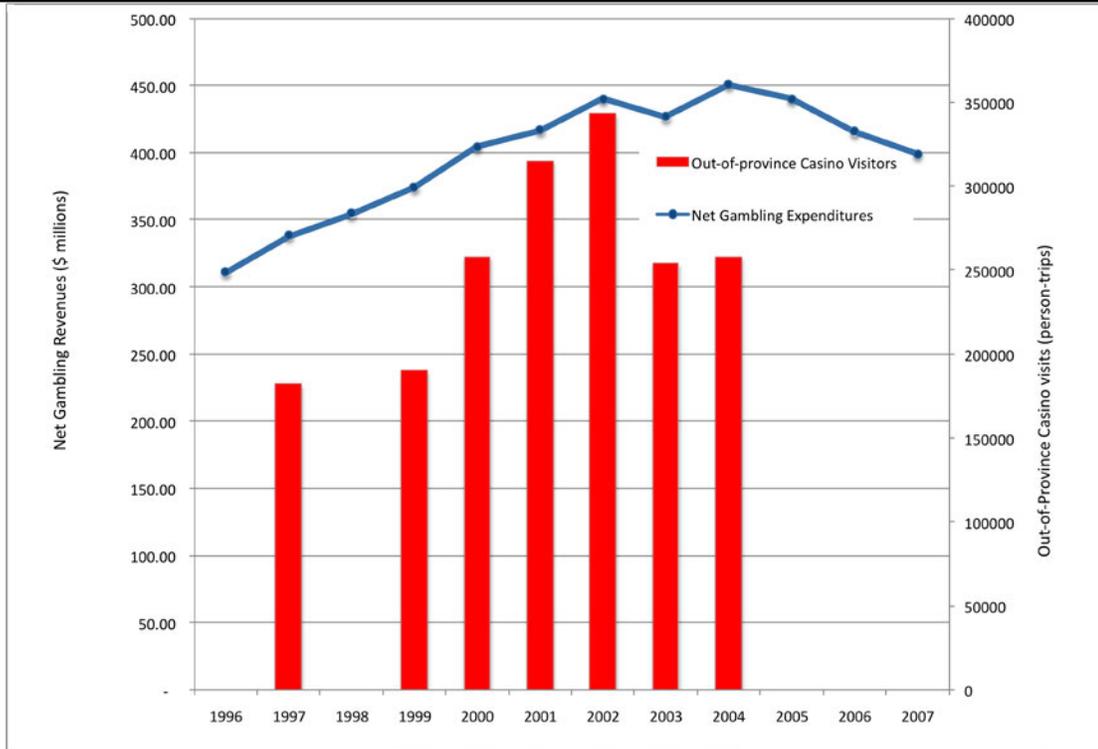
Data includes Nova Scotian out-of-town visitors, making the analysis incorrect. The removal of 1,000 VLTs from the market is not taken into consideration, nor are other factors considered (i.e., supply; large events).

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Figure 23
Out-of-Province Visitors to Nova Scotia Casinos vs. Net Gambling Revenues, 2001-2007

Data includes out-of-town Nova Scotian visitors.



Source: Statistics Canada Canadian travel survey, activity participation (person-trips), CANSIM Table 426-0006. Alcohol and Gaming Authority. Annual Gaming Reports 2001-2007. Net gambling revenue data is from the Ministry of Environment and Labour, Alcohol and Gaming Division's annual gambling reports, 2001/02-2007/08.

In conclusion, while tourist statistics do show that some portion of tourist visits to Nova Scotia may be motivated by the existence of gambling venues, these statistics are limited to casino visits (there are no visitor statistics on patronage to other gambling venues such as VLTs). Thus, it is difficult to determine what percentage of total Nova Scotia gambling revenues that are coming from out-of-province visitor expenditures. In terms of casinos, less than 5% of total out-of-province visitors went to a casino during their visit between 1998 and 2004.

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5.4. Incremental tourist expenditures on gambling venues.

Tourist dollars expended in Nova Scotia are the equivalent of exports in terms of economic benefits from a macro-economic or GDP accounting perspective. These constitute dollars from disposable income from out-of-province consumers or households and are thus genuine net economic inputs to the Nova Scotia economy when spent at Nova Scotia gambling venues.

Nova Scotia gambling revenue statistics do not distinguish between dollars wagered by Nova Scotia residents and those wagered by out-of-province tourists.

In 2004 an estimated \$1.206 billion was spent¹¹⁴ by out-of-province visitors (see Table 52). Based on Statistics Canada travel survey statistics, we estimated that roughly 3.7% of tourist expenditures (\$44.0 million)¹¹⁵ were spent (total wagered before cash prize payouts) at Nova Scotia casinos in 2004. Compared to the total estimated amount of money wagered at casinos in Nova Scotia in 2004 (\$371.1 million) this \$44.0 million contribution by tourists represented 11.8% of total wagered at Nova Scotia casinos. By extension, this would suggest that roughly 11.8% of Nova Scotia net gambling revenues (wagered less prize payouts) from casinos would amount to an estimated \$10 million of the total \$85 million in net revenues from casinos in 2004. In the context of total net revenues for all Nova Scotia gambling activity in 2004 (\$450.7 million), this \$10 million estimated net expenditure by tourists at casinos would represent about 2.2% of total gambling net revenues.¹¹⁶

Data includes out-of-town Nova Scotian visitors.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

The methodology was used to calculate the tourism expenditures at the casinos is not valid because the assumption that the percentage of visitors to the casinos matches the percentage of expenditures at the casinos is not justified.

¹¹⁴ Statistics Canada uses the term 'reallocated expenditures' to denote household or consumer expenditures which are made by outside of the community or province of origin.

¹¹⁵ By comparison, an economic impact study in 2007 of the Tall Ships festival of non-Nova Scotians found that only 1.3% (\$463,668) of total tourist expenditures (\$36,945,079) by an estimates 67,317 visitors to Nova Scotia was spent on the Halifax casino and on VLTs in the Halifax area (T.M. McGuire Ltd. 2007. *Tall Ships Nova Scotia Festival 2007 Economic Impact Study*. Prepared for Tall Ships Nova Scotia Festival 2007 & Waterfront Development Corporation Limited. November 13, 2007)

¹¹⁶ In a study of the economic and financial impacts of gambling in Canada by Vaillancourt and Roy published in 1999 estimated that tourist spending in Nova Scotia casinos represented 15% of Nova Scotia's gambling revenue and that these visitors accounted for 0.4% of spending on other goods or services related to gambling (Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation).

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Table 51

Estimated Tourist Expenditures ('Reallocated Expenditures') in Nova Scotia, Casinos and Bars and Nightclubs, 1996 to 2004.

Year	Nova Scotia Total Reallocated Tourist Expenditures (1)	Halifax Total Reallocated Tourist Expenditures	Estimated Nova Scotia Casino Reallocated Expenditures (2)	% of total Nova Scotia Reallocated Tourist Expenditures spent at casinos	Estimated Nova Scotia Bars and Night Clubs Reallocated Expenditures (3)
1996	\$742,983,000	\$426,632,000	\$24,299,480	3.3%	\$44,901,212
1997	n.a.	n.a.	n.a.	n.a.	n.a.
1998	\$877,106,000	\$509,193,000	\$24,615,774	2.8%	\$50,976,082
1999	\$904,459,000	\$489,244,000	\$24,528,577	2.7%	\$50,711,957
2000 *	\$983,217,000	\$550,132,000	\$36,063,404	3.7%	\$79,501,558
2001	\$1,177,481,000	\$668,528,000	\$52,843,213	4.5%	\$100,895,665
2002	\$1,309,866,000	\$724,253,000	\$54,215,523	4.1%	\$108,423,221
2003	\$1,260,350,000	\$668,918,000	\$44,685,776	3.5%	\$109,215,596
2004	\$1,206,290,000	\$637,410,000	\$44,045,120	3.7%	\$89,406,237

Notes: 1. Reallocated expenditures refers to the expenditures by out-of-province tourists to Nova Scotia. 2. Estimated reallocated expenditures by tourists visiting Nova Scotia casinos is based on a calculation of the average total reallocated expenditure of all tourists divided by the total tourist person-trips (see Table 50) multiplied by the number of person-trips to Nova Scotia casinos. 3. Estimated reallocated expenditures at Nova Scotia bars and nightclubs is estimated in the same fashion as the estimate for casinos.

Source: Statistics Canada, Table 4260001 - Canadian travel survey, domestic travel, by province and census metropolitan areas, annually (Person-trips unless specified)

n.a. - data not available

* In April, 2000, the Halifax Casino opened; an interim casino has existed in Halifax since opening in 1995.

Table 52 and the following paragraph are incorrect because 1) the data includes Nova Scotia out-of-town visitors, and 2) the assumption that the percentage of expenditures must match the percentage of visitors going to the casinos.

Since we do not have any account of the percentage of tourist expenditures on horse racing, VLTs at bars and nightclubs, bingos, charitable lotteries or on ticket lotteries, our estimate of the \$10 million contribution or 2.2% of net gambling revenues from tourist expenditures at Nova Scotia casinos is conservative.

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From a GDP accounting perspective, tourist expenditures at gambling venues would be akin to the value of exports for gambling as an economic sector. However, since tourist expenditures are already counted in the total net gambling revenues reported by the provincial government, these expenditures do not constitute additional or net economic benefits to the provincial economy from the perspective our GDP of gambling estimates.¹¹⁷ All that we have demonstrated is that tourists do contribute some portion (at least \$10 million or more in 2004) of net gambling expenditures and that these expenditures do constitute a genuine net economic benefit for Nova Scotia.

The conclusions are incorrect because the data includes Nova Scotia out-of-town visitors and the underlying assumption is unlikely (percentage of expenditures matches the percentage of visitors going to the casinos).

¹¹⁷ Note that our gambling GDP estimate based on a consumer expenditure basis was based on net gambling expenditures that includes both Nova Scotia household and out-of-province visitor expenditures, combined. It is impossible to disaggregate the tourist portion of the net gambling revenue figures reported by the provincial government.

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6. Employment Impacts

6.1 Introduction

This chapter presents data on employment impacts in Nova Scotia's gambling industries. Data from a variety of sources are examined to gain insight into the current level of employment by industry sector and changes in employment over time.

Using the national SEIG analytic framework, the key employment impact indicators examined for Nova Scotia include:

- Net job creation in the gambling industry
- Indirect employment related to the gambling industry
- Changes in unemployment and underemployment resulting directly from gambling industry development
- Productivity losses and absenteeism.

Introduction omits the retail industry sector.

The introduction of gambling venues to a community is thought to result in positive impacts on an economy through increased employment in gambling-related services and indirect jobs created elsewhere in the local economy. The gambling industry employs people directly (e.g. casinos) and indirectly such as restaurants, hotels, bars and lounges benefit from spending by gambling patrons.

The challenge is determining how many jobs or what proportion of a job can be attributed to gambling activity. For example, did the new casino result in a genuine 'net' increase in employment (i.e. new jobs) or were these jobs a transfer of workers from one sector to another? As Vaillancourt and Roy point out in their cost-benefit analysis of gambling in Canada,¹¹⁸ just because there is evidence of new gambling-related employment does not necessarily mean that new jobs are created. They noted that two criteria are needed for this to be the case. The first is that one must show that local residents' gambling expenditures have created more jobs than would have been created by spending the same amount on alternative local goods and services. The second is that foreign tourists spend more because of gambling services directly (exports of gambling services) and/or that local residents spend less on out of province gambling (import substitution). Vaillancourt and Roy assumed in their study of Canada (including Nova Scotia) that, since there is no evidence on the alternative uses of gambled money in Canada, additional spending on gambling relative to other local goods and services is

¹¹⁸ Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation.

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zero. Azmier (2000) supports the conclusions of Vaillancourt and Roy, noting that he found no evidence in Canada that new jobs are actually created from these activities, after job transfers from other business sectors are considered.¹¹⁹

Earl Grinols (2004)¹²⁰ notes that too often development of one sector comes at the expense of cannibalizing workers from another sector in the community, implying that there may be no net benefit.¹²¹ Some of the increased revenues from gambling are considered to be a transfer of employment from other sectors to the gambling industry. Grinols noted that most gambling-sector jobs resulted from a transfer of from other sectors in the economy or from other communities (migrant workers). Calculating the indirect loss of jobs and expenditures created by diverting revenue from other industries to the gambling sector is difficult since these effects are often not localized or visible.¹²²

Economist Douglas Walker (2006)¹²³ disagrees with Grinols, suggesting that employment created by building a new casino should count if that new casino creates new, better and higher-paying jobs (a qualitative improvement in the labour market) than the industry or firm that the casino may have displaced. Moreover, Walker argues that the new gambling establishment must be creating better employment opportunities than existed before or workers would seek other employment options.

According to a *GPI Atlantic* study, almost all of the direct employment from gambling are products of casinos and government regulated authorities.¹²⁴ And some of the increased revenues from gambling may simply be transfers of employment from other sectors to the gambling industry. The majority of employment benefits from gambling in Nova Scotia are likely from casinos, ticket lottery sales, and VLTs, with the latter two representing only a portion of a full-time-equivalent employee's work hours.

¹¹⁹ Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation.

¹²⁰ Grinols, Earl L. 2004. *Gambling in America: Costs and Benefits*. Cambridge University Press

¹²¹ Anielski Management Inc. 2008. *The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard*. p. 1

¹²² Henriksson, L. E. and R. G. Lipsey. (1998). *Research into Gambling Expansion (CERGE)*.

¹²³ Walker, Douglas. 2006. *Quantification of the Social Costs and Benefits of Gambling*. Paper presented at the workshop on Social and Economic Impacts of Gambling April 21-22, 2006 in Banff, Alberta

¹²⁴ GPI Atlantic. 2004. *The Costs and Benefits of Gaming: A Literature Review with Emphasis on Nova Scotia*. Study prepare by Karen Hayward for the Nova Scotia Gaming Foundation. July 2004, p. 89.

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In terms of the demographic profile of gambling industry workers in Canada, Statistics Canada data for Canada for 2006 shows that, compared with workers in non-gambling industries, workers in the gambling sector were more likely to be: women (54% versus 47%), paid by the hour (79% versus 65%), and paid less (\$18 hourly versus \$20) and receiving tips at their job (30% versus 7%).¹²⁵

Statistics Canada definition of gambling industries does not include workers in all gambling venues.

This chapter examines trends in direct employment related to the gambling industry as well as estimates of indirect employment impacts, using input-output (I-O) modeling techniques. We also examine experiential data from the 2003 and 2007 adult gambling prevalence studies and the 2008 adult problem gambler telephone survey as to potential negative impacts of loss of work productivity, job loss, absenteeism, and other negative employment experiences due to gambling.

The draft only examines the negative impacts of gambling on employment in Nova Scotia, which does not respond to the RFP.

6.2 Net Job Creation in the Gambling Industry

Official employment data (full-time equivalent (FTE) positions) for Nova Scotia's gambling industry are only available for the casinos, the Nova Scotia Gaming Corporation, and a portion of the Atlantic Lottery Commission FTEs dedicated to Nova Scotia operations. Employment data related to VLTs, ticket lottery sales, charitable lotteries and bingos are not available from Statistics Canada or other employment data sources. An Input-Output simulation analysis was conducted by the Department of Finance for Anielski Management Inc. to estimate both direct and spin-off employment impacts of ticket lotteries, video lottery terminals and casinos. However, these I-O employment estimates cannot be compared with official employment statistics and discussed separately later in this section.

In 2006, there were approximately 790 FTEs employed by Nova Scotia's casinos and gambling agencies (Table 53) or a total of 983 jobs in the gambling sector in 2006. An estimated 707 FTEs (more than 90%) were employed by the Halifax and Sydney casinos (the Halifax casino employed 547 FTEs), approximately 64 FTEs were employed by the Atlantic Lottery Commission, and an additional 19 FTEs were employed by the Nova Scotia Gaming Corporation. The Alcohol and Gaming Division of the Department of Labour and Environment employed an estimated 60 FTEs in 2006, however, what proportion of these FTEs were engaged in gambling-related work is unknown.

Incorrect number (983) from table used in text. Number in text (90%) is incorrect.

¹²⁵ Marshall, K. (2007). *Fact-sheet on gambling*. Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, May 2007.

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Employment in the Nova Scotia's gambling sector has remained relatively unchanged, ranging from 790 FTEs in 2006 to 887 FTEs in 2002. Of the 790 FTEs employed in 2006, an estimated 96 (12.2%) were in management positions and 694 (87.8%) in service positions.

A 10.9% change is not relatively unchanged.

Table 52
Direct Employment in Nova Scotia's Gambling Industry

Nova Scotia Employee numbers (FTEs)	2001	2002	2003	2004	2005	2006
Atlantic Lottery Commission (Nova Scotia operations)	68	72	74	67	62	64 (64)
Nova Scotia Gaming Corp.	14	12	15	15	13	19 (20)
Alcohol and Gaming Division	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Casino Nova Scotia Halifax - Annual Average FTEs (# employees in brackets)	605 (784)	613 (825)	616 (747)	584 (752)	564 (613)	547 (657)
Casino Nova Scotia Sydney - Annual Average FTEs (# employees in brackets)	187 (243)	189 (248)	181 (232)	171 (248)	160 (196)	160 (223)
Subtotal casinos (FTEs) (# employees in brackets)	792 (1,027)	803 (1,073)	797 (979)	755 (1,000)	724 (809)	707 (874)
Total FTEs (all gambling) (# estimated jobs in Nova Scotia gambling industry, in brackets)¹	874 (1,133)	887 (1,185)	886 (1,088)	837 (1,108)	799 (892)	790 (983)

Notes: n.a. employment data for FTEs dedicated to gambling from the Alcohol and Gaming Division of the Department of Labour and the Environment are not available, however, roughly 60 FTEs were employed in the Division in 2006-07. 1, Number of estimated jobs in Nova Scotia gambling industry are from Bill Trask, Nova Scotia Gaming Corp. (2007), special data request. Sources: Nova Scotia Department of Environment and Labour. 2006. Alcohol and Gaming Authority. Annual Gaming Reports 2001-2006. Trask, Bill. 2007. Data request, Employee numbers (FTEs). Nova Scotia Gaming Corporation. September 2007. Nova Scotia Gaming Corporation. 2007. Fact sheet on Gambling. July 2007. Nova Scotia Gaming Corporation. 2006. Fact sheet on Gambling. July 2006. Employee figures for casinos is from Nova Scotia Department of Environment and Labour. 2006. Alcohol and Gaming Authority. Annual Gaming Reports 2001/02-2006/07.

*There are addition errors and incorrect figures in Table.
Table excludes entire subsets of employers (e.g., harness racing, charities, and ticket/VLT retailers).
Citation should reference the source of the data not the name of a staff person who provided it.*

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The actual number of persons employed or ‘jobs’ (which includes full-time and part-time employees) tend to be higher than the FTE numbers¹²⁶ For example, in 2006 there were an estimated 983 jobs or persons employed in Nova Scotia’s gambling sector compared to 790 FTEs. The number of employees employed by casinos has ranged from a low of 809 in 2005 to a high of 1,073 in 2002 (see Table 53). Employee data is only available for casinos and only for 2006 for all other gambling-related employment.

The final sentence does not correlate with Table 53.

Gambling employment relative to other provincial employment

How does the estimated employment in the gambling sector compare with other Nova Scotia sectors of the economy? The estimated 983 jobs or people employed in Nova Scotia’s gambling industry in 2006 represented 0.22% of the 441,800 persons employed in Nova Scotia in 2006. However, casino and other gambling employment numbers reported by Statistics Canada¹²⁷ represented roughly 9.2% of 8,634 jobs in Nova Scotia’s arts, entertainment and recreation industries (NAICS 71) and almost 20% of the 3,979 jobs in amusement, gambling and entertainment industries (NAICS 713) and subset of the arts, entertainment and recreation total. Relative to the 29,880 persons employed in the accommodation food services industries in 2006, casino and other gambling related employment would have represented 2.7% of this sector’s employment.¹²⁸ Including employment simulation estimates for VLTs and ticket lotteries would yield higher percentages of total arts, entertainment and recreation employment contributed by the gambling industry.

Footnote 127 and text are contradictory.

Several numbers in the paragraph are incorrect.

Employment numbers used would be classified in other industry subsets not necessarily associated with the gambling industry as defined by Statistics Canada.

¹²⁶ Full-time equivalents differ from the actual number of employees in that some employees may work part-time yet their part-time hours are combined to create a full-time-equivalent position for the purposes of reporting.

¹²⁷ Statistics Canada does have a specific NAICS code for ‘gaming industries’ (NAICS 7132), however, employment data and wage data for this classification is not available for Nova Scotia.

¹²⁸ Persons employed figures for Nova Scotia and other sectors is from Statistics Canada Table 2820061 - Labour force survey estimates (LFS), employment by economic region and North American Industry Classification System (NAICS), annually (Persons).

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Compared with other sectors in the Nova Scotia economy, employment of 983 persons by casinos, the NSGC and ALC would be larger than the 513 jobs in the pharmaceutical and medicine manufacturing in 2006 but smaller than the 846 jobs in advertising industries and the 1461 jobs in the aerospace product and parts manufacturing.¹²⁹

Text contains an incorrect number.

Overall, comparing the gambling-related total jobs in the arts and recreation sector shows a decline from 12.9% in 2001 to 9.2% in 2006, thus reflecting a declining share of total arts and recreation employment from the gambling sector.

Text contains an incorrect number.

Input-Output simulation estimates for VLT and ticket lottery-related employment

Although formal employment statistics do not exist related to ticket lotteries and VLTs, an input-output (I-O) analysis¹³⁰ was undertaken to estimate the economic impacts, including direct, indirect (spin-off jobs), and total employment impacts¹³¹, of operations of ticket lottery (TL) and video lottery (VL) in Nova Scotia for the year 2007. The analysis was conducted by the Economics and Statistics Division of the Nova Scotia Department of Finance for Anielski Management Inc. in 2008. In order to derive these employment impact estimates, data on commissions and bonus payments to ticket lottery and VLT operators was used to derive three possible employment outcome scenarios.¹³²

The treatment of commissions and bonuses determines the impact of this analysis and as such there are a number of issues for consideration.

¹²⁹ Other sector employment data is from Statistics Canada, CANSIM table 383-0010, labour statistics for Nova Scotia.

¹³⁰ In working with the input vectors for the 2003 Nova Scotia Input-Output Model (the "Model"), certain assumptions had to be made regarding the breakdown of commissions and the creation of employment from these commissions.

¹³¹ Direct impacts are those that result directly from the company's expenditures on, or purchases of, goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (due to inter-industry transactions) and induced impacts (from the repercussive effects caused by household spending and re-spending). Total impacts are the sum of direct and spinoff impacts.

¹³² For each of the scenarios the assumption of the amount of commissions and bonuses going to employment income was critical. Employment associated with commissions and bonuses was derived from household income associated with employment and the estimated annual wage for the Retail Grocery Stores industry (NAICS code 4451) and the Food Services and Drinking Places industry (NAICS code 772), for Ticket Lottery and Video Lottery, respectively. The hourly wage was provided by Anielski Management Inc. and was adjusted by average Nova Scotia benefits and multiplied by 2,000 hours per person-year to provide an estimated annual wage.

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Questions for consideration include:

These questions were provided to the consultant by the NS Department of Finance for the purpose of refining the analysis.

1. Do commissions and bonuses truly represent incremental employment? Is employment associated only with selling lottery tickets or having video lottery terminals?
2. Do commissions and bonuses going to employment support existing employment? To what extent do entities use it to subsidize employment?
3. Do commissions and benefits go to profits? Are these profits reinvested in the business? Do they remain in the province?
4. Do commissions and bonuses go to profits, which are then paid out in dividends to shareholders? Are these shareholders within the province? Is money received as dividends spent the same as other household income?

Ticket lottery employment simulations

The I-O simulation analysis for ticket lottery employment estimates between 288 (scenario 1) and 543 direct person-years of employment for the year 2007 (Table 54); see Appendix 2 for a detailed description of the I-O analysis work. Scenario 1 simulation assumes that 50% of bonuses and commissions paid to ticket lottery vendors goes to employment income while 50% is retained as dividends to the vendor. Scenario 2 assumes that 100% of bonuses and commissions goes to employment income. In our opinion, scenario 1 (288 direct person years of employment) is a more likely scenario for the typical Nova Scotia establishment that sells ticket lotteries. This is because it is unlikely that 100% of commissions and bonuses from ticket lottery sales would be solely dedicated to employee salaries at these establishments. Spinoff or indirect employment will be discussed in the next section of the Employment analysis part of this report.

Table 53
Ticket Lottery I-O Employment Simulations for 2007

Employment (Person- Years)	Direct	Spinoff	Total
Scenario 1 (50% to employment income, 50% to dividends)	288	202	490
Scenario 2 (100% to employment income)	543	202	745

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Source: Economics and Statistics Division of the Nova Scotia Department of Finance on behalf of, Anielski Management Inc., October, 2008.

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Video lottery employment simulations

The I-O simulation analysis for video lottery employment estimates between 24 (scenario 1), 548 (scenario 2) and 1,072 (scenario 3) direct person-years of employment for the year 2007 (Table 55); see Appendix 2 for a detailed description of the I-O analysis work. Scenario 1 simulation assumes that 100% of bonuses and commissions do not accrue to employment income or benefits but rather leak out accruing perhaps to the VLT terminal venue vendors. Scenario 2 assumes that 50% of bonuses and commissions goes to employment income while 50% goes to VLT vendor dividends. Scenario 3 assumes that 100% of bonuses and commissions goes to employment income. Which scenario is most likely to represent reality in the case of VLT venue vendors in Nova Scotia depends on each venue? In our opinion a reasonable assumption is that VLT related direct employment probably falls somewhere between 24 (scenario 1) and 548 (scenario 2) person-years of employment since we believe it is highly unlikely that VLT venue owners (e.g. bars and clubs) would spend 100% of the VLT commissions and bonuses on employee salaries either directly or indirectly related to the existence of the VLT machines in their establishments.¹³³ Spinoff employment will be discussed in the next section of the Employment analysis part of this report.

Table 54
Video Lottery I-O Employment Simulations for 2007

Employment (Person- Years)	Direct	Spinoff	Total
Scenario 1 (100% leakage of commissions and bonuses)	24	175	199
Scenario 2 (50% of commissions and bonuses to employment income, 50% to dividends)	548	338	886
Scenario 3 (100% of commissions and bonuses to employment income)	1,072	338	1,410

Source: Economics and Statistics Division of the Nova Scotia Department of Finance on behalf of, Anielski Management Inc., October, 2008.

¹³³ 2. Employment associated with commissions and bonuses to private enterprises may be misleading (overstated). It may be that the amount of commissions and bonuses going towards household income is used to support employment, possibly even pre-existing employment, rather than be associated with creating employment. It would be rare that a high percentage of any single person's job where VLTs are present would be dedicated to VLT activities.

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While the I-O employment simulation results for ticket lottery and video lottery are of interest they cannot be simply added to the known FTEs of employment at Nova Scotia casinos and other gambling-related organizations. However considering the employment scenario 1 for ticket lotteries (288 direct employment person years) and **medium** between scenario 1 and 2 for ticket lotteries (286 direct employment person years) it is possible that as many as 574 more jobs were supported in 2007 by existence of these two games of chance, which can be compared to the estimated 790 FTEs for gambling in 2006.

“Medium” is an incorrect term.

If we were to combine these figures, both simulated (2007) and actual (2006) for all gambling employment, would yield an estimated 1,364 person-years of gambling-related employment, or 0.31% of total Nova Scotia employment by all industrial sectors or 8.4% of the total persons employed in the information, culture and recreation sector.

How are jobs in the gambling industry affecting employment trends in the arts, entertainment and recreation industries and the accommodations and food services industries?

This question of the importance of gambling-related employment in both the arts and recreation and accommodation and food services industries can be evaluated by comparing trends in the persons employed in the gambling sector (FTEs) to trends in employment in these respective sectors, which we may benefit from the existence of gambling venues. For example, we theorize that a portion of jobs in pubs, restaurants, and hotels benefit from the existence and location of casinos in their proximity.

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Figure 23 compares the trends in FTEs employed by the ALC, NSGC and Nova Scotia casinos (2001-2006) with the trends in total jobs in the 'arts, entertainment and recreation'¹³⁴ industries and the 'amusement, gambling and recreation' industries (a subset of the arts, entertainment and recreation industries) accommodation and food services¹³⁵ from 1997-2006. The graph also shows 'amusement, gambling and recreation' industries with the casino and other gambling-related FTEs netted out as well as the trends in casino and other-gambling related FTEs. There are two important observations. First, the opening of the refurbished Halifax casino in April of 2000 (an interim casino existed prior to the April 2000 opening) appears to have had no measurable impact on the change in jobs in the amusement, gambling and recreation industries. Second, between 2001 and 2006 the growth in employment in the arts, entertainment and recreation industries averaged 6.6% compared to an average decline of 1.9% in employment in the casinos and other gambling-related enterprises (excluding employment related to VLTs, ticket lottery, charitable lotteries, bingo, harness racing and other games, for which statistical data is not available).

Incorrect reference to Figure 23.

Figure 24 shows trends in employment in the arts, entertainment and recreation sector (which includes gambling industries) relative to casino and gambling employment. The impression from this graph is that there does not appear to be a strong relationship between employment trends in gambling employment and those sectors of the economy that would most likely to be influenced by gambling activity. In fact the opposite is true; the number of jobs in the arts, entertainment and recreation sector, without gambling jobs (ALC, NSGC and Nova Scotia casino FTEs) actually grew by an average of 6.6% between per annum between 2001 and 2006 while gambling-related jobs declined by an average of 1.9% over the same period.¹³⁶

The categorization of jobs does not match Statistics Canada's categorization of jobs in the gambling industry.

¹³⁴ In Statistics Canada statistics on industry employment and earnings, 'gambling industries' are identified with the NAICS (North American Industry Classification System) code number 7132, which is a subset of the 'amusement, gambling and recreation industries' (NAICS 713) which is a further subset of the arts and 'art and recreation' industries (NAICS 71).

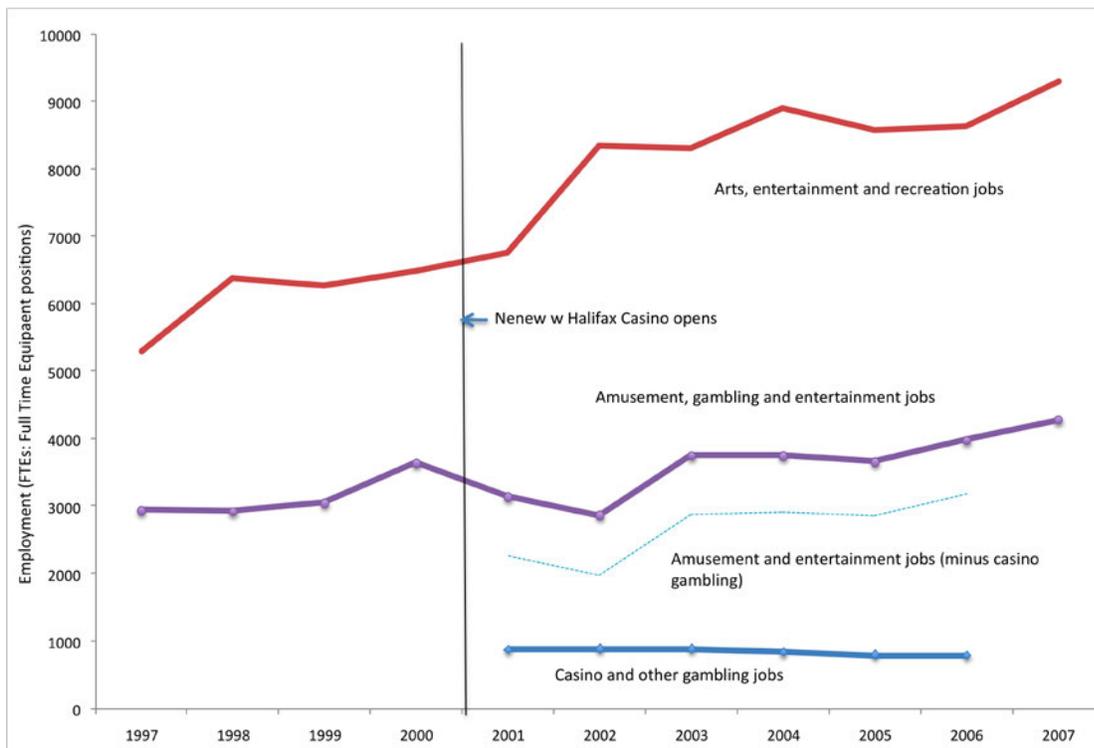
¹³⁵ Accommodation and food services industries (NAICS 72) includes hotels (traveller accommodations NAICS 7211), restaurants (NAICS 7221), alcohol drinking places or bars (NAICS 7224).

¹³⁶ This could be because the FTEs from gambling as a portion of total employed in these combined sectors is relatively small.

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Figure 24
Gambling-related Jobs vs. Arts and Recreation Jobs, Nova Scotia, 1996-2006.



Source: Casino and other gambling employment are in terms of FTEs positions related to ALC, NSGC and casinos in Nova Scotia are from Nova Scotia Department of Environment and Labour, 2006. Alcohol and Gaming Authority. Annual Gaming Reports 2001-2006, and from Bill Trask, 2007. Data request, Employee numbers (FTEs). Employment statistics (total jobs) for information for the arts, entertainment and recreation industries and the amusement, gambling and entertainment industries are from Table 383-0010 - Labour statistics consistent with the System of National Accounts, by North American Industry Classification System (NAICS), annual(1), Total number of jobs, 1997 to 2007.

Citation should reference the source of the data not the name of a staff person who provided it.

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We also analyzed trends in employment in the accommodation and food services (including restaurants, bars, lounges and facilities), which would be venues for VLTs. Between 1997 and 2007 the number of jobs increased by an annual average of only 0.7% from 28,419 jobs in 1997 to 30,369 in 2007. This is during a period when total dollars wagered on VLTs more than doubled and the annual average growth rate in VLT wagered increased by 7.4%. This does not suggest that the introduction of VLTs in bars and lounges over the past 10 years did not have any impact on employment in this sector. Rather, the impacts appear to be minor relative to increases in money wagered over the same period.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

Gambling jobs per \$1 million in net gambling revenues

How many jobs are created in the gambling sector for every \$1 million in net gambling revenues or for every \$1 million in gambling-GDP, relative to other sectors in the economy? Using various statistical sources (see Table 56) we estimated that for every \$1 million in net casino revenues in 2006 there were an estimated 7.91 jobs (FTEs). For every \$1 million in net gambling revenues (all games there were 3.28 jobs (FTEs) created for government gambling business enterprises (ALC and NSGC), casinos, VLTs and ticket lotteries. We compared these jobs per \$1 million in revenue returns to estimates of jobs created per \$1 million in GDP for economic sectors most related to gambling. The arts, entertainment and recreation sector generated roughly 52.79 jobs per \$1 million in GDP generated by this sector in 2006. The accommodation and food services sector generated 44.89 jobs per \$1 million in GDP generated by the sector. While these figures are not directly comparable with the gambling jobs analysis¹³⁷, they suggest that, relatively speaking, the gambling industry generated fewer jobs per \$1 of economic output, perhaps as little as 6% of the returns of jobs to \$ GDP as the arts, entertainment and recreation sector.

It is inappropriate to compare jobs per million dollars in revenues to jobs per million dollars in GDP.

¹³⁷ While our gambling jobs to net gambling revenue estimates might not be comparable with jobs per GDP output and may generate relatively lower ratios, we remind the reader that net gambling revenues has been used as a proxy for total consumption expenditures by Nova Scotians on games of chance and that personal consumption expenditures makes up roughly 70% of Nova Scotia's Gross Domestic Product (GDP). We thus caution the reader to consider these comparisons to be 'relative.'

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Table 55
Gambling Jobs per \$1 million in Net Gambling Revenues for 2006 versus
Jobs per \$1 million in GDP in the arts and recreation, accommodation and food service industries,

	Jobs/\$ 1 million
Casino jobs (FTEs) per \$1 million in net casino revenues (2006)	7.91
Gambling jobs (FTEs) related to NSGC, ALC, Casinos, VLTs and Ticket lotteries, per \$1 million in net gambling revenues (2006)	3.28
Arts, entertainment and recreation [71] jobs per \$1 million GDP in arts, entertainment and recreation sector, current dollars, 2006	52.79
Accommodation and food services [72] jobs per \$1 million GDP in arts, entertainment and recreation sector, current dollars, 2006)	44.89

Sources: 1. Casino jobs estimates are from Nova Scotia Department of Environment and Labour. 2006. Alcohol and Gaming Authority. Annual Gaming Reports 2006-07. Trask, Bill. 2007. Data request, Employee numbers (FTEs). Nova Scotia Gaming Corporation 2. Casino net gambling revenues are from Alcohol and Gaming Authority. Annual Gaming Report 2006-2007. 3. Gambling jobs estimates are from previous estimate of 1,364 person years of gambling-related employment and net gambling revenues for 2006 by combining actual employment at the ALC, NSGC and casinos with the I-O employment simulations for VLTs and ticket lotteries. 4. Arts, entertainment, and recreation and accommodation and food services employment statistics are from Statistics Canada, CANSIM Table 3830010 - Labour statistics consistent with the System of National Accounts, by North American Industry Classification System (NAICS), 2006. 5. Arts, entertainment, and recreation and accommodation and food services GDP statistics are from Statistics Canada, CANSIM Table 379-0025 - Gross Domestic Product (GDP) at basic prices, by North American Industry Classification System (NAICS) and province, 2006.

The calculation of Table 56 is not inclusive of the whole gambling industry.

Gambling Wages

Using salary and benefits and number of jobs in Nova Scotia's gambling industry (available from the Nova Scotia Gaming Corporation) along with estimates of annual hours worked by the average Nova Scotia worker, estimates of the average hourly wage in the gambling industry were calculated (see Table 57), Using this calculus, we estimate hourly gambling industry wages averaged \$22.17/hour in 2005-06, \$16.32/hour in 2006-07, and \$16.22/hour in 2007-08.

The calculation of Table 57 is not inclusive of the whole gambling industry.

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Compared to average wages in other occupations in Nova Scotia in 2007-08, jobs in the gambling industry were 6.1% higher than the average wage for occupations in art, culture, recreation and sport (\$15.23/hour) and 26.8% higher than average wage for sales and service occupations (\$11.87/hour). However gambling industry wages were lower than for management occupations and business, finance, and administrative occupations. While these statistics are not directly comparable they provide an illustration of relative differences in wage rates.

Table 56
Average Hourly Wages in Nova Scotia Gambling Industry vs. other Sectors

Average Hourly Wages	2005-06	2006-07	2007-08
Nova Scotia Gambling Industry	\$22.17	\$16.32	\$16.22
Management occupations	n.a.	n.a.	24.73
Business, finance and administrative occupations	n.a.	n.a.	23.14
Occupations in art, culture, recreation and sport	n.a.	n.a.	15.23
Sales and service occupations			11.87

Note: n.a. not available.

Sources: Nova Scotia gambling industry average wages are estimated based on Nova Scotia Gaming Corporation statistics (Fact Sheet on Gambling for 2006, 2007, and 2008) for total salaries and benefits divided by total estimated jobs in the gaming industry. For example, for 2007-08 total salaries and benefits were \$30 million divided by 989 jobs in the gambling industry divided by an estimate 1870 hours worked per year by Nova Scotia employees equals an hourly wage of \$16.22/hour. Wages of course would vary between management and service positions, with management wages most likely garnering higher salaries. Other occupational hourly wage data for 2007 is from Statistics Canada CANSIM tables 282-0069 and 282-0073; these selected wage categories were chosen as illustrative benchmarks for comparison with the estimated gambling industry wages..

*The calculation of Table 57 is not inclusive of the whole gambling industry.
Note: CANSIM Tables would have had data available for "n.a." cells.*

In conclusion, while the gambling sector does generate jobs in Nova Scotia, it is less clear as to whether the existence of legalized gambling has resulted in a genuine change in *net* employment for Nova Scotia; that is, whether gambling jobs have come at the expense of the loss of jobs in other sectors in the Nova Scotia economy. Nor is there clear evidence as to whether gambling expenditures by local residents has created new jobs that might have otherwise been created by spending disposable income on alternative local goods and services. Notwithstanding, a number of persons are employed by the Nova Scotia gambling sector though the numbers employed are relatively small compared with other sectors in the economy and have been in decline relative to other sectors of the economy.

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6.3 Indirect Employment Related to Gambling Industry

The terms “indirect”, “induced”, and “spinoff” are different concepts and cannot be used interchangeably.

Video lottery employment simulations

Conventional economic analysis also considers the indirect and induced or spin-off (also called employment multiplier) impact of employment of one sector on other sectors in the economy. Spin-off employment estimates were calculated as part of the I-O analysis

The I-O results for ticket lotteries (see previous Table 54; see Appendix 2 for a detailed description of the I-O analysis work) estimates 202 person-years of spinoff jobs for both scenario 1 and scenario 2 for the year 2007. The I-O simulation analysis for video lottery employment estimates that between 175 (scenario 1) and 338 (scenario 2 and scenario 3) of indirect or spinoff person-years of employment were generated for the year 2007 (see previous Table 55; see Appendix 2 for a detailed description of the I-O analysis work). As per the previous discussion of direct employment estimates for video lottery, in our opinion spinoff job estimates related to video lottery would fall somewhere between 175 (scenario 1) and 338 (scenario 2 and 3) person-years of employment since we believe it is highly unlikely that VLT venue owners (e.g. bars and clubs) would spend 100% of the VLT commissions and bonuses on employee salaries either directly or indirectly related to the existence of the VLT machines in their establishments.¹³⁸

The results of the I-O analysis for casinos, showed an estimated 27 spinoff jobs created as a result of the renovation of the Halifax casino in 2005, 460 spinoff jobs associated with operating the Halifax casino and 144 spinoff jobs operating the Sydney casino (see also Section 13 on Casinos and I-O analysis results).

6.4 Changes in Unemployment and Underemployment

From the previous employment impact analysis, we were unable to determine whether the employment of workers within the gambling industries represent *net* or new employment (new jobs) by employing persons previously unemployed or underemployed or whether these new jobs are simply transfers of labour from other industries or sectors to the gambling sector. The

¹³⁸ Employment associated with commissions and bonuses to private enterprises may be misleading (overstated). It may be that the amount of commissions and bonuses going towards household income is used to support employment, possibly even pre-existing employment, rather than be associated with creating employment. It would be rare that a high percentage of any single person's job where VLTs are present would be dedicated to VLT activities.

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same logic can be applied to analyzing *net* changes in unemployment and underemployment attributed to the gambling industry's employment impact. For example, while the unemployment rate in Nova Scotia has declined from 12.2% in 1997 to 8.0% in 2007¹³⁹ (an absolute decline of 15,162 persons who were no longer unemployed), it would be difficult to attribute any part of this decline in the unemployed labour force to changes in employment in the gambling industries over the same period. If anything, the number of FTEs employed in casinos and gambling agencies actually declined over the period 2001 to 2006 (see previous Table 53).

Net or new employment is employing those people who were previously unemployed, not underemployed.

Problem Gamblers Employed in the Gambling Industry

One of the issues explored in the 2008 telephone survey of problem gamblers and family members, as well as non-problem gamblers was whether they had recently held a job in the gambling industry and what that job was. The survey showed that the moderate-risk and problem gamblers, 7 respondents (12.7% of the 55 respondents) had held a job in the gambling industry. Of these 3 (or 5.5%) had worked in a bar or lounge with a VLT, 2 (3.6%) had worked a lottery ticket outlet, 1 (1.8%) had worked at a horse race track and one other person (1.8%) had worked at another gambling facility. Of 56 non-problem regular gamblers who were asked, 7 (12.5% of the 56 respondents) had recently held a job in the gambling industry; of these 5 (8.9%) said they had worked at a VLT bar or lounge, while one had worked at a ticket lottery outlet.¹⁴⁰ The survey revealed that a small segment of both problem gamblers and non-problem gamblers may be employed in the gambling industry, however, moderate-risk/problem gamblers are no more likely to be employed in the gambling industry than non-problem gamblers..

Analysis is done using small sample sizes resulting in extrapolation issues.

When the respondents were asked "Were you unemployed prior to this job in the gambling industry or did you change jobs?", two of the 7 moderate-risk/problem gamblers said they had been unemployed while 5 had changed jobs. Of the 7 non-problem regular gamblers only 1 said they were previously unemployed, while 6 had changed jobs.¹⁴¹

Analysis is done using small sample sizes resulting in extrapolation issues.

¹³⁹ Statistics Canada, CANSIM table 2820055 - Labour force survey estimates (LFS), by provinces, territories and economic regions, annually.

¹⁴⁰ Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008. The telephone survey question 15a. asked 'what was your most recent job in the gambling industry?'

¹⁴¹ Ibid.

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6.5 Productivity Losses and Absenteeism.

One of the possible negative impacts of problem gambling is the effect on employment, including income or job loss, absenteeism, loss of job productivity, and other work problems. These impacts were examined looking at the number of callers to the Nova Scotia addictions services help-line who cited employment impacts due to gambling. Table 58 shows the trends in the number of calls received; in 2001 39 calls (or 19.0% of total help-line calls) cited negative employment impacts due to gambling. In 2002 68 calls (20.0% of all calls) cited employment impacts. This number has declined steadily to a low of 17 calls in 2007 (only 9.8% of all calls). While it is not clear why the number of calls is declining the decrease does parallel the decline in the number of provincial VLT machines since 2005 and a decline in net gambling expenditures.

*The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.
The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.*

Table 57
Help-Line Calls Citing Employment Impacts Due to Gambling

	2001	2002	2003	2004	2005	2006	2007
n = total callers who experienced problems due to gambler	206	346	290	298	433	277	171
Number of callers to the NS addictions services and helpline citing employment impacts due to gambling	39	68	57	45	59	37	17
Percentage of total calls citing employment impacts from gambling.	19.0%	20.0%	20.0%	15.0%	14.0%	13.4%	9.8%

Source: Nova Scotia Office of Health Promotion Problem Gambling Services. Problem Gambling Help Line. 2001-05 Annual Reports. 2006 and 2007 data is from Nova Scotia Office of Health Promotion Problem Gambling Services; Problem Gambling Help Line. Year to Date Synopsis and Monthly Statistical Reports December 2006 and December 2007.

*The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened.
Citation error in source.*

In the 2003 and 2007 adult gambling prevalence studies the question was asked whether in the past year a gambler had experienced any problems with income or job loss, which may or may not be related to problems with gambling (Table 59). In 2002, 8.4%, said they had experienced

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income or job loss in the past year while in 2007 only 6.3% said they had these experiences (this represents a statistically significant decline). The most problems were experienced by moderate-risk/problem gamblers; in 2002 roughly 25.0% of moderate-risk/problem gamblers said they had experienced income or job loss compared to 14.8% in 2007. Low-risk gamblers also experienced income or job loss problems; 16.4% of those surveyed in 2002 and 16.5% in 2007.

Table 58
Experienced Problems With Income or Job Loss

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
In past year have you experienced any problems with income loss/job loss? ²				
2003 Survey	7.6% (175)	16.4% (22)	25% (14)	8.4% (211)
2007 Survey	5.5% (112) ↓	16.5% (15)	14.8% (9)	6.3% (136) ↓

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gambles have been combined.
² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Table 59 is missing the category of non-gamblers which would have provided a context for the population as a whole.

Did gambling play a role?

Only the 2003 survey asked respondents if gambling played a role in their income or job loss experience over the past year. Only 3 (5.36%) of the 56 moderate-risk/problem gamblers who responded 'yes' to the previous question said that gambling had played a role. Low-risk and non-problem gamblers said that gambling play no or an insignificant role. The question was not repeated in the 2007 survey.

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Experienced work problems

Do problem gamblers experience higher rates of work problems than non-problem or low-risk gamblers? In the 2003 and 2007 prevalence surveys, gamblers were asked if they had experienced work problems in the past year and whether gambling played a role with these work problems (Table 60). Of the total sample of gamblers surveyed in 2003 (n=2501), 7.0% said they experienced work problems with a higher percentage of moderate-risk/problem gamblers (16.1% of these gamblers) having experienced work problems followed closely by low risk gamblers (15.7% of these gamblers). Of the 9 moderate-risk/problem gamblers who said they experienced work problems in 2003 only 3 (or 5.5% of the total sample of 56) said that gambling had played a role in the work problems while only 1.5% (2 out of 91) of low-risk gamblers said gambling had played a role with work problems. In the 2007 prevalence study there was a slight decline (6.6% of total respondents) of those surveyed that experienced work problems. In 2007 low-risk gamblers were more likely to have experienced work problems (19.8% of the sample size of 91) compared to only 13.1% (8 out of a sample of 61) of moderate-risk/problem gamblers. The subsequent question of attribution of work problems to gambling was not repeated in the 2007 prevalence survey. The percentage results of the gambling-work problem relational analysis does not suggest that they can be readily applied to the estimated 14,680 moderate-risk/problem gamblers in 2003 and 18,861 in 2007 to derive a total moderate-risk/problem gambler population who may have experienced work problems because of gambling. However, the data does suggest that problems do exist but the question remains — how many actual moderate-risk/problem gamblers experience work problems due to gambling — without oversampling of the moderate-risk/problem gambler population

Due to methodology used, categories of non-gamblers were not included and therefore analysis does not correlate with the NS Prevalence Studies.

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Table 59
Experienced Work Problems

Gambler Subtype (past year gamblers)				
Survey Question/Year	Non-Problem	Low Risk	Moderate-risk & Problem ¹	Total Past Year Gamblers
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
In past year have you experienced any problems with work problems? ²				
2003 Survey	6.2% (144)	15.7% (21)	16.1% (9)	7.0% (174)
2007 Survey	5.8% (117)	19.8% (18)	13.1% (8)	6.6% (143)

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).

¹ CPGI scores for moderate-risk and problem gamblers have been combined.

² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Due to methodology used, categories of non-gamblers were not included and therefore analysis does not correlate with the NS Prevalence Studies. Including non-gamblers would have provided a context for the population regarding behaviours.

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Socio-economic Impact Study of Gambling in Nova Scotia –Annotated Version 2011/06/08

The 2008 telephone survey of non-problem gamblers, moderate-risk/problem gamblers and their family members attempted to explore the relationship between gambling and employment impacts in greater detail. The results of the telephone survey (Table 61) showed the following results for a series of questions explored. Of the 55 moderate-risk/problem gamblers who responded to our survey, only one gambler indicated that they had lost their job because of gambling; this is lower than the 5.3% of the same gambler type in the 2003 prevalence survey who said they had experienced either income or job loss due to gambling. When asked whether they had taken absences from work to gamble, 4 (7.3%) of 55 moderate-risk/problem gambler respondents said that they had; one of these four said they at taken between 1 and 11 absences during the past year to go gamble. And 5 (9.1%) of the 55 moderate-risk/problem gamblers said they had felt less productive at work because of gambling.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

**Table 60
Gambling Impacts Related to Employment and Workplace Productivity, 2008, Nova Scotia**

	Count (#) who completed the survey and (% of those who completed the survey)			
	Non Problem Reg. (n=56)	Moderate-risk & Problem (n=55)	Family Members (n=40)	Total (n=151)
Ever lost job because of gambling	0 (0%)	1 (1.8%)	1 (2.5%)	2 (1.3%)
Have you ever taken absences from work to gamble?	0 (0%)	4 (7.3%)	1 (2.5%)	5 (3.3%)
Have you ever felt less productive at work because of gambling (e.g., thinking about gambling, gambling on the job, taking absences to gamble)?	0 (0%)	5 (9.1%)	n.a.	5 (4.5%)

Differences significant (p≤.01)

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

Work absences translate into reduced workplace productivity, which has economic implications to the economy. However, precisely how many hours of lost labour can be attributed to those 7.3% of moderate-risk/problem gamblers sampled in the 2008 telephone survey that took absences from work to gamble cannot be readily determined. Accounting of work-time lost due to problem gambling behaviour would require new research.

“Work absences” and “work-time lost” are two different concepts.

Canadian research into the extent and economic value of workplace productivity losses due to problem gambling is instructive. In a Canada-wide study, Ladouceur et al. (1994) found that

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66% of gamblers in Gamblers Anonymous had missed work to gamble, that half of those had left work more than five times a month to gamble, and that 14% had missed whole days to gamble.¹⁴² In another study in Québec, Ladouceur (1996)¹⁴³ estimated the cost of lost time to employers from problem gamblers at Cnd\$5 million a year, based on 50% of pathological gamblers with an average wage of \$15 per hour, missing five hours of work a month by being late.¹⁴⁴ The same study estimated that 36% of problem gamblers lose their jobs because of gambling-related problems. In a literature review, Lesieur found that 69%-to-76% had missed work to gamble, and 21%-36% had lost their jobs due to gambling problems.¹⁴⁵

¹⁴² Ladouceur, R., J. Boisvert, M. Pepin, M. Loranger and C. Sylvain. (1994). Social cost of pathological gambling. *Journal of Gambling Studies*, 10(4), 399-409.

¹⁴³ Ladouceur, R. (1996). The Prevalence of Pathological Gambling in Canada. *Journal of Gambling Studies*, 12(Summer), 129-142.

¹⁴⁴ Ladouceur, R. (1996). The Prevalence of Pathological Gambling in Canada. *Journal of Gambling Studies*, 12 (Summer), 129-142.

¹⁴⁵ Lesieur, H. (1998b). Costs and treatment of pathological gambling. *The Annals. American Academy of Political and Social Sciences (AAPSS)*, 556(March), 153ñ159.

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6. Health and Well-being Impacts

7.1 Introduction

This section examines the potential impacts on physical, mental and social health and well-being¹⁴⁶ impact of gambling on individual gamblers, their families and society, with a particular focus on moderate-risk and problem gamblers. The focus on moderate-risk and problem gamblers is intended to distinguish between healthy and unhealthy gambling behaviour.

The impact of gambling through a public health lens is recognized by epidemiologists and public health experts (Korn et al., 2003).¹⁴⁷ Korn et al. (2003) provide a useful definition of healthy and unhealthy gambling behaviour:

“Healthy gambling entails informed choice on the probability of winning, a pleasurable gambling experience in low-risk situations, and wagering in sensible amounts. Healthy gambling sustains or enhances a gambler’s state of well-being. Conversely, unhealthy gambling refers to various levels of gambling problems.”

Health is multidimensional, involving physical, psychological, social, and economic aspects. In this view, social and economic factors have a greater impact on health outcomes than do lifestyle risk behaviours, which themselves are influenced by underlying social and economic conditions.¹⁴⁸ For example, low-income, unemployed, and poorly educated people have higher rates of smoking, obesity, physical inactivity, and poor nutrition, indicating that social and economic circumstances generally precede and, in large part, determine lifestyle choices. Health Canada therefore regards health as the interdependence of social, economic, and environmental determinants.¹⁴⁹ The determinants of health cover the same areas of impacts that we are investigating in terms of gambling. Korn et al. (2003)¹⁵⁰ explain that in the context of the population health model, "empirical data are used to analyze the relationship of income, employment, poverty, social status and community economic development to the health status of geographic communities and other population groups."

¹⁴⁶ This definition of health comes from the World Health Organization framework which replaces earlier definitions of health as “the absence of disease.” (World Health Organization. (1947-2004). *WHO Definition of Health*).

¹⁴⁷ Korn, D., R. Gibbins and J. Azmier, (2003). *Framing Public Policy: Towards a Public Health Paradigm for Gambling*. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 235-256.

¹⁴⁸ GPI Atlantic. 2004. *The Costs and Benefits of Gaming :A Literature Review with Emphasis on Nova Scotia*. Study prepare by Karen Hayward for the Nova Scotia Gaming Foundation. July 2004, p. 41-42.

¹⁴⁹ Ibid.

¹⁵⁰ Korn, D., R. Gibbins and J. Azmier, (2003). *Framing Public Policy: Towards a Public Health Paradigm for Gambling*. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 235-256

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From a health perspective, the fundamental question as to whether a gambler's experience is 'pleasurable' and leads to an enhanced state or sense of well-being. This is the central point of inquiry in this study. To the extent that a gambler experiences an enhanced state of well-being from gambling suggests that, from an economic perspective, the gambler has experienced 'genuine utility.' Gambling may provide the gambler an experience of improved personal well-being through reduced stress or as a temporary escape from life's troubles.

The RFP requested that a "snapshot of the economic and social impacts of gambling" be prepared, which did not imply a focus on a gambler's personal experience.

On the other hand, the impact of unhealthy gambling can lead to the erosion of well-being that, at the individual gambler level, may include depression, stress-related illness, chronic or severe headaches, anxiety, moodiness, irritability, intestinal disorders, asthma, cognitive distortion, and cardiovascular disorders.¹⁵¹ Other negative impacts related to gambling include suicide, substance abuse (alcohol, tobacco, and illicit drugs) and loss of quality time with family and friends.

We have attempted to explore as many of these negative well-being impacts as possible and for which some data may be available from the adult gambler prevalence studies and the 2008 gambler telephone survey.

There may be other unintended well-being impacts on the gambler's family, friends and relations, including the impact of relational breakdown, conflict and divorce, as well as neglect of family and domestic violence.

Studies of health-related impacts from problem gambling have found that many physical health conditions have been associated with gambling problems, including high blood pressure, ulcers, migraine headaches, intestinal problems, serious heart problems resulting from chronic stress (Wenger, McKechnie, and Wiebe, 1997)¹⁵², as well as repetitive movement disorders, orthopedic distress, and sexual dysfunction (Petry, 2000)¹⁵³. Problem gamblers also experience higher risks of alcohol, drug and tobacco abuse (Stewart and Kushner, 2003)¹⁵⁴, as well as increased risk of mental health problems such as dysthymia, major depression, anti-social

¹⁵¹ Grinols, E. and D.B. Mustard. (2001). Business Profitability versus Social Profitability: Evaluating Industries with Externalities, the Case of Casinos. *Managerial and Decision Economics*, 22:143-162.

¹⁵² Wenger, L., B. McKechnie and J. Wiebe. (1999). *Fast Facts on Gambling*. The Awareness & Information Unit of the Addictions Foundation of Manitoba.

¹⁵³ Petry, N. (2000). Gambling problems in substance abusers are associated with in-creased sexual risk behaviors. *Addiction*, 95, 1089-1100.

¹⁵⁴ Stewart, S. H. and M. G. Kushner. (2003). Recent Research on the Comorbidity of Alcoholism and Pathological Gambling. *Alcoholism: Clinical and Experimental Research*, 27(2), 285-291.

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personality disorder, phobias, or anxiety (Potenza et al., 2002)¹⁵⁵. Some extreme cases of problem gambling have resulted in suicides. Youth or adolescents with problem gambling parents are more likely to be anxious, insecure, subject to mood disorders, twice as likely to attempt suicide, and at risk of becoming problem gamblers themselves (Potenza et al., 2002).

The most comprehensive study of gambling and problem gambling health impact was conducted in Saskatchewan (Wynne, 2002)¹⁵⁶. The study provided important insights into the correlation between problem gambling and several health status indicators. For example, 39.1% of problem gamblers have emotional problems compared to 3.7% of non-problem gamblers, and 34% of problem gamblers have problems with alcohol compared with 0.9% of non-problem gamblers. For depression, 56.5% of problem gamblers felt depressed for two or more weeks compared with 13.3% of those without gambling problems. Forty-three percent (43.5%) of problem gamblers had serious thoughts of suicide compared with 5.7% of non-problem gamblers. Specific chronic physical health problems that were not statistically significant with respect to problem versus non-problem gamblers included heart disease, hypertension and diabetes. However, 26.1% of problem gamblers did report experiencing long-term illness compared to 13.2% of non-problem gamblers.

Many of these impacts can be reported simply as statistics or used to estimate the probability or likelihood of the problem gambling cohort in a community experiencing these negative health impacts. Many of these impacts can be monetized using cost-of-illness methods related to the economic value of illness, morbidity and premature mortality. Some benchmark estimates of cost of illness for gambling may be applied from the cost of morbidity and premature mortality estimates related to **substance abuse estimated** by the Canadian Centre on Substance Abuse (2006). The 2006 study estimated the direct health care and criminal justice cost and indirect cost due to productivity losses from disability and premature death from substance abuse in Canada amounted to \$39.8 billion or \$1,267 per Canadian (based on 2002 data).

Applying substance abuse estimates to the cost of illness for gambling is inappropriate as these are two different concepts.

This study attempted to measure the following suite health and well-being impacts of gambling:

- Problem gambling prevalence rates.
- Gains from gambling as a leisure activity.
- Health problems, disease rates and morbidity.
- Premature mortality rates (other than suicide).

¹⁵⁵ Potenza, M. N., D. A. Fiellin, G. R. Heninger, B. J. Rounsaville and C. M. Mazure. (2002). Gambling: An Addictive Behavior with Health and Primary Care Implications. *JGIM: Journal of General Internal Medicine*, 17(9), 721-732. Blackwell Publishing: Indianapolis, IN

¹⁵⁶ Wynne, Harold. J. (2002). *Gambling and Problem Gambling in Saskatchewan*. Final Report. Report prepared for Saskatchewan Health.

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- Stress, anxiety and depression.
- Suicide (thoughts, attempts, actual).
- Social isolation.
- Loss of quality time with family, friends and community.
- Substance abuse related to gambling.
- Psychological impacts on family and friends of gamblers.
- Family break-up (separation, divorce, impact on children).
- Domestic violence.

Because of data limitations, we were not able to analyze all of these indicators.

7.2 Problem Gambling Prevalence Rates

As previously presented in this study, the prevalence rate of problem gambling has increased over time both in terms of total estimated number of Nova Scotia adults and in terms of the percentage of the total adult population. In 1993, for example, there were an estimated 11,678 moderate risk and problem gamblers (1.7% of the adult population) and 21,274 moderate-risk gamblers (3.1% of the adult population (Table 62). In 2007 there were an estimated 18,861 moderate risk and problem gamblers (2.4% of the adult population) and 28,137 moderate-risk gamblers (3.6% of the adult population). Comparing 2007 with 1993, Nova Scotia's adult population increased by 12.5% while the population of non-gamblers increased 33.4% and non-problem gamblers increased by 8.1%. Over the same time period, there was a 61.5% increase in 'moderate risk' and 'problem gamblers' and a 32.1% increase in the 'moderate-risk gambler' population.

*Incorrect use of data throughout paragraph – possibly due to inconsistent breakdown of risk as compared to the NS Prevalence study.
Accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.*

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Table 61

Gambler Types for Nova Scotia Adult Population, 1993, 1996, 2002 and 2007.

Survey Year	Gambler Subtype				Total Adults ¹⁵⁷
	Non-Gamblers	Non-Problem Gamblers	Low Risk Gamblers	Moderate-risk and Problem Gamblers	
Percentage of Population					
1993	11%	84.2%	3.1%	1.7%	100%
1996	8.0%	86.5%	3.6%	1.9%	100%
2002	10.7%	82.4% ↓	4.8% ↑	2.1%	100%
2007	13.0%	80.9%	3.6% ↓	2.5%	100%
Population Estimates					
1993	≈75,563	≈578,398	≈21,295	≈11,678	686,933
1996	≈55,899	≈604,409	≈25,155	≈13,276	698,739
2002	≈79,381	≈605,812	≈35,127	≈14,680	≈734,000
2007	≈100,799	≈625,202	≈28,137	≈18,861	≈773,000
% change 1993-					
2007	33.4%	8.1%	32.1%	61.5%	12.7%

Sources: Nova Scotia Department of Health. 1993. Prevalence Study on Problem Gambling in Nova Scotia (1993). Conducted by Omnifacts Research.; Nova Scotia Department of Health. 1996. Prevalence Study on Problem Gambling in Nova Scotia (1996). Conducted by Baseline Market Research Ltd.; Nova Scotia Office of Health Promotions and Addictions Services. 2004. 2003 Nova Scotia Gambling Prevalence Study. Conducted by Focal Research. 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection.

“n” is not noted.

The purpose of the arrows is not cited. Inconsistent use of “approximate” signs. Missing source citations.

Some data not reflected in reported NS Prevalence study results.

Accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

The estimated number of moderate risk and problem gambler adult population by individual game-of-chance in Nova Scotia in 2002 and 2007 revealed that the majority of adult problem gamblers are ALC lottery ticket players, VLT players, and charitable ticket lottery players (see Table 63). Many problem gamblers will play a multiple of games thus the summation of adult problem gamblers in Nova Scotia using game-specific estimates is not possible.

¹⁵⁷ There is a discrepancy in the estimated adult population for Nova Scotia from the prevalence studies and official Statistics Canada adult population statistics (19 years and older) for the years 2003 and 2007. For example, in 2001 (the relevant reporting year for the 2003 prevalence study) there were 715,998 adults according to Statistics Canada compared with 734,000 estimated in the prevalence study. In the 2007 prevalence study, the adult population estimate is 773,000 compared to Statistics Canada's adult population estimate of 736,840 for the reporting year 2006. The discrepancy may be due to new or revised Statistics Canada population figures subsequent to the completion of both the 2003 and 2007 prevalence studies by Focal Research Consultants.

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Table 62

Estimated Number of Nova Scotia Adults (19 years and older) Who are Moderate Risk and Problem Gamblers, by Game, 2002 and 2007

Number of adults (>19 years) who are moderate risk and problem gamblers	2002	2007
ALC Lottery Tickets	14,156	17,934
VLTs	12,059	12,677
Charitable Ticket Lotteries	9,699	10,513
Casinos	6,291	7,112
Bingo	4,981	2,783
Horse Racing	0	928

Notes: Because a problem gambler respondent to the prevalence study survey may have problems with more than one game, the number of adult problems who are moderate risk and problem gamblers cannot be added together to generate a total. Such a total would exceed the estimated 14,680 adult problem gamblers in 2002 and 18,861 adult problem gamblers in 2007.

Source: Based on CPGI classification from Nova Scotia adult gambling prevalence studies. Nova Scotia Office of Health Promotions and Addictions Services. 2004. 2003 Nova Scotia Gambling Prevalence Study. Conducted by Focal Research. 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection.

Incorrect representation of data. Needs clarification of ALC Lottery Ticket definition. A lack of clarity exists regarding past year or monthly participation rates as a source of data for this table. Caution should be used when extrapolating from small sample sizes to population estimates.

7.2.1 Risks for Problem Gambling in Nova Scotia by Key Demographic and Socio-Economic Characteristics

From a public health perspective, we are interested in the relative impact of problem gambling according to key demographic and socio-economic characteristics which include examining the relationship of gender, age, marital status, income, education, employment, social status, health regions, and work status to the gambling health status of geographic communities and other population groups.

Based on Focal Research Consultants 2003 and 2007 adult gambling prevalence studies a number of demographic and other socio-economic related characteristics were found to be associated with the risk of problem gambling. In addition to gender and age, risk segments were examined for nine other demographic characteristics for 2007 including: education, marital status, work status, occupation category, household composition, urban versus rural place of residence, presence of children in the household and number of people in the household.

“Focal Research Consultants” is incorrect. The proper research reference is the NS Department of Health Promotion and Protection. Demographic characteristics were explored for all adults participating in the NS Prevalence studies, not just those adults with problem gambling issues.

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Gender: As was the case in 2002, risk (8% versus 4.4%) and rates of problem gambling (2.5% versus 1.5%) continued to be twice as high among men in Nova Scotia compared to women, yet women still comprised one-third of those having gambling problems.¹⁵⁸

Incorrect use of data and incorrect citation.

Age: As was the case in 2003, risk for gambling problems in 2007 declined with age. Adults 19 to 24 years of age were most likely to be at *any level of risk* for problems (12.1%) and this rate declined to 2.0% among those aged 65 years or older.¹⁵⁹ Problem gambling was highest among those under 35 years of age (≈4.4%) in 2007, similar to the prevalence study results of 2003. Young adults have the highest risk of developing gambling problems, almost twice the risk of 35-44 year olds and **four times the risk** of adults over 45.¹⁶⁰ Seniors (65+) years of age or older were the only age group to have significantly lower levels of problem gambling (0.2%).

“Four times the risk” is incorrect.

The text should note that data from two different sources is being combined here.

Rates of regular participation in daily lottery games, breakopen tickets, casino slots and table games, and VLTs were similar among those age 19-54 years. Young adults (19-24) were more likely than other age cohorts to be playing poker on a regular basis and least likely to be playing low risk draw games, such as weekly draws or charity raffles. Seniors (65+) had the same levels of participation as adults aged 25-64 in casino gambling and the same level of slot machine gambling as all other age categories in 2007.

Some activities listed are incorrect and participation level does not appear to reflect the NS Prevalence study results.

The term “casino gambling” is not defined.

Marital status: In 2007, adults who were single (10%), living common-law (10.5) and those separated from a spouse or partner (18.4%) had higher rates of risk for gambling problems compared to those in formally recognized marriages (4.5%).

¹⁵⁸ Nova Scotia Health Promotion and Protection. 2008. *2007 Adult Gambling Prevalence Study*. p.x.

¹⁵⁹ Ibid.

¹⁶⁰ Nova Scotia Gaming Corporation. 2007. *Fact Sheet: Gambling in Nova Scotia*. July 2007.

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Income: While those living in the higher income households (\$60,000 +/-year) were more likely to gamble, their overall risk levels were significantly lower (5.2%) compared with those with lower income (\approx 7.6%). Adults living in households with incomes over \$60,000/year had higher rates of **past-year and regular casino gambling**, poker, charity raffles and **draws**, whereas instant lottery games and bingo were more popular among those living in households with incomes less than \$30,000 per year. Daily lotteries were played equally by those with mid-to lower incomes (<\$60,000/year). **The only regular playing patterns that did not vary by income were ALC weekly lottery draws and VLT gambling.**

The term “draws” needs to be defined to clarify if table games and/or slots are included. There is a lack of clarity, as the statement about ALC is only correct for regular past-year participation. The use of language from the NS Prevalence studies would provide clarity.

Education: In the 2007 adult gambling prevalence study education was a factor for participation in gambling as well as risk for gambling problems **although rates of problem gambling did not differ significantly among any of the education categories**. Roughly 31.1% of problem gamblers are university-educated or college graduates compared with 40.7% of moderate-risk gamblers. Roughly 29.5% of **gamblers** have less than grade 12 education while 20.9% of moderate-risk gamblers have less than a grade 12 education.

A citation from the 2007 NS Prevalence study should be noted for the first sentence. “Gamblers” should be “problem gamblers”. Given the statement, “although rates of problem gambling did not differ significantly among any of the education categories”, it is inappropriate to provide educational statistics which may imply that there are significant differences.

In 2007, individuals with the highest (Post Graduates: 83.2%) and lowest education levels (< High School: 79.1%) were least likely to have taken part in any gambling activities over the past year compared to about 90% of those with at least a high school diploma. While those who had less than high school educations were significantly less likely to take part in gambling in the last year, 6.2% of this group had some level of risk for problems and among those who did gamble 3.8% scored for gambling problems. Those with incomplete or partial university or college education had among the highest rates of those at any level of risk for problems (10.6%). While risk has typically been high among students, students were found to comprise only a minority of this group (\approx 12%) suggesting that those who failed to complete post-secondary education (e.g. drop-outs) have additional risk beyond that identified for students.¹⁶¹

Health Districts: The prevalence rates for risk and for gambling problems were comparable across the District Health Authorities in Nova Scotia, however, problem gamblers are more likely

¹⁶¹ Nova Scotia Health Promotion and Protection. 2008. *2007 Adult Gambling Prevalence Study*.

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to live in the DHA 9 (Capital) region (42.6% problem gamblers and 39.6% moderate-risk (or low-risk)) than any other health district. Except for an increase in the problem gambling rate in the Northern District, there were no significant prevalence changes between 2002 and 2007.

Work Status: In 2007, roughly 52.5% of problem gamblers were more likely to be working full-time compared with 59.3% of moderate-risk gamblers who were working full-time. Rates of gambling problems were significantly higher for individuals who were unemployed (10.3%) and disabled (8.3%) compared to problem rates of 1.0 to 2.5% for employed individuals, students, homemakers, and retirees. Also, students were more likely to gamble (92.5%) and had the highest levels of risk of problem gambling (10.4%).

The text beginning “Rates...gambling (10.4%).” should be properly quoted and cited.

Occupational category: There were no statistical differences in risks or gambling problems among any of the four occupational categories (White Collar, Grey Collar, Blue Collar, and Income Supported).

Direct quotes from the NS Prevalence Studies should be cited.

Other household factors, including area of residence (urban versus rural) and number children in a household were not statistically significant factors related to risk for problem gambling in 2007

7.3 Gains from Gambling as a Leisure Activity

There is little empirical research into the positive impacts of gambling on well-being. For some gamblers, playing games of chance represents an escape from life’s hardships and troubles and relief from loneliness or boredom. For others gambling may represent a genuine form of entertainment and therefore has leisure value. The empirical question is whether gambling, as a form of leisure activity, provides genuine utility (i.e. entertainment value) that is an improvement in personal well-being that can be measured either objectively or subjectively. This could be as simple as asking the individual gambler if they felt their gambling experience resulted in an increased level of happiness.

Using this approach, the analysis of the impact of gambling on individual well-being could proceed by asking the individual gambler to report on how much money he or she would need to spend to achieve a desired state of well being (i.e. expected utility). In theory, welfare (well-being) could be measured in *utils* (units of well-being). However, this is beyond the scope of this study.

An economist might view entertainment value as an intangible component of consumer surplus. In welfare economics it is assumed that the individual is the best judge of whether or not an

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economic activity or choice will lead to greater or lesser welfare (well-being) and that these impacts can be measured either in monetary terms or as a relative preference for one activity over another.¹⁶² From a sociological and public health perspective, the experience of the individual gambler from gambling, either positive or negative, is important in defining genuine entertainment value. It is most likely that entertainment value will be defined and measured subjectively from the experiential perspective of the individual gambler.

In the 2003 and 2007 Nova Scotia adult gambling prevalence studies, gamblers were asked they agreed or strongly agreed that they found playing games of chance (all games) 'fun and entertaining.' The results (Table 64) reveal that moderate-risk/problem gamblers are more likely to agree that gambling is fun and entertaining (69.7% of respondents in 2002 and 54.1% of respondents in 2007) than low-risk gamblers (65.6% and 45.1%, respectively). The more interesting statistic is that non-problem gamblers are less likely to consider gambling fun and entertaining; only 28.9% of respondents in 2002 and 21.0% of respondents in 2007 agreed that gambling was fun and entertaining. While it may not be surprising that moderate-risk/problem gamblers consider gambling genuinely entertaining, it is more surprising that the majority non-problem gamblers (the so-called 'recreation gambler') disagreed or were neutral that gambling was entertaining. From a welfare economic perspective, these findings might suggest that the amount of money spent or wagered on games of chance has not resulted in genuine improved well-being which might, in turn, question the results of our earlier analysis of consumer surplus. The question is what form of 'value' did the non-problem, 'recreational' gambler experience when gambling?

The original intention of asking this question in the NS Prevalence studies was not to assess gambling as a leisure activity, but rather to assess, along with a number of other statements, gambling motivation among the risk categories.

¹⁶² Source: http://en.wikipedia.org/wiki/Welfare_economics accessed May 25, 2006.

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Table 63
Gambling/Games of Chance are Fun and Entertaining

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
Gambling/games of chance are fun and entertaining.²				
2003 Survey	28.9% (670)	65.6% (88)	69.7% (39)	31.9% (797)
2007 Survey	21.9% (443)	45.1% (41) ↓	54.1% (33) ↓	23.8% (517) ↓

- Shading indicates significant differences among gambler subtypes (p<.05)
- ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
- ¹ CPGI scores for moderate-risk and problem gamblers have been combined.
- ² Combined responses for scores of 4 and 5 on a five point scale ranging from “1 – strongly disagree” to “5 – strongly agree.”

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

The original intention of asking this question in the NS Prevalence studies was not to assess gambling as a leisure activity, rather to assess, along with a number of other statements, gambling motivation among the risk categories. Some of the data presented is not reflected in the NS Prevalence Study reports.

In the 2008 gambler telephone survey, the gambler was asked how much they value gambling as an entertainment pastime (Table 65). On a scale from 1 to 10 where one means ‘not at all entertaining’ and 10 is ‘very entertaining,’ 50.9% of moderate-risk/problem gamblers and 67.1% of non-problem gamblers scored in the 1-4 range (i.e. low entertainment value). This suggests that the majority of non-problem gamblers (or recreational gamblers) felt that their gambling experience had relatively low entertainment utility or value.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone which would over-index problem gambling and results.

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Table 64
Value of Gambling as Entertainment (Scale from 1-10) (2008)

Note: Annotation for Table is on the next page.

The Value of Gambling as an Entertainment Pastime		Completed which survey			Total
		At Risk & Problem	Non Problem Reg.	Family Members	
1	Count	19	15	8	42
	% within completed which survey	34.5%	26.8%	20.0%	27.8%
2	Count	1	7	1	9
	% within completed which survey	1.8%	12.5%	2.5%	6.0%
3	Count	3	5	3	11
	% within completed which survey	5.5%	8.9%	7.5%	7.3%
4	Count	5	5	5	15
	% within completed which survey	9.1%	8.9%	12.5%	9.9%
5	Count	9	8	6	23
	% within completed which survey	16.4%	14.3%	15.0%	15.2%
6	Count	5	2	5	12
	% within completed which survey	9.1%	3.6%	12.5%	7.9%
7	Count	5	4	2	11
	% within completed which survey	9.1%	7.1%	5.0%	7.3%
8	Count	0	5	5	10
	% within completed which survey	.0%	8.9%	12.5%	6.6%
10	Count	8	5	5	18
	% within completed which survey	14.5%	8.9%	12.5%	11.9%
Total	Count	55	56	40	151

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% within completed which survey	100.0%	100.0%	100.0%	100.0%
---------------------------------	--------	--------	--------	--------

Notes: The question was asked: On a scale from 1 to 10 where one means not at all entertaining and 10 is very entertaining, how much do you value gambling as an entertainment pastime?

No significant difference

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

Analysis is done using small sample sizes resulting in extrapolation issues.

In the 2003 adult gambling prevalence study, gamblers were asked whether they felt gambling was an enjoyable part of socializing with friends or family; 33.6% of low-risk gamblers agreed or strongly agreed with this statement compared to 37.5% of moderate-risk/problem and 20% of non-problem gamblers (Table 66). Thus, across all gambler types, the majority of gamblers disagreed that gambling is an enjoyable part of socializing.

The original intention of asking this question in the NS Prevalence studies was not to assess gambling as a social activity, rather to assess, along with a number of other statements, gambling motivation among the risk categories.

The question was asked in 2007 but “socializing with friends” was asked separately from “socializing with family”.

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**Table 65
Gambling is Enjoyable Part of Socializing**

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	
Gambling is an enjoyable part of socializing with friends or family.²				
2003 Survey	20% (461)	33.6% (45)	37.5% (21)	21.1% (527)
2007 Survey ³	---	---	---	---

- Shading indicates significant differences among gambler subtypes (p<.05)
- ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
- ¹ CPGI scores for moderate-risk and problem gambles have been combined.
- ² Combined responses for scores of 4 and 5 on a five point scale ranging from “1 – strongly disagree” to “5 – strongly agree.”
- ³ The question asked in 2003 was broken into two separate questions (friends and family) in 2007 and are not comparable.

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

*The original intention of asking this question in the NS Prevalence studies was not to assess gambling as a social activity, rather to assess, along with a number of other statements, gambling motivation among the risk categories.
The question was asked in 2007 but “socializing with friends” was asked separately from “socializing with family”.*

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7.4 Health Problems, Disease Rates and Morbidity

In earlier research into the relationship between problem gambling and health problems, researchers found that several physical health conditions had been associated with problem gambling, including high blood pressure, ulcers, migraine headaches, intestinal problems, serious heart problems resulting from chronic stress (Wenger, McKechnie, and Wiebe, 1997),¹⁶³ as well as repetitive movement disorders, orthopedic distress, and sexual dysfunction (Petry, 2000).¹⁶⁴ In a 2002 study examining the impacts of gambling on health for Saskatchewan (Wynne, 2002),¹⁶⁵ a relatively high correlation between problem gambling and several health indicators was discovered. For example, 39.1% of problem gamblers have emotional problems compared to 3.7% of non-problem gamblers, and 34% of problem gamblers have problems with alcohol compared with 0.9% of non-problem gamblers. For depression, 56.5% of problem gamblers felt depressed for two or more weeks compared with 13.3% of those without gambling problems. Forty-three percent (43.5%) of problem gamblers had serious thoughts of suicide compared with only 5.7% of non-problem gamblers; both depression and suicide were statistically significant. Specific chronic physical health problems that were not statistically significant with respect to problem versus non-problem gamblers included heart disease, hypertension and diabetes. However, 26.1% of problem gamblers did report experiencing long-term illness compared to 13.2% of non-problem gamblers.

The relationship between problem gambling and health issues is problematic and not inclusive of all the gambling types.

Similar studies have not been conducted for Nova Scotia. We were unable to find any statistical evidence for Nova Scotia of the connection between disease rates and pre-mature mortality and problem gambling, with the exception of suicide, which is discussed in a subsequent section of this report.

¹⁶³ Wenger, L., B. McKechnie and J. Wiebe. (1999). *Fast Facts on Gambling*. The Awareness & Information Unit of the Addictions Foundation of Manitoba.

¹⁶⁴ Petry, N. (2000). Gambling problems in substance abusers are associated with in-creased sexual risk behaviors. *Addiction*, 95, 1089-1100.

¹⁶⁵ Wynne, Harold. J. (2002). *Gambling and Problem Gambling in Saskatchewan*. Final Report. Report prepared for Saskatchewan Health

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The only evidence of a possible relationship between problem gambling and health comes from **Nova Scotia help-line statistics**. For example, between 5.6% (2007) and 24.9% (2002) of all calls to the help-line cited physical health as an impact of their problem gambling experience (Table 67). The call statistics suggest there has been a downward trend from 2004 to 2007 in the number of callers citing health problems related to gambling.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened. Individuals could select more than one impact from the list of impacts asked. A concern with use of the help line data is that it will overestimate impacts due to sample selection bias.

Table 66
Help-Line Calls Citing Physical Health Impacts Due to Gambling

	2001	2002	2003	2004	2005	2006	2007
n = total number of callers citing gambling problems	206	346	290	298	433	277	171
Number of callers to the NS addictions services and helpline citing physical health being impacted by gambling	30	86	56	69	78	34	10
Percentage of total calls citing physical health impacts from gambling	15.0%	24.9%	19.3%	23.2%	18.0%	12.3%	5.6%

Source: Nova Scotia Office of Health Promotion Problem Gambling Services. Problem Gambling Help Line. 2001-05 Annual Reports. 2006 and 2007 data is from Nova Scotia Office of Health Promotion Problem Gambling Services; Problem Gambling Help Line. Year to Date Synopsis and Monthly Statistical Reports December 2006 and December 2007.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened. Individuals could select more than one impact from the list of impacts asked. A concern with use of the help line data is that it will overestimate impacts due to sample selection bias. Some numbers in the table differ from the Problem Gambling Help Line Annual Reports.

In the 2003 and 2007 adult gambling prevalence surveys, moderate-risk/problem gamblers were no more likely to experience health problems than non-problem gamblers (Table 68). However, in 2002, 5.36% of moderate-risk/problem gamblers and 2.24% of low-risk gamblers said that gambling had played a role in their health problems. Specific health problems experienced were not identified.

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Table 67
Experienced Health Problems

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	(2002 n=2501) (2007 n=2174)
In past year have you experienced any problems with health problems? ²				
2003 Survey	20.7% (478)	23.1% (31)	26.8% (15)	21% (524)
2007 Survey	23.4% (474) ↑	26.4% (24)	29.5% (18)	23.7% (516)

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Due to methodology used, categories of non-gamblers were not included and therefore analysis does not correlate with the NS Prevalence Studies. Including non-gamblers would have provided a context for the population regarding behaviours.

In the 2008 adult gambler telephone survey, 20.0% (11 of 55 respondents) of moderate-risk/problem gamblers said they had experienced either mental or physical health problems (such as stress, anxiety, depression, insomnia, stomach ailments, or migraine headaches) (Table 69). None of the non-problem gamblers had experienced any health problems related to gambling. The most common health problem experienced by the 11 moderate-risk/problem gamblers was stress and depression. Of the same 11 moderate-risk/problem gamblers, 3 gamblers said they had sought treatment for their gambling-related health problems including calling the gambling help-line, counseling, and acupuncture.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

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Table 68
Had Health Problems Caused by Gambling (2008)

Has gambling ever caused you any mental or physical health problems (e.g., stress, anxiety, depression, insomnia, stomach ailments, migraines)? Q.21		Completed which survey			
		Non Problem Reg.	Moderate-risk & Problem	Family Members	Total
No	Count	56	44	37	137
	% within completed which survey	100.0%	80.0%	92.5%	90.7%
Yes	Count	0	11	3	14
	% within completed which survey	.0%	20.0%	7.5%	9.3%
Total	Count	56	55	40	151
	% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences significant ($p \leq .01$)

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

Analysis is done using small sample sizes resulting in extrapolation issues.

7.5 Stress, Anxiety and Depression

There is a much stronger link between problem gambling and mental health, including stress, anxiety and depression. In the Saskatchewan study, Wynne (2002) found that 56.5% of problem gamblers felt depressed for two or more weeks compared with 13.3% of those without gambling problems. Forty-three percent (43.5%) of problem gamblers had serious thoughts of suicide compared with only 5.7% of non-problem gamblers; both depression and suicide were statistically significant.

Drawing from the Nova Scotia help-line data, a large proportion of gamblers who had called the help-line cited mental health problems due to gambling. This ranged from 39.2% of callers in 2007 to 52.3% of callers in 2004 (Table 70). The rate of callers citing mental health impacts has remained relatively unchanged since 2001.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened. Individuals could select more than one impact from the list of impacts asked.

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Table 69
Help-Line Calls Citing Mental Health Problems Due to Gambling

	2001	2002	2003	2004	2005	2006	2007
n = total callers who experienced problems due to gambler	206	346	290	298	433	277	171
Number of callers to the NS addictions services and helpline citing mental health well-being impacted by gambling	85	170	139	156	207	133	67
Percentage of total calls citing mental health impacts from gambling	41.3%	49.1%	47.9%	52.3%	47.8%	48.0%	39.2%

Source: Nova Scotia Office of Health Promotion Problem Gambling Services. Problem Gambling Help Line. 2001-05 Annual Reports. 2006 and 2007 data is from Nova Scotia Office of Health Promotion Problem Gambling Services; Problem Gambling Help Line. Year to Date Synopsis and Monthly Statistical Reports December 2006 and December 2007.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened. Individuals could select more than one impact from the list of impacts asked. Some numbers in the table differ from the report.

In the 2003 and 2007 adult gambling prevalence studies, moderate-risk/problem gamblers were more than twice as likely to have experienced any problems with depression than low-risk gamblers and more than three-times more likely than non-problem gamblers (Table 71). In 2007, 39.3% of moderate-risk/problem gamblers said they had experienced depression, which was statistically higher than in 2002 when 21.4%, said they had experienced depression. However, only 5.63% (3 out of 56 surveyed) of moderate-risk/problem gamblers said that gambling had played a direct role in their depression while only 1.49% of low-risk gamblers acknowledged gambling's role in their depression.

Non-gamblers also experienced an increase in depression.

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- *The NS Prevalence Studies were conducted in 2003 and 2007 and are inconsistently referenced throughout this document. This could cause problems when doing comparisons with other data.*
- *Risk category terminology used in this draft document is not consistent with the NS Prevalence Studies which use the following categories: non-gamblers, non-problem, at-risk, and problem gambling.*

Table 70
Experienced Problems With Depression

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem (2002 n=2311) (2007 n=2022)	Low Risk (2002 n=134) (2007 n=91)	Moderate-risk & Problem ¹ (2002 n=56) (2007 n=61)	
In past year have you experienced any problems with depression? ²				
2003 Survey	7.2% (167)	9.0% (12)	21.4% (12)	7.6% (191)
2007 Survey	11.5% (233) ↑	19.8% (18) ↑	39.3% (24) ↑	12.6% (275) ↑

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Due to methodology used, categories of non-gamblers were not included and therefore analysis does not correlate with the NS Prevalence Studies. Including non-gamblers would have provided a context for the population regarding behaviours.

In the same 2003 and 2007 adult gambling prevalence studies, 17.9% (2002) and **18.1% (2007)** of moderate-risk/problem gamblers said that gambling had been the cause of health problems, including stress and anxiety (Table 72). None of the low-risk and non-problem gamblers said they had experience stress and anxiety attributable to gambling.

The 2007 study asked about anxiety and panic attacks but not whether gambling is a cause for the anxiety and panic attacks. It did not ask about stress.

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Table 71
Gambling Caused Stress and Anxiety

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem (2002 n=2311) (2007 n=2022)	Low Risk (2002 n=134) (2007 n=91)	Moderate-risk & Problem ¹ (2002 n=56) (2007 n=61)	
Gambling has caused you any health problems including stress or anxiety. ²				
2003 Survey	0%	0%	17.9% (10)	0.4% (10)
2007 Survey	0%	0%	18.1% (11)	0.5% (11)

Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Combined responses of "most of the time" and "almost always" from four point scale that includes "sometimes" and "never."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

The 2007 study asked about anxiety and panic attacks but not if gambling is a cause for the anxiety and panic attacks. It did not ask about stress. Due to methodology used, categories of non-gamblers were not included and therefore analysis does not correlate with the NS Prevalence Studies. Including non-gamblers would have provided a context for the population regarding behaviours.

When asked whether they felt guilty about how much money they spend gambling, moderate-risk/problem gamblers were far more likely to have felt guilty than other gambler types (Table 73). In 2002 62.5% of moderate-risk/problem gamblers felt guilty while in 2007 59.0% felt guilty. In 2002, 23.9% of low-risk gamblers felt guilty compared to 30.8% in 2007. Only 3% of non-problem gamblers felt guilty in 2003 compared to 2.6% in 2007.

Some data is reported incorrectly.

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Table 72
Felt Guilty About Spending Money Gambling

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem (2002 n=2311) (2007 n=2022)	Low Risk (2002 n=134) (2007 n=91)	Moderate-risk & Problem ¹ (2002 n=56) (2007 n=61)	
I sometimes feel guilty about how much money I've spent gambling. ²				
2003 Survey	3% (69)	23.9% (32)	62.5% (35)	5.5% (136)
2007 Survey	2.6% (52)	30.8% (28)	59.0% (36)	5.4% (116)

Shading indicates significant differences among gambler subtypes (p<.05)

↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).

¹ CPGI scores for moderate-risk and problem gamblers have been combined.

² Combined responses for scores of 4 and 5 on a five point scale ranging from "1 – strongly disagree" to "5 – strongly agree."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Some data is reported incorrectly. Due to methodology used, categories of non-gamblers were not included and therefore analysis does not correlate with the NS Prevalence Studies. Including non-gamblers would have provided a context for the population regarding behaviours.

In terms of other behavioural characteristics of gamblers, Table 74, reveals whether gamblers gambled to forget their troubles or worries, whether they lied about their gambling, and whether thinking of gambling and ways to spend money to gamble consumes much of their time. Moderate-risk/problem gamblers were far more likely to say they gamble to forget their troubles or worries; 18.0% in 2007 compared to only 2.2% of low-risk and 0.6% of non-problem gamblers. These figures are largely unchanged from 2002 statistics. Far more moderate-risk/problem gamblers said they had lied about their gambling; 27.9% said they had lied in the 2007 survey compared to only 1.1% of low-risk gamblers and 0.3% of non-problem gamblers; again the 2002 statistics are similar. Moderate-risk/problem gamblers are also more likely than other gambler types to find themselves thinking about gambling or ways to make money to gamble; 18.0% of moderate-risk/problem gamblers surveyed in 2007, 2.2% of low-risk gamblers, and 0.5% of non-problem gamblers.

Some data are incorrectly represented as the NS Prevalence studies included statistics for non-gamblers.

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Table 73
Gamble to Forget Troubles or Worries, Lied About Gambling, Thinking About Gambling

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	
I gamble to forget my troubles or worries or when I feel bad about myself.²				
2003 Survey	0.4% (10)	3.7% (5)	16.1% (9)	1% (24)
2007 Survey	0.6% (12)	2.2% (2)	18% (11)	1.1% (25)
I have lied about my gambling.²				
2003 Survey	0.5% (12)	2.2% (3)	30.3% (17)	1.3% (32)
2007 Survey	0.3% (7)	1.1% (1)	27.9% (17)	1.2% (25)
I often find myself thinking about gambling or ways to find money to gamble.²				
2003 Survey	0.3% (7)	4.5% (6)	19.6% (11)	0.9% (24)
2007 Survey	0.5% (12)	2.2% (2)	18% (11)	1.1% (25)

 Shading indicates significant differences among gambler subtypes (p<.05)
 Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Combined responses for scores of 4 and 5 on a five point scale ranging from "1 – strongly disagree" to "5 – strongly agree."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Some data are incorrectly represented as the NS Prevalence studies included statistics for non-gamblers.

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7.6 Suicide

Suicide is one of the most commonly cited health impacts of problem gambling in both the Canadian and international gambling research literature. In a Canadian national study (2007), it was estimated that the odds ratio for problem gambling (in the past year) and attempted suicide was 3.43 (95% confidence interval, 1.37 to 8.60). However, the same study concluded that it is not possible to say from these data whether this represents a causal relation.¹⁶⁶ In Alberta approximately 2% of suicides were estimated to be related to problem gambling in 2000, 2001 and 2002. In a Quebec study, Ladouceur et al. interviewed a sample of 1471 college students, aged 16 to 23 years, living in the metropolitan area of Quebec City. The lifetime prevalence rate of attempted suicide in pathological gamblers was 26.8%, while among those without gambling problems, the rate was 7.2%.¹⁶⁷

*Citation is required for the statement: "Suicide is...research literature."
Source for Alberta study needs to be cited.*

In the 2005-2006 Department of Health Promotion and Protection *Accountability Report*, addressing suicide was identified as a priority in the area of injury prevention.¹⁶⁸ In May 2005, the Minister announced the department's intention to lead the development of a framework to address suicide and, in November 2006, the *Nova Scotia Strategic Framework to Address Suicide* was published.¹⁶⁹ The stated vision in the NSSFAS is to reduce the impact of suicide through building hope, strength, and resiliency, so that every person can lead a healthy and safe life.

Suicide is one of the top three causes of death and hospitalization in Nova Scotia amongst those 16 years and older.¹⁷⁰ Moreover, the public health impact of attempted suicide is substantial. The burden on emergency health services, medical and psychiatric services is deemed to be considerable.¹⁷¹ In fact, the economic impact of suicide in Nova Scotia is estimated to be \$100 million annually.¹⁷²

¹⁶⁶ Newman, S. and A. Thompson. 2007. The Association Between Pathological Gambling and Attempted Suicide in Canada. *The Canadian Journal of Psychiatry*, Vol 52, No 9.

¹⁶⁷ Ladouceur R, Dubé D, Bujold A. "Prevalence of pathological gambling and related problems among college students in the Quebec metropolitan area." *Canadian Journal of Psychiatry*. 1994;39:289–293.

¹⁶⁸ Nova Scotia Health Promotion and Protection (November 30, 2006). *Annual Accountability Report for the Fiscal Year 2005-2006*.

¹⁶⁹ Nova Scotia Health Promotion and Protection (November 2006) (*Nova Scotia Strategic Framework to Address Suicide*). Provincial Strategic Framework Development Committee.

¹⁷⁰ Department of Health Promotion and Protection 2008-2009 Business Plan, April 21, 2008, p.8.

¹⁷¹ Ibid,

¹⁷² Ibid, p.9. The Department of Health Promotion and Protection cites the following source for this figure: Clayton, D., and Barcelo, A. (2000). The Cost of Suicide Mortality in New Brunswick, 1996. *Chronic Diseases in Canada*, 20(3).

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Suicide is defined in medical statistics as intentional self-harm. There are no published statistics on the total number of suicides committed in Nova Scotia each year. However, the Nova Scotia Department of Health does report the mortality rates for selected causes and this includes the following suicide rates per 100,000 population for the period 1996 to 2005 for each of the nine District Health Authority regions in the province (Table 75).¹⁷³

Accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

Table 74
Intentional Self-Harm (suicide) SMR per 100,000 for Province and District

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Province	12.18	9.52	11.51	11.98	7.10	9.82	10.04	9.84	8.74	8.38
District 1	11.80	10.86	18.13	11.64	11.58	10.81	17.41	13.36	17.67	10.32
District 2	9.45	12.07	15.56	8.16	7.58	15.77	9.40	7.66	5.32	4.43
District 3	13.84	7.45	19.45	14.32	11.15	14.93	9.66	21.60	13.09	11.19
District 4	11.37	8.49	7.07	14.55	9.71	4.77	10.44	18.51	6.08	6.67
District 5	8.63	11.96	6.79	10.73	18.10	5.27	22.56	13.90	4.96	6.24
District 6	20.91	6.90	11.12	10.82	8.79	8.21	6.44	7.29	4.28	3.76
District 7	22.68	7.42	8.76	10.38	1.55	15.08	13.26	8.07	6.01	8.03
District 8	12.52	11.69	10.46	14.23	5.98	9.39	13.08	8.53	8.15	18.99
District 9	11.08	8.94	10.06	11.57	4.97	8.77	7.81	7.44	8.89	6.00

Prepared by: Information Analysis and Reporting
Nova Scotia Mortality Report – May 2007

It should be noted that these statistics are reflective of all suicides not only gambling related suicides.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

¹⁷³ Nova Scotia Mortality Rates for Selected Causes, 1996 to 2005. Prepared by Information Analysis and Reporting Division, Information Standards, Solutions and Services (ISE) Branch, Nova Scotia Department of Health, May 2007.

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There are no definitive statistics on the relationship of suicide to problem gambling in Nova Scotia in the medical records (e.g. chief medical examiner reports). However, according to one expert, an estimated 6% of Nova Scotia suicides may be related to problem gambling.¹⁷⁴ This estimate is similar to that offered by Peter McKenna in his recent book *Terminal Damage* (2008), where he quoted a Canadian Press (2003, A1) article that “of some 159 confirmed suicides in Nova Scotia between January 2001 and September of 2002, ten—or 6.3 percent—were seen as causally linked to a gambling addiction.”¹⁷⁵

The “expert” referenced did not provide a number but provided possible sources of data for research. Because statistics are not collected in a manner that is usable the estimates of suicides are unreliable, resulting in a lack of rigor in the methodology. Citations are incorrect or missing.

Although the actual number of suicides in Nova Scotia is not published annually and there is no definitive number of these suicides that can be directly linked to a gambling addiction, it is possible to estimate these figures from the data presented above. Table 76 shows that the estimated total number of suicides in Nova Scotia between 1996 and 2005 ranged from a high of 113 in 1996 to a low of 66 in 2000, with the average being 93 suicides per year over this ten-year period.¹⁷⁶ For the same period, it can be estimated that annual gambling-related suicides ranged from a high of 6.8 in 1996 to a low of 4.0 in 2000, with the average being about 5.6 gambling-related suicides per year.

The strength of methodology is questioned as accurate gambling and suicide statistics are not kept by Nova Scotia, therefore estimations are questionable.

¹⁷⁴ Graham, Robert. 2007. Personal Communication. Nova Scotia Office of Health Promotions and Addictions Services. July 2007.

¹⁷⁵ McKenna, Peter. (2008). *Terminal Damage*. Black Point, NS: Fernwood Publishing. (p.84).

¹⁷⁶ Statistics Canada CANSIM Table 102-0551 reports on suicide deaths for Nova Scotia for the period 2000-2004 (Deaths, by selected grouped causes, age group and sex, Canada, provinces and territories, annual, Intentional self-harm (suicide) [X60-X84, Y87.0]). Total suicides, as reported by Statistics Canada for Nova Scotia are 75 (2000), 93 (2001), 98 (2002), 99 (2003) and 90 (2004). These differ somewhat from those derived from Nova Scotia Department of Health's DHA statistics for suicide.

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Table 75
Estimated Number of Suicides and Gambling-Related Suicides, 1996 to 2005

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total Estimated Suicides	113	89	107	112	66	92	94	92	82	78
Total Estimated Gambling-Related Suicides	6.8	5.3	6.4	6.7	4.0	5.5	5.6	5.5	4.9	4.7

Source: Statistics Canada. CANSIM Table 051-0001 - Estimates of population, by age group and sex for July 1, Canada, provinces and territories, annual (persons unless otherwise noted) (accessed October 1, 2008)

Note: Total number of suicides are estimated using the DHA suicide rate (per 100,000) statistics for Nova Scotia from the Department of Health adjusted for total provincial population.

Strength of methodology questioned as accurate gambling and suicide statistics are not kept by Nova Scotia, therefore estimations are questionable. The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

The Department of Health Promotion and Protection estimates that the economic impact of suicides in Nova Scotia is about \$100 million per year. Based on this figure and an estimated average of 93 suicides/year, it may be further estimated that the economic impact of each suicide in the province is about \$1,075,269. If one assumes that there are about 5.6 gambling-related suicides on average each year, then the total economic impact of these suicides is about \$6,021,505.

Strength of methodology questioned as accurate gambling and suicide statistics are not kept by Nova Scotia, therefore estimations are questionable.

7.7 Social Isolation

Problem gamblers may experience higher rates of loneliness and gambling may lead to heightened feelings of loneliness and isolation. This may lead to the erosion of social cohesion (i.e. social capital) in communities.

In the 2003 and 2007 adult gambling prevalence surveys, moderate-risk/problem gamblers were more likely to have experienced loneliness and isolation than low-risk and non-problem gamblers (Table 77). In 2007, 23.0% of moderate-risk/problem gamblers, 18.7% of low-risk gamblers, and 9.0% of non-problem gamblers experienced loneliness or increased isolation. However, of the 13 moderate-risk/problem gamblers who experienced these impacts in 2002, only 2 (3.57% of total surveyed) said that gambling played a role in their loneliness (the same question was not asked in the 2007 survey).

Some data are incorrectly represented.

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Table 76
Experienced Loneliness/Increased Isolation

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem (2002 n=2311) (2007 n=2022)	Low Risk (2002 n=134) (2007 n=91)	Moderate-risk & Problem ¹ (2002 n=56) (2007 n=61)	
In past year have you experienced any problems with loneliness/increased isolation? ²				
2003 Survey	6.2% (143)	11.2% (15)	23.2% (13)	6.8% (171)
2007 Survey	9.0% (181) ↑	18.7% (17)	23.0% (14)	9.8% (212) ↑

Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gambles have been combined.
² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Some data are incorrectly represented.

Statistics from the help-line calls between 2001 and 2007 show that 17% (2007) and 41% (2001) of all calls cited social impacts due to problem gambling (Table 78). The statistics do not specify what social impacts were experienced.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened. Individuals could select more than one impact from the list of impacts asked.

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Table 77
Help-Line Calls Social Impacts Due to Gambling

	2001	2002	2003	2004	2005	2006	2007
n = total number of callers citing gambling problems	206	346	290	298	433	277	171
Number of callers to the NS addictions services and helpline citing social impacts from problem gambling.	85	128	68	96	106	69	30
Percentage of total calls citing social impacts from gambling	41%	37%	23%	32%	24%	25%	17%

Source: Nova Scotia Office of Health Promotion Problem Gambling Services. Problem Gambling Help Line. 2001-05 Annual Reports. 2006 and 2007 data is from Nova Scotia Office of Health Promotion Problem Gambling Services; Problem Gambling Help Line. Year to Date Synopsis and Monthly Statistical Reports December 2006 and December 2007.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened. Individuals could select more than one impact from the list of impacts asked. Some numbers in the table differ from the report.

7.8 Substance Abuse Related to Gambling

The socio-economic impact of gambling Whistler Symposium in 2000 identified empirical research needed to establish direct causal links between gambling and substance abuse.¹⁷⁷ Valid impact and co-morbidity analysis requires *attribution fractions* that link gambling as a cause of positive or negative outcomes. These fractions establish what proportion of the impact can be attributed directly to gambling and what proportion can be associated indirectly with gambling, but is caused by another source such as alcohol or illegal drug use. The Whistler Symposium concluded that without gambling attribution factors that connect problems directly to gambling, it is not possible to produce meaningful estimates of costs and benefits.

In a 1998 review of the literature, Crockford and el-Guebaly (1998)¹⁷⁸ found a large proportion – between 25% and 63% – of pathological gamblers also have had (or have) a substance disorder. In addition, 9% to 16% of substance abusers are probable pathological gamblers. Crockford and el-Guebaly report that the lack of consistency of results reflects use of small sample sizes, generalizing from studies that use gamblers in treatment, use of different

¹⁷⁷ Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Ottawa: Canadian Centre on Substance Abuse, p.27.

¹⁷⁸ Crockford, D. N. and N. el-Guebaly. (1998). Psychiatric co-morbidity in pathological gambling: A critical review. *Canadian Journal of Psychiatry*, 43, 43-50.

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instruments, and lack of adequate descriptions of demographic variables such as age and ethnicity, and other potentially confounding variables such as severity of the gambling problem.

For this study, we use evidence from the 2003 and 2007 adult gambler prevalence studies to explore the possible co-relationship between gambling and substance abuse. Table 80 shows that in 2002, 12.5% of moderate-risk/problem gamblers, 6% of low-risk gamblers, and 1% of non-problem gamblers had gambled under the influence of alcohol or other drugs. The same question was not asked in the 2007 survey. According to the 2003 study, over 55% of moderate-risk/problem gamblers used tobacco while gambling, compared to 26.9% of low-risk gamblers and 8.3% of non-problem gamblers. The same question was not asked in the 2007 survey.

Incorrect table citation, refers to table below.

Table 78
Gambled Under the Influence of Alcohol
Use Tobacco While Gambling

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	
Gambled under the influence of alcohol or other drugs, while drunk or high.²				
2003 Survey	1% (23)	6% (8)	12.5% (7)	1.5% (38)
2007 Survey ³	---	---	---	---
Used tobacco while gambling.²				
2003 Survey	8.3% (192)	26.9% (36)	55.4% (31)	7.7% (192)
2007 Survey ³	---	---	---	---

- Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Combined responses of "most of the time" and "almost always" from four point scale that includes "sometimes" and "never."
³ The question was not asked in the 2007 survey.

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

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In the 2008 adult gambler telephone survey, 5.5% (3 out of 55 respondents) of moderate-risk/problem gamblers said that they had had a substance abuse problem (such as alcohol), while only 1.8% (1 out of 58 respondents) of non-problem gamblers surveyed said they had experienced alcohol abuse.¹⁷⁹ In terms of nicotine (smoking) substance abuse, 7.3% of the 55 moderate-risk/problem gambler respondents said they had had a nicotine substance abuse problem compared to only 1.8% of the 56 non-problem gamblers.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

7.9 Psychological Impacts on Family and Friends of Gamblers

Problem gambling impacts can extend beyond the individual gambler to family, friends and work colleagues. The impacts can include financial and emotional stress for the family, spouse and children. Psychological impacts may also include criticism by others of gamblers problems and feelings of worry by family members of a problem gambler spouse, partner or other family member.

In the 2008 adult gambler telephone survey, that included family members of moderate-risk/problem gamblers, 12.7% (7 out of 55 respondents) said that gambling had caused stress for their family in their recent gambling experience (Table 80). Three of these moderate-risk/problem gamblers said that the stress had been experienced during the past year. Of family members, 7.5% (3 of 40 respondents) said they had gambling had caused stress for their family. **None of the family members had experienced stress in the past year.**

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results. The last statement is not correct according to data in Table 80.

¹⁷⁹ Focal Research. 2008. Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

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Table 79
Gambling Ever Caused Stress for Family (2008)

Has your gambling ever caused stress for the family? Q27		Completed which survey			Total
		Non Problem Reg.	Moderate-risk & Problem	Family Members	
No	Count	48	48	37	141
	% within completed which survey	100.0%	84.3%	92.5%	93.4%
Yes	Count	7	7	3	10
	% within completed which survey	0.0%	12.7%	7.5%	6.6%
Total	Count	56	55	40	151
	% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences significant (p≤.05)

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results. Question refers to “your gambling”. Clarification is required as to whether family members are responding about their gambling or that of another family member.

When asked whether gambling had ever caused removal of their children from their home, none of the respondents to the 2008 telephone survey said this had occurred.¹⁸⁰

Analysis is done using small sample sizes resulting in extrapolation issues.

¹⁸⁰ Question 27a from the 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted by Focal Research between August 26 – September 3, 2008

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When asked whether family members had ever received treatment for negative impacts of gambling, including counseling, hospitalization or other treatment, only 1 out of 55 moderate-risk/problem gamblers said ‘yes.’¹⁸¹ None of the family members had received treatment resulting from the impacts of a problem gambler family member.

Analysis is done using small sample sizes resulting in extrapolation issues.

In both the 2003 and 2007 adult gambler prevalence surveys, gamblers were asked if their friends or family worry or complain about their gambling behaviour. Table 81 shows that a greater number of moderate-risk/problem gamblers experienced these psychological impacts; 24.6% of these gamblers in 2007 and 25% in 2002. Fewer low-risk and non-problem gamblers experienced family member complaints about their gambling.

It is questionable if this “question” belongs under psychological impact.

Table 80
Friends and Family Worry or Complain About My Gambling

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311) (2007 n=2022)	(2002 n=134) (2007 n=91)	(2002 n=56) (2007 n=61)	
I have friends or family who worry or complain about me gambling. ²				
2003 Survey	0.4% (9)	3% (4)	25% (14)	1.1% (27)
2007 Survey	0.5% (11)	1.1% (1)	24.6% (15)	1.3% (27)

- Shading indicates significant differences among gambler subtypes (p<.05)
- ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
- ¹ CPGI scores for moderate-risk and problem gambles have been combined.
- ² Combined responses for scores of 4 and 5 on a five point scale ranging from “1 – strongly disagree” to “5 – strongly agree.”

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Analysis is done using small sample sizes resulting in extrapolation issues.

¹⁸¹ Question 27b from the 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted by Focal Research between August 26 – September 3, 2008

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Moderate-risk/problem gamblers from the 2003 and 2007 gambling prevalence studies were more likely than low-risk and non-problem gamblers to have been criticized by others for their gambling problem (whether or not they thought they had a gambling problem). Table 82 shows that 19.7% in 2007 and 21.5% in 2003 of moderate-risk/problem gamblers experienced criticism; none of the low-risk and non-problem gamblers had this experience.

Some data is incorrectly represented.

**Table 81
People Have Criticized Your Gambling**

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem (2003 n=2311) (2007 n=2022)	Low Risk (2003 n=134) (2007 n=91)	Moderate-risk & Problem ¹ (2003 n=56) (2007 n=61)	
People have criticized your betting or told you that you had a gambling problem regardless of whether or not you thought it was true. ²				
2003 Survey	0%	0%	21.5% (12)	0.5% (12)
2007 Survey	0%	0%	19.7% (12)	0.6% (12)

- Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gamblers have been combined.
² Combined responses of "most of the time" and "almost always" from four point scale that includes "sometimes" and "never."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

Some data is incorrectly represented.

Costs of Emotional Distress due to Problem Gambling

The emotional stress on families caused by problem gambling can be translated into economic costs. In Australia, the Australian Productivity Commission in 1999 estimated cost of emotional distress caused by gambling on the immediate family and parents of severe problem gamblers was between A\$5,000 and A\$15,000 for immediate family members, and A\$0-to-A\$5,000 for parents. The total annual cost was estimated at A\$756 million-to-A\$2.3 billion for immediate family members, and A\$0-to-A\$666 million for parents.¹⁸² Similar estimates have not been produced for Canada, however, the Australian estimates do provide meaningful benchmarks to consider in assessing the emotional costs of problem gambling to families in Nova Scotia.

It is inappropriate to use Australian data as a proxy for Nova Scotia.

¹⁸² Australia Productivity Commission. (1999). *Australia's gambling industries inquiry report*. Report prepared by G. Banks and R. Fitzgerald

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7.10 Family Break-up (Separation, Divorce, Impact on Children)

The financial stresses that result from problem gambling can often lead to relational and marital stress that may lead to separation, divorce and negative impact on children.

Relationship problems

In 2002, roughly 37.5% (21 out of 56) moderate-risk and problem gamblers said they had experienced relationship problems in their lives (not necessarily due to gambling) (Table 83). Of the 21 moderate-risk/problem gambler respondents, 8 (or 14.3% of all 56 respondents) said that gambling had played a role in their relationship problems. About 11.9 % (16 out of 134) low risk gamblers and 6.8 % (158 out of 2,311) non-problem gamblers had experienced relationship problems. Only 1.5% of all low-risk gamblers said that gambling had played a role in their relationship problems. This suggests that problem gamblers were more than three times more likely to experience relationship problems than other gambler types and more than five times more likely to experience relationship problems due to gambling. Most importantly, gambling had played a significant role in the relationship problems. The same questions were not posed in the 2007 survey.

Some data are incorrectly represented.

Table 82
Experienced Relationship Problems

Survey Question/Year	Gambler Subtype (past year gamblers)			Total Past Year Gamblers
	Non-Problem	Low Risk	Moderate-risk & Problem ¹	
	(2002 n=2311)	(2002 n=134)	(2002 n=56)	(2002 n=2501)
	(2007 n=)	(2007 n=)	(2007 n=)	(2007 n=)
In past year have you experienced any relationship problems? ²				
2003 Survey	6.8% (158)	11.9% (16)	37.5% (21)	7.8% (195)
2007 Survey ³	---	---	---	---

- Shading indicates significant differences among gambler subtypes (p<.05)
 ↑↓ Arrows indicate the direction of significant change within each gambler subtype and for the total between survey times 2003 vs. 2007 (p <.05).
¹ CPGI scores for moderate-risk and problem gambles have been combined.
² Response scale "yes/no."

Source: 2003 Adult Gambling Prevalence Study and 2007 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection

*Due to methodology used, categories of non-gamblers were not included and therefore analysis does not correlate with the NS Prevalence Studies. Including non-gamblers would have provided a context for the population regarding behaviours.
Some data are incorrectly represented.
Table note 3 does not exist.*

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Marriage Separation and Divorce

The 2008 adult gambler telephone survey inquired more deeply into the relationship impacts of problem gambling. When asked whether gambling has ever caused marriage separation only 1 out of 55 moderate-risk/problem gamblers said they had experienced marriage separation.¹⁸³ None of the non-problem gamblers and none of the family members of problem gamblers said they had experienced marriage separation. In a follow-up question, respondents were asked whether their gambling ever caused a divorce. Only 1.8% or 1 of the 55 moderate-risk/problem gambler noted that divorce had resulted from their problem gambling.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

These results are similar to the 2003 study, which asked whether gambling had played a role in the loss (i.e. divorce) of a spouse or partner. Of the 56 moderate-risk/problem gambler respondents only 1 (1.8%) respondents said that gambling had played a role.¹⁸⁴

Loss is not limited to a definition of divorce. Some data are incorrectly represented.

Costs of Family Breakdown

Families of problem gamblers bear the gambling-related cost of divorce, separation, spousal abuse, and child neglect. These costs are tangible and real, and can be quantified in terms of the amount of money an individual would be willing to pay to remove the problem. In practice, however, such costs are rarely measured. When social services or other government or community services deal with the effects of problem gambling, these service expenditures represent resources lost to other uses in society and, can be measured by the cost of the services provided.

¹⁸³ Question 27 from the 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted by Focal Research between August 26 – September 3, 2008

¹⁸⁴ Source: 2003 Adult Gambling Prevalence Study. Prepared by Focal Research, Halifax for Nova Scotia Health Promotion and Protection.

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There are no Canadian estimates of the economic cost associated with loss of well-being by gamblers' family and friends due to problem gambling behaviour. Estimates of divorce and counselling cost associated with gambling do not include the loss of well-being of families of problem gamblers. Vaillancourt and Roy (2000) arbitrarily assumed a cost of Cnd\$1,000 per problem gambler for the loss of well-being of these gamblers' families that is attributable to the gambling behaviour.

In Australia, the Australian Productivity Commission estimated the financial cost per divorce or separation in that country to be A\$1,100 (C\$1,146), which represented filing and legal fees. This is a conservative estimate since it does not include the cost of enforcing child support orders, transaction costs of house sales, separate household set-up cost, and the long-term human capital cost relating to impact on children's education that might translate to lower earnings later in life.¹⁸⁵ The Australian Productivity Commission also estimated other emotional cost, including the emotional costs of relationship breakdowns due to problem gambling, which was estimated for both partners at between A\$5,000 (C\$5,213) and A\$15,000 (C\$15,638). The total annual cost was A\$288 million-to-A\$864 million, based mainly on the lower range of payments for victims' compensation in New South Wales and Queensland. The estimated emotional cost of divorce and separation for immediate family members of problem gamblers was estimated at between A\$15,000 (C\$15,638) and \$30,000 (\$31,276), or an annual total cost of between A\$126 million (\$C131 million) and A\$864 million (\$C900 million).

Presenting both Australian and Canadian dollar figures implies that these costs could be applied to Nova Scotia.

¹⁸⁵ ¹⁸⁵ Anielski Management Inc. 2008. *The Socio-Economic Impact of Gambling (SEIG) Framework: An Assessment Framework for Canada: In Search of the Gold Standard*. p. 81-82.

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7.11 Domestic Violence

Problem gambling may also lead to increased levels of verbal and physical abuse or domestic violence. In the 2008 adult gambler telephone survey respondents were asked whether their gambling had ever caused or led to verbal abuse of others, including members of their households. Of the 55 moderate-risk/problem gambler respondents, 3 (or 5.5% of respondents) said that gambling had caused verbal abuse while one (2.5%) of the 40 family member respondents said they had experienced verbal abuse as a result of a problem gambler family member’s gambling activity (Table 84).

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results. Table 84 indicates that the differences are not significant, so therefore, should not comment upon them as if they were.

**Table 83
Gambling Ever Caused Verbal Abuse (2008)**

Has your gambling ever caused verbal abuse? Q27		Completed which survey			Total
		Non Problem Reg.	Moderate-risk & Problem	Family Members	
No	Count	56	52	39	147
	% within completed which survey	100.0%	94.5%	97.5%	97.4%
Yes	Count	0	3	1	4
	% within completed which survey	0.0%	5.5%	2.5%	2.6%
Total	Count	56	55	40	151
	% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences not significant
Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

Analysis is done using small sample sizes resulting in extrapolation issues. Question refers to “your gambling”. Clarification is required as to whether family members are responding about their gambling or that of another family member.

When asked about gambling causing any physical abuse, none of the family member respondents in the 2008 telephone survey said they had experienced physical abuse and none of the gamblers surveyed said they were physically abusive because of their problem gambling.

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From these results we might conclude that at least a small proportion of Nova Scotia families experience verbal abuse from problem gambler members of their households, because of gambling behaviour, but that incidents of physical abuse do not seem to be related to problem gambling.

Clarification is required as to whether family members are responding about their gambling or that of another family member.

However, according to our analysis of crime statistics from the Halifax Regional Municipal police, we estimate there were at least 21 occurrences of domestic dispute, violence or abuse in 2006 and 23 occurrences in 2007. These crime statistics are examined in greater detail in the impacts of gambling and crime section of this report. However, using these statistics we could compare them with the estimated 5.5% of moderate-risk/problem gamblers who, in our 2008 telephone survey indicated a link between gambling and verbal abuse. Assuming that that 39.9% of moderate-risk/problem gamblers in Nova Scotia live in the Halifax RM (i.e. an estimated 7,525 gamblers) this would suggest an estimated crime occurrence rate of 0.31% of the moderate-risk/problem gambler estimated population for Halifax. This is significantly lower than our estimated 5.5% verbal abuse rate from the 2008 telephone survey.¹⁸⁶

Rigour of methodology is poor as responses are notes in case files. Halifax should not be used to extrapolate to the entire Province.

No estimate of the cost of domestic violence from an economic perspective, have been made in Canada. The Australian Productivity Commission (1999) estimated that the cost of domestic violence related to problem gambling was at between A\$5,000 (CDN\$ 5,213) and A\$15,000 (CDN\$ 15,638) per incident. The incidence of gambling-related violence was estimated from a survey of problem gamblers in counselling, which indicated that 13.1% of the severe problem gamblers reported having participated in a violent activity at some point during the period of gambling. The total cost for the harm caused by gambling-related violence was estimated to be between A\$2.8 million and A\$8.3 million.

Presenting both Australian and Canadian dollar figures implies that these costs could be applied to Nova Scotia.

¹⁸⁶ There could be many reasons for this discrepancy including that many verbal abuse cases may not be reported to police.

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8. Crime, Legal and Justice Impacts

8.1 Introduction

This section deals with the impacts of gambling on crime and the criminal justice system, including the potential for increased criminal activity attributable to gambling, the increase in money-related crimes (e.g. theft (including property), fraud, embezzlement), the need for extra law enforcement personnel, use of loan sharks, incarceration costs, and family abuse (e.g. domestic violence, child neglect, suicide and home invasion). As well, this section includes impacts of illegal gambling — gambling activity that is counter to Criminal Code of Canada statutes, such as bookmaking, keeping a common gambling house, and cheating at play — and the potential effects of underground gambling in a context where gambling is illegal.

We attempted to examine the following key indicators based on the national SEIG framework:

- Reduced illegal gambling rates (as a positive benefit of the availability of legalized gambling).
- Crime rates related to gambling (e.g. money-related crimes including theft, other property crimes, fraud, embezzlement).
- Policing and incarceration costs
- Security costs
- Social cost of gambling-related crime

On one hand the introduction of legalized or regulated gambling could have the effect of reducing previous illegal gambling activity. On the other hand, the potential for increase crime can be associated with increasing access to gambling venues and various games of chance. Gambling-related crimes occur in three major areas: problem gamblers commit crimes such as theft, forgery, drug dealing, domestic violence and white collar crime in order to pay for their gambling addiction and related debts; gambling venues can be locations for criminal activity such as theft and money laundering; and organized crime effect the gambling industry mainly through loan sharing, money laundering, and counterfeiting.¹⁸⁷

How much crime is directly or indirectly related to gambling is, however, difficult to discern. In previous studies of the relationship between gambling and crime, researchers have found that most police records are incomplete and may be of limited use.¹⁸⁸ Police records often reflect crimes reports rather than actual crime committed and many crimes are never solved or brought

¹⁸⁷ Social and Economic Research Centre (SERC) University of Queensland. (2001). *The Social and Economic Impacts of Gaming: A framework for research*. Gambling Research Panel. Victorian Casino and Gaming Authority [Australia].

¹⁸⁸ Smith, G. J., H. J. Wynne and T. F. Hartnagel. (2003). *Examining Police Records to Assess Gambling Impacts: A Study of Gambling-Related Crime in the City of Edmonton*. Alberta Gaming Research Institute.

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to prosecution. There is also the issue of multiple law enforcement agencies (e.g. Halifax Regional Police and the RCMP in Nova Scotia) that keep different records. These agencies do not currently keep formal records of gambling-related incidents of crime. Many crimes such as family disputes, domestic violence and abuse go unreported.

An earlier study by Smith and Wynne in 1999 into the association of crime and gambling in western Canada, found that it was virtually impossible to assess the extent of crime that is gambling related.¹⁸⁹ These researchers also report that empirical evidence does not confirm that an increase in crime due to legalized gambling had occurred to any great extent in Canada. In fact, they point to arguments that suggest that legalization of gambling might actually have decreased crime.

However, **several US studies** into crime and gambling, had found an *association* between problem gambling and criminal activity such as burglaries, robberies, loan sharking, drug dealing, and money laundering.¹⁹⁰ However, the conclusion as to whether or not gambling 'causes' crime remains controversial.¹⁹¹ Problem gamblers are more likely to commit crimes; according to the Australian Productivity Commission in 1999 found that up to 70 per cent of Australian problem gamblers may commit offences.¹⁹²

Two sources are noted in the footnote giving opposite viewpoints. It is unclear how this supports the reference to "several US studies".

In one of the most comprehensive studies of gambling-related crime in Canada (Smith, Wynne and Hartnagel, 2003) examined all aspects of gambling related crime in Edmonton, Alberta.¹⁹³ Searching through hundreds of Edmonton Police Service (EPS) records of gambling-related crimes investigated (between January 1 to July 2002), they could not conclude that gambling causes crime, however, they did note that gambling and crime are connected in at least three important ways:

¹⁸⁹ Smith, G. and H. Wynne (1999). *Gambling and Crime in Western Canada: Exploring Myth and Reality* (summary report). Canada West Foundation

¹⁹⁰ Margolis (Margolis, J. (1997). *Casinos and Crime: An Analysis of the Evidence*. Washington, D.C.: American Gaming Association). states that many of these causal issues have not been researched, but notes that there is not much evidence at this point to support the idea that casino gaming has any meaningful impact on crime rates. Grinols (Grinols, E. L. (2000). *Casino gambling causes crime*. Policy Forum. Institute of Government and Public Affairs, 3(2)), on the other hand, states emphatically that there is considerable evidence that increases in crime, especially by problem gamblers.

¹⁹¹ Eadington, W. R. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives*, 13(3), 173-192.

¹⁹² The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.200

¹⁹³ Smith, G. J., H. J. Wynne and T. F. Hartnagel. (2003). *Examining Police Records to Assess Gambling Impacts: A Study of Gambling-Related Crime in the City of Edmonton*. Alberta Gaming Research Institute.

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- (1) Addicted gamblers commit crimes — many of the gambling-related family disputes and suicides, and over one-half of the gambling-related frauds where charges were laid, were precipitated by one person's problem gambling behavior.
- (2) Major gambling venues attract opportunistic criminals looking to exploit the situation via activities such as cheating at play, counterfeiting, money laundering, theft, and fraud, and they also deal with undesirables who disrupt play through vandalism, fighting, and public intoxication.
- (3) The existence of popular forms of illegal gambling such as Internet wagering, bookmaking, and common gambling houses constitute criminal activity.

Out of 11,198 files in the selected categories from EPS 2001, 5,196 were intensely scrutinized yielding 338 (or 2.74%) files (234 observed and 104 projected), which appeared to be gambling-related.¹⁹⁴ Then using the gambling occurrence report and EPS case manager assistance, 119 gambling-related occurrences were recorded over a seven-month period in 2002. This would equate to 17.6 gambling-related crime incidents per 100,000 citizens for Edmonton in 2002.¹⁹⁵ Of these 119 gambling-related occurrences, 61% were for passing counterfeit currency, 8% were for theft, 7% for frauds, 4% for family disputes, and a few others were in miscellaneous categories. Their research estimated that 1.5% of the reported domestic violence incidents in Edmonton, were gambling-related. They also estimated that 1.5% of reported fraud cases, 3.6% of robbery files and 13% of robbery-firearm files were gambling-related. Their study also examined criminal incidents at gambling venues including bingo halls and casinos. **The most common crimes** committed at or near bingo halls was theft from cars, **general complaints**, counterfeiting¹⁹⁶, and public mischief were the main complaints while the most common crime in casinos involved counterfeiting. Data concerning VLTs were excluded from the study, since VLTs are located in venues where other types of activity (e.g. alcohol consumption) occur, and gambling-related incidents could not be separated out from other causes of crime.

Clarification is required as to whether general complaints are considered a crime.

For this study, we adopted a similar, though less **forensic**, approach as Smith, Wynne and Hartnagel, to investigating the incidents of crimes committed in Nova Scotia that may be related to gambling. We requested a special police file search that was conducted by both the Halifax Regional Police and the RCMP.¹⁹⁷ The Halifax Regional Police (HRP) files for 2005, 2006 and

¹⁹⁴ The researchers note that they believe they had uncovered only a modest proportion of the crimes that actually occur related to gambling.

¹⁹⁵ In 2002, the City of Edmonton had a population of 677,430; Statistics Canada CANSIM Table 051-0001.

¹⁹⁶ Smith et.al. (2003) point out that their figures for casino crimes are very low because many of the criminal incidents at casinos are handled internally by the casino security personnel rather than by local police. Also, money laundering and loan sharking, both of which the casino security personnel report occurring at casinos, were not listed.

¹⁹⁷ A similar scrutiny of RCMP records were not available at the time of writing this report.

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2007 were scrutinized on our behalf by the HRP using key-word search protocols that looked for any gambling-related incidents of crime. Like Smith et.al. we realize that we are only picking up a modest proportion of the crimes that actually occur related to gambling. The results of our analysis are provided in the following sections.

In addition, the Nova Scotia Problem Gambling Help-Line data provides some evidence of the extent of problem gamblers experiencing legal issues related to their gambling problems,. Between 2001 and 2007 the number of callers to the Help-Line who cited experiencing legal issues related to gambling problems ranged from a low of 4 (2.3% of all callers) in 2007 to a high of 16 (5.0% of all callers) (see Table 85). While there is no obvious trend in these statistics (roughly 2-3% of all callers cite legal issues), 2007 appears to represent a significant reduction in the number of problem gamblers experiencing legal issues.

The subset of problem gamblers is unrepresentative of the general population. The representation of callers to the Problem Gambling Help Line is incorrect, as it includes open cases vs. total calls to the Help Line. Data cited here refers only to first time callers for whom a case is opened. Individuals could select more than one impact from the list of impacts asked. Some numbers in the table are incorrect. These are legal issues, and not necessarily related to criminal activity (e.g., could be legal issues related to a divorce or bankruptcy). The statement, "2007 appears...legal issues" is not supported by Table 85 – percentage of total calls remains at similar level

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Table 84
Help-Line Calls Citing Legal Impacts Due to Gambling

	2001	2002	2003	2004	2005	2006	2007
n = total number of callers citing gambling problems	206	346	290	298	433	277	171
Number of callers to the NS addictions services and helpline citing legal issues related to the impact of gambling problems.	7	16	5	9	8	8	4
Percentage of total calls citing legal impacts from gambling	3.0%	5.0%	2.0%	3.0%	2.0%	2.9%	2.3%

Source: Nova Scotia Office of Health Promotion Problem Gambling Services. Problem Gambling Help Line. 2001-05 Annual Reports. 2006 and 2007 data is from Nova Scotia Office of Health Promotion Problem Gambling Services; Problem Gambling Help Line. Year to Date Synopsis and Monthly Statistical Reports December 2006 and December 2007.

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8.2 Illegal Gambling

One of the potential benefits of legalized or regulated gambling is that it provides an opportunity to gamble in a legally sanctioned environment. Those who might have gambled illegally in the past can now do so without committing a criminal offence. An indicator of this benefit would be the reduction in illegal gambling as shown by a decline in the incidence of illegal gambling and betting (from police reports) and a decline in court proceedings for this crime. These declines should lead to reduced policing and court costs associated with illegal gambling may occur if the participants choose to switch to legalized gambling.

In previous analysis of illegal gambling in Nova Scotia by *GPI Atlantic (2004)*¹⁹⁸, the Problem Gambling Service at the Nova Scotia Department of Health reported that illegal high stakes card games and non-sanctioned video machines are representative of illegal activities operating in the province.¹⁹⁹ The Nova Scotia Video Lottery Players' Survey, 1997/98 indicated that, before the legalization of VLT machines in 1991, the 'Grey Market' for the illegal

¹⁹⁸ GPI Atlantic. 2004. *The Costs and Benefits of Gaming: A Literature Review with Emphasis on Nova Scotia*. Study prepared by Karen Hayward for the Nova Scotia Gaming Foundation. July 2004, p. 106-107.

¹⁹⁹ Problem Gambling Services. (n.d.). *What is gambling?* Nova Scotia Department of Health.

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machines was estimated at approximately 1,500 to 2,000. The report on the survey, prepared for the NS Department of Health, cautions that any ban on VLTs could recreate this situation and drive the problems associated with VLT gambling underground.²⁰⁰ The RCMP's Provincial Illegal Gaming Unit investigates illegal gambling activities. In 1998, the unit investigated 61 complaints about grey machines, seized 12 machines, and successfully prosecuted 8 cases.²⁰¹

To examine a potential relationship between increased access to legal gambling and a change in the degree of illegal gambling, we compared incidents of illegal gambling and betting in Nova Scotia (based on crime statistics from Statistics Canada) from 1996 to 2007 and net gambling expenditures (as a proxy for increasing levels of legal gambling activity). Figure 25 reveals dramatic decline in the incidents of police-reported illegal gambling and betting crimes from 37 incidents (3.97 incidents per 100,000 citizens) in 1996 to only 2 incidents (0.21 incidents per 100,000 citizens) in 2003. This decline occurred at the same time that the number of VLTs was increasing, the Halifax casino opened in 2000 and total gambling expenditures were rising. However, since 2003 the incidents of illegal gambling and **better** began to rise again just as the numbers of VLTs were reduced and net gambling expenditures stagnated and then began to decline in 2006 and 2007. **The visual relationship between illegal gambling incidents and net gambling revenues does not suggest that the two trends are directly or indirectly related, however, it is of interest that statistically these two variables when correlated yields an R-squared of -0.835, a reasonably strong statistical fit. This suggests that there appears to be a reasonable strong relationship between rising net gambling revenues (as a proxy for increased availability of legal gambling) and declines in illegal gambling crimes.**

Visual analysis is not an appropriate methodology. In statistical analysis, correlation is not proof of causality between the variables being examined. Conclusions lack rigor.

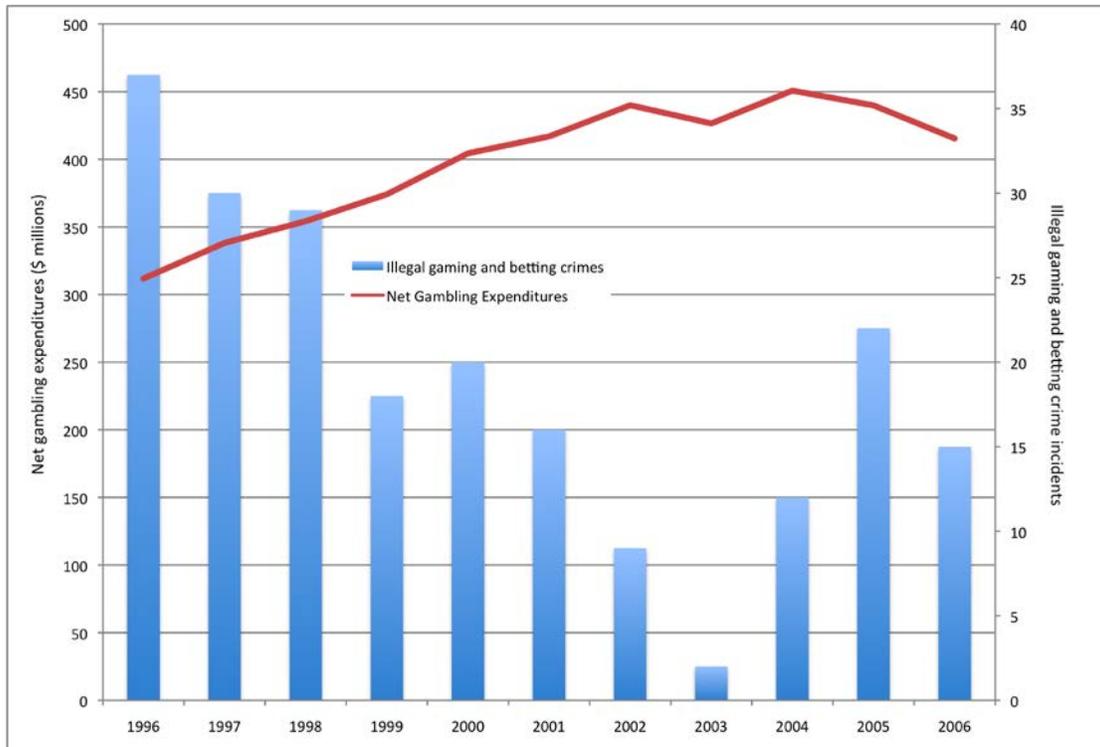
²⁰⁰ Focal Research Consultants Ltd. (1998). *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services.

²⁰¹ Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report*. Volume I. Halifax, N.S.: Alcohol and Gaming Authority.

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Figure 25
Incidents of Illegal Gambling and Betting vs. Net Gambling Expenditures, 1996-2007, Nova Scotia



Source: Crime statistics are from Statistics Canada CANSIM Table 252-0013 - Crime statistics, by detailed offences, annual (number)(42), Actual Incidents. Net gambling expenditure data is from Nova Scotia, 1995-2006. Alcohol and Gaming Authority. Annual Gaming Reports 2001-2007. Net gambling revenue data is from the Ministry of Environment and Labour, Alcohol and Gaming Division's annual gambling reports, 2001-2007

*Incorrect data for net gambling expenditures.
 Questionable source, as the last year of data in CANSIM Table 252-0013 was 1997.
 The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.*

The economic value (total amounts wagered) of illegal gambling and betting is unknown for Nova Scotia.

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Illegal Means of Securing Gambling Money

In our 2008 adult gambler telephone survey, we asked respondents whether they did anything illegal to get money to gamble. The majority (96.4% or 53 out of 55 respondents) of moderate-risk and problem gamblers said that they had not done anything illegal to secure gambling funds (Table 86). None of the non-problem gamblers had done anything illegal to secure funds. Of the two moderate-risk/problem gamblers who had done something illegal to secure money for gambling, one person had secured \$150 and the other \$2000 illegally for the purposes of gambling.

Analysis is done using small sample sizes resulting in extrapolation issues.

The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

Table 86 indicates that the differences are not significant.

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Table 85
Did Anything Illegal to Get Money To Gamble (2008)

Did you do anything illegal to get money to gamble?		Completed which survey			Total
		Non Problem Reg.	Moderate-risk & Problem	Family Members	
No	Count	56	53	39	148
	% within completed which survey	100.0%	96.4%	97.5%	98.0%
Yes	Count	0	2	1	3
	% within completed which survey	.0%	3.6%	2.5%	2.0%
Total	Count	56	55	40	151
	% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences not significant

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

Analysis is done using small sample sizes resulting in extrapolation issues. Question refers to “your gambling”. Clarification is required as to whether family members are responding about their gambling or that of another family member. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

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8.3 Crime rates related to gambling

Historically, there has been no meaningful evidence of a connection between increased crime rates in Nova Scotia communities and gambling venues. According to the 2004 report on the socio-economic impacts of gambling for Nova Scotia by GPI Atlantic, there is no evidence that presence of casinos in Nova Scotia has led to increased crime rates in the communities in which they are located, nor have these casinos produced a significant increase in public services such as police, ambulance and transportation.²⁰² However, gambling-related fraud appeared to have increased, based on a KPMG report of personal communication with a Halifax regional police superintendent who indicated that the Halifax and Sydney police departments had investigated many major fraud cases directly related to gambling at the local casinos.²⁰³

Footnote 203: The report noted does not refer to communication with a Halifax Regional Police superintendent. As well, the report states, "In Canada, increased criminal activity has not occurred in any significant way in communities that have introduced casino gaming. No jurisdiction has reported a significant increase in street crime, prostitution or organized crime as a result of the introduction of casino gaming. [...] No Canadian casino jurisdiction has reported problems with organized crime and regulated casinos."

In our analysis, we examine the possible historical relationship between specific crimes, which are believed to be associated with gambling — theft (over and under \$5,000), property crime, fraud and domestic/family disputes and violence — and changes in net gambling expenditures for Nova Scotia between 1996 and 2007. In the absence of gambling-specific crime statistics, we examine only total crime rates in relationship with net gambling expenditures.

Crime data is not limited to gambling-related crimes.

²⁰² Citizens' Committee on Destination Gaming and D. Bourgeois (Chairperson). (2001). *The Potential Economic, Social, and Image Impacts of a Casino in Moncton*. Moncton [New Brunswick] City Council.

²⁰³ KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton.

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Examining the relationship between total incidents of theft (over and under \$5000) (Figure 25), property crimes (Figure 26), and fraud (Figure 27) relative to net gambling expenditures. There is no specific domestic violence crime statistics available from the Statistics Canada crime statistical data source. What is apparent from all three graphs is that there is apparently no strong visual or statistical relationship between these crime rates and net gambling expenditures for the period 1996 to 2007. We did not find a strong statistical relationship between crime rates considered to be correlated with problem gambling and net gambling expenditures. The opposite was found in a recent Tasmania, Australia study into the relationship between crime rates and gambling. Using more rigorous statistical analysis, a positive and significant relationship was found between gambling expenditure and various crime rates, as well as some evidence of the strongest link between gambling expenditure and income-generating crimes, though the results did not confirm all the hypotheses of crime and gambling relationships.²⁰⁴

*There are methodology issues regarding the use of visual relationship.
It is inappropriate to draw comparisons between Tasmania and Nova Scotia.*

Our findings do not imply that there are *not* gambling-related crimes in Nova Scotia. These preliminary results do, however, seem to suggest there is not a strong causal relationship between net gambling expenditures (as a proxy for gambling activity) and increases in crimes most likely connected with gambling.

Paragraph is confusing.

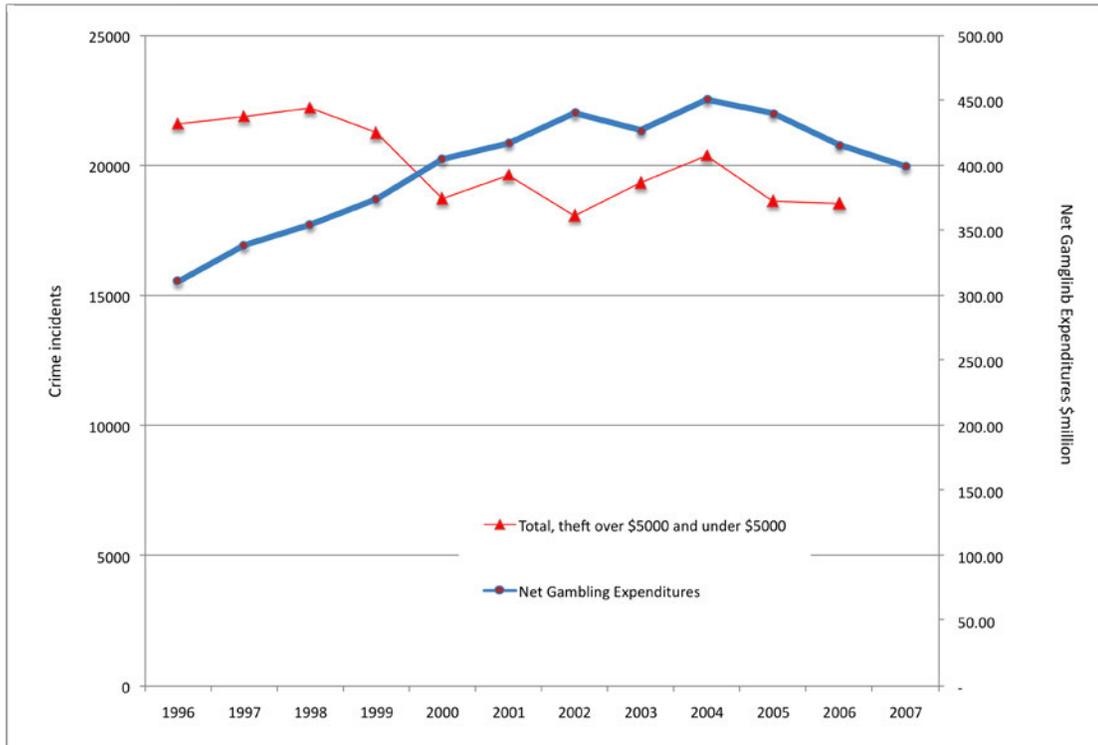
²⁰⁴ The South Australian Centre for Economic Studies (2008). *The Social and Economic Impact Study into Gambling in Tasmania: Volume 1*. Prepared for the Department of Treasury and Finance Tasmania. June 2008; P.208

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Figure 26

Theft (under and over \$5000) Crime vs. Net Gambling Expenditures, 1996-2007, Nova Scotia



Source: Crime statistics are from Statistics Canada [CANSIM Table 252-0013](#) - Crime statistics, by detailed offences, annual (number)(42), Actual Incidents. Net gambling expenditure data is from the Ministry of Environment and Labour, Alcohol and Gaming Division's annual gambling reports, 1996/97-2007/08.

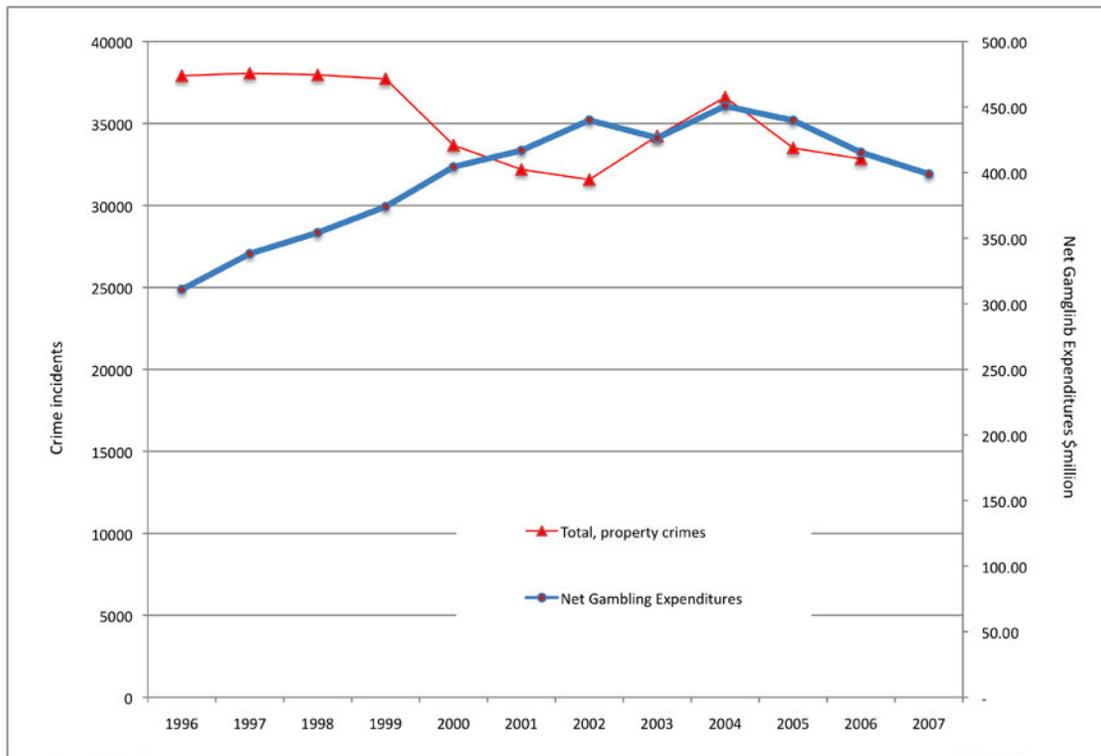
Questionable source, as the last year of data in CANSIM Table 252-0013 was 1997. The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

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Figure 27

Property Crimes vs. Net Gambling Expenditures, 1996-2007, Nova Scotia



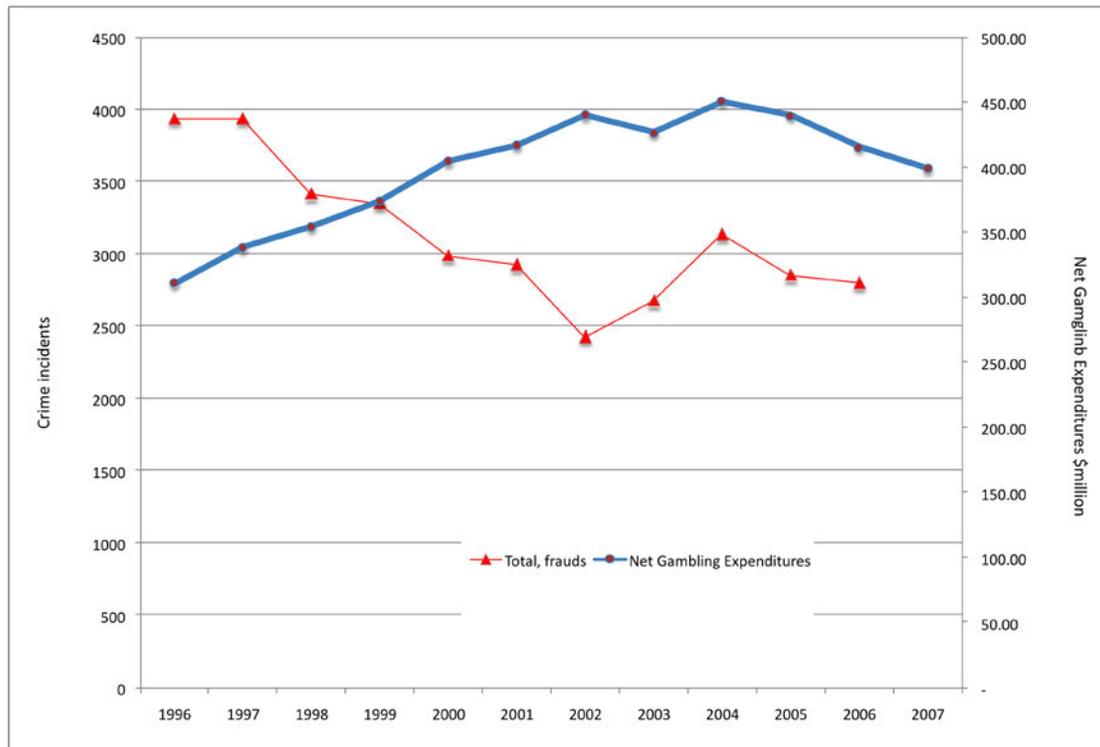
Crime statistics are from Statistics Canada CANSIM Table 252-0013 - Crime statistics, by detailed offences, annual (number)(42), Actual Incidents. Net gambling expenditure data is from the Ministry of Environment and Labour, Alcohol and Gaming Division's annual gambling reports, 1996/97-2007/08.

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Figure 28
 Fraud Crimes vs. Net Gambling Expenditures, 1996-2007, Nova Scotia



Source: Crime statistics are from Statistics Canada CANSIM Table 252-0013 - Crime statistics, by detailed offences, annual (number)(42), Actual Incidents. Net gambling expenditure data is from the Ministry of Environment and Labour, Alcohol and Gaming Division's annual gambling reports, 1996/97-2007/08.

Questionable source, as the last year of data in CANSIM Table 252-0013 was 1997. The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

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To explore the potential incident of gambling-related crimes from police records, we contacted police services in Nova Scotia, including the Halifax Regional Police (Superintendent Bill Moore) and the RCMP Provincial Gambling Office in Dartmouth (Constable Al Wadden) to request a special key-word search of historical police records that would show 'gambling' in any of the police crime incident records.

The methodology is such that search terms related to gambling were used to identify events. However, each event was not analysed to see to what degree the event was related to gambling. As such, the analysis incorrectly assumes 100% attribution of each event to gambling. This method overestimates gambling-related impact.

Halifax Regional Police conducted a key-word search of 2005, 2006, 2007 and 2008 (year-to-date) police records; there were 51,315 total crime occurrences in 2005, 62,862 in 2006, and 70,572 in 2007, which includes traffic offenses. All records were searched by key-word criterion. We found the following key-word criterion files for: (a) "*"gambling"-489 records; (b) "*"gamb*"—849 records; (c) "*"bingo*"—274 records; and (d) "*"vlt*"—530 records. To analyze the volume of occurrences that related to gambling we then sorted these records by calendar year then eliminated possible duplicate records, then read the remarks in each record to determine which are bona fide "gambling-related crime occurrences". A reading of the files allowed us to eliminate files, which were not bona-fide occurrences. The result was that we were able to generate statistics for gambling-related occurrences for 2006 and 2007 (the 2005 data file was not sufficiently robust and 2008 is yet incomplete).

Figure 29 shows the results of our analysis for the years 2006 and 2007. On the following pages are shown the breakdown of specific gambling-related crimes for 2007, by crime category. In 2006 there were an estimated 68 gambling-related crimes in the Halifax Regional Municipality, according to the Halifax police records; the exact same number of crimes (68) were recorded in 2007. This would suggest a gambling-related crime rate of 18.25 per 100,000 citizens (these rates are comparable to the findings by Smith, Wynne and Hartnagel for Edmonton where in 2002 there was an estimated gambling-related crime rate of 17.6 per 100,000 Edmontonians).

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The primary category of gambling-related crimes in 2007 (see Appendix 3.1) was domestic violence, disputes, or abuse (23 occurrences), theft and fraud (18), other (14), suicide (7), and missing persons (6). **Domestic disputes and violence are clearly the most important gambling-related crime** at least in the Halifax community. One unique category is the occurrence of missing persons, who may have a gambling problem. Of the theft and fraud crime occurrences, 10 were theft occurrences (including property theft) while 7 involved fraud. **Suicide attempts or threats (7 in 2007 and 2 in 2006) are counted as a criminal occurrence providing further evidence that suicide and problem gambling may be directly related** augmenting our estimates of successful suicides in Nova Scotia (we estimated there were **4.7 suicides** in Nova Scotia in 2005).

Text contains a statement of value judgment.

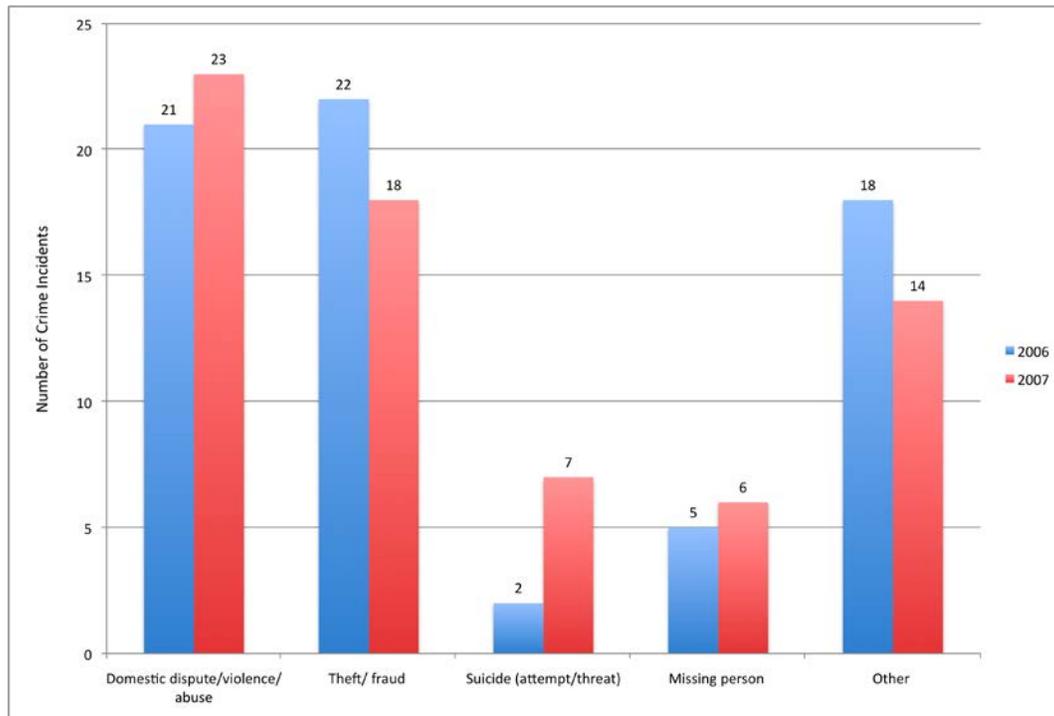
Counting “suicide attempts or threats” as criminal occurrences does not provide evidence that suicide and problem gambling are related.

Suicide statistics would be reported in whole numbers.

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Figure 29
Incidents of Gambling-Related Crime, 2006 and 2007, Halifax Regional Municipality, Nova Scotia



Source: Special query of over 70,000 police records (occurrences of crime) for 2006 and 2007 which were related to gambling from the Halifax Regional Police, Halifax Regional Municipality (Bill Moore, Superintendent, December 2008).

Figure has incorrect title.

Citation should reference the source of the data, not the name of a staff person who provided it.

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While these crime statistics are specific to Halifax alone (with a population representing roughly 40% of the provincial total), they do provide some sense of the existence and degree of gambling-related crime incidents in Nova Scotia; though Halifax crime rates may not be representative of gambling-related crimes in Cape Breton (Sydney) or other parts of Halifax. While these few occurrences relative to the total number of crime occurrences are numerically insignificant they are nevertheless important. As previously note from previous research in Alberta, we suspect that these statistics are conservative.

Rigour of methodology is poor as responses are notes in case files. Halifax should not be used to extrapolate to the entire Province.

In the absence of public accounts records or detailed enough information, we were unable to estimate the financial costs of policing and other justice costs related to these gambling-related crimes.

The methodology is such that search terms related to gambling were used to identify events. However, each event was not analysed to see to what degree the event was related to gambling. The analysis incorrectly assumes 100% attribution of each event to gambling. This method overestimates gambling-related impact.

8.4 Security Costs

Another indicator of the cost of securing against criminal activities in gambling venues, is the private security costs (operating and capital) born by casino operators. Table 87 shows trends in security and surveillance operating expenses of both the Halifax and Sydney casinos between 2001 and 2004 (more recent statistics were not available). Security costs have been increasing at an average 4.0% per annum between 2001 and 2004. Rising security costs may be associated simply with inflationary budgetary pressures. What is not clear is whether there is a relationship between these rising costs and the perceived or real threat of illegal activities or crimes against persons or property at casinos. We do know from the HRP records that in 2007 there was at least one incidence of trespassing on the Halifax casino and a possible vandalism act.

Private security costs are part of the cost of doing business. The text lacks details supporting reasons behind rising costs. A relationship cannot be established with the examples of possible illegal activity given.

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Table 86
Nova Scotia Casino Security Costs, 2001-2004

	2001	2002	2003	2004
Security and Surveillance Operating Expense – Halifax	\$2,027,151	\$2,100,568	\$2,309,812	\$2,295,375
Security and Surveillance Capital Expense – Halifax	\$34,895	\$6,314	\$18,422	\$85,075
Security and Surveillance Operating Expense – Sydney	\$1,127,389	\$1,124,263	\$1,197,328	\$1,218,023
Security and Surveillance Capital Expense – Sydney	\$21,157	\$30,536	\$19,181	\$36,626
Total Security & Surveillance Operating and Capital Costs – Halifax and Sydney	\$3,210,592	\$3,261,681	\$3,544,743	\$3,635,099

Source: [Trask, Bill](#). 2007. Data request, Security and Surveillance. Nova Scotia Gaming Corporation. December 2007.

Citation should reference the source of the data, not the name of a staff person who provided it.

8.5 Social Cost of Gambling-related Crime

Few studies into the socio-economic impacts of gambling have examined the estimated costs associated with crime. Data indicating how much effort and cost are involved with crimes (or with that proportion of crimes) that can be directly attributed to gambling are generally not available in the research to date. This is largely due to the fact that assessing the role of gambling in particular crimes is difficult.

As Single et al. suggest:

“The analyst must be very careful and explicit in discussing how attribution factors are derived for such crimes. It may often come down to whether the analyst is willing to exercise their reasoned judgment and make an explicit assumption about the rate. If so, that assumption should be backed up by a chain of logic and the best data that are available. However, these estimates would have poor statistical reliability.”²⁰⁵

There is some debate amongst economists as to how to treat social costs related to crime and gambling. Thompson refutes the classical economic position that gambling-related thefts do not represent a social cost since they are a transfer from one individual to another. Thompson says that the collective wealth of society is decreased since the value of a property declines when it becomes stolen, and therefore the difference in value is a social cost.²⁰⁶ Grinols explains that

²⁰⁵ Single, E., D. Collins, B. Easton, H. Harwood, H. Lapsley, P. Kopp and E. Wilson. (2001). *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition*. Canadian Centre on Substance Abuse.

²⁰⁶ Thompson, W. N. (2000). Theft is a social cost: Bigger than we may have thought. Report on Problem Gambling, 1(44), 46., cited in: Wildman, R. W. I., & S. Chevalier. (2002). *Problems Associated with Gambling: A*

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the real resources stolen could be treated as social costs to the victimized public.²⁰⁷ Henriksson and Lipsey note that one of the major issues concerning crime costs is that the costs of incarceration, justice administration, higher insurance rates, and preventative measures are often ignored in crime cost estimates.²⁰⁸

Estimating the costs of intangible impacts such as the pain and suffering of crime victims is even more difficult than estimating direct crime costs.

In a 1999 study into the costs of crime for Nova Scotia *GPI Atlantic* (2008) researchers found that costs of personal suffering due to crime:

“...are generally the largest single component of any comprehensive cost estimate of crime and justice costs, and undeniably one of the most important actual costs from the perspective of crime victims. In the case of victims of violent crime or abuse, there may be life-long disabilities and psychological scars that inhibit effective functioning and that are far in excess of the medical, hospital and monetary losses. In such cases, court awards for ‘shattered lives’ are often used as a proxy for this suffering.”²⁰⁹

GPI Atlantic’s final report (October 2008) contains estimates of the cost of crime to Nova Scotia, which may be instructive for deriving estimates of the cost of gambling-related crimes.²¹⁰ They estimate a full array of crime-related costs including: a) victim losses (e.g. direct victim losses such as property crime; hospitalization costs, and loss of labour productivity), b) public justice costs (including police expenditures, courts, and corrections costs), and; c) private defensive expenditures (including home security, private security and business defensive costs). Taken together these conservative cost estimates of crime totaled \$703 million for 2007, we estimated that this equates to roughly \$9,336 per total incidents of crime in Nova Scotia in 2007 (75,393 incidents reported). If this per crime incident cost were applied to the incidence of Halifax gambling-related crimes for 2007 (68 incidents) as a proxy cost estimate of the average cost of any given crime (across all categories) this would amount to an estimated social cost of gambling-related crimes to Halifax of \$634,876. If the Halifax figures for crime and the cost of crime estimates provincially holds true for the rest of the province, this would imply a conservative provincial estimated cost of gambling-related crime of **\$1,591,168**.²¹¹

The estimate for the cost of gambling-related crime is not reliable given the number of assumptions made.

Preliminary Investigation into Health, Social and Psychological Aspects. Ontario Problem Gambling Research Institute. Available: <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>

²⁰⁷ Grinols, E. L. (2004). *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press.

²⁰⁸ Henriksson, L. E. and R. G. Lipsey. (1998). *Should Provinces Expand Gambling?* Coalition for Education and Research into Gambling Expansion (CERGE).

²⁰⁹ Colman, R. and C. Dodds. (1999). *The Cost of Crime in Nova Scotia*. GPI Atlantic.

²¹⁰ GPI Atlantic. 2008. *The 2008 GPI Accounts*. p. 288. <http://www.gpiatlantic.org/pdf/integrated/gpi2008.pdf>

²¹¹ We acknowledge that these are very rough estimates to illustrate the potential social cost magnitude; we which would require more forensic cost accounting for specific gambling-related crimes and more accurate provincial gambling-related crime statistics.

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9. Community and Culture Impacts

9.1 Introduction

This section examines the potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations who benefit from gambling revenue transfers from the provincial government, and the public attitude, beliefs, and values toward gambling by citizens. The **primary question** is whether the existence of legalized gambling, on the whole, has led to an overall increase in the quality of life and well-being conditions of Nova Scotia society.

The RFP requested that a snapshot of the economic and social impacts of gambling be done, not the assessment of quality of life.

The indicators we examined to answer these questions included:

1. Local charities and non-profit sector dependence on gambling revenues (% of revenues from gambling).
2. Feelings of loss or gains community quality of life and social cohesion.
3. Sense of safety from gambling venues.

The impacts of gambling on communities, including specific socio-demographic groups in communities (e.g. youth, First Nations), will vary. We have previously noted evidence from the 2003 and 2007 adult gambling prevalence studies, which revealed that impacts may be unequally distributed amongst various socio-economic and demographic groups within a community.

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9.2 Impacts on Local Charities, Non-Profit Organizations and other Public Sector Agencies

One of the benefits of gambling to the community are gambling revenues generated by charities that are actively engaged in charitable lotteries and bingos. In addition communities, charities and community organizations benefit from the transfer of gambling revenues from the provincial government for community activities and programs. There are a multitude of such community beneficiaries from public schools or registered charities. But how much do these organizations benefit from regulated gambling revenues allocated to them out of net gambling revenues generated? Since there is no requirement by registered charities and other organizations that benefit from gambling revenues to report on the source of their total revenue stream, it is difficult to account for just how dependent Nova Scotia community organizations are on gambling revenues.

Gambling revenues accrue to provincial total revenue and are not specifically assigned as to revenue source when disbursed.

Previous studies of the impact of gambling funds on culture and communities in Canada show that while important, gambling revenues may not be that important to cultural and non-profit organizations. Jeannotte (2002) studied gambling as a source of this funding in a 2002 report, *Gambling on Culture in Canada: Gaming as a source of funding for culture, the arts, and heritage*, sponsored by the Canadian Department of Canadian Heritage.²¹² The report looked at the administration and allocation of gambling revenues in British Columbia, Alberta, Saskatchewan, and Ontario and found that only 1% to 3% of the revenues are used to fund cultural, charitable, and non profit organizations. Jeannotte found that in most of the other provinces, gambling revenue becomes "part of provincial consolidated revenues, making it impossible to trace where they were allocated and to whom."²¹³ In Nova Scotia, she found that "small payments (totaling \$200,000 in 2001-02) are made to three special funds administered by the Department of Education and Culture (in support of the Cultural Federation of Nova Scotia), the Department of Agriculture and Fisheries (in support of the Exhibition Association of Nova Scotia) and the Sport and Recreation Commission (in support of Sport Nova Scotia)."²¹⁴

The first statement refers to previous studies however only the Jeannotte study is referenced. Text cites the percentage of revenue from BC, Alberta, and Ontario that is "streamed" to charities. It does not indicate the relevance of this to NS.

²¹² Jeannotte, M. S. (2002). *Gambling on Culture in Canada: Gaming as a source of funding for culture, the arts and heritage*. Submitted to CIRCLHeritage, Government of Canada.

²¹³ Ibid.p. 52.

²¹⁴ Ibid.p. 12.

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In an earlier study by Berdhal (1999) for the Canada West Foundation the **impact of gambling on Canadian non-profit organizations** was analyzed by surveying gambling grant recipients.²¹⁵ Of the 400 organizations examined, which had received gambling grants, 28% said that the gambling grants were their major source of funding, 50% said gambling grants were in the top three sources of their funding, and 20% said they received over half of their funding from gambling revenue. Gambling funds, however, were likely to fluctuate erratically according to government decisions. Gambling grants and charitable gambling data from all ten provinces are included in the report.

Other provinces have different arrangements regarding gambling revenues. Text does not indicate the relevance of this to NS.

There have been no detailed studies of the impact of gambling on Nova Scotia non-profit organizations nor was this within the capacity of this study. What we can report is the trends in charitable revenues from Nova Scotia gambling activity. Figure 30 shows the trends in charitable revenues from regulated gambling between 1995 and 2007. These revenues have increased steadily and have more than doubled from \$14.0 million in 1995 to a peak of \$28.6 million in 2005; they have since moderated and declined through 2007. The relative importance of regulated gambling revenue benefits to non-profit organizations in Nova Scotia can only be surmised to the extent that we know what percentage of their operating revenues are dependent upon these gambling revenue streams. The importance of **gambling revenues to First Nations communities** has already been noted in this report.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

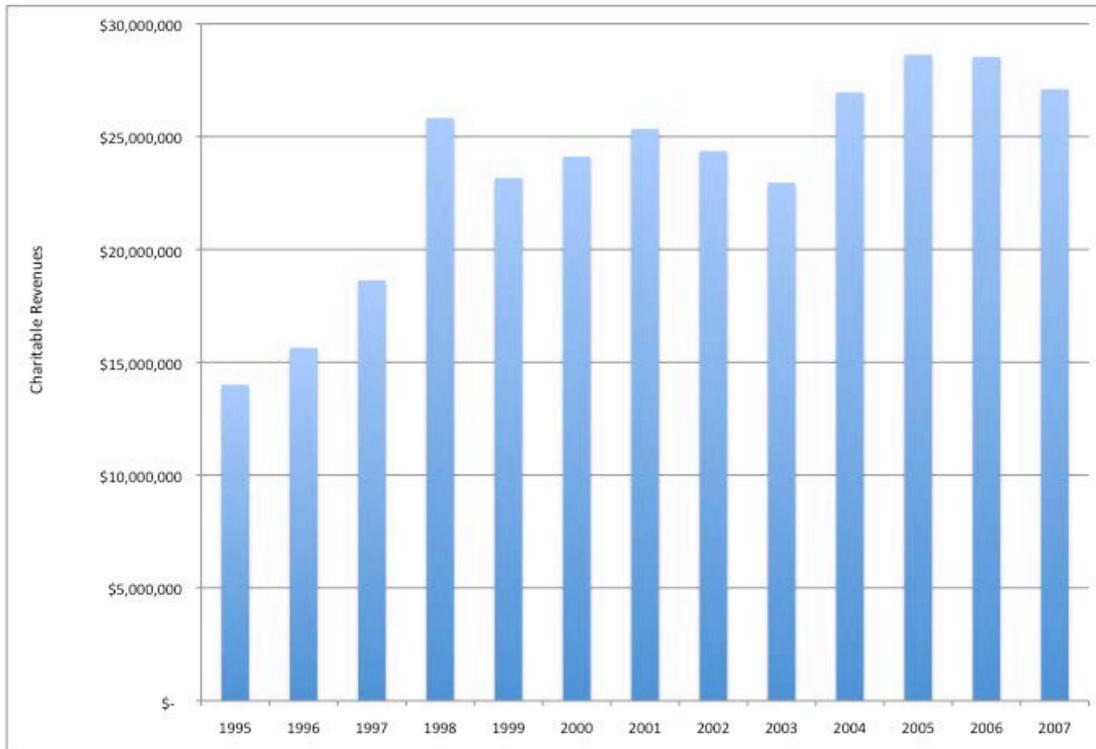
The inclusion of First Nations communities in this section is misleading as they are not non-profit organizations. The text does not recognize that gaming agreements exist which allow for some sharing of Sydney Casino profits with First Nations Bands.

²¹⁵ Berdahl, L. (1999). The Impact of Gaming upon Non-Profits: A 1999 Survey of Gaming Grant Recipients (main report). Canada West Foundation.

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Figure 30
Charitable Revenues from Gambling, Nova Scotia, 1995-2007



Source: Nova Scotia Department of Environment and Labour, Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007/08. Nova Scotia Government Annual Reports 1995/96 to 2007/08.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

Charitable lotteries contributed most to charitable revenues in 2007 (\$12.1 million or 44.7% of charitable revenues), followed by bingo (\$9.1 million or 33.5% of charitable revenues) and VLTs (\$5.8 million or 21.6% of charitable revenues) (see Table 88).

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Table 87
Charitable Revenues from Gambling, by Game, Nova Scotia
2001 to 2007

\$ thousands	2001	2002	2003	2004	2005	2006	2007
VLTs	6,371	7,022	6,554	6,521	5,777	5,496	5,857
Casino	0	0	0	0	0	0	0
ALC Ticket lotteries	44	39	35	50	53	46	45
Bingo	13,872	12,303	10,325	10,197	10,950	10,356	9,079
Charitable lotteries	5,055	5,001	6,046	10,192	11,854	12,638	12,126
On-line gambling	0	0	0	0	0	0	0
All Games	25,342	24,365	22,960	26,960	28,634	28,536	27,107

Notes: n.a.: not available.

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2001/02-2007/08.

*Incorrect reference (“n.a.” vs. “0”)
 Clarity is required regarding on-line gambling and ALC Ticket Lotteries.*

9.3 Citizen Attitudes Towards Gambling and Gambling Venues

Public or citizen perceptions and attitudes towards gambling is a key determinant of analyzing gambling’s impact on the well-being of society. The degree to which gambling is socially and culturally acceptable is important to understanding how to weight the relative positive and negative impacts on society and the economy. Furthermore, public opinion towards gambling is a key factor in government’s determination of gambling regulation. For example, the decision to remove over 1,000 VLT machines from Nova Scotia over the past 4 years was partly motivated by public opinion.

In historical studies of public opinions towards gambling in Canada, it was found that Atlantic Canadians have had the strongest anti-gambling sentiment. The Canada West Foundation interviewed 2,202 Canadians from across the country in June 1999 to identify public perceptions and attitudes toward gambling issues.²¹⁶ The sample included 402 residents from Atlantic Canada. Generally, the survey found that most Canadians tolerated the current level of gambling because of the importance of gambling as a revenue source for government rather than because of its entertainment value or its economic development benefits. For the most part, acceptance was linked to feelings of the inevitability of gambling.

²¹⁶ Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation.

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There were, however, distinct regional differences. For example, **Atlantic Canadians (AC)** showed the strongest anti-gambling attitudes in the country. The Atlantic respondents were the most likely to disagree that gambling is acceptable. Other findings from the Atlantic region were:

The age of the data and research report may make it irrelevant for the time period of this study. Data includes all Atlantic Canadians and is not specific to Nova Scotia.

- 60% prefer more restrictions on gambling.
- AC were most opposed to VLT gambling, with 62% in favor of a ban. However, gamblers in the 18-34 age range did not agree with such a ban. "Based on the strength of opposition to VLTs in the Atlantic region (at 45%, nearly twice as many respondents strongly agree with a ban on VLTs in Atlantic Canada as in Ontario and the Prairies), it is perhaps more accurate to describe the Atlantic region as anti-VLT than as anti-gambling."
- At 48%, AC are the least supportive of **First Nations on-reserve gambling**.

Presentation of First Nations data is inconsistent with the treatment of other gambling venues.

- AC were the least willing in Canada to support use of gambling revenue in general or for charities specifically. Only 12% were in favour.
- Preserving the right to gamble regardless of the consequences was agreed on by 63% of Canadians as a whole. However majorities in both Quebec and AC disagreed.
- 32% of Canadians as a whole know a problem gambler, and 56% of AC report knowing a problem gambler.
- 60% of Canadians agreed that gambling-related problems had increased in their province in the last three years. 45% of AC strongly agreed that gambling-related problems had increased (the highest regional average) compared with 21% in Ontario.
- AC had the strongest opinion that gambling has negative consequences on the community with 42% agreeing. Only 7% from AC thought gambling has had a positive impact.
- 84% of AC disagreed that their province needs gambling to attract tourists, again the strongest negative view in Canada.
- 36% of AC agreed that employment had increased as a result of gambling.
- AC (78%) and Quebec residents (84%) showed greatest opposition to casino developments in their neighbourhoods
- AC showed the strongest disagreement in Canada when asked if gambling had improved the quality of life in the province. 63% strongly disagreed and 82% disagreed overall.

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Nova Scotia produced an analysis of public attitudes toward gambling that is reported in the 1998- 1999 Alcohol and Gaming Authority Annual Gaming Report.²¹⁷ VLTs had a disapproval rate of 66%, higher than that of any other type of gaming. Almost 79% of respondents disapproved of Automatic Teller Machines at VLT sites. Over half of the respondents said they would prefer to see VLTs either banned or reduced in number, even if it meant an increase in personal taxes.

The age of the data may make it irrelevant for the time period of this study.

In this study, we conducted a series of telephone survey questions in the 2008 adult gambler telephone survey conducted by Focal Research. When asking respondents (total sample of 151) about how they felt about the impacts gambling has had on their family, community and Nova Scotia society over the past 5 years, 2.0% of respondents said they felt quality of life had improved, 4.6% said they felt quality of life had declined and 93.4% said quality of life has stayed about the same (Table 89).

Analysis is done using small sample sizes resulting in extrapolation issues.

²¹⁷ Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

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Table 88
Changes in Family’s Quality of Life (2008)

Do you feel your family, community and Nova Scotia society has changed over the past 5 years because of gambling? Q. 29(fm).		Completed which survey			Total
		Non-Problem Ret.	Moderate-risk & Problem	Family Members	
Improved	Count	1	1	0	3
	% within completed which survey	3.6%	1,8%	0.0%	2.0%
Declined	Count	1	4	2	7
	% within completed which survey	1.8%	7.3%	5.0%	4.6%
Stayed about the Same	Count	53	50	38	141
	% within completed which survey	94.6%	90.9%	95.0%	93.4%
Total	Count	56	55	40	151
	% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences not significant

Source: Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

Analysis is done using small sample sizes resulting in extrapolation issues. Some numbers in the table are incorrect.

The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

Despite being based on the same question, Tables 89 and 90 do not have the same data.

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However, the results were significantly different when in a follow-up, open-ended question respondents were asked to describe, in their own words, their perceptions of impacts of gambling on their own family, community and Nova Scotia society. The response to this question was significant with 36 out of 55 (65% response rate) moderate-risk/problem gamblers responding to the question, 25 out of 56 (45% response rate) non-problem gamblers, and 22 out of 40 (55% response rate) family members of problem gamblers. In general, the feelings towards gambling are mostly negative (see complete list of responses to question 29a in the 2008 telephone survey in Appendix 2).²¹⁸ The results provide a deeper and personal or experiential insight into impacts of gambling revealing how gamblers, family members of gamblers and the community, at large, perceives or have experienced gambling impacts on their own lives or the lives of others. While this form of qualitative impact information is useful as a snap-shot sample of perceptions towards gambling's impacts, it does not necessarily represent a broad societal opinion poll towards gambling's impacts on quality of life in Nova Scotia.

The use of the term “significantly different” infers a “statistical significance” which is not possible on an open-ended question.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

²¹⁸ Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

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9.4 Feelings of Safety Due to Gambling Venues

One of the perceived indicators of the benefit of gambling venues identified in the national SEIG framework is the feeling of safety that may be experienced by gamblers where these facilities are accessible to them in their communities. In the 2008 telephone survey of adult gamblers, respondents were asked whether they were concerned personally or about their family members about the presence of gambling venues in Nova Scotia. The results revealed that the vast majority, 94.7% of all respondents, was not concerned (Table 90). While this question reflects the opposite of feeling safety benefits from accessibility to gambling venues, the results nevertheless suggest that most gamblers do not consider gambling venues to be a threat to their personal safety.

Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

The question used in Table 90 about perception of change does not relate to “Feelings of Safety Due to Gambling Venues”. Tables 89 and 90 despite having the same question do not have the same data.

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**Table 89
Concerns About Safety Due To Gambling Venues (2008)**

Do you feel your family, community and Nova Scotia society has changed over the past 5 years because of gambling? Q. 29(fm).		Completed which survey			Total
		Non Problem Reg.	Moderate-risk & Problem	Family Members	
Improved	Count	2	1	0	3
	% within completed which survey	3.6%	1.8%	0.0%	2.0%
Declined	Count	1	4	2	7
	% within completed which survey	1.8%	7.3%	5.0%	4.6%
Stayed about the Same	Count	53	50	38	141
	% within completed which survey	94.6%	90.9%	95.0%	93.4%
Total	Count	56	55	40	151
	% within completed which survey	100.0%	100.0%	100.0%	100.0%

Differences not significant

Focal Research. 2008 Socio-Economic Impact of Gambling Telephone Survey of Problem, Moderate-risk, Non-Problem Gamblers and Family Members. Survey conducted between August 26 – September 3, 2008

The question used in Table 90 about perception of change does not relate to “Feelings of Safety Due to Gambling Venues”. Tables 89 and 90 despite having the same question do not have the same data. Analysis is done using small sample sizes resulting in extrapolation issues. The study was meant to assess the industry holistically and not focus on problem gamblers alone, which would over-index problem gambling and results.

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Part III. Impacts of Gambling by Game of Chance on Nova Scotia

Throughout Part III of this document, there are estimates of expenditures/revenues by game and by gambler subtype. This is not appropriate given data limitations.

Introduction

The following sections of this report examine the various socio-economic impacts, using the same SEIG impact assessment framework used to assess impacts of all games of chance in Part II of this report. For each game (bingo, casinos, harness racing, ticket lotteries, video lottery terminals (VLTs) and on-line or Internet gambling) an overview of the game is provided, including financial statistics (e.g. total wagered, prizes, operating expenditures, charitable revenues, commercial revenues and net government revenues), number of games, gambler population (by CPGI category), number of games/machines and venues, and various 'efficiency' indicators (e.g. total wagered per VLT machine, average wagered per VLT gambler). The various impacts for each game are then examined in sequential order using the SEIG impact assessment framework from economic-financial impacts to community impacts. Statistical, qualitative and perceptual data are presented for each impact variable or indicator, where meaningful and robust data was available.

Data Limitations and Caveats

In most instances, with the exception of economic and financial statistics, there was insufficient data to assess impacts of gambling on Nova Scotians by individual game according to the indicators from the SEIG framework. This is because the primary source of impact data for this study, namely the adult gambling prevalence studies from 1993, 1996, 2002 and 2007, as well as our customized 2008 telephone survey, either lacked a statistically valid sample size to attribute impacts to a specific game or simply did not examine the impacts relevant to the SEIG framework. This socio-economic study did not have the resources and scope to conduct such primary research and data collection.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

The primary source of game-specific impact data came from the 2003 and 2007 adult gambling prevalence studies for Nova Scotia. The 2007 prevalence study was particularly useful for assessing some of the most important socio-economic impacts of gambling in Nova Scotia. Notwithstanding the quality of these studies, they too still lack the comprehensiveness of impact

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analysis that is required to populate the SEIG framework at the individual game level. Thus the impacts we analyzed are primarily economic and financial in nature, augmented by some qualitative information to provide context.

Where there is no data available for a given impact indicator, these should be noted as areas for future primary research, including new prevalence studies that could reveal data necessary to populate the SEIG indicator framework for future analysis. This might include larger adult gambler sample size along with collecting experiential data through focus groups and direct consultation with the smaller cohort of moderate-risk, moderate risk and problem gamblers.

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12. Impacts of Bingo in Nova Scotia

12.1 Introduction and Description of Bingo

This section refers to bingos regulated by the province and does not include **First Nations bingo operations**.

Bingo activity in First Nations communities falls under provincial regulation. The province does not collect data on such revenue sources.

The last commercial bingo establishment in Nova Scotia ceased operation in 2005-06. All Bingos across the province are now charity bingos. The Bingo Regulations made under Section 127 of the Gaming Control Act effective in 1995 stipulated that no new commercial bingo licenses would be issued.

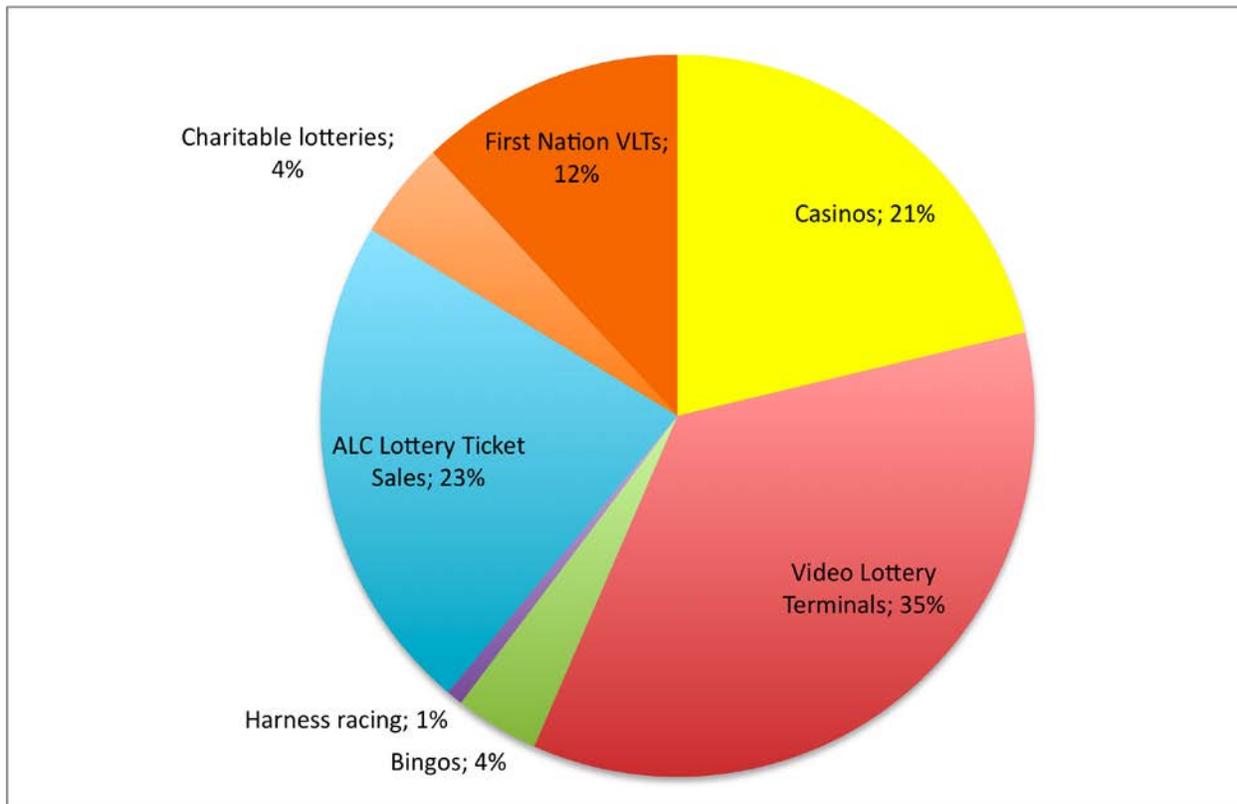
Bingos are an important fund raising strategy for charity and religious organizations throughout the province. The host charity or religious organization operate the bingo and receive all bingo profits. In 2007, bingos generated over \$9 million in charitable revenue. The province generates revenue through licensing fees. In 2007, provincial revenue totaled \$907 thousand. As a game, bingo contributes marginally to overall provincial gambling revenues (0.5%). In terms of overall **net gambling revenue** (total wagered minus prize payouts), bingo contributes the least of all game types at 4% (see Figure 31).

Net revenues and net expenditures are not the same.

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Figure 31
Net Expenditures by Game as % of Total Gambling Net Expenditures



The terms "net revenue" and "net expenditure" are not the same and are inconsistently used. Source and date are not cited for Figure 31.

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Bingo has been in steady decline since 2001 (see Table 91). Total wager, prize pay outs, charitable revenues, and provincial revenues have all decreased by thirty to thirty-five percent between 2001 and 2007. The amount of money wagered on bingos has been in decline since 2001 falling; in 2007 total wagered on bingos was \$60.5 million or 30.7% lower than in 2001. Net revenues from bingo have also declined since 2001; in 2007 net revenues from bingo were \$15.1 million or 34.4% lower than in 2001. Net gambling revenues from bingo represented 3.8% of net gambling revenues for Nova Scotia in 2007, for all games. Bingo's contribution to provincial government revenues was 35.0% lower in 2007 (\$907 thousand) than in 2001.

Table 91 has an incorrect label ("Provincial VLTs" should be "Bingo").

**Table 90
Bingo Gambling Financial Statistics, 2001-2007**

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Provincial VLTs							
Total Wagered	\$87,254	\$84,853	\$75,817	\$73,076	\$72,290	\$67,359	\$60,490
Prizes	64,149	63,522	57,548	55,583	54,298	50,429	45,344
Net Revenue	\$23,105	\$21,331	\$18,269	\$17,493	\$17,992	\$16,930	\$15,146
Operating Expenses	7,460	7,301	6,685	6,148	5,937	5,500	5,160
Commercial Revenue	377	339	80	30	15	0	0
Charitable Revenue	13,872	12,303	10,325	10,197	10,950	10,356	9,079
Provincial Net Revenue	\$1,396	\$1,388	\$1,179	\$1,118	\$1,090	\$1,074	\$907
% of Net Gambling Revenues for All Games From Bingo	5.5%	4.8%	4.3%	3.9%	4.1%	4.1%	3.8%
% of Provincial Government Gambling Revenues from Bingo	0.8%	0.7%	0.6%	0.6%	0.6%	0.6%	0.5%

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008. Note: Net gambling revenues for all games, includes First Nation VLT and harness racing net revenues.

Table 91 has an incorrect label ("Provincial VLTs" should be "Bingo").

**Table 91
Bingo Licenses, 2001-2007**

	2001	2002	2003	2004	2005	2006	2007
Number of Provincial Bingo Licenses	579	544	569	638	518	561	547

Sources: Bingo licenses statistic from 2002-03 to 2007-08 Nova Scotia Annual Gaming Reports (Nova Scotia Alcohol and Gaming Division).

Figures do not correspond to AGD figures.

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The number of licensees has declined dramatically as well (see Table 92). There are number of possible explanations for the decline in bingo wagers and revenues including greater competition from other games, game maturity, loss of patronage due to the smoking ban, and loss of patronage to First Nations **bingos** which do not fall under provincial **authority**. The province has been working with charitable organizations to increase revenue by introducing electronically linked bingos (Superstar Bingo), and providing consultation support to increase bingo event profitability.²¹⁹

Bingos operated by First Nations communities fall under provincial regulation. The conclusions are unsubstantiated.

Where available, individual bingo gaming data is reported for the suite of impact indicators developed for the Nova Scotia SEIG framework. At an individual game level there is insufficient data to populate many of the indicators. For these indicators we direct readers to the all games section for further description of the indicator.

Bingo Adult Gambler Participation Rates

Bingo remains a relatively popular game. According to the 2007 adult gambling prevalence study for Nova Scotia, 42.7% of Nova Scotia adults had played bingo at some time. However, bingo participation rate was statistically lower than in 2002 when 55.6% of adults said that they had played bingo (based on the 2003 adult gambling prevalence study).²²⁰ An estimated 11.6% of adult gamblers had played bingo in the last year, 2007, (down from 15.3% in 2002, a statistically significant decrease) while 4.3% of adults played bingo on a **regular and continuous monthly basis** over the past year (down from 5.5% in 2002).

Text is inconsistent with NS 2007 Prevalence Study terminology (i.e., “regular and monthly basis”).

²¹⁹ Electronically linked bingos connect participating bingo halls offering players larger jackpots.

²²⁰ Nova Scotia Health Promotion and Protection. 2008. *2007 Nova Scotia Adult Gambling Prevalence Study*, Study conducted by Focal Research, April 2008; p. 54

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A relatively small proportion of adults (4.1%, down from 6.6% in 2003) were regularly gambling on both VLTs and casino games²²¹ each month in 2007 though contributed about 36% of the annual gambling expenditures in Nova Scotia in 2007.²²² While there were fewer adult gamblers participating in regular VLT and casino games, these regular gamblers were spending about \$1,500 more per year in 2007 than in 2003; an increase from \$3,760 per annum in 2003 to an estimated \$5,293 per annum in 2007. These regular VLT and casino gamblers were spending **almost 9 times more per year** than the regular lottery-ticket-only gamblers.²²³

This section is about bingo, not VLTs. Some of the information and numbers are incorrectly representing the NS Prevalence Study findings.

²²¹ The 2007 adult gambling prevalence study results do not split out VLT from casino gambling activity for this analysis of regular gambling activity.

²²² Ibid. p. vii

²²³ Ibid. p. vii

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12.2. Economic and Financial Impacts

12.2.1 Introduction

This section examines economic and financial impacts attributable to bingos. Of the economic and financial indicators adopted for the Nova Scotia SEIG framework we were unable to estimate impacts for the following indicators:

Economic and Financial Indicator	Notes
Gambling GDP.	There was not sufficient data to estimate a gambling GDP value specific to bingo at a game level. Nor has there been an input-output analysis for bingo which might provide GDP estimates for bingo
Consumer surplus.	No consumer surplus estimates available for bingo.
Negative consumer surplus (excessive losses)	There was not sufficient data to estimate a negative consumer surplus value attributable at a game level for Bingo. Ideally, it would be desirable to determine a healthy level of dollars wagered by a bingo player compared with a moderate risk or problem gambler to derive a negative consumer surplus estimate.
Net business sector growth/investment.	There was not sufficient data to estimate a net business sector growth value attributable at a game level for Bingo
Consumer capital gains due to gambling development.	There was not sufficient data to estimate a consumer capital gains due to bingo gambling development.
Government defensive expenditures to mitigate gambling impacts	There was not sufficient data to estimate a government defensive expenditures value attributable at a game level for Bingo
Direct regulatory costs related to gambling industry	There was not sufficient data to estimate direct regulatory costs attributable at a game level for Bingo.
Bad debts, bankruptcies and costs to recover bad debts.	There was not sufficient data to estimate the contribution of bingo to bankruptcies, financial difficulties, and bad debts.
Abused dollars.	There are no estimates of abused dollars for Canada or for Nova Scotia

Please refer to Part II of this study for an analysis of these impacts across all games.

The following economic and financial impacts from bingo were analyzed.

12.2.2 Personal Expenditures on Bingo

Total wager on bingos have decreased steadily since 2001 from a high of \$87.2 million in 2001 to a low of \$60.5 million in 2007 (see Table 93). When factoring in the disbursement of prizes, net expenditure on bingos totaled \$15.1 million in 2007, or an average of \$20 per adult Nova

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Scotian. Similar to total wagered, net expenditure on bingos decreased steadily since 2001. Net expenditure per adult decreased by 37% from \$32 per adult in 2001 to \$20 per adult in 2007.

Table 92
Bingo: total wager, prizes, expenditure, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Total Wager	\$87,254	\$84,853	\$75,817	\$73,076	\$72,290	\$67,359	\$60,490
Total Prizes	\$64,149	\$63,522	\$57,548	\$55,583	\$54,298	\$50,429	\$45,344
Net expenditure	\$23,105	\$21,331	\$18,269	\$17,493	\$17,992	\$16,930	\$15,146
Net expenditure per adult (19+)	\$32	\$30	\$25	\$24	\$25	\$23	\$20

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08.

Source is required for population figures.

Net Gambling Expenditure by Risk of Gambling Problems

Based on 2003 and 2007 Adult Gambling Prevalence Study data and self-reporting by respondents of bingo gambling expenditures, it is possible to estimate the average net bingo gambling expenditures by gambler subtype as well as predict the distribution of bingo net revenues across gambler subtypes. Table 94 shows that bingo does not appear to be a game predisposed to problem gambling, compared to VLT and casino gambling. For example, in both 2002 only 0.7% of adults in Nova Scotia were self-reporting as moderate risk or problem gamblers, which subsequently declined to 0.4% of adults in 2007. Moreover, the survey results predict that only 8.0% of gambling net expenditures came from moderate risk or problem gamblers in both 2002 and 2007. The majority of bingo net expenditures come from non-problem bingo gamblers (77.0% of net expenditures in 2007).

The number of problem adult gamblers is relatively small in number; for example, in 2007 the moderate risk and problem bingo gambler cohort was $n=2,783$ with average expenditures of \$1,628 per bingo gambler. The predicted net expenditure by this problem gambling cohort in 2007 was \$4.53 million. Also, the moderate risk and problem gambler's estimated expenditures were 2.8 times greater than a non-problem bingo gambler in 2007, significantly lower than similar ratios for problem VLT and casino gamblers.

"n" is commonly understood to be sample size. This is not sample size but estimated population. This analysis has been based on a sample size of 9. This sample is not large enough to conduct the analysis that has been conducted here. Estimates of expenditures based on the NS Prevalence Studies are not statistically sound. Individuals participate in more than one gambling activity which influences risk.

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Table 93
Net Gambling Bingo Expenditures by Gambler Subtype Predicted by 2002-03 and 2007-08 Adult Gambling Prevalence Studies and Estimated based on Net Revenues from Bingo Gambling

Survey Year	Gambler Subtype				
	Non-VLT Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers	Total Adults
	2002 (n=2372) 2007 (n=2210)	2002 (n=368) 2007 (n=252)	2002 (n=41) 2007 (n=29)	2002 (n=19) 2007 (n=9)	2003 (n=2800) 2007 (n=2500)
Nova Scotia Adult Bingo Gambler Population estimates (19 years +)					
2002	621,803	96,469	10,748	4,981	734,000
2007	683,332	77,918	8,967	2,783	773,000
Average Net Gambling Expenditure per Gambler² (Bingo), based on prevalence studies					
2002-03	\$0	\$567.38	\$1,292.10	\$1,214.58	\$665.53
2007-08	\$0	\$572.27	\$977.79	\$1,627.78	\$645.58
Provincial and First Nations Net Bingo Revenue Estimated from Sample					
2002-03	\$0	\$54,734,581	\$13,887,491	\$6,049,823	\$74,671,895
2007-08	\$0	\$44,590,134	\$8,767,843	\$4,530,112	\$57,888,089
Provincial and First Nations Net Bingo Gambling Revenue (Actual)					
2002-03	\$0	\$15,635,646	\$3,967,143	\$1,728,211	\$21,331,000
2007-08	\$0	\$11,666,686	\$2,294,043	\$1,185,271	\$15,146,000
Distribution of Gambling Expenditures by Gambler					
2002-03	0%	73.0%	19.0%	8.0%	100%
2007-08	0%	77.0%	15.0%	8.0%	100%

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated distribution of net gambling expenditures by CPGI are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc. Provincial and First Nations VLT net revenues are considered in aggregate. Provincial net VLT gambling revenue statistics are for fiscal year 2002-03 and 2007-08 from Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2002-03 and 2007-08. First Nations VLT net revenue statistics are from the [Office of Aboriginal Affairs](#). Notes: Adult VLT gambler population estimates were derived from prevalence rates calculated to two decimal points. Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or losses).

“n” is commonly understood to be sample size. This is not sample size but estimated population. This analysis has been based on a sample size of 9. This sample is not large enough to conduct the analysis that has been conducted here.

Estimates of expenditures based on the NS Prevalence Studies are not statistically sound.

Some individuals participate in more than one gambling activity which influences risk.

Incorrect headings and source reference as regards bingo vs. VLTs. First Nations figures are not included in Table 94. Clarification is required regarding “sample” vs. “actual”.

Revenue data is not generated by Office of Aboriginal Affairs. All reported revenue data for First Nations is for VLT gaming only and is generated through the ALC.

Incorrect headings and source reference as regards bingo vs. VLTs. First Nations figures are not included in Table 94. Clarification is required regarding “sample” vs. “actual”.

Revenue data is not generated by Office of Aboriginal Affairs. All reported revenue data for First Nations is for VLT gaming only and is generated through the ALC.

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To check the validity of our findings we check the predicted net revenues from all bingo gambling with the actual net revenues as reported by the Nova Scotia government. Comparing these figures from Table 94 shows that gamblers involved in the prevalence studies over estimated these expenditures in comparison with actual net revenues (wagered less prizes).. For example the predicted net gambling revenues from bingo from the 2007 prevalence sample was 3.8 times higher than actual net bingo revenues; that is, \$57.8 million compared with the 2007-08 actual net gambling revenues bingo of \$15.1 million. This suggests that bingo gamblers over reported their expenditures. This also means that the estimated net expenditures per gambler type would also be over-estimated.

As conclusions were drawn from small sample sizes, the results are unstable and contradictory.

The underreporting of expenditures by participants in the prevalence studies in Nova Scotia is not unusual. For example, in a 2004 Canadian study by Williams and Todd (2004)²²⁴ attempts to estimate the proportion of gaming revenues from problem gamblers across Canadian provinces found that there was both under and over reporting of gambling expenditures relative to actual net revenues reported by provincial governments.

As conclusions were drawn from small sample sizes, the results are unstable and contradictory. The previous paragraph indicates “over-reporting,” not “under-reporting”.

²²⁴ Williams, Robert and Robert T. Wood. 2004. The Proportion of Gaming Revenue Derived from Problem Gamblers: Examining the Issues in a Canadian Context. *Analyses of Social Issues and Public Policy*, Vol. 4, No. 1, 2004, pp. 33-45.

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12.2.3 Household Expenditures on Bingo

According to the Statistics Canada Survey of Household Spending, average household expenditure on bingo decreased by almost 50% between 2001 and 2006 from \$121 per household to \$63 per household (see Table 95). If we compare this to net expenditure per household using the Alcohol and Gaming Annual Gaming Statistics, average expenditure per household decreased from \$64 dollars per household in 2001 to \$47 dollars per household in 2006. While the trend downward is the same, household expenditure data reported by the province is substantially lower. The discrepancy is believed to be due to the fact that the Survey of Household Spending is a self recall survey. As noted in the all games section, self reported gambling expenditures are typically under reported due to the negative stigma associated with gambling. The greater social acceptance of bingo versus other game types may explain the anomaly in the self reported results. Another potential explanation contributing to the difference is that the NS government data does not include expenditures on bingos taking place on First Nations Reserves or out of province where as the Statistics Canada data would include household expenditure regardless of location.

Methodology issues: caution must be exercised when using a data sample; as well, literature in prevalence studies indicates there is an issue about recall of gambling expenditures in surveys. [Reference: http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30]

Table 94
Average Household Expenditure on Bingo 2001 to 2006.

	2001	2002	2003	2004	2005	2006	2007
Statistics Canada	\$121	\$155	\$98	\$92	\$69	\$63	(n.a.)
NS Government	\$64	\$59	\$51	\$48	\$50	\$47	\$42

Notes: n.a.: not available.

Sources: Statistics Canada. household expenditure data [CANSIM Table 62F0032](#). Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08.

CANSIM Table does not exist as cited. AGD statistics are not reported on a household basis. Source for number of households not cited. Methodology issues: caution must be exercised when using a data sample; as well, literature in prevalence studies indicates there is an issue about recall of gambling expenditures in surveys. [Reference: http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30]

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12.2.4 Bingo Revenues

Net bingo revenues (2001 to 2007):

In 2007, Bingo revenues made up 4.3% of net gambling revenues (not including FN gambling revenues) from all games (see Table 96). This is the smallest contribution by game type to overall net gambling revenues, other than harness racing (0.8% of net gambling revenues in 2007).

Table 95
Bingo Gambling Revenues, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Net bingo revenue	\$23,105	\$21,331	\$18,269	\$17,493	\$17,992	\$16,930	\$15,146
Subtotal Net Gambling Revenues (Non-FN Gambling Only)	\$395,715	\$411,988	\$391,810	\$410,611	\$397,688	\$372,300	\$350,963
Bingo Revenues as a Percent of Net Gambling Revenues	5.8%	5.2%	4.7%	4.3%	4.5%	4.5%	4.3%

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08.

Figures do not correspond to AGD figures.

Provincial Revenues (2001 to 2007):

Net provincial revenues generated by bingos decreased from \$1.4 million in 2001 to \$907 thousand in 2007 (see Table 97). In terms of total net provincial gambling revenues, bingos contribute a mere 0.5%.

Table 96
Provincial Revenues from Bingos, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Bingos	1,396	1,388	1,179	1,118	1,090	1,074	907
Provincial Gambling Revenues	184,486	196,936	182,349	195,533	186,201	176,264	169,305
Bingo as a Percentage of Total Provincial Gambling Revenues	0.8%	0.7%	0.6%	0.6%	0.6%	0.6%	0.5%

Notes: Net provincial revenues refers to total amount of net revenue to the province of Nova Scotia after prizes, operating expenses, retailer commissions, and other associated costs are removed.

Source: Nova Scotia Government. Alcohol and Gaming Authority, Annual Gaming Reports.

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Provincial revenues from bingos are generated by a licensing fee. A Series License costs \$83.85 for a three year term and Single License cost \$27.95 for a one time bingo when total prizes exceed \$2,500. There is no fee when prizes are less than \$2,500. There is also a monthly licensing fee calculated at the rate of 2.13% of the total value of prizes awarded.

Charity Revenues (2001 to 2007):

Charity revenues decreased by 35% between 2001 and 2007 from \$13.9 million to \$9.1 million (see Table 98). The decrease is consistent with the overall decline in bingo wagers and revenues. A discussion of charity revenues can be found in the community and culture impacts section. The reported charitable revenues do not include revenue generated from linked bingo, which totalled \$638 thousand in 2007.

Table 97
Charitable Revenues, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Charitable Revenues	\$13,872	\$12,303	\$10,325	\$10,197	\$10,950	\$10,356	\$9,079

Source: Nova Scotia Government. Alcohol and Gaming Authority, Annual Gaming Reports.

12.2.5 Gambling Industry Business Profits

All bingo operations and events in the province are now charity bingos. The last commercial operation closed in 2005. Commercial revenue decreased from a peak of \$377 thousand in 2001 to \$0 in 2006 and 2007 (See Table 99).

Table 98
Commercial Revenues from Bingo, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Commercial Revenue	\$377	\$339	\$80	\$30	\$15	0	\$0

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08.

12.3. Tourism and Recreation Impacts

Tourism and recreation impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Gambling patronage (out-of-province visitors)
- Incremental tourist expenditures on gambling venues

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- Income and employment losses sustained by other entertainment and recreation tourism-related industries.

Given data limitations, there was not sufficient data to estimate impact values at a game level for Bingo. Please refer to all-games section for a discussion of tourism and recreation impacts.

12.4. Employment Impacts

12.4.1 Introduction

This section examines employment impacts attributable to bingos. The emphasis is on direct and indirect job creation but also includes potential productivity losses stemming from gambling problems. Employment impact indicators adopted for the Nova Scotia SEIG framework include:

- Net job creation in the gambling industry
- Indirect employment related to the gambling industry
- Changes in unemployment and underemployment resulting directly from gambling industry development
- Productivity losses and absenteeism.

12.4.2 Net Job Creation in the Gambling Industry

According to a *GPI Atlantic* study, almost all of the direct employment from gambling are products of casinos and government regulated authorities.²²⁵ Charity bingos are assumed to support very few direct jobs. In most cases, those working charity bingos are volunteers or receive a small wage for their services. In cases where workers are paid, it is not full time employment and rarely the primary employment of the individual.

As for direct government regulated authority jobs, the provincial government Alcohol and Gaming Division oversees the licensing process of charity bingos. The division, however, does not attribute job employment numbers to gambling or specific games so it is unknown how many FTEs are engaged in bingo-related work. The Alcohol and Gaming Division as a whole employed an estimated 60 FTEs in 2006.

²²⁵ GPI Atlantic. 2004. *The Costs and Benefits of Gaming: A Literature Review with Emphasis on Nova Scotia*. Study prepared by Karen Hayward for the Nova Scotia Gaming Foundation. July 2004, p. 89.

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12.4.3 Indirect Employment Related to Gambling Industry

Indirect employment related to charity bingo was not estimated as we were not able to determine a direct job employment value. Indirect employment is estimated by adjusting direct employment with an indirect job multiplier variable. Indirect job multipliers used in this report range from 0.80 for Casinos to 0.90 for VLT venues.

The terms “indirect”, “induced”, and “spinoff” are different concepts and cannot be used interchangeably.

The use of multipliers for casinos or VLT venues would not be applicable to bingo because of the different structure of the industry. The multiplier for VLT venues does not match data provided in Table 140 of this document.

12.4.4 Changes in Unemployment and Underemployment

Please refer to all-games section. There was not sufficient data to estimate the contribution of charity bingo to changes in unemployment and underemployment.

12.4.5 Productivity Losses and Absenteeism

Please refer to all-games section. There was not sufficient data to estimate the contribution of charity bingo to productivity losses and absenteeism.

12.5 Health and Well-being Impacts

12.5.1 Introduction

This section examines the potential impacts on physical, mental and social health and well-being²²⁶ impact of bingo on individual gamblers, their families and society. Health and Well-being impact indicators adopted for the Nova Scotia SEIG framework include:

- Problem gambling prevalence rates
- Gains from gambling as a leisure activity
- Health problems, disease rates and morbidity
- Premature mortality rates (other than suicide)
- Stress, anxiety and depression

²²⁶ This definition of health comes from the World Health Organization framework which replaces earlier definitions of health as “the absence of disease.” (World Health Organization. (1947-2004). *WHO Definition of Health*).

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- Suicide (thoughts, attempts, actual)
- Social isolation
- Loss of quality time with family, friends and community
- Substance abuse related to gambling
- Psychological impacts on family and friends of gamblers
- Family break-up (separation, divorce, impact on children)
- Domestic violence

Given the lack of game-specific impact data from either the 2003 and 2007 Nova Scotia adult prevalence study as well as other potential sources of information cited in Part II (all-games) section of this report, only problem gambling prevalence rates for bingo gamblers could be evaluated.

12.5.2 Problem Gambling Prevalence Rates

According to the 2003 and 2007 Adult Gambling Prevalence Study results an estimated 11.6% of Nova Scotia adults gambled with bingo in the last year prior to the survey period; this is a statistically significant decline from 2002 when an estimated 15.3% of Nova Scotia adults had gambled with bingo. In terms of problem gamblers, an estimated 0.40% of Nova Scotia adults (19 years and older) were moderate risk and problem bringo gamblers in 2007 compared to 0.70% in 2002; that is, an estimated 4,981 adults in 2002 and 2,783 in 2007 had a gambling problem with bingo (see Table 100).²²⁷

Data is not represented in the same manner as in the NS Prevalence Studies.

²²⁷ As previously noted, the 2007 Adult Gambling Prevalence study found that problems with gambling may be associated with more than one game so that a VLT player with a gambling problem may also be a person who has problems with casino games or with daily lotteries. Therefore, caution should be used when interpreting the estimated problem gambler population figures since there could be overlap or duplication across other games.

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Table 99
Estimated Nova Scotia Bingo Gamblers by Gambler Type (CPGI),
2002 and 2007

Survey Year	Gambler Subtype				Total Adults
	Non-bingo Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate-risk and Problem Gamblers	
	2002 (n=2372) 2007 (n=2210)	2002 (n=368) 2007 (n=252)	2002 (n=41) 2007 (n=29)	2002 (n=19) 2007 (n=9)	
Percentage of Sample					
2002	84.70%	13.10%	1.50%	0.70%	15.30%
2007	88.40%	10.10%	1.20%	0.40%	11.6% ↓
Nova Scotia Population Estimates (adults ≥ 19 years)					
2002	621,803	96,469	10,748	4,981	734,000
2007	683,332	77,918	8,967	2,783	773,000

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc.

Notes: Arrows indicate the direction of significant change over time (p <.05). Population estimates were derived from prevalence rates calculated to two decimal points. The 2003 adult gambling prevalence study reflects gambling activity that occurred in the year 2002.

*Data is not represented in the same manner as in the NS Prevalence Studies.
 Source of population data is not cited.*

According to the 2007 gambling prevalence study, less than 0.1% of adults said that they currently have a bingo gambling problem, while 1.4% of adults indicated that at some point they had a bingo gambling problem.

Among those self reporting a gambling problem (either current or in the past) 3% indicated that bingo was associated with the problem. Among problem gamblers as identified by the CPGI model, 4.9% regularly played bingo on a monthly basis. This is the second lowest participation rate by game type analyzed in the study behind harness racing (VL, TL, Casino, charity raffle or draw, sports betting, poker game (non-casino), 50-50 draws).

Source is not cited.

12.5.3 Gains from Bingo as a Leisure Activity

A study commissioned by the Alberta Gaming Research Institute (O'Brian Cousins et. al., 2002) focusing on seniors in Alberta with a view to learn more about the lifestyle and possible wellness contribution of bingo found that the most commonly cited motives to play bingo include: affordable entertainment, a social outing, a way to fill time, and a pleasurable way to spend time

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with other people in the community. None of the respondents emphasized winning money as a main motive.²²⁸

12.5.4 Health Problems, Disease Rates and Morbidity

O'Brian Cousins et.al. (2002) found that Bingo players who are seniors seem to have more health limitations than non-players, (50% versus 36%) and tended to be less physically active than non-players (23% vs. 13.1%).²²⁹

12.5.5 Stress, Anxiety and Depression

Please refer to all-games section. There was not sufficient data to estimate the contribution of bingo to stress, anxiety, and depression.

12.5.6 Suicide

Please refer to all-games section. There was not sufficient data to estimate the contribution of bingo to suicide.

12.5.7 Social Isolation

Playing Bingo offers social respite from loneliness and isolation. A study by Tinsley and colleagues (1985) of elderly persons (55-75) noted that bingo has positive psychological benefits linked to increased companionship. O'Brian Cousins and colleagues (2002) study on motivations for playing bingo note similar findings. O'Brian Cousins and colleagues study also found that bingo playing seniors were more likely to be widowed (68% of bingo players vs. 12.8% of non-players) and have more health limitations (50% of bingo players vs. 36% of non-players) suggesting that bingo offers social respite to populations associated with high rates of isolation.

The source population for these studies should be indicated.

²²⁸ See also Howard E. A. Tinsley, H., Teaff, J.D., Colbs, S.L, and N. Kaufman 1985. A System of Classifying Leisure Activities In Terms of the Psychological Benefits of Participation Reported by Older Persons. *Journal of Gerontology*. Vol. 40. No. 2. 172-178.

²²⁹ O'Brien Cousins, S., Witcher, C, and J. Moodie. 2002. *Lifestyles of Elders Who Play Bingo: High Quality Aging or Gambling with Health?* Alberta Gaming Research Institute. December 2002

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12.5.8 Substance Abuse Related to Bingo

O'Brian Cousins et.al. (2002) found that there is a significant difference among seniors who play bingo and non bingo players in regards to alcohol consumption. The majority (80.0%) of bingo players who indicated they did play bingo, consume one drink per month or less, while slightly over half (55.6%) of people who indicated they were non-players, consume one drink per month or less.

12.5.9 Psychological Impacts on Family and Friends of Bingo Gamblers

Please refer to all-games section. There was not sufficient data to determine the psychological impacts on family and friends of bingo players.

12.5.10 Family Break-up (Separation, Divorce, Impact on Children)

Please refer to all-games section. There was not sufficient data to determine the role bingo plays in family break-ups.

12.5.11 Domestic Violence

Please refer to all-games section. There was not sufficient data to determine the relationship between bingo and domestic violence.

12.6. Crime, Legal and Justice Impacts

Crime, legal and justice impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Reduced illegal gambling rates (as a positive benefit of the availability of legalized gambling).
- Crime rates related to gambling (e.g. money-related crimes including theft, other property crimes, fraud, embezzlement).
- Policing and incarceration costs
- Security costs
- Social cost of gambling-related crime

Given data limitations, there was insufficient data to estimate impact values at a game level for Bingo. Please refer to all-games section for a discussion of crime, legal and justice impacts associated with gambling in Nova Scotia.

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12.7. Community and Culture Impacts

12.7.1 Introduction

This section examines the potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations that benefit from gambling revenue transfers from the provincial government, and the public attitude, beliefs, and values toward gambling by citizens.

Community and culture impact Indicators examined for Nova Scotia SEIG framework include:

1. Local charities and non-profit sector dependence on gambling revenues
2. Feelings of loss or gains community quality of life and social cohesion.
3. Sense of safety from gambling venues.

12.7.2 Impacts on Local Charities, Non-Profit Organizations and other Public Sector Agencies

Bingos are an important revenue stream for many charity and religious organizations. In 2007 Bingos generated \$9.1 million in charitable revenues. While still a significant amount, charitable revenues have been in decline since 2001 (see Bingo section 2.8 revenues). Declining revenues put pressure on charitable organizations to find alternate fund raising streams. While it has not been formally measured, the importance of bingos to churches, volunteer fire departments, minor league sports team, legions and religious organizations is vital.

While charity revenue from bingo has been in decline, overall charity revenue generated from gambling has been relatively stable since 2001. In 2007 bingo accounted for 33% of charitable revenue from gambling sources, well below a high of 55% in 2001 (see Table 101). Bingo now ranks second as the most important source of charitable revenue from gambling sources behind charity lotteries.

Table 100
Charitable Revenues from Bingos, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Charitable Revenues (Bingo)	\$13,872	\$12,303	\$10,325	\$10,197	\$10,950	\$10,356	\$9,079
Charitable Revenues (All Games)	\$25,342	\$24,365	\$22,960	\$26,960	\$28,634	\$28,536	\$27,107
Bingo as a Percent of Charitable Revenues	55%	50%	45%	38%	38%	36%	33%

Source: Nova Scotia Government. Alcohol and Gaming Authority, Annual Gaming Reports.

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While not a perfect indicator, the decline in licensees suggest that the number of organizations holding bingos has declined since 2001.²³⁰ **Series Licensees declined from 521 in 2001 to 255 in 2007.** Media Bingos, decreased from 36 in 2001 to 32 in 2007.

*“Series license” is an incorrect term.
Footnote 230: contains incorrect information*

12.7.3 Citizen Attitudes Towards Gambling and Gambling Venues

While there has been mixed public opinion toward gambling and several game types, bingos have strong public approval. 85% of the public either approve or strongly approve of bingos.²³¹

12.7.4 Feelings of Safety Due to Gambling Venues

Please refer to all-games section. There was not sufficient data to evaluate citizen feelings of safety due to bingo venues.

²³⁰ There are two types of licenses: A Series License for a three year term and a Single License for a one time bingo when total prizes exceed \$2,500.00. **If bingo prizes are less than \$2,500.00, no license is needed.**

²³¹ Omnifacts Bristol Research. 2005. Public Attitudes on Gaming in Nova Scotia. February 25, 2005. ISBN # 7073-1006.

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13. Impacts of Casinos in Nova Scotia

13.1 Introduction and Description Casinos

Casino gambling in the province was first introduced in 1994, with the Halifax Interim Casino opening June 1, 1994 followed by the Sydney Casino, August 1, 1994. Both casinos are open seven days a week (excluding four statutory holidays) and in Halifax, the casino was open 24 hours per day.

Incorrect dates.

There are two permanent casino venues (Halifax and Sydney) in Nova Scotia owned and operated by Great Canadian Gaming Corporation (GCGC). Prior to May 2005, Park Place Entertainment operated both venues on behalf of NSGC. Collectively, these sites offer patrons access to 1,051 slot machines (Halifax: 714 slots; Sydney: 337 slots) and about 53 different tables games (Halifax: 40; Sydney: 13) (see Table 102)

Incorrect figures for slots.

There were 53 tables at the casino at the time of this study, however, there are not 53 different forms of games.

**Table 101
Casino Statistics, 2001-2007**

	2001	2002	2003	2004	2005	2006	2007
Casinos (Number): Halifax and Sydney	2	2	2	2	2	2	2
Slots at Casinos	n.a.	1,099	1,130	1,139	1,128	1,051	1,051
Gaming Tables	n.a.	56	49	48	50	51	53

Note: n.a. means information was not available

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008.

Incorrect figures in Table 102.

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In 2005, the two Nova Scotia casinos introduced new regulations and made renovations to their facilities (\$22 million). These changes included the following:

- Token-based slot machines have been replaced with ticket-based machines (Ticket-in/Ticket-out technology (TITO)) where patrons were given bar-coded tickets. This system makes it easier for users to have breaks and is compatible with card-based systems expected to be used in the future.

At the time of this report government did not indicate plans for a card-based system in the casinos.

- New poker tables
- New multi-denominational slots that range from \$0.01 to \$1 machines
- Digital surveillance systems replaced video-based system.
- Different food and beverage offerings, and live entertainment venue.²³²

Footnote 232: incorrect title used

In 2005, Responsible Gambling Resource Centers (RGRC) were introduced at both casinos, managed by staff trained in addictions and crisis management and are intended to provide information to patrons about how the games work, problem gambling risks, and other resources.

In July 2005, changes were made to the operating contract whereby GCGC assumed responsibility for the operating expenses previously shared with NSGC and, in exchange, more of the gross revenue (55.5%) was allocated to GCGC. This explains the sharp increase in commercial revenues by casinos in 2005 and the sharp decrease in operating expenses (Table 103).

Analyzing the trends in casino financial statistics (Table 103) revealed that the amount wagered at both Nova Scotia casinos increased 37.1% (\$133.0 million) from 2001 to 2007 while net revenues (after cash prize payouts) decreased by 16.7% (\$17.0 million) due to an increase of 59.1% (\$150.0 million) in the amount cashed out as prizes.

²³² Leaving Nothing to Chance: Nova Scotia Annual Gaming Report 2006-2007, Delivering the Business Results, p. 8, and Nova Scotia Gaming Corporation (December 15, 2005). Media Release: Nova Scotia Government Approves Changes to Province's Casino Regulations. Retrieved at https://www.nsgc.ca/pdf/press/AmendmentstoC_diaRelease12_15_05.pdf.

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**Table 102
Casino Gambling Financial Statistics, 2001-2007**

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Total Wagered	356,005	366,604	356,255	366,391	371,077	\$489,109	\$488,995
Prizes	253,988	266,718	269,890	281,397	285,689	399,705	404,051
Net Revenue	102,017	99,886	86,365	84,994	85,388	89,404	84,944
Operating Expenses	74,612	65,785	60,293	58,336	19,808	6,671	3,725
Commercial Revenue	1,989	1,621	1,334	1,076	37,735	51,205	48,482
Charitable Revenue	0	0	0	0	0	0	0
Provincial Net Revenue	25,416	32,480	24,738	25,582	27,845	31,528	32,737
% of Net Gambling Revenues from Casinos	23.4%	22.3%	21.5%	20.0%	21.1%	22.7%	22.5%
% of Total Provincial Gambling Revenues From Casinos	13.8%	16.5%	13.6%	13.1%	15.0%	17.9%	19.3%

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008.
Note: Net gambling revenues includes First Nation and harness racing.

It is unclear if the net gambling revenues in Table 103 include First Nations VLTs and Harness Racing statistics.

Over the past seven years, the amount of prizes cashed out at the two casinos has steadily climbed from 71.3% in 2001 to 82.6% of total wagers in 2007. As a result casino gambling accounted for 33.5% of the wagers in Nova Scotia yet only contributed 19.3% of provincial net gambling revenues (\$32.7 million). In 2007 Nova Scotia's casinos generated \$48.5 million in commercial revenue for the Great Canadian Gaming Corporation. Casinos have become the third most important source of revenues to the Nova Scotia government after VLTs and ticket lotteries. In terms of net gambling expenditures, (total wagered minus prize payouts), casinos are third most important game of chance (after VLTs and ticket lotteries) in Nova Scotia. Casinos have not been a source of charitable revenues.

*Reference should be to "gambling revenues to the Nova Scotia government".
Source is required for the comment that "casinos are third most important game of chance".*

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Casino Adult Gambler Participation Rates

According to both the 2003 and 2007 adult gambling prevalence studies for Nova Scotia, the same rate, 45.6% of Nova Scotia adults, had gambled (either slot machines or casino table games, including poker games) at a casino in Nova Scotia in both 2002 and 2007.²³³ An estimated 42.8% of adults had ever gambled at casino slot machines in the 2007 survey compared to 44.2% in the 2003 survey. An estimated 10.7% of adults had gambled at a casino table game in 2007 compared to 10.6% in the 2003 survey. An estimated 17.2% of adult gamblers had gambled at a casino in the last year (down from 23.2% in 2002, a statistically significant decrease) while 0.8% played of adults said they had gambled at casino on a regular and continuous monthly basis over the past year (down from 1.9% in 2002).

Footnote 233: Citation is incorrect.

Text is inconsistent with NS 2007 Prevalence Study terminology (i.e., “regular and continuous monthly basis”).

²³³ Nova Scotia Health Promotion and Protection. 2008. *2007 Nova Scotia Adult Gambling Prevalence Study*, Study conducted by Focal Research, April 2008; p. 54

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13.2. Economic and Financial Impacts

13.2.1 Introduction

This section examines economic and financial impacts attributable specifically to casino gambling. Of the economic and financial indicators adopted for the Nova Scotia SEIG framework we were unable to estimate impacts for the following indicators:

Economic and Financial Indicator	Notes
Consumer surplus.	No consumer surplus estimates available for casinos.
Negative consumer surplus (excessive losses)	There was not sufficient data to estimate a negative consumer surplus value attributable at a game level for casinos. Ideally, it would be desirable to determine a healthy level of dollars wagered by a casino player compared with a moderate risk or problem gambler to derive a negative consumer surplus estimate.
Net business sector growth/investment.	There was not sufficient data to estimate a net business sector growth value attributable at a game level for casinos.
Consumer capital gains due to gambling development.	There was not sufficient data to estimate a consumer capital gains due to casino gambling development.
Government defensive expenditures to mitigate gambling impacts	There was not sufficient data to estimate a government defensive expenditures value attributable at a game level for casinos.
Direct regulatory costs related to gambling industry	There was not sufficient data to estimate direct regulatory costs attributable at a game level for casinos.
Bad debts, bankruptcies and costs to recover bad debts.	There was not sufficient data to estimate the contribution of casinos to bankruptcies, financial difficulties, and bad debts.
Abused dollars.	There are no estimates of abused dollars for Canada or for Nova Scotia.

Table incorrectly states there were no data for "Net business sector growth/investment". This document contains an input-output analysis that was conducted on renovations made in 2005.

As with other game-specific economic and financial impact indicators, the lack of game-specific data precludes analysis of these impacts specific to casino gambling activity. However, an I-O economic impact analysis was conducted by the Economics and Statistics Division of the Nova Scotia Department of Finance (commissioned by Anielski Management Inc.) of the economic impacts of casinos on the Nova Scotia economy. The analysis was limited to 2004 casino operations in Halifax and Sydney and on capital expenditures related to the 2005 renovations of the Halifax casino (see Appendix 2.2 for details of the I-O analysis).

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The I-O analysis provided estimates of employment (direct and spinoff), household income, GDP related to casino gambling activity, and government revenues from income taxes paid related to casino gambling.

13.2.1 Gambling GDP attributed to casino gambling

The Nova Scotia Department of Finance conducted an analysis of the incremental economic impact of: a) the \$4.1 million Halifax Casino renovations in 2005, b) the Halifax Casino annual operating expenditures of \$35.9 million in 2004, and c) the annual operating expenditures of \$11.5 million of the Sydney Casino (Table 104). The estimated benefits to provincial GDP of the combined annual operations of the Halifax and Sydney Casinos is estimated at \$73.6 million.

Only direct GDP should be reported. In terms of contribution to the GDP, the Halifax casino renovations cannot be added to the annual operations of the casinos.

Table 103
GDP (at market prices) Impact Estimates for Nova Scotia Casinos

GDP at market prices \$000's	Direct	Spinoff	Total
1. Incremental Economic Impact on Nova Scotia of \$4.1 Million of Halifax Casino Renovations in 2005	1,662	1,604	3,266
2.1 Incremental Economic Impact on Nova Scotia of Halifax Casino Annual Operations Expenditures of \$35.9 Million 2004	33,586	22,686	56,272
2.2 Incremental Economic Impact on Nova Scotia of Sydney Casino Annual Operations Expenditures of \$11.5 Million 2004.	9,931	7,452	17,383
Subtotal of Annual Operations GDP Benefit	43,517	30,138	73,655

Source: I-O analysis conducted by the Economics and Statistics Division Nova Scotia Department of Finance, May 2008

There was an error in the original study so the GDP numbers are incorrect.

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Assuming these GDP benefits apply to the year 2007, the two Nova Scotia casinos contributed an estimated 0.22% (\$73.65 million) to Nova Scotia's \$33,296 million GDP in 2007.²³⁴ These GDP estimates for casinos appear high relative to our previous gambling industry GDP estimate for all games of \$54.0 million (see section 4.2 of this report). However, these estimates, as a percentage of the expenditure-based gambling GDP of \$399.7 million (2007), would suggest that casino gambling contributed 18.7% to our estimated provincial gambling GDP for all games. This seems reasonable given that casino gambling net expenditures were 21.3% of total net gambling expenditures for all games (including harness racing and First Nations VLT gambling net expenditures) in 2007.

The assumption cannot be made that GDP occurring in 2004 will be the same amount as in 2007. Neither the impacts of renovations nor the spinoff of GDP should be included in this calculation. The casinos' GDP is reported in market prices and should not be compared to total NS GDP at basic prices. Methodological and data issues result in incorrect data.

13.2.2 Personal Expenditures on casino gambling

Net expenditures (total wagered less prizes) at casinos in 2007 at casinos totaled \$84.9 million, or an average expenditure of \$115 per adult in Nova Scotia (see Table 105). Net expenditures at casinos in Nova Scotia were 16.7% lower in 2007 than in 2001. Of all gambling expenditures in Nova Scotia, casino gambling expenditures is the third most important contributing 21.3% to net gambling expenditures of Nova Scotia games in 2007, after VLT and ALC ticket lotteries expenditures.

²³⁴ Nova Scotia's GDP in 2007, at current dollar value, was \$33,296 million from Statistics Canada CANSIM Table 384-002 - Gross Domestic Product (GDP) at basic prices, accessed November 26, 2008.

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Table 104
Net Expenditures and per Adult Expenditures at Casinos,
Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Net Expenditures at Casinos (\$ thousands)	102,017	99,886	86,365	84,994	85,388	89,404	84,944
Net Casino Expenditures per Adult (19+)	\$143	\$138	\$118	\$116	\$116	\$121	\$115
Net Casino Expenditures as % of Total Net Gambling Expenditures of All Games	24.4%	22.6%	20.2%	18.8%	19.4%	21.5%	21.3%

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08. Nova Scotia population statistics are from Statistics Canada, CANSIM Table 051-0001, accessed October 23, 2008.

Notes: Total net gambling expenditures includes harness racing and First Nations VLTs.

Net Gambling Expenditure by Risk of Gambling Problems

Based on the sample of gamblers surveyed in the 2003 and 2007 Adult Gambling Prevalence studies and self-reporting by respondents of casino gambling expenditures, it is possible to estimate the average net casino gambling expenditures by gambler subtype as well as predict the distribution of casino net revenues across gambler subtypes.

Table 106 shows, for example, that in 2007 there were an estimated 7,122 moderate risk and problem casino gamblers in Nova Scotia, with a predicted average net expenditure of \$2,224 per casino gambler²³⁵ for an estimated contribution to provincial casino gambling revenues of \$42.0 million or an estimated 49.0% of net gambling revenues, second only to the contribution of VLT problem gamblers to net VLT expenditures (69.1% in 2007-08). The estimated number of moderate risk and problem casino gamblers in Nova Scotia in 2007 is ranked fourth after the number of ALC ticket lottery, VLT, and charitable lottery problem gamblers. The estimated expenditures by a problem gambler at a casino are 4 times greater than a low-risk gambler and 25 times higher than a non-problem casino gambler.

Due to small sample size, extrapolation of expenditure estimates is not statistically sound.

²³⁵ Note that because the prevalence survey sample under-predicts actual net gambling expenditures at casinos in both 2002 and 2007, the per gambler expenditure predicted is also under estimated from the sample of problem gamblers surveyed. However, we assume that the relative distribution of expenditures by CPGI subtype type is robust enough to predict the relative distribution of actual net gambling expenditures by CPGI subtype.

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Table 105

Net Gambling Casino Expenditures by Gambler Subtype Predicted by 2002-03 and 2007-08 Adult Gambling Prevalence Studies and Estimated based on Net Revenues from Casino Gambling

Survey Year	Gambler Subtype				
	Non-VLT Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers	Total Adults
	2003 (n=2148) 2007 (n=2082)	2003 (n=561) 2007 (n=356)	2003 (n=67) 2007 (n=39)	2003 (n=24) 2007 (n=23)	2003 (n=2800) 2007 (n=2500)
Nova Scotia Adult Casino Gambler Population estimates (19 years +)					
2002	563,083	147,062	17,564	6,291	734,000
2007	643,754	110,075	12,059	7,112	773,000
Average Net Gambling Expenditure per Gambler² (Casinos), based on prevalence studies					
2002-03	\$0	\$148.09	\$426.19	\$4,005.21	\$318.64
2007-08	\$0	\$85.98	\$554.87	\$2,224.57	\$247.40
Provincial Net Casino Revenue Estimated from Sample					
2002-03	\$0	\$21,778,412	\$7,485,601	\$25,196,776	\$54,460,789
2007-08	\$0	\$9,464,249	\$6,691,177	\$15,821,142	\$31,976,568
Provincial Net Casino Gambling Revenue (Actual)					
2002-03	\$0	\$39,943,572	\$13,729,268	\$46,213,160	\$99,886,000
2007-08	\$0	\$25,141,259	\$17,774,745	\$42,027,996	\$84,944,000
Distribution of Gambling Expenditures by Gambler					
2002-03	0.0%	40.0%	14.0%	46.0%	100%
2007-08	0.0%	30.0%	21.0%	49.0%	100%

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated distribution of net gambling expenditures by CPGI are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc.. Provincial net gambling revenue statistics are for fiscal year 2002-03 and 2007-08 from Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2002-03 and 2007/08.

Notes: Adult gambler population estimates were derived from prevalence rates calculated to two decimal points. Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or losses).

*Data is not represented in the same manner as in the NS Prevalence Studies.
 Source of population data is not cited.
 Incorrect label ["non-VLT Gamblers"].
 Estimates of expenditures based on the NS Prevalence Studies are not statistically sound.
 Some individuals participate in more than one gambling activity which influences risk.*

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To check the validity of our findings we check the predicted net revenues from all casino gambling with the actual net revenues as reported by the Nova Scotia government. Comparing these figures from Table 106 shows that gamblers involved in the prevalence studies underestimated the casino expenditures in comparison with actual net revenues (wagered less prizes) reported by government sources. For example, the predicted provincial net casino revenues for 2007 (\$31.9 million) were 37.6% of the actual revenues from casinos that accrued to the provincial government (\$84.9 million). Casino expenditures in the 2003 prevalence study were also underreported by 54.5%. Since casino gamblers underreported their expenditures in both the 2003 and 2007 prevalence studies, this means that the estimated net gambling expenditures per moderate risk and problem gambler would likely have been 1.8 times higher in 2002-03 and 2.6 times higher in 2007-08.

*Data are not represented in the same manner as in the NS Prevalence Studies.
Estimates of expenditures based on the NS Prevalence Studies are not statistically sound.
Some individuals participate in more than one gambling activity which influences risk.*

The underreporting of expenditures by participants in the prevalence studies in Nova Scotia is not unusual. For example, in a 2004 Canadian study by Williams and Todd (2004)²³⁶ attempts to estimate the proportion of gaming revenues from problem gamblers across Canadian provinces found that there was both under and over reporting of gambling expenditures relative to actual net revenues reported by provincial governments.

The analysis does yield important estimates of the distribution of gambling expenditures by gambler type showing that in 2007 moderate risk and problem gamblers (n=7,112) contributed an estimated 49.0% to net gambling expenditures at casinos or \$42.0 million to net gambling expenditures at casinos.

"n" is commonly understood to be sample size not population estimate.

The significance of this impact is heightened by the fact that in 2007-08 net gambling revenues from casinos represented the third largest share of all provincial net gambling revenues (24.1% of 2007 net gambling revenues from all games) and contributed 19.3% to net provincial gambling revenues.

²³⁶ Williams, Robert and Robert T. Wood. 2004. The Proportion of Gaming Revenue Derived from Problem Gamblers: Examining the Issues in a Canadian Context. *Analyses of Social Issues and Public Policy*, Vol. 4, No. 1, 2004, pp. 33-45.

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13.2.3 Household Expenditures at Casinos

The average household net expenditure at casinos per Nova Scotia household fell from \$283.36 in 2001 to \$225.63 in 2007, a 16.9% decrease over the time period (see Table 107). By contrast, the Statistics Canada Survey of Household Spending, estimates of the combined spending on casinos, slot machines and VLTs are considerably lower than the imputed per household casino expenditures from actual casino net revenue statistics.

Methodology issues: caution must be exercised when using a data sample; as well, literature in prevalence studies indicates there is an issue about recall of gambling expenditures in surveys. [Reference: http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30]

Table 106
Average Household Net Expenditure at Casinos,
2001 to 2007.

	2001	2002	2003	2004	2005	2006	2007
Net Expenditures on Casinos (\$000),	\$102,017	\$99,886	\$86,365	\$84,994	\$85,388	\$89,404	\$84,944
Number of Nova Scotia Households	360,020	363,385	366,750	370,115	373,480	376,845	376,481
Average Nova Scotia Household Net Expenditures at Casinos	\$283.36	\$274.88	\$235.49	\$229.64	\$228.63	\$237.24	\$225.63
Average Nova Scotia Household Net Expenditures at Casinos, VLTs, and Slots (Statistics Canada)	\$75	\$102	\$91	\$85	\$186	\$86	n.a.

Sources: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08. Household statistics for Nova Scotia are from Statistics Canada. Statistics Canada household expenditure data CANSIM Table 62F0032. Number of Nova Scotia households is from Statistics Canada Census 2001 and 2006; other years are estimated. Statistics Canada data does not break out casino expenditures from other expenditures on VLTs and slots.

CANSIM Table as cited does not exist. The number of households reported in Table 107 is not consistent with other estimates of number of households elsewhere in this document.

13.2.4 Government Gambling Revenues

Casino gambling revenues are the third most important source of gambling revenues (19.3% of all provincial gambling revenues) to the Nova Scotia Government, contributing \$32.7 million in

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2007-08 or 0.37% of total provincial revenues (see Table 108). Between 2001 and 2007 provincial revenues from casinos has grown 28.8%.

Table 107
Net Revenues to Nova Scotia Government from Casino Gambling Revenues

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Net Revenues From Casinos to Nova Scotia Government	\$25,416	\$32,480	\$24,738	\$25,582	\$27,845	\$31,528	\$32,737
Casino Net Provincial Government Revenues as % of Total Net Provincial Gambling Revenues	13.8%	16.5%	13.6%	13.1%	15.0%	17.9%	19.3%
% of total Nova Scotia Government Revenues	0.45%	0.57%	0.41%	0.37%	0.37%	0.40%	0.37%

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007/08. Nova Scotia Government Annual Reports 2001/02 to 2007/08. Nova Scotia Government revenue statistics are from Province of Nova Scotia. Public Accounts Vol. 1. Financial Statements. Reports for fiscal year ending March 31 2001 - fiscal year ending March 31 2008.

Source contains incorrect date.

13.2.5 Producer Surplus (Industry Profit)

This is not consistent with Table 1, “The SEIG Analytical Framework” which uses “gambling industry profits” as terminology, not “producer surplus.”

A key benefit of gambling is the producer surplus or gambling industry profit that is earned by the gambling industry, and additional profit earned by other associated industries that benefit directly or indirectly from the existence of the gambling industry. In economic theory, producer surplus is the difference between what producers actually receive when selling a product and the amount they are willing to accept for a unit of the good. How should industry profit or producer surplus be measured?

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For purposes of this study we used commercial revenue (payments to the gambling industry out of net revenues) as a proxy for producer surplus. Commercial revenues from casinos grew significantly between 2001 and 2007 from less than \$2 million in 2001 to \$48.48 million in 2007 (see Table 109). Casino commercial revenues contribute the most (57.0%) to total commercial revenues from all games in 2007.

*In 2005 there was a change in the operating contract that affected commercial revenues which should be noted in this paragraph.
Commercial revenue is not necessarily a reasonable proxy for profit or for producer surplus.*

Table 108
Commercial Revenues to Nova Scotia Gambling Industry from Casinos

	2001	2002	2003	2004	2005	2006	2007
Commercial Revenues From Casinos (\$000)	1,989	1,621	1,334	1,076	37,735	51,205	48,482
% of Total Commercial Revenues From All Gambling.	4.1%	3.1%	2.5%	2.0%	44.1%	56.2%	57.0%

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007/08. Nova Scotia Government Annual Reports 2000/01 to 2007/08.

It is not clear if total commercial revenues include harness racing.

13.3 Tourism and Recreation Impacts

Tourism and recreation impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Gambling patronage (out-of-province visitors)
- Incremental tourist expenditures on gambling venues
- Income and employment losses sustained by other entertainment and recreation tourism-related industries.

Sections 5.3 and 5.4 of Part II of this report provided detailed analysis of the tourism impacts associated with the Halifax and Sydney casinos, including casino patronage by out-of-province visitors and estimates of incremental tourist expenditures. Please refer to these sections of the report for more detailed information.

Sections 5.3 and 5.4 have data and methodological issues pertaining to 1) the inclusion of Nova Scotia out-of-town visitors in the data set, and 2) the assumptions that are made.

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13.3.1 Gambling patronage (participation rates).

While tourist statistics do show that some portion of tourist visits to Nova Scotia may be motivated by the existence of gambling venues, these statistics are limited to visits to the Halifax and Sydney casinos. Thus, it is difficult to determine what percentage of total Nova Scotia gambling revenues that are coming from out-of-province visitor expenditures. In terms of casinos, less than 5% of total out-of-province visitors went to a casino during their visit between 1998 and 2004.

The source of data should be cited.

As noted in section 5.3 of this report, total visits to both Nova Scotia casinos has declined by 46.1% from a total of 3,112,265 visitors in 1996 to 1,678,320 in 2007 (1,433,945 fewer visitors in 2007 compared to 1996), which represents an annual rate of decline of 5.3% over this time period. The Sydney casino has experienced a steady decline in visitors falling 52.0% since 1996 (compared to 2007 visits) while the Halifax casino experienced a slight resurgence in visits between 1998 and 2001, thereafter also experiencing a steady decline. Between 2001 and 2007 the visits to the Halifax and Sydney casinos declined by an average of 7.8% per annum. The Halifax casino, which experienced the bulk of Nova Scotia casino patronage (67% in 2007) has experienced the greatest absolute decline in visitors, 41.0% drop comparing 2007 to 2001. The Sydney casino (with 33% of total Nova Scotia casino visitors in 2007) experienced a 34.4% drop in visitors.

“Visitors” and “visits” are different concepts which should not be compared.

The year 2002 recorded both the highest total tourist person-trips to Nova Scotia and the highest recorded person-trips to Nova Scotia casinos by tourists. However, since 2002, person-trips to Nova Scotia casinos have been in steady decline.

The data used included Nova Scotians so analysis is incorrect.

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13.3.2. Incremental tourist expenditures on gambling venues.

As per section 5.3 (incremental tourist expenditures) of this report, using Statistics Canada travel survey statistics, an estimated 3.7% of tourist expenditures (\$44.0 million) were spent at Nova Scotia casinos in 2004. Relative to the wagers at casinos in Nova Scotia in 2004 (\$371.1 million) the \$44.0 million contribution by tourists represented 11.8% of total wagered at Nova Scotia casinos. Applying the same percentages to net gambling revenues would suggest that an estimated \$10 million (11.8%) of the total \$85 million in net expenditures (after prizes) from casinos in 2004 were made by tourists, or 2.2% of net gambling expenditures in Nova Scotia in 2004 (\$452.2 million, including harness racing and First Nations VLTs).

*Due to data and methodological issues this section is incorrect.
Number (\$371.1 million) corresponds to 2005/2006, not 2004 (\$366.4 million).*

13.3.3. Income and employment losses sustained by other entertainment and recreation industries

There was insufficient data to conduct an analysis of the employment and income losses sustained by other entertainment and recreation industries in Nova Scotia due to the impact of the two Nova Scotia casinos.

13.4. Employment Impacts

13.4.1 Introduction

This section examines employment impacts that are estimated to be attributable to casino gambling, using the results of the Input-Output modeling that was conducted for Anielski Management Inc. by the Nova Scotia Department of Finance (see Appendix 2.2 for details). The I-O results provides an estimate of employment (person years), both direct and spin-off employment estimates, estimates of household income associated with this employment, and government tax revenues associated with household income related to casino gambling activities.

Following the employment impact indicators framework in Part II of this report, the following employment indicators were examined related to casino gambling:

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- Net job creation in the gambling industry (including estimated household income and personal provincial income taxes from I-O analysis associated with VLT employment)
- Indirect employment related to the gambling industry
- Changes in unemployment and underemployment resulting directly from gambling industry development
- Productivity losses and absenteeism.

The word “VLT” should be “casino”.

13.4.2 Net Job Creation in the Gambling Industry

There are no official employment statistics related to employment related to casino gambling in Nova Scotia. Instead, an input-output (I-O) analysis was completed for Anielski Management Inc. by the Nova Scotia Department of Finance to generate estimates of employment (in person-years) and household income related to the employment benefits for a) renovations to the Halifax casino in 2005 and b) the operations of both the Halifax and Sydney casinos in 2004.

This statement does not correlate with Table 53 which reports employment related to casino gambling.

**Table 109
Employment Impact Estimates for Nova Scotia Casinos**

Employment (PYs)	Direct	Spinoff	Total
1. Incremental Economic Impact on Nova Scotia of \$4.1 million of Halifax Casino Renovations in 2005	33	27	60
2.1 Incremental Economic Impact on Nova Scotia of Halifax Casino Annual Operations Expenditures of \$35.9 Million 2004	584	460	1,044
2.2 Incremental Economic Impact on Nova Scotia of Sydney Casino Annual Operations Expenditures of \$11.5 Million 2004.	171	144	315
Total Employment	788	631	1,419

Source: I-O analysis conducted by the Economics and Statistics Division Nova Scotia Department of Finance, May 2008

The term “incremental” was not used by NS Department of Finance.

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How important are casino-related gambling jobs to overall Nova Scotia employment? Table 111 shows that an estimated 1,044 PYs (direct and spinoff) of employment are generated by the Halifax Casino operations in addition to 315 PYs (direct and spinoff) by the Sydney Casino, for a total of 1,359 PYs of employment in both Nova Scotia casinos. The renovations of the Halifax Casino in 2005 is estimated to have generated 60 PYs of direct and spinoff employment. As a percentage of the 30,200 persons employed in Nova Scotia's accommodations and food service industries in 2007, the 1,359 PYs of casino employment would represent 4.5% of those employed in this sector.²³⁷

Table 111 is an incorrect table reference.

The correct employment for both NS casinos is 755; 1,359 PYs of employment includes spinoff employment.

Direct casino employment is found as a subset of the amusement, entertainment and recreation industry so should not be compared to the accommodation and food sector. Furthermore spinoff employment should not be used in this comparison as this employment would be found in industries other than gambling. As noted in Footnote 237, jobs and PYs are different concepts and should not be directly compared.

Footnote 237: Subject matter is not about VLTs.

Household income related to casino gambling

Household income associated with the estimated employment impacts of the Halifax casino renovation and the operations of the Halifax and Sydney casinos are shown in Table 111. The capital investments and renovations of the Halifax casino in 2005 were estimated to generate household income (from employment) of \$2.4 million. The operations of the Halifax casino generated an estimated \$34.4 million in household income from employment while the Sydney casino generated \$10.7 million in household income. Relative to the total Nova Scotia personal incomes for the province (\$25,236 million in 2004)²³⁸ the estimated household income from the operations of both Nova Scotia casinos represented 0.16% of total provincial household income in 2004.

Direct household income should be presented as household income associated with the casinos, with total household income presented separately.

Household income associated with renovations should be presented separately as a different ongoing operation of the casinos.

The figure 0.16% is incorrect.

²³⁷ Employment statistics are from Statistics Canada, CANSIM Table 282-0061, Labour force survey estimates and are reported in terms of number of persons employed. While person-years of employment are not directly comparable with the number of persons employed, the comparisons are made to provide a relative sense of magnitude of VLT-related employment estimates.

²³⁸ Statistics Canada CANSIM 384-0012, Sources and disposition of personal income, provincial economic accounts.

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Table 110
Household Income Impact Estimates for Nova Scotia Casinos

Household Income (\$000), 2005\$	Direct	Spinoff	Total
1. Incremental Economic Impact on Nova Scotia of \$4.1 million of Halifax Casino Renovations in 2005	1,452	984	2,436
2.1 Incremental Economic Impact on Nova Scotia of Halifax Casino Annual Operations Expenditures of \$35.9 Million 2004	19,192	15,246	34,438
2.2 Incremental Economic Impact on Nova Scotia of Sydney Casino Annual Operations Expenditures of \$11.5 Million 2004.	5,675	5,008	10,683
Total Household Income	26,319	21,238	47,557

Source: I-O analysis conducted by the Economics and Statistics Division Nova Scotia Department of Finance, May 2008

The term "incremental" was not used by NS Department of Finance. Data is only presented in 2005 dollars (2005\$) for Halifax Casino renovations. The annual casino operations data is presented in 2004 dollars (2004\$).

13.4.3 Indirect Employment Related to Gambling Industry

Indirect (spinoff) employment related to casino operations from the I-O analysis are shown in the previous Table 111. Spinoff employment estimated for the renovation of the Halifax casino in 2005 was 27 PYs (person years) while spinoff employment from the operations of the Halifax casino in 2004 was 460 PYs compared to 144 PYS for the Sydney casino. The indirect job multiplier (the ratio of spinoff employment to direct employment) for the operations of the Halifax casino is 0.82 and 0.84 for the Sydney casino.

The terms "indirect", "induced", and "spinoff" are different concepts and cannot be used interchangeably. Table 111 is an incorrect table citation. The figure "0.82" is incorrect.

13.4.4 Changes in Unemployment and Underemployment

Please refer to all-games section. There was not sufficient data to estimate the contribution of casinos to changes in unemployment and underemployment.

13.4.5 Productivity Losses and Absenteeism

Please refer to all-games section. There was not sufficient data to estimate the contribution of casino gambling to productivity losses and absenteeism.

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13.5 Health and Well-being Impacts

13.5.1 Introduction

This section examines the potential impacts on physical, mental and social health and well-being²³⁹ impact of casino gambling on individual gamblers, their families and society. Health and Well-being impact indicators adopted for the Nova Scotia SEIG framework.

Unfortunately, due to the limitations of data most of the health and well-being impact attributed to casino gambling or any other game-of-chance in Nova Scotia could not be analyzed, with the exception of data on problem gambling prevalence rates from existing adult gambling prevalence studies. Such detailed or forensic game-specific impact analysis was beyond the scope of this project.

The following health and well-being impacts attributable to casino gambling could not be analyzed due to data limitations:

- Gains from gambling as a leisure activity.
- Health problems, disease rates and morbidity.
- Premature mortality rates (other than suicide).
- Stress, anxiety and depression.
- Suicide (thoughts, attempts, actual).
- Social isolation.
- Loss of quality time with family, friends and community.
- Substance abuse related to gambling.
- Psychological impacts on family and friends of gamblers.
- Family break-up (separation, divorce, impact on children).
- Domestic violence.

While the adult gambling prevalence studies contain useful information on impacts related to health and well-being, they are not specific enough to the health indicators in the SEIG framework. While resample the problem gambler cohort and their families from the 2007 adult gambling prevalence study in the 2008 telephone survey did provide some additional anecdotal information, the information was qualitative in nature ((see responses to the open-ended 2008 telephone survey question of problem gamblers and family members related to their feelings about the impacts of gambling on themselves, their family and society in Appendix 3.2). Moreover, because of a relatively small sample size of problem gamblers, it is still not

²³⁹ This definition of health comes from the World Health Organization framework which replaces earlier definitions of health as “the absence of disease.” (World Health Organization. (1947-2004). *WHO Definition of Health*).

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feasible nor is it statistically defensible to attribute health problems to a specific gambling activity.

This suggests the need for a new primary research agenda that would probe more deeply the health, well-being and social impacts of specific games-of-chance particularly those, like VLT, ticket lotteries, and slot machines at casinos which are known currently to the most deleterious in terms of problem gambling impacts experienced by adult gamblers.

13.5.2 Problem Gambling Prevalence Rates

According to the 2007 Adult Gambling Prevalence Study results an estimated 17.2% of Nova Scotia adults (19 years and older) gambled at a casino (either slot machines or table games, including poker) in the last year prior to the survey period. Compared to the 2002 rate (23.3% of adults), the rate was statistically lower in 2007. In both 2002 and 2007, 45.6% of Nova Scotia adults were estimated to have gambled at a casino at some point. In terms of problem gamblers, an estimated 0.90% of Nova Scotia adults (19 years and older) were moderate risk or problem casino gamblers in both 2002 and 2007; that is, an estimated 6,291 adults in 2002 and 7,112 adults in 2007 had a gambling problem with casino gambling (see Table 112).²⁴⁰ Therefore, a relative small population of problem casino gamblers contribute a disproportionately large share of net gambling expenditures at casinos. The estimated number of casino problem gamblers is the fourth largest in terms of number of adults after ALC lottery ticket players, VLT players and charitable lottery players.

It is unclear how this conclusion has been drawn and what data has been used to draw it. Some data are incorrectly represented and are not reflected in the NS Prevalence studies. There are methodological concerns related to the fact that individuals can be involved in more than one activity.

²⁴⁰ As previously noted, the 2007 Adult Gambling Prevalence study found that problems with gambling may be associated with more than one game so that a VLT player with a gambling problem may also be a person who has problems with casino games or with daily lotteries. Therefore, caution should be used when interpreting the estimated problem gambler population figures since there could be overlap or duplication across other games.

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Table 111
Estimated Nova Scotia Casino Gamblers by Gambler Type (CPGI),
2002 and 2007

Survey Year	Gambler Subtype				Total Adults
	Non-Casino Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers	
	2003 (n=2148)	2003 (n=561)	2003 (n=67)	2003 (n=24)	2003 (n=2800)
	2007 (n=2082)	2007 (n=356)	2007 (n=39)	2007 (n=23)	2007 (n=2500)
Percentage of Sample					
2002	76.70%	20.00%	2.40%	0.90%	23.30%
2007	83.30%	14.20%	1.60%	0.90%	16.7% ↓
Nova Scotia Population Estimates (adults ≥ 19 years)					
2002	563,083	147,062	17,564	6,291	734,000
2007	643,754	110,075	12,059	7,112	773,000

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc.

Notes: Arrows indicate the direction of significant change over time ($p < .05$). Population estimates were derived from prevalence rates calculated to two decimal points. The 2003 adult gambling prevalence study reflects gambling activity that occurred in the year 2002.

Compared with other games-of-chance, a casino gambler is less likely to become a problem gambler than a VLT player or ALC ticket lottery player, according to the prevalence of moderate risk and problem gambling by game from the 2003 and 2007 adult gambling prevalence studies.

Some data are incorrectly represented and are not reflected in the NS Prevalence studies. There are methodological concerns related to the fact that individuals can be involved in more than one activity. The sentence “Compared with other games-of-chance...” incorrectly references the 2007 NS Prevalence Study data.

13.6. Crime, Legal and Justice Impacts

Crime, legal and justice impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Reduced illegal gambling rates (as a positive benefit of the availability of legalized gambling).
- Crime rates related to gambling (e.g. money-related crimes including theft, other property crimes, fraud, embezzlement).
- Policing and incarceration costs
- Security costs
- Social cost of gambling-related crime

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Given data limitations, there was insufficient data to estimate impact values at a game level for casino gambling. For example, while the review of Halifax Regional Police records did reveal some potential attribution of criminal activity to specific games-of-chance, they are of limited use in an objective statistical analysis. Nevertheless, they do provide some insights into the potential relative impacts of certain types of gambling and point to the need for more indepth analysis of police records and qualitative research into impacts on gamblers, their families and the community, at large, of crime, legal and justice impacts associated with gambling in Nova Scotia.

13.7. Community and Culture Impacts

13.7.1 Introduction

This section examines the potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations that benefit from gambling revenue transfers from the provincial government, and the public attitude, beliefs, and values toward gambling by citizens.

Community and culture impact Indicators examined for Nova Scotia SEIG framework include:

1. Local charities and non-profit sector dependence on gambling revenues
2. Feelings of loss or gains community quality of life and social cohesion.
3. Sense of safety from gambling venues.

Because of the limitations of data from sources such as the adult gambling prevalence study and other potential data sources, no meaningful assessment of the community and cultural impacts from casino gambling could be analyzed.

13.7.2 Impacts on Local Charities, Non-Profit Organizations and other Public Sector Agencies

Casinos currently do not contribute directly to charitable revenues in Nova Scotia.

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13.7.3 Citizen Attitudes Towards Gambling and Gambling Venues

In a 2005 public opinion poll of Nova Scotia citizens, 52% of respondents either approved or strongly approved of slot machines in casinos compared with a 58% approval ratings for table games.²⁴¹

13.7.4 Feelings of Safety Due to Gambling Venues

Please refer to all-games section. There was not sufficient data to evaluate citizen feelings of safety due to casino venues.

²⁴¹ Omnifacts Bristol Research. 2005. Public Attitudes on Gaming in Nova Scotia. February 25, 2005. ISBN # 7073-1006.

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14. Impacts of Harness Racing in Nova Scotia

14.1 Introduction and Description of Harness Racing

Harness racing in Nova Scotia falls under separate gambling legislation (Maritime Provinces Harness Racing Commission Act 1993). Nova Scotia Harness Racing Incorporated (NSHRI) was designated as a crown corporation on April 7, 1999 to manage and administer the Nova Scotia Harness Racing Fund (a fund intended to stimulate and support harness racing in the province). NSHRI is a wholly owned subsidiary of the Nova Scotia Gaming Corporation established “to preserve the horse breeding and harness racing industries, and to encourage betting on horse races.”²⁴² Harness racing is subsidized by the Nova Scotia Gaming Commission (NSGC) at an amount of \$1 million and does not contribute to provincial gambling revenues; however, harness racing does contribute to provincial taxes.

The reference should be the “Nova Scotia Utility and Review Board,” not NSHRI or NSGC.

The Nova Scotia Harness Racing Industry operates from three (3) tracks in Nova Scotia - The Truro Raceway, The Inverness Raceway and the newly re- established Northside Downs Raceway.²⁴³

The Truro Raceway is one of the oldest horse racing facilities in the country opening in 1865. The facility is owned and operated by the Nova Scotia Provincial Exhibition Commission. The Truro Raceway operates year round (January through December) offering both live and simulcast races during the year. **The Truro Raceway operates year round (January through December) offering both live and simulcast races during the year.** The facility has over 220 horse stables at the site of this ½ mile horse racing track. During the 2007 racing season close to 50 live and in excess of 200 simulcast race cards were presented, both live and simulcast races are presented at the Truro Raceway with simulcast races also being offered at two metro Halifax locations.

This paragraph is a direct quotation with the exception of the repeated sentence from the Canmac Study p.8 – unacknowledged.

²⁴² Nova Scotia Archives and Records Management. Government Administrative Histories Online <http://www.gov.ns.ca/nsarm/gaho/authority.asp?ID=82>. Retrieved January, 2008.

²⁴³ Canmac Economics Limited. 2008. Nova Scotia Harness Racing Industry Economic Impact Study. September 2008.

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The Inverness Raceway began live racing in 1926. The facility is owned by the diocese of Antigonish and is leased for 100 years by the operators, a non-profit organization where everything goes back to the Horsemen. The Inverness Raceway operates year round offering 30 live race cards during the 2007 season of live races from June through October and over 200 simulcast race cards offered on site and at remote simulcast locations throughout Cape Breton. Remote simulcast locations are also offered.

This paragraph is a direct quotation from the Canmac Study p.9 – unacknowledged.

Northside Downs, located on the Cape Breton Exhibition Grounds in North Sydney, first presented live harness racing on Dominion Day, July 1st, 1898. Over the years the track has experienced ups and downs, operating at intervals until 1957, the last races were held at Northside Downs on September 9th, 1989. In the summer of 2007, a live race program resumed at Northside Downs. The facility is owned and operated by the Cape Breton Federation of Agriculture. Northside Downs operates year round offering both live and simulcast races during the year. During the 2007 racing season 29 live and in excess of 200 simulcast race cards were presented, both live and simulcast races are presented at Northside Downs with simulcast races being presented in Sydney and New Waterford. Remote simulcast races are also presented.

This paragraph is a direct quotation from the Canmac Study p.10 – unacknowledged.

Analysis of the trends in harness racing revealed that total wagering on harness racing in Nova Scotia in 2007-08 was \$9.8 million or 18.2% lower than than in 2001 (\$12.0 million) (see Table 113). Prizes or payouts also declined 19.6% over the same timer period while net revenues (after prize payouts) fell by 16.0% compared to 2001. Relative to other forms of gambling in Nova Scotia, harness racing contributes a small proportion in therm of net revenues or net expenditures by Nova Scotians, 0.94% of net gambling expenditures in 2007.

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Table 112
Harness Racing Financial Statistics, 2001-2007

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Gross bet (total wagered)	12,041	12,200	9,939	13,333	11,571	10,061	9,847
Prizes/payouts est. (1)	7,551	7,615	6,008	8,548	7,211	6,244	6,075
Net Revenue est. (1)	4,491	4,586	3,932	4,785	4,360	3,818	3,773
Associations fees	2,985	3,000	2,443	3,213	2,776	2,429	2,375
Provincial taxes	1,409	1,488	1,409	1,467	1,492	1,309	1,320
Federal Government levy	96	97	79	106	92	80	78
Harness Racing Net Revenues as % of Net Revenues for All Nova Scotia Gambling.	1.07%	1.04%	0.92%	1.06%	0.99%	0.92%	0.94%

Sources: The Canadian Pari-Mutuel Agency (CPMA). Breed Report (H): Detailed Reports. 2001-2007. As referenced in the *Nova Scotia Harness Racing Industry Economic Impact Study* by Canmac Economics Ltd. 2008.. September 2008.

Notes: Official prize or payout statistics are not formally derived or published; payout statistics are estimated as the residual of gross bet less Association revenues, provincial taxes and the federal government levy of 0.8%. Association revenues are a percentage of the amount of the bet received by the race tracks and tele- theatres (simulcast) locations. Federal levy is 0.8% of total bet used to fund Canadian Pari- mutuel Agency.

Net Revenues for all Nova Scotia gambling includes net revenues from First Nations VLTs and harness racing.

Harness Racing Adult Gambler Participation Rates

According to the 2003 and 2007 adult gambling prevalence studies for Nova Scotia, participation in horse and harness racing in Nova Scotia has decreased since the 2003 prevalence study to about 11.1% of adult gamblers in 2007 (down from 12.9% in 2002).²⁴⁴ Because past-year participation is low at 1.3% of adult gamblers, there is insufficient data available to examine gambling behaviour for this form of gambling in greater detail.²⁴⁵

Footnote 244: The citation is incorrect.

²⁴⁴ Nova Scotia Health Promotion and Protection. 2008. *2007 Nova Scotia Adult Gambling Prevalence Study*, Study conducted by Focal Research, April 2008; p. 53

²⁴⁵ Ibid. 55

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14.2. Economic and Financial Impacts

14.2.1 Introduction

This section examines economic and financial impacts attributable specifically to horse and harness racing. Of the economic and financial indicators adopted for the Nova Scotia SEIG framework we were unable to estimate impacts for the following indicators:

Economic and Financial Indicator	Notes
Consumer surplus.	No consumer surplus estimates available for horse and harness racing.
Negative consumer surplus (excessive losses)	There was not sufficient data to estimate a negative consumer surplus value attributable to horse and harness racing.
Net business sector growth/investment.	There was not sufficient data to estimate impacts attributable to horse and harness racing.
Consumer capital gains due to gambling development.	There was not sufficient data to estimate impacts attributable to horse and harness racing.
Government defensive expenditures to mitigate gambling impacts	There was not sufficient data to estimate impacts attributable to horse and harness racing.
Direct regulatory costs related to gambling industry	There was not sufficient data to estimate impacts attributable to horse and harness racing.
Bad debts, bankruptcies and costs to recover bad debts.	There was not sufficient data to estimate impacts attributable to horse and harness racing.
Abused dollars.	There are no estimates of abused dollars for Canada or for Nova Scotia.

A 2008 input-output analysis and study into the economic impacts of harness racing in Nova Scotia provided some estimates of the total economic importance of the industry to the Nova Scotia economy in terms of industry output (Gross Domestic Product), household income and employment.²⁴⁶ The impact assessment measures the direct impact of the sector and the additional economic impact that results from multiplier effects as a result of respending in the economy.

The economic impact assessment was conducted using simulations with the Nova Scotia Input-Output (I-O) Model. Industry data was collected via industry surveys, personal interviews and telephone call backs. The data was then linked to the I-O Model accounting framework. The model then simulates three different economic indicators, total gross domestic product, household income and employment generated drawing on historical harness racing industry data and provincial I-O multipliers.²⁴⁷

²⁴⁶ Canmac Economics Ltd. 2008. *Nova Scotia Harness Racing Industry Economic Impact Study*. September 2008.

²⁴⁷ The Input- Output model used in this study takes direct data and computes the total economic impact, measured as the sum of the direct, indirect and induced effects. Canmac's approach assembles the client data into a consistent

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The major results of this analysis showed the following results:

- Direct GDP increased by \$7.649 million.
- Total GDP increased by \$16.555 million.
- Direct Household Income increased by \$5.274 million.
- Total Household Income increased by \$10.857 million.
- Direct Employment (FTE) increased by 181.3 person years.
- Total Employment (FTE) increased by 448.0 person years.

The number is inconsistent with Table 114 (\$16.555M).

Other than these primary economic impact indicators from the Canmac study, there is insufficient data on the impacts of horse and harness racing from either the 2003 and 2007 adult gambling prevalence studies to populate the other economic and financial impact indicators in the Nova Scotia SEIG framework. This is due primarily to small sample sizes for harness racing gamblers but also that these prevalence studies did not examine some of the impact variable in the SEIG framework, such as financial or debt problems associated with harness race betting.

In order to meet these existing data gaps, considerably new primary economic research will be required including new prevalence studies that could populate the SEIG framework of impact indicators.

accounting format and then conducts a simulation with Canmac's Nova Scotia Input- Output Model. Impact simulations trace out the indirect and induced effects.

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14.2.1 Gambling GDP Attributed to Harness Racing

The Canmac Economics Ltd. Study of the economic impacts of harness racing to Nova Scotia included estimates of the contribution of the industry to the Gross Domestic Product (GDP) of the province. According to the GDP estimates, harness racing contributes \$16.45 million to Nova Scotia's economy or the equivalent of 0.049% of Nova Scotia's \$33,296 million GDP in 2007 (Table 114).²⁴⁸ Compared to our previous estimate of a provincial gambling GDP of \$399.7 million (based on net gambling expenditures for all games) and a gambling industry GDP of \$54.0 million the estimated harness racing GDP figure of \$16.5 million (or 4.1% of the provincial gambling GDP estimate) would appear high given that harness racing wagers represented 0.7% of total provincial gambling wagers in 2007.

Gambling GDP estimates are problematic. Statistics Canada does not include harness/horse racing as part of the gambling industry. Comparisons should only be made on the basis of direct GDP.

Gambling activity is associated with racing track operations and simulcasts; therefore, the inclusion of impacts of racing breeder/owner is questionable.

Table 113
GDP (at factor cost) Impact Estimates for Nova Scotia Harness Racing

\$000's	Direct	Spinoff	Total
Racing Track Operations	\$1,994	\$2,217	\$4,211
Racing Track Simulcast	\$238	\$188	\$425
Racing Breeder/Owner	\$5,417	\$6,393	\$11,810
Total	\$7,649	\$8,798	\$16,448

Source: Canmac Economics Limited. 2008. *Nova Scotia Harness Racing Industry Economic Impact Study*. September 2008
Note: may not sum due to rounding

14.2.2 Personal Expenditures on Harness Racing

Net expenditures on harness racing per adult in Nova Scotia was in excess of \$5.10 in 2007 (see Table 115) and has declined 18.8% since 2001.

²⁴⁸ Nova Scotia's GDP in 2007, at current dollar value, was \$33,296 million from Statistics Canada CANSIM Table 384-002 - Gross Domestic Product (GDP) at basic prices, accessed November 26, 2008.

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Table 114
Harness Racing Net Expenditures per Adult
Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Net Harness Racing Expenditures (\$000)	4,491	4,586	3,932	4,785	4,360	3,818	3,773
Net Harness Racing Expenditure per Adult (19+), \$/adult	\$6.28	\$6.36	\$5.41	\$6.54	\$5.94	\$5.18	\$5.10

Sources: The Canadian Pari-Mutuel Agency (CPMA). Agriculture and Agri Food Canada. Statistics. Detailed Reports. 2001-2007. Nova Scotia population statistics are from Statistics Canada, CANSIM Table 051-0001, accessed October 23, 2008.

Because of a low participation rate and thus small sample size from both the 2003 and 2007 adult gambling prevalence studies, an estimation of the distribution of net expenditures by gambler type (CPGI) is not possible.

14.2.4 Government Gambling Revenues

While harness racing is subsidized by the Nova Scotia Gaming Commission (NSGC) at an amount of \$1 million, the harness racing does contribute to provincial tax revenues in the form of an amusement tax as per the Theatres and Amusements Regulations ([Section 6 \(1\) – \(4\)](#)).²⁴⁹ These tax revenues have ranged from \$1.32 million in 2007 to \$1.49 million in 2005 (Table 116). They are not formally counted as provincial government gambling revenues in the same manner as other gambling revenues which accrue to the Nova Scotia provincial government.

Incorrect citation: should read "Section 43(1)-(2)".

²⁴⁹ As per personal communication (via email) with Mr. Bill Trask, Manager, Business Planning and Analysis, Nova Scotia Gaming Corporation, November 21, 2008.

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Table 115
Harness Racing Provincial Amusement Tax Contributions,
2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Provincial Amusement Tax Paid by Harness Racing Industry (\$)	1,409,447	1,488,083	1,409,447	1,466,630	1,492,200	1,308,731	1,319,958

Sources: Data provided by Bill Trask, [Nova Scotia Gaming Corporation](#).

Citation should reference the source of the data not the name of a staff person who provided it.

In the I-O study of the economic impacts of harness racing in Nova Scotia by Canmac Economics Ltd., estimates were made of the contribution direct and spin-off employment impacts have on provincial government income tax revenues (Table 117). Provincial tax revenue is estimated to increase by \$1,584.6 thousand annually as a result of the economic impacts of harness racing.

The provincial tax revenue reference needs to be defined, as these figures are reflective of the I-O (Input-Output) study which uses modeling techniques different from government reported revenue data.

Provincial tax revenue should only include direct tax revenue, not total.

Table 116
Total Provincial Revenue Impact from Nova Scotia Harness Racing

	Direct	Spinoff	Total
Provincial Income Tax Revenue (000's \$)	\$333.8	\$353.4	\$687.2
Provincial HST Tax Revenue (000's \$)	\$230.5	\$244.0	\$474.4
Provincial Other Indirect Tax Revenue (000's \$)	\$170.5	\$180.6	\$351.1
Provincial Corporate Tax Revenue (000's \$)	\$4.0	\$67.8	\$71.8
Total (000's \$)	\$738.8	\$845.8	\$1,584.6

Source: Canmac Economics Limited. 2008. *Nova Scotia Harness Racing Industry Economic Impact Study*. September 2008

Note: may not sum due to rounding

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14.2.5 Producer Surplus (Industry Profit)

This is not consistent with Table 1, “The SEIG Analytical Framework” which uses “gambling industry profits” as terminology, not “producer surplus.”

For purposes of this study we use commercial revenue (payments to the gambling industry out of net revenues) as a proxy for producer surplus. Association revenues are generated from harness racing and paid out to the industry on an annual basis out of gross betting, calculated as a percentage of the amount of the bet received by the race tracks and tele- theatres (simulcast) locations. Historically, Association revenues from ranged from \$2.375 million in 2007 to \$3.213 million in 2004 (Table 118).

Commercial revenue is not necessarily a reasonable proxy for profit or for producer surplus.

**Table 117
Harness Racing Association Revenues from Harness Racing**

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Associations Revenues	2,985	3,000	2,443	3,213	2,776	2,429	2,375

The Canadian Pari-Mutuel Agency (CPMA). Breed Report (H): Detailed Reports. 2001-2007. As referenced in the Nova Scotia Harness Racing Industry Economic Impact Study by Canmac Economics Ltd. 2008.. September 2008.

14.3 Tourism and Recreation Impacts

Tourism and recreation impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Gambling patronage (out-of-province visitors)
- Incremental tourist expenditures on gambling venues
- Income and employment losses sustained by other entertainment and recreation tourism-related industries.

Given data limitations, there was not sufficient data to estimate tourism and recreation impact of horse and harness racing. Please refer to the all-games section for a discussion of tourism and recreation impacts.

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14.4. Employment Impacts

14.4.1 Introduction

This section examines employment impacts that are estimated to be attributable to horse and harness racing, drawing from a Canmac Economics Ltd. input-output analysis conducted in 2008. Similar to the I-O analysis for VLTs, ticket lotteries and casinos, the results provide an estimate both direct and spin-off employment estimates, estimates of household income associated with this employment, and government tax revenues associated with household income related to harness racing activities. Three different attributes of harness racing impacts are considered: a) racing track operations, b) racing track simulcast, and c) racing breeder/owner impact.

Please also refer to Part II of this report for a comprehensive treatment of employment impacts for all games according to the following indicators:

- Net job creation in the gambling industry
- Indirect employment related to the gambling industry
- Changes in unemployment and underemployment resulting directly from gambling industry development
- Productivity losses and absenteeism.

14.4.2 Net Job Creation in the Gambling Industry

There is no discussion of net job creation in this section.

There are no official employment statistics related to harness racing in Nova Scotia. Input-output (I-O) analysis can be used to estimate employment impacts. Canmac Economics Limited conducted an I-O analysis of the employment and economic impacts of harness racing on the Nova Scotia economy.

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Three aspects (racing track operations, racing track simulcasting, and racing breeder/owner impacts) of the harness racing industry were examined providing estimates of employment (PYs), household income and the contribution to provincial GDP from both direct and indirect spinoff employment benefits (see Tables 119 to 121).

The term "indirect spinoff" is incorrect.

Table 118
Racing Track Operations Impact

	Direct	Spinoff	Total
Employment (PYs)	57.9	63.5	121.4
Household Income (\$000s)	\$1,738.0	\$1,369.6	\$3,107.6

Source: Canmac Economics Limited. 2008. *Nova Scotia Harness Racing Industry Economic Impact Study*. September 2008
Note: Employment is full time equivalents.

Table 119
Racing Track Simulcast Impact

	Direct	Spinoff	Total
Employment (PYs)	12.1	4.0	16.1
Household Income (\$000s)	\$200.9	\$114.3	\$315.3

Source: Canmac Economics Limited. 2008. *Nova Scotia Harness Racing Industry Economic Impact Study*. September 2008
Note: Employment is full time equivalents.

Table 120
Racing Breeder/Owner Impact

	Direct	Spinoff	Total
Employment (PYs)	111.2	193.4	304.6
Household Income (\$000s)	\$3,334.6	\$4,004.7	\$7,339.4

Source: Canmac Economics Limited. 2008. *Nova Scotia Harness Racing Industry Economic Impact Study*. September 2008
Note: Employment is full time equivalents.

The combined impact of all three racing track aspects suggests that harness racing contributes annually:

- Direct household income increased by \$5.274 million.
- Spinoff household income increased by \$5.449 million
- Total Household Income increased by \$10.857 million.
- Direct Employment (FTE) increased by 181.3 person years.
- Spinoff Employment (FTE) increased by 260.9 person years.
- Total Employment (FTE) increased by 448.0 person years.

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14.4.3 Indirect Employment Related to Gambling Industry

Indirect and spinoff employment are not the same concept.

Indirect (spinoff) employment related to harness racing are discussed in the previous *Net Job Creation* section.

14.4.4 Changes in Unemployment and Underemployment

Please refer to all-games section. There was not sufficient data to estimate the contribution of harness racing to changes in unemployment and underemployment.

14.4.5 Productivity Losses and Absenteeism

Please refer to all-games section. There was not sufficient data to estimate the contribution of harness racing to productivity losses and absenteeism.

14.5 Health and Well-being Impacts

This section examines the potential impacts on physical, mental and social health and well-being²⁵⁰ impact of horse and harness racing on individual gamblers, their families and society. Health and Well-being impact indicators adopted for the Nova Scotia SEIG framework include:

- Problem gambling prevalence rates.
- Gains from gambling as a leisure activity.
- Health problems, disease rates and morbidity.
- Premature mortality rates (other than suicide).
- Stress, anxiety and depression.
- Suicide (thoughts, attempts, actual).
- Social isolation.
- Loss of quality time with family, friends and community.
- Substance abuse related to gambling.
- Psychological impacts on family and friends of gamblers.
- Family break-up (separation, divorce, impact on children).
- Domestic violence.

²⁵⁰ This definition of health comes from the World Health Organization framework which replaces earlier definitions of health as “the absence of disease.” (World Health Organization. (1947-2004). *WHO Definition of Health*).

Cautionary notes:

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There was insufficient information, given small sample sizes from the 2003 and 2007 prevalence study and other data limitations, to provide any insights into the health and well-being impacts of harness racing in Nova Scotia.

14.6. Crime, Legal and Justice Impacts

Crime, legal and justice impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Reduced illegal gambling rates (as a positive benefit of the availability of legalized gambling).
- Crime rates related to gambling (e.g. money-related crimes including theft, other property crimes, fraud, embezzlement).
- Policing and incarceration costs
- Security costs
- Social cost of gambling-related crime

Given data limitations, there was not sufficient data to estimate impact values at a game level for horse and harness racing. Please refer to all-games section for a discussion of crime, legal and justice impacts associated with gambling in Nova Scotia.

14.7. Community and Culture Impacts

This section examines the potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations that benefit from gambling revenue transfers from the provincial government, and the public attitude, beliefs, and values toward gambling by citizens.

Community and culture impact Indicators examined for Nova Scotia SEIG framework include:

1. Local charities and non-profit sector dependence on gambling revenues
2. Feelings of loss or gains community quality of life and social cohesion.
3. Sense of safety from gambling venues.

Given small sample sizes and low participation rates in horse and harness racing in Nova Scotia from previous adult gambling prevalence studies, there was not sufficient data to estimate impact values at a game level for this form of gambling. Please refer to all-games section for a discussion of crime, legal and justice impacts associated with gambling in Nova Scotia.

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15. Impacts of ALC Lottery Products in Nova Scotia

15.1 Introduction and Description ALC Lottery Products

Inter-provincial tickets and lotteries in Nova Scotia are managed and administered by the Atlantic Lotteries Corporation (ALC) under the Nova Scotia Gaming Corporation (NSGC). The ALC was established in 1976 by the four Atlantic Provinces to operate ticket lotteries in each province.

There are currently 1,252 retail lottery outlets²⁵¹ in all of Nova Scotia including Lottery Centre kiosks in malls, convenience stores/corner stores, grocery stores, drug stores, gas stations, and, in the case of breakopen tickets, liquor-licensed establishments (e.g. bars).²⁵² In 2007 there were 77 fewer retail lottery outlets in Nova Scotia compared to 2002 (Table 122). ALC lottery products include on-line ticket draw games (e.g. Lotto 6/49 and Lotto Super 7), provincial tickets such as TAG, Atlantic 49 and Atlantic Payday. There are two daily draws, Keno Atlantic (introduced in 2001) and Bucko (introduced in 2006). Instant lottery tickets included Scratch'n Wins or "extended play" tickets, and a core product line of tickets including Lotto Bingo, Crossword, Set for Life and other seasonal and special-themed offerings. By 1996, the extended-play instant ticket line included a wide variety of games, including Crossword, Monopoly, Auto Plus, Trucks & Bucks and others designed to provide greater value and entertainment to consumers. Sport Select sports lottery includes Pro-Line, Over/Under, and Game Day. Similar to promotional offers for lottery ticket games, ALC offers sports lottery gambler chances to win merchandise and other prizes based on the amounts wagered on Sport Select games.²⁵³ In August 2004, ALC introduced PlaySphere, an online ticket purchasing service. People can buy draw tickets and sports games from ALC over the internet. PlaySphere also offers several interactive games including iBingo, Pick'n Click and Hold'em Poker.²⁵⁴

Footnote 253: Citation is incorrect.

²⁵¹ Nova Scotia Gaming Corporation (December 2007). Fact Sheet on Gambling. Retrieved at: <http://www.nsgc.ca/files/factsongambling/Gambling%20in%20NS.December%202007.pdf> NSGC

²⁵² Atlantic Lottery Corporation. Regional Economic Benefits. Retrieved on December 17, 2007 at <http://www.alc.ca/English/AboutALC/GivingBack>

²⁵³ Nova Scotia Health Promotion and Protection. 2008. 2007 Adult Gambling Prevalence Study. p. 18.

²⁵⁴ PlaySphere sales in 2006-07 were \$1.8 million (Atlantic Lottery Corporation. Raising our game. 2006-07 ALC Financial Update. Retrieved at <http://www.alc.ca/English/AboutALC/AnnualReport/Images/ALCAnnualReport2006-07.pdf>).

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Table 121
ALC Lottery Product Statistics, 2001-2007

	2001	2002	2003	2004	2005	2006	2007
ALC Retail Lottery Outlets	n.a.	1,329	1,324	1,321	1,306	1,236	1,252
ALC Lottery Product net revenues per lottery ticket outlet	n.a.	\$73,959	\$69,215	\$68,514	\$71,266	\$76,354	\$71,680

Note: n.a. means information was not available.

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008.

Incorrect source: Figures are derived from (not sourced from) AGD figures for net revenue from ALC Lotteries.

In 2007, the amount wagered on ALC lottery products in Nova Scotia was \$203.3 million or about 11.9% of all gambling wagers in the province (Table 123).²⁵⁵ Trend analysis of total wagered (annual sales) on ALC lottery products shows regular fluctuations between 2001 and 2007. In 2007 total wagering on ALC lottery products had declined \$11.8 million since 2006 but was nearly on par with 2001 levels (\$204.4 million). Profitability, measured in terms of net revenues as a percentage of total wagered, has remained relatively constant between 2001-02 and 2007 about about 44%. Net gambling revenues from ALC lotteries contributed 25.5% to net gambling revenue in Nova Scotia in 2007 ranked second behind VLT net gambling revenues (40.0% of net gambling revenues for Nova Scotia). ALC lottery products contributed \$40.4 million to net provincial gambling revenues (23.9% of total government gambling revenues) in 2007-08, the second highest contribution to government gambling revenues after VLTs. In 2007 provincial government ALC lottery revenues were 12.2% lower (- \$5.6 million) compared with 2001.

²⁵⁵ Based on inclusion of First Nations VLT wagers. The ratio is 13.9% of all gambling wagers, excluding First Nations VLTs.

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Table 122
ALC Lotteries Gambling Financial Statistics, 2001-2007

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Total Wagered	204,421	212,259	206,281	200,471	210,677	215,124	203,334
Prizes	106,637	113,968	114,641	109,964	117,603	120,750	113,590
Net Revenue	97,784	98,291	91,640	90,507	93,074	94,374	89,744
Operating Expenses	33,672	34,533	34,732	37,141	36,308	32,178	35,750
Commercial Revenue	18,022	18,718	18,484	17,292	17,112	14,507	13,531
Charitable Revenue	44	39	35	50	53	46	45
Provincial Net Revenue	46,046	45,001	38,389	36,024	39,601	47,643	40,418
ALC Lottery Net Revenues as % of Net Gambling Revenues for Nova Scotia	23.4%	22.3%	21.5%	20.0%	21.1%	22.7%	22.5%
ALC Lottery Provincial Net Revenues % of Nova Scotia Government Gambling Revenues	25.0%	22.9%	21.1%	18.4%	21.3%	27.0%	23.9%

Note: Net gambling revenues for Nova Scotia includes First Nations VLT net revenues and harness racing net revenues.

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000/01-2007/08.

Trend analysis of operating expenses for ALC ticket lottery products of \$13.5 million in 2007-08, a 6.2% increase over 2001-02 levels. Commercial revenues from the sale of ALC ticket lottery products were \$35.7 million in 2007-08 or 24.9 % lower than in 2001-02. And charitable revenues from ALC ticket lottery product sales were \$45,000 or 2.3% higher than in 2001-02.

The operating expenses and the commercial revenue do not match numbers in Table 123.

In 2007 ALC lottery tickets were by far the most popular game of chance in Nova Scotia and were associated with the majority (77.6%) of gambling over the past year. Lottery tickets accounted for most of the regular involvement in gambling; 44.8% of adults purchased at least one ALC lottery-type ticket regularly each month, a rate 5 times higher than any other form or gambling. Most popular of these were the weekly lottery draws where regular play were at least twice as high compared to any other gambling activity available in Nova Scotia, with the highest rates of trial (78.8% of gamblers), yearly participation rates (69.9%) and regular play (39.4%).²⁵⁶

*Terminology does not match the terminology used in the 2007 NS Prevalence Study which could lead to misinterpretation of the data.
Footnote 256: Citation is incorrect.*

²⁵⁶ Nova Scotia Health and Promotion. 2008. 2007 Adult Gambling Prevalence Study. p. 53

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15.2. Economic and Financial Impacts

15.2.1 Introduction

This section examines economic and financial impacts attributable specifically to ALC lottery product sales. Of the economic and financial indicators adopted for the Nova Scotia SEIG framework we were unable to estimate impacts for the following indicators:

Economic and Financial Indicator	Notes
Gambling GDP.	While input-output analysis for ALC lottery ticket sales was conducted the GDP estimates were not used for methodological reasons.
Consumer surplus.	No consumer surplus estimates available for ticket lotteries.
Negative consumer surplus (excessive losses)	There was not sufficient data to estimate a negative consumer surplus value attributable to this game.
Net business sector growth/investment.	There was not sufficient data to estimate a net business sector growth value attributable at a game level for lottery ticket sales.
Consumer capital gains due to gambling development.	There was not sufficient data to estimate a consumer capital gains due to lottery ticket sales.
Government defensive expenditures to mitigate gambling impacts	There was not sufficient data to estimate a government defensive expenditures value attributable at a game level for lottery ticket sales.
Direct regulatory costs related to gambling industry	There was not sufficient data to estimate direct regulatory costs attributable at a game level for lottery ticket sales.
Bad debts, bankruptcies and costs to recover bad debts.	There was not sufficient data to estimate the contribution of lottery ticket sales associated with bankruptcies, financial difficulties, and bad debts.
Abused dollars.	There are no estimates of abused dollars for Canada or for Nova Scotia.

Unfortunately, most of these indicators cannot currently be populated with raw data given the absence of game-specific data, with a few exceptions including I-O modeling estimates for ALC lottery products which derived estimates of employment, household income, and provincial revenues, under three different scenarios. Please refer to Part II of this study for a discussion of these impacts across all games.

Much of the primary data used in this section to evaluate impacts specific to ALC lottery ticket gambling were drawn from the 2003 and 2007 adult gambling prevalence studies; this is currently the only source for select game-specific impact information for Nova Scotia. Unfortunately, while these prevalence studies are relatively robust in identifying relative problem gambling rates by game, age, gender and socio-economic profiles, they were not sufficiently robust to derive empirically defensible estimates of the majority of the financial and economic impacts according to the SEIG indicator framework.

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In order to meet these existing data gaps, considerably new primary economic research will be required. This is not unique to Nova Scotia. A similar socio-economic study in Alberta by researchers is finding a similar condition where new research will be required in a field that is still in its infancy of economic impact analysis.

Input-Output (I-O) Analysis

An input-output analysis was conducted for ALC lottery ticket sales and VLTs, under three different analytic scenarios (see Appendix 2 for a detailed description), that estimated employment, household income and provincial revenue estimates for a single year. Attempts to estimate a GDP for ALC lottery ticket and VLT gambling were ultimately rejected by the Nova Scotia Department of Finance, in the absence of a suitably robust output-GDP multiplier associated with ALC lottery ticket and VLTs operating expenses (as was done with GDP estimates for casinos). We rejected the GDP calculations for the ALC lottery ticket and VLTs because of the method that the model calculates the GDP by extracting the GDP from every industry that has an expense in the vector but the GDP for the household industry is zero. As well, critical assumptions were made regarding the most appropriate use of dividends and employment under the three analytic scenarios. The result was that we were unable to derive a good measure of GDP for either ALC lottery tickets or VLTs. This I-O analysis represents an exercise in new research, requiring further inquiry in future.

This is an unsourced quotation from a NS Department of Finance e-mail.

15.2.1 Gambling GDP attributed to ALC Lottery Products

Incorrect heading notation.

As noted, preliminary estimates of GDP for ALC ticket products gambling were ultimately rejected because of methodological challenges. In the absence of I-O modeling results, it would be difficult to estimate what percentage of the gambling GDP estimates from 4.2 *Gambling GDP* section of this study without some heroic assumptions. For example, the relative amount of total wagered or net revenues from ticke lotteries gambling, relative to total wagered and net revenues for all games, might be applied to the gambling GDP estimates. However, this is not a methodologically defensible approach as conducting a more rigorous input-output model might yield.

15.2.2 Personal Expenditures on ALC Lottery Products

Net expenditures (net of prize payouts) on ALC lottery products declined 8.2% since 2001 from \$97.8 million in 2001 to \$89.7 million in 2007 (Table 124). ALC lottery product expenditures per adult (19 years and older) ranged from \$121 per adult (2007) to \$137 per adult (2001). ALC

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lottery net gambling expenditures represented the second most significant of all gambling activity in Nova Scotia, after VLT gambling.

Table 123
ALC Ticket Lotteries Net Expenditures Statistics, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Net ALC Lotteries Expenditure (\$ thousands)	97,784	98,291	91,640	90,507	93,074	94,374	89,744
Net ALC Lottery Expenditures \$ per adult (19+)	137	136	126	124	127	128	121

Note: Net gambling revenues for Nova Scotia includes First Nations VLT net revenues.

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08.

Net Gambling Expenditure by Risk of Gambling Problems

Based on 2003 and 2007 Adult Gambling Prevalence Study data and self-reporting by respondents of ALC lottery gambling expenditures, it is possible to estimate the average net gambling expenditures by gambler subtype and predict the provincial government net revenues by CPGI gambler subtype. Table 125 shows, for example, that in 2007 the moderate risk and problem gambler cohort (n=17,934) expended \$1,168 per gambler. These figures are then used to predict net gambling expenditure by gambler subtype. For example, in 2007-08 predicted net expenditures on ALC lotteries by moderate and problem gamblers was \$20.9 million. Based on these figures, moderate risk and problem gamblers were estimated to have contributed 14.0% to provincial net gambling revenues from ALC lotteries in 2002 and 11.0% in 2007-08. While considerably more Nova Scotia adults purchase ALC lottery products compared to other games-of-chance (n=600,776 in 2007; 77.7% of Nova Scotia adults), the gap in gambling expenditures between the moderate risk and problem gambler and non-problem gamblers playing ALC lottery is less than for other games-of-chance. For example, the ratio of moderate risk and problem gambler's estimated expenditures in 2007 were 4.4 times greater than a non-problem ALC lottery gambler (n=555,323) and 1.7 times more than a low-risk gambler (n=12,059). Compared to 2002-03, the average net expenditures by a moderate risk and problem gambler in 2007-08 was roughly 23.0% lower per gambler.

Statistically, "n" is used to denote "sample size"; here "n" is incorrectly used to denote "population estimate." Estimates of expenditures based on the NS Prevalence Studies are not statistically sound. Some individuals participate in more than one gambling activity which influences risk.

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Table 124
Net Gambling ALC Lottery Expenditures by Gambler Subtype Predicted by 2002-03 and 2007-08 Adult Gambling Prevalence Studies and Estimated based on Net Revenues from ALC Lottery Gambling

Survey Year	Gambler Subtype				
	Non-ALC Lottery Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers	Total Adults
	2002 (n=584) 2007 (n=557)	2002 (n=2031) 2007 (n=1796)	2002 (n=131) 2007 (n=89)	2002 (n=54) 2007 (n=58)	20032 (n=2800) 2007 (n=2500)
Nova Scotia Adult ALC Ticket Lottery Gambler Population estimates (19 years +)					
2002	153,091	532,412	34,341	14,156	734,000
2007	172,224	555,323	27,519	17,934	773,000
Average Net Gambling Expenditure per Gambler² (ALC Ticket Lotteries), based on prevalence studies					
2002-03	0%	\$207.69	\$476.54	\$1,517.11	\$255.49
2007-08	0%	\$266.19	\$696.19	\$1,167.98	\$312.81
Provincial Net ALC Lotteries Revenue Estimated from Sample					
2002-03	\$0	\$110,576,648	\$16,364,860	\$21,476,209	\$148,417,717
2007-08	\$0	\$147,821,429	\$19,158,453	\$20,946,553	\$187,926,435
Provincial Net ALC Lotteries Gambling Revenue (Actual)					
2002-03	\$0	\$73,230,404	\$10,837,779	\$14,222,817	\$98,291,000
2007-08	\$0	\$70,591,912	\$9,149,092	\$10,002,996	\$89,744,000
Distribution of Gambling Expenditures by Gambler					
2002-03	0%	75.0%	11.0%	14.0%	100%
2007-08	0%	79.0%	10.0%	11.0%	100%

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated distribution of net gambling expenditures by CPGI are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc.. Provincial net gambling revenue statistics are for fiscal year 2002-03 and 2007-08 from Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2002-03 and 2007-08.
 Notes: Adult gambler population estimates were derived from prevalence rates calculated to two decimal points. Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or losses).

*Estimates of expenditures based on the NS Prevalence Studies are not statistically sound. Some individuals participate in more than one gambling activity which influences risk.
 No source for population figures.
 "Table note 2" is missing.*

To check the validity of our findings we check the predicted net revenues from ALC lotteries with the actual net revenues as reported by the Nova Scotia government. Comparing these figures from Table 125 shows that gamblers involved in the prevalence studies over estimated their expenditures when compared with actual reported net gambling revenues or net expenditures (wagered less prizes). For example, the predicted net gambling revenues from the 2007 prevalence sample was \$187.9 million compared with the 2007-08 actual net gambling revenues from ALC lotteries (\$89.7 million). This suggests that gamblers over reported their expenditures by more than twice as much as the actual net expenditures on ALC lottery

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products in 2007. This also means that the estimated net expenditures per gambler type would also be over-estimated.

Estimates of gambling expenditures by sub-type are not methodologically sound.

The analysis does yield important estimates of the distribution of gambling expenditures by gambler type showing that in 2003 moderate risk and problem gamblers (n=14,156) contributed an estimated 14.0% to net gambling revenues from ALC lottery products. In 2007, an estimated 17,934 moderate risk and problem gamblers contributed an estimated 11.0% of net gambling revenues from ALC lotteries, or \$10.0 of a total of \$89.7 million in net ALC lottery gambling revenues in 2007.

Statistically, “n” is used to denote “sample size”; here “n” is incorrectly used to denote “population estimate.” Estimates of expenditures based on the NS Prevalence Studies are not statistically sound.

15.2.3 Household Expenditures on ALC Ticket Lotteries

The average ALC net expenditure per Nova Scotia household rose from \$511 per household in 2001 to a peak of \$664 per household in 2004 and has since declined to \$523 per household in 2007 (see Table 126). By contrast, the Statistics Canada Survey of Household Spending, estimates of the combined spending on casinos, slot machines and VLTs are considerably lower than the imputed per household VLT expenditures from actual VLT net revenue (or net VLT expenditures) statistics.

Incorrect reference to VLT expenditures in ALC Ticket Lottery section.

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Table 125
Average Household Net Expenditure on ALC Lotteries
2001 to 2007

	2001	2002	2003	2004	2005	2006	2007
Net expenditures on ALC Lotteries (\$000)	\$97,784	\$98,291	\$91,640	\$90,507	\$93,074	\$94,374	\$89,744
Number of Nova Scotia Households	360,020	360,838	361,612	362,184	361,464	360,798	360,798
Average Nova Scotia Household Net Expenditures on ALC Lotteries (\$/household)	271.61	270.49	249.87	244.54	249.21	250.43	238.38

Sources: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007/08. Household statistics for Nova Scotia are from Statistics Canada. Statistics Canada household expenditure data [CANSIM Table 62F0032](#). Statistics Canada data does not break out VLT expenditures from casinos and slots.

*CANSIM Table 62F0032 does not exist.
 There is an incorrect reference to VLT expenditures in table note.
 The number of households does not match previous household estimates in other tables.*

15.2.4 Government Gambling Revenues

Net revenues (net expenditures) from ALC lottery ticket sales gambling revenues to the Nova Scotia government have fluctuated between a low of \$38.4 million in 2003 to a high of \$47.6 million in 2006. In 2007, net provincial government revenues from ALC lottery ticket sales were 12.2% lower than in 2001 (see Table 127). ALC lottery ticket sales contributed 23.9% to provincial gambling revenues in 2007, marginally less than in 2001 when they represented 25.0% of net provincial gambling revenues. Lottery ticket sales represented 0.45% of total Nova Scotia government revenues in 2007.

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Table 126

Net Revenues to Nova Scotia Government from ALC Lottery Ticket Gambling Revenues

	2001	2002	2003	2004	2005	2006	2007
Net revenues from ALC Lottery Ticket Sales to Nova Scotia Government (\$000)	\$46,046	\$45,001	\$38,389	\$36,024	\$39,601	\$47,643	\$40,418
ALC Lottery Ticket Net Provincial Government Revenues as % of Total Net Provincial Gambling Revenues	25.0%	22.9%	21.1%	18.4%	21.3%	27.0%	23.9%
% of Total Nova Scotia Government Revenues	0.82%	0.79%	0.63%	0.51%	0.53%	0.60%	0.45%

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007/08. Nova Scotia Government Annual Reports 2000 to 2007/08. Nova Scotia Government revenue statistics are from Province of Nova Scotia. Public Accounts Vol. 1. Financial Statements. Reports for fiscal year ending March 31 2001 - fiscal year ending March 31 2008.

15.2.5 Producer Surplus (Industry Profit)

This is not consistent with Table 1, “The SEIG Analytical Framework” which uses “gambling industry profits” as terminology, not “producer surplus.”

A key benefit of gambling is the producer surplus or gambling industry profit that is earned by the gambling industry, and additional profit earned by other associated industries that benefit directly or indirectly from the existence of the gambling industry. In economic theory, producer surplus is the difference between what producers actually receive when selling a product and the amount they are willing to accept for a unit of the good. How should industry profit or producer surplus be measured?

For purposes of this study we use commercial revenue (payments to the gambling industry out of net revenues) as a proxy for producer surplus. Commercial revenues from ALC lotteries and ticket sales has been decreasing over the years from \$18.0 million in 2001 to \$13.5 million in 2007 (Table 128). As a percentage of total commercial revenues from all gambling, ALC lottery product sales contributed 15.9% of all gambling industry revenues in 2007, down from 36.9% in 2001.

Commercial revenue is not a reasonable proxy for profit or for producer surplus.

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Table 127
Commercial Revenues to Nova Scotia Gambling Industry from ALC Lotteries

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Commercial Revenues From ALC Lotteries	18,022	18,718	18,484	17,292	17,112	14,507	13,531
% of Total Commercial Revenues From All Gambling	36.9%	35.4%	35.1%	32.5%	20.0%	15.9%	15.9%

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007/08. Nova Scotia Government Annual Reports 2000/01 to 2007/08.

It is unclear if Table 128 includes harness racing and First Nations gambling.

15.3 Tourism and Recreation Impacts

Tourism and recreation impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Gambling patronage (out-of-province visitors)
- Incremental tourist expenditures on gambling venues
- Income and employment losses sustained by other entertainment and recreation tourism-related industries.

As noted, tourism statistics related specifically to ALC lottery and ticket sales activity were not available and therefore estimating impact values at a game level. Please refer to the all-games section for a discussion of tourism and recreation impacts.

15.4. Employment Impacts

15.4.1 Introduction

This section examines employment impacts that are estimated to be attributable to ALC lottery and ticket sales by various Nova Scotia vendors. I-O analysis was conducted on both VLT and ALC lotteries to estimate employment (direct and spinoff person years), household income and government revenues from personal income taxes associated with household income (see Appendix 2 for details). **Three different analytic scenarios are considered.**

Only two analytical scenarios were done for ALC lottery.

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Following the employment impact indicators framework in Part II of this report, the following employment indicators were examined related to ALC lottery gambling:

- Net job creation in the gambling industry (including estimated household income and personal provincial income taxes from I-O analysis associated with ALC lottery employment)
- Indirect employment related to the gambling industry
- Changes in unemployment and underemployment resulting directly from gambling industry development
- Productivity losses and absenteeism.

15.4.2 Net Job Creation in the Gambling Industry

Net job creation is not discussed.

There are no official employment statistics related to ALC lottery ticket gambling and the venues where ALC lottery products are sold. Instead, an input-output (I-O) analysis was completed for ALC ticket lotteries and VLTs by Anielski Management Inc. with the analytic support of the Nova Scotia Department of Finance with data input obtained from a combination of sources, including the Nova Scotia Gaming Corporation and the Atlantic Lottery Commission (see Appendix 2). Please also refer to section 6.2 of this report which discussed the results of the I-O analysis for both ticket lotteries and VLTs.

Inputs to the I-O model were broken down into supply industries, proceeds to non-profit and community minded sectors, and household income, with contribution of wages and salaries to NSGC and ALC employees. As well, employment (person-years) was calculated for NSGC and ALC based on the salary data supplied, and imputed employment was calculated by the consultant based on the average wage for the Retail Grocery Stores industry (NAICS code 4451). Employment estimates were made based on a 2,000 hour work-year and included average Nova Scotia benefit rates.

Interpretation of ticket lottery activities and the input vector considered several points, which could increase or decrease impacts on the Nova Scotia economy:

- Some commissions and bonuses would support employment
- Some commissions and bonuses would go to dividends, or be redirected into profits (capital residual) where spending and taxation patterns are unknown.
- Some commissions and bonuses would be leaked directly from the province

Because of these variables, we have made assumptions and present two scenarios: the first scenario has 50% of commissions and bonuses going to household income (supporting employment) and 50% going to dividends ((Table 129), and the second has 100% going to employment income (Table 130). Their results are presented in the following two tables:

Paragraph quoted from NS Department of Finance study without acknowledgement.

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Table 128
ALC Ticket Lottery Scenario 1
(50% to employment and 50% to dividends)

	Direct	Spinoff	Total
Employment (PYs)	288	202	490
Household Income (\$000s)	16,004	7,647	23,651
Provincial Government Revenue (\$000s)	854	1,006	1,860

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Table 129 was sourced from NS Department of Finance study without acknowledgement.

Table 129
ALC Ticket Lottery Scenario 2
(100% to employment income)

	Direct	Spinoff	Total
Employment (PYs)	543	202	745
Household Income (\$000s)	16,004	7,647	23,651
Provincial Government Revenue (\$000s)	1,443	1,006	2,449

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Table 130 was sourced from NS Department of Finance study without acknowledgement.

Which ALC ticket lottery employment simulation scenario is most relevant to Nova Scotia? The answer depends on the unique conditions of operations for each ticket lottery vendor in Nova Scotia and how ALC ticket lottery commissions are allocated. We believe it is highly unlikely that ALC ticket lottery vendors would spend 100% of the commissions and bonuses from ticket lottery sales on employee salaries either directly or indirectly related to the existence of the ALC lottery and ticket products in their establishments.

Scenarios were provided to the consultant by the NS Department of Finance for the purpose of further research related to this study.

Assuming Scenario 1 is the correct choice of scenarios, ALC lottery and ticket sales contribute an estimated 288 PYs of direct employment and 202 PYs of spinoff employment for a total employment of 490 PYs. This employment estimate would have represented 1.6% of the 30,200

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persons employed in the accommodation and food services industries (the sector most likely to include bars and other VLT venues) in Nova Scotia in 2007.²⁵⁷

*As this section is on lottery tickets, the sector in which employment would be found is the retail trade (or retail and wholesale trade) sector.
Reference to VLTs in this paragraph and in Footnote 257 is incorrect.*

Household Income Related to ALC Lottery Ticket Gambling

Household income associated with the estimated employment impacts of ALC tic gambling were also estimated using I-O analysis (see Appendix 2 for details of how household income was estimated). Assuming that scenario 1 best reflects the more likely employment and income scenario for ALC lottery ticket gambling, the I-O results estimate household income of \$16,004,000 (scenario 1, direct employment) and \$7,647,000 (scenario 2, direct employment) for a total estimated \$23,651,000 in household income. Relative to the total Nova Scotia personal incomes for the province (\$27,323 million in 2006)²⁵⁸ the estimated household income from ALC lottery ticket-related employment would represent between 0.029% (scenario 1) and 0.09% (scenario 2) of total provincial household income in 2006.

The number \$16,004,000 is direct household income for scenario 1, and the number \$7,647,000 is spinoff household income for either scenario 1 or scenario 2. For comparison purposes, direct household income should be compared to total NS personal incomes.

15.4.3 Indirect Employment Related to Gambling Industry

Indirect (spinoff) employment related to ALC lottery ticket gambling venues were estimated using I-O analysis. Tables 129 and 130 shows that both scenarios predict 202 spinoff jobs.

The terms “indirect” and “spinoff” are different concepts and cannot be used interchangeably.

²⁵⁷ Employment statistics are from Statistics Canada, CANSIM Table 282-0061, Labour force survey estimates and are reported in terms of number of persons employed. While person-years of employment are not directly comparable with the number of persons employed, the comparisons are made to provide a relative sense of magnitude of VLT-related employment estimates.

²⁵⁸ Statistics Canada CANSIM 384-0012, Sources and disposition of personal income, provincial economic accounts.

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15.4.4 Changes in Unemployment and Underemployment

Please refer to all-games section. There was not sufficient data to estimate the contribution of ALC lottery gambling and venues to changes in unemployment and underemployment.

15.4.5 Productivity Losses and Absenteeism

Please refer to all-games section. There was not sufficient data to estimate the contribution of ALC lottery gambling to productivity losses and absenteeism.

15.5 Health and Well-being Impacts

15.5.1 Introduction

This section examines the potential impacts on physical, mental and social health and well-being²⁵⁹ impact of **bingo** on individual gamblers, their families and society. Health and Well-being impact indicators adopted for the Nova Scotia SEIG framework include:

Reference to bingo in this paragraph is incorrect.

- Problem gambling prevalence rates.
- Gains from gambling as a leisure activity.
- Health problems, disease rates and morbidity.
- Premature mortality rates (other than suicide).
- Stress, anxiety and depression.
- Suicide (thoughts, attempts, actual).
- Social isolation.
- Loss of quality time with family, friends and community.
- Substance abuse related to gambling.
- Psychological impacts on family and friends of gamblers.
- Family break-up (separation, divorce, impact on children).
- Domestic violence.

While the adult gambling prevalence studies contain useful information on impacts related to health and well-being, and provide some insights into the growing negative impact of some ALC

²⁵⁹ This definition of health comes from the World Health Organization framework which replaces earlier definitions of health as “the absence of disease.” (World Health Organization. (1947-2004). *WHO Definition of Health*).

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Lottery products to problem gambling behaviour, the statistics were not robust enough (i.e. small sample size) to yield any statistically meaningful information for populating the health indicators in the SEIG framework.

15.5.2 Problem Gambling Prevalence Rates

ALC lottery product gamblers experience the greatest problems of all other games-of-chance in Nova Scotia. According to the 2003 and 2007 Adult Gambling Prevalence Study results an estimated 77.6% of Nova Scotia adults played ALC ticket lotteries in the last year prior to the survey period represent a decline from 2002 when an estimated 79.1% of Nova Scotia adults had played ticket lotteries. In terms of problem gamblers using the CPGI classification system, an estimated 2.30% of Nova Scotia adults (17,934 adults aged 19 years and older) were moderate risk and problem ticket lottery gamblers in 2007 compared to 1.90% in 2002 (14,156 adults aged 19 years and older) (see Table 131).²⁶⁰

*Some data is incorrectly represented.
Some individuals participate in more than one gambling activity which influences risk.*

²⁶⁰ As previously noted, the 2007 Adult Gambling Prevalence study found that problems with gambling may be associated with more than one game so that a VLT player with a gambling problem may also be a person who has problems with casino games or with daily lotteries. Therefore, caution should be used when interpreting the estimated problem gambler population figures since there could be overlap or duplication across other games. However, the 2007 prevalence study noted that currently gambling problems are becoming more strongly skewed towards a single type of gambling activity; 85% of those who reporting having an ongoing gambling problem cited only one type of gambling as being associated with problems for them.

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Table 130
Estimated Nova Scotia ALC Ticket Lottery Gamblers by Gambler Type (CPGI),
2002 and 2007

Survey Year	Gambler Subtype				Total Adults
	Non-VLT Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers	
	2002 (n=2372) 2007 (n=2210)	2002 (n=368) 2007 (n=252)	2002 (n=41) 2007 (n=29)	2002 (n=19) 2007 (n=9)	
Percentage of Sample					
2002	19.90%	72.50%	4.70%	1.90%	79.10%
2007	22.30%	71.80%	3.60%	2.30%	77.70%
Nova Scotia Population Estimates (adults ≥ 19 years)					
2002	153,091	532,412	34,341	14,156	734,000
2007	172,224	555,323	27,519	17,934	773,000

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc.

Notes: Arrows indicate the direction of significant change over time ($p < .05$). Population estimates were derived from prevalence rates calculated to two decimal points. The 2003 adult gambling prevalence study reflects gambling activity that occurred in the year 2002.

*Individuals participate in more than one gambling activity which influences risk.
 No source for population figures.
 Reference to VLTs is incorrect.*

Given the high participation rate in ticket lottery gambling and a relatively high degree of problem gambling, the number of adult gamblers in Nova Scotia with gambling problems related to ticket lottery gambling is high. An estimated 17,934 Nova Scotia adults (aged 19 years and older) from the 2007 prevalence study sample self-rated as a moderate risk and problem gambler according to the CPGI classification system, the highest number of adults with problem gambling behaviour for all games ahead of VLT (12,677 adults), charitable lotteries (10,513 adults), and casinos (2,783 adults).²⁶¹

²⁶¹ There were an estimated 18,861 Nova Scotia adults who scored as moderate risk to problem gambler according to the CPGI. This means that estimateds of the problem gambler adult population for each game can not be totaled implying that some problem gamblers have problems with more than one game.

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According to the 2007 adult prevalence gambling study, there was a shift towards negative impacts associated with ALC lottery products in 2007 compared to 2002. Since the 2002 study, ALC sports lottery, breakopen tickets, and daily lottery draws have emerged, along with casino gambling and bingo, as being associated with higher than expected risk for problem gambling. In 2007, one in every 45-50 regular ACL Sport Select (2.2%), daily lottery (2.1%), and breakopen (2.0%) reported problems.²⁶²

Some information provided is inconsistent with 2007 NS Prevalence Study results. The number "2.1%" is not consistent with the 2007 NS Prevalence Study. It is inaccurate to reference a risk as higher than expected, since there is no expected risk. Footnote 262: Citations are incorrect.

Daily Draw Tickets

Daily lotteries were mentioned by 18% of 2007 survey respondents as being associated with current gambling problems second after VLTs.²⁶³ However, only 0.5% ((almost 4,000 adults) of the Nova Scotia adult population said they experienced problems with play of daily lotteries, though this has increased from 0.1% in the 2003 prevalence study.

The paragraph above is an incorrect representation of 2007 NS Prevalence Study findings as only 2,500 Nova Scotia adults participated in that study.

Weekly Draw Tickets

Only 0.1% of adults who purchased weekly draw tickets indicated that they had ever had a problem with this type of gambling.²⁶⁴

The number "0.1%" is not consistent with the 2007 NS Prevalence Study.

²⁶² Nova Scotia Health and Protection. 2008. *2007 Adult Gambling Prevalence Study*. p. viii

²⁶³ Nova Scotia Health and Protection. 2008. *2007 Adult Gambling Prevalence Study*. p. 50

²⁶⁴ Ibid. p.53

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Scratch 'n Wins

In 2003 Scratch 'n Win instant lottery games were found to pose greater risk to consumers than weekly draw type tickets, although a similar percentage of adults in the province were self-identifying problems with either type of ticket game (0.1% for both). The percentage of adults reporting problems with this form of gambling has declined from 0.4% in 2003 to 0.1% in 2007. Compared to lottery draws, fewer adults purchased the instant games in the past year (49.8% versus 69.9%) and only a third of the adults reported regular monthly purchasing (12.4% versus 39.4%), yet the percentage of adults reporting problems was comparable. While the number of adults buying instant tickets over the past year was similar in 2003 (48.4%) and 2007 (49.8%), regular purchasing patterns have fallen off with only 12.4% purchasing regularly each month versus 15.4% in 2003 and regular weekly play down to 3.6% from 5.7% in 2003.²⁶⁵

The number "0.1%" is from the 2007 NS Prevalence Study.

The term "reporting problems" should be defined for clarification.

"Lottery draws" should be properly referred to as "weekly lottery draws".

Clarification is required to differentiate between "instant games" and "instant tickets", and to clarify whether these numbers include "breakopens".

Footnote 265: Citation is incorrect.

15.5.3 Gains as a Leisure Activity

Please refer to all-games section 7.3 that deals with the gains from gambling as a leisure activity (i.e. fun and entertaining). Unfortunately data from the 2003 and 2007 adult gambling prevalence studies do not provide a statistically robust data set to provide insights into game-specific impacts.

15.5.4 Health Problems, Disease Rates and Morbidity

Please refer to all-games section 7.4 dealing with health impacts from gambling. While VLT gambling is the greatest source of problem gambling experienced by adult gamblers, based on the adult gambling prevalence research, there is insufficient data to attribute specific health problems with a specific game. At present there is only anecdotal information about the impact of ALC lottery gambling on problem gambling experienced revealed in the 2008 adult problem gambling telephone survey (see Appendix

Reference to VLT is incorrect.

²⁶⁵ Ibid.

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15.5.5 Stress, Anxiety and Depression

Please refer to all-games section. There was not sufficient data to estimate the contribution of VLT gambling to stress, anxiety, and depression.

Reference to VLT is incorrect.

15.5.6 Suicide

Please refer to all-games section. There was not sufficient data to estimate the contribution of ALC lottery gambling to suicide.

15.5.7 Social Isolation

Please refer to all-games section. There was not sufficient data to estimate the contribution of ALC lottery gambling to social isolation.

15.5.8 Substance Abuse

Please refer to all-games section. There was not sufficient data to estimate the contribution of ALC lottery gambling to substance abuse, including smoking.

15.5.9 Psychological Impacts on Family and Friends

Please refer to all-games section. There was not sufficient data to determine the psychological impacts on family and friends of ALC lottery players.

15.5.10 Family Break-up (Separation, Divorce, Impact on Children)

Please refer to all-games section. There was not sufficient data to determine the role ALC lottery plays in family break-ups.

15.5.11 Domestic Violence

Please refer to all-games section. There was not sufficient data to determine the relationship between ALC lottery gambling and domestic violence.

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15.6. Crime, Legal and Justice Impacts

Crime, legal and justice impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Reduced illegal gambling rates (as a positive benefit of the availability of legalized gambling).
- Crime rates related to gambling (e.g. money-related crimes including theft, other property crimes, fraud, embezzlement).
- Policing and incarceration costs
- Security costs
- Social cost of gambling-related crime

Given data limitations, there was not sufficient data to estimate impact values at a game level for ALC lottery gambling. Please refer to all-games section for a discussion of crime, legal and justice impacts associated with gambling in Nova Scotia.

15.7. Community and Culture Impacts

15.7.1 Introduction

This section examines the potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations that benefit from gambling revenue transfers from the provincial government, and the public attitude, beliefs, and values toward gambling by citizens.

Community and culture impact Indicators examined for Nova Scotia SEIG framework include:

1. Local charities and non-profit sector dependence on gambling revenues
2. Feelings of loss or gains community quality of life and social cohesion.
3. Sense of safety from gambling venues.

15.7.2 Impacts on Local Charities, Non-Profit Organizations and other Public Sector Agencies

Charitable revenues from ALC lottery gambling activity contributed relatively little to charitable revenues historically and in 2007, contributed \$45,000 or 0.17% to gambling charitable revenues from all games (\$27.1 million) (see Table 132).

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Table 131
Charitable Revenues from ALC Lotteries
Nova Scotia, 2001-2007

	2001	2002	2003	2004	2005	2006	2007
Charitable Revenues from ALC Lotteries, \$000s	44	39	35	50	53	46	45
Charitable Revenues (all games), \$000	25,342	24,365	22,960	26,960	28,634	28,536	27,107
ALC Lotteries as a Percent of Charitable Revenues	0.17%	0.16%	0.15%	0.19%	0.19%	0.16%	0.17%

Source: Nova Scotia Government. Alcohol and Gaming Authority, Annual Gaming Reports.

15.7.3 Citizen Attitudes Towards Gambling and Gambling Venues

While there has been mixed public opinion toward gambling and several game types, ALC ticket lottery products have strong public approval. 84% of the public either approve or strongly approved of Lotto 64/9 or Scratch'n Win.²⁶⁶

15.7.4 Feelings of Safety Due to Gambling Venues

Please refer to all-games section. There was not sufficient data to evaluate citizen feelings of safety due to ALC lottery products and venues.

²⁶⁶ Omnifacts Bristol Research. 2005. Public Attitudes on Gaming in Nova Scotia. February 25, 2005. ISBN # 7073-1006.

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16. Video Lottery Terminals

16.1 Introduction and Description Video Lottery Terminals (VLT)

Video lottery terminals (VLTs) are operated by the Atlantic Lottery Corporation with a total of 2,230 terminals located at 452 liquor-licensed retail sites in 2007. In addition, there were 594 terminals located at First Nation Gaming sites throughout the province in 2007 (Table 133).

Table 132
VLT Statistics, 2001-2007

	2001	2002	2003	2004	2005	2006	2007
Number of VLT Sites	1,338	1,349	1,324	1,321	1,306	1,269	1,234
Number of Venues with VLTs (incl. FN)	600	617	573	555	486	469	452
Number of VLT machines (non-First Nation)	3,205	3,234	3,234	3,218	2,344	2,275	2,230
Number of VLT machines (First Nation)	449	560	611	602	568	560	594
Total Number of VLT machines	3,654	3,794	3,845	3,820	2,912	2,835	2,824

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008; VLT numbers are from Nova Scotia Gaming Corporation. First Nations VLT statistics are from the Office of Aboriginal Affairs.

Table 133 requires audit before use as some of the numbers are incorrect.

In May 1991, Nova Scotia was one of the first jurisdictions in North America to introduce regulated video lottery terminal (VLT) gambling. Originally, the machines were widely distributed among establishments like corner stores and convenience stores. In 1993, VLTs were restricted to age-controlled liquor licensed establishments including licensed restaurants, bars, pubs, and legions.

In July 2005, in response to a growing concern about the impacts of VLTs on problem gambling behaviour, the Nova Scotia government introduced four key initiatives in an attempt to reduce harms associated with playing VLTs. These included: a) the removal of 1,000 VLTs starting with 800 in November 2005 and the remaining 200 by attrition, b) reduced hours of operation (turned off at midnight); c) disabling the Stop Bottom feature and d) reducing the speed of VLT play by

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30% in January 2006.²⁶⁷ As a result of these changes there were 2,230 provincial VLTs and 594 First Nation VLTs in 2007-08, a decline of 1,021 machines or a 26.6% reduction in the total number of VLT machines in the province compared to the peak in machines of 3,845 in 2003/04.²⁶⁸ The number of First Nation VLT also declined slightly by 17 machines from a peak of 611 machines in 2003 to 594 terminals in 2007-08. Since these changes in 2005, there appears to have been a corresponding decline in total wagered, cash prizes, net revenues and provincial revenues from VLTs, though the relationship between fewer VLT machines and the amount wagered is not clear.

Footnote 267: Contains incorrect source.

Footnote 268: The statement relating to this footnote does not match information contained in the footnote.

Video Lottery Terminals have become the most important gambling revenue source for governments throughout Canada. In most provinces they generate over 50% of net government revenues from all forms of regulated gambling activities. In Nova Scotia in 2007-08, VLTs generated 56.1% of the \$169.3 million in net gambling revenues to the Nova Scotia government, the most important provincial government revenue source of all legal gambling activity in province ahead of charitable lotteries (23.9% of net provincial gambling revenues), casinos (19.1%), bingos (0.5%) and charitable lotteries (0.2%).

The sentence contains an error; as the term “charitable lotteries” is used twice and requires audit.

In terms of net gambling expenditures, (total wagered minus prize payouts), provincial VLTs are most important game of chance in Nova Scotia, representing 35.0% of total net gambling expenditures in 2007-08 (see Figure 35).

The term “expenditures” should be “revenues”.

The reference to Figure 35 is incorrect as it should be Figure 32.

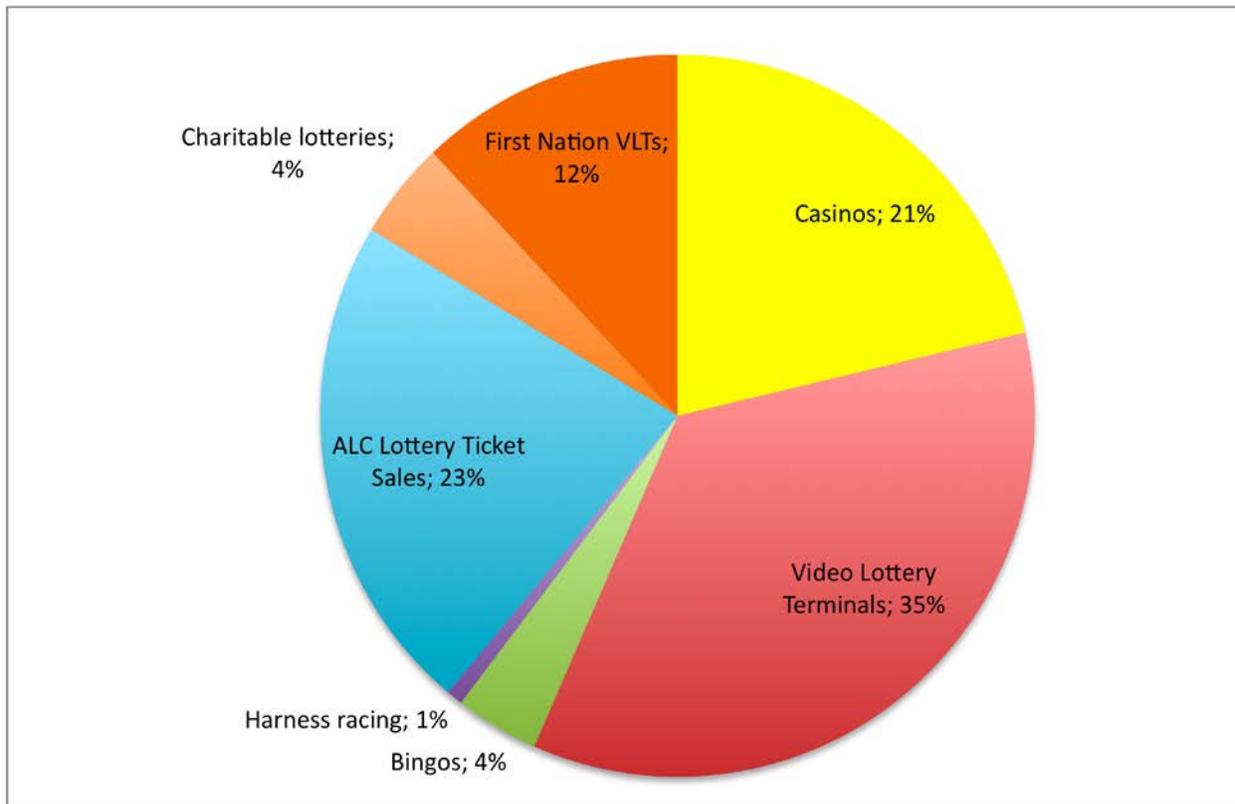
²⁶⁷ Leaving Nothing to Chance: Nova Scotia Annual Gaming Report, 2006-2007, Nova Scotia Environment and Labour, Alcohol and Gaming Authority, Research Highlights, p.13

²⁶⁸ There were 1,051 slot machines at casinos in 2006/07 based on the Canadian Gambling Digest 2006-07.

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Figure 32
Net Expenditures by Game as % of Total Gambling Net Expenditures



Source: Nova Scotia Government. Alcohol and Gaming Authority, Annual Gaming Report, 2007-08 and First Nations gambling statistics from the Office of Aboriginal Affairs.

Title is missing date reference.

Historical analysis of VLT gambling in Nova Scotia reveals that in 1995-96, Nova Scotian adults (population of 698,739 19+ years) wagered \$315.7 million on VLTs or roughly \$506 per adult. The money wagered on VLTs in 1995-96 represented 46.3% of all funds wagered on all regulated games of chance in Nova Scotia. In 1995-96 VLTs generated \$63.8 million in net government revenues (54.5% of net government revenues from all forms of gambling) or roughly 1.65% of total provincial revenues in that year. Also in 1995-96, VLTs generated \$21.2 million in commercial revenues to those establishments such as bars, pubs, clubs, lounges and

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cabarets. VLT revenues were also important to community organizations and charities contributing \$6.3 million (27.5% of total net gambling revenues to charities) in 1995-96.²⁶⁹

Between 1995 and 2004 there had been a steady increase in both the number of VLTs and in wagers, net revenues (see Table 134). The year 2004 represented the peak in most VLT financial statistics. The combined number of provincial and First Nation VLTs rose from 3,654 in 2001 to a peak of 3,845 machines in 2003. In 2001 the amount wagered on provincial VLTs reached \$575.7 million or 82.2% greater than 1995-96 levels with 3,205 terminals available. In addition to the provincial terminals, the total wagered on 449 First Nation VLTs in 2001-03 was \$82.2 million.

The accounting period stated by the consultant as 2001 to 2007 is not applied consistently throughout the document.

Table 133
VLT Gambling Financial Statistics, 2001-2007

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Provincial VLTs							
Total Wagered	\$575,750	\$767,518	\$821,481	\$895,076	\$819,962	\$717,153	\$673,048
Prizes	\$413,162	\$585,615	\$638,418	\$694,847	\$637,757	\$565,849	\$532,310
Net Revenue	\$147,370	\$162,588	\$181,903	\$183,063	\$200,229	\$182,205	\$140,738
Operating Expenses	\$16,300	\$24,792	\$25,858	\$26,397	\$28,330	\$24,704	\$16,880
Commercial Revenue	\$28,404	\$32,145	\$32,779	\$34,756	\$30,706	\$25,401	\$23,066
Charitable Revenue	\$6,371	\$7,022	\$6,554	\$6,521	\$5,777	\$5,496	\$5,857
Provincial Net Revenue	\$111,513	\$117,945	\$117,872	\$132,555	\$117,392	\$95,703	\$94,935
Provincial Government Revenues from VLTs as % of Total Provincial Gambling Revenues	60.4%	59.9%	64.6%	67.8%	63.0%	54.3%	56.1%
First Nations VLTs							
First Nation VLTs Total Wagered	\$82,200	\$117,500	\$154,200	\$180,430	\$190,264	\$211,492	\$239,037
First Nation VLTs Prizes	\$61,000	\$89,500	\$119,500	\$140,275	\$148,092	\$168,384	\$191,107
First Nation VLT Net Revenue	\$21,200	\$28,000	\$34,700	\$40,154	\$42,172	\$43,108	\$47,930
Provincial and First Nation VLT Net Revenues Total	183,788	209,904	217,763	240,384	224,377	194,412	188,668

²⁶⁹ 1995/96 Nova Scotia Gaming Control Commission, First Annual Report. A Year in Review. Gaming in Nova Scotia.

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Total VLT Net Revenues (incl. FN VLT) as % of Net Gambling Revenues for Nova Scotia	44.0%	47.6%	51.0%	53.2%	50.9%	46.7%	47.2%
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Note: n.a. means information was not available.

Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports 2000-2008; VLT numbers are from Nova Scotia Gaming Corporation. First Nations VLT statistics are from the Office of Aboriginal Affairs.

*The incorrect date sequence (2000-2005 referenced 2001-2006) given in Table 134 results in calculation errors. The figures in this table must be audited prior to use of, or comparison with, any other figures.
It should be clearly noted that provincial VLT revenue does not include First Nations gambling figures.*

Trend analysis of VLT gambling reveals that the combined total wagered on both provincial VLTs (\$895.1 million) and First Nation VLTs (\$180.4 million) peaked at \$1,075.4 million in 2004-5 and then declined through to 2007-08 (see Table 134).²⁷⁰ Cash-out prizes fell to \$532.3 million in 2007 or a 23.4% reduction compared with the peak of \$694.8 million in 2004. Net Revenues (after cash-prize payouts) from provincial VLTs fell to \$140.7 million, a 29.1% reduction compared to the peak in 2005 of \$200.2 million. Operating expenses dropped by 40.4% to \$16.9 million in 2007 compared with \$28.3 million at its peak in 2005/06. Commercial revenues also fell to \$23.1 million in 2007, down 33.6% from a peak of \$34.8 million in 2004. And charitable sector revenues fell to \$5.8 million in 2007, down 17.1% from a peak of \$7.0 million in 2002. Finally, net revenues to the provincial government declined to \$94.9 million in 2007 or down 28.4% from the peak of \$132.6 million in 2004.

Net revenues from VLTs continue to be the most important source of net gambling revenue in Nova Scotia generating \$140.7 million in 2007 on provincial VLTs and \$47.9 million on First Nation VLTs. In 2007, provincial VLT net revenues represented 40.0% of net gambling revenues (excluding First Nation VLT net revenues).

The number \$200.2 million is incorrect in both Table 134 and text.

Notwithstanding, VLT revenues to the provincial government's gambling revenues continue to be the most important revenue source representing 56.1% of net provincial gambling revenues in 2007 down from a high of 67.8% of total net provincial gambling revenues in 2004.

²⁷⁰ Nova Scotia Alcohol & Gaming Authority's Annual Survey on Gaming in Nova Scotia (2001, 2002, 2003, 2004, 2005, 2006, and 2007).

Cautionary notes:

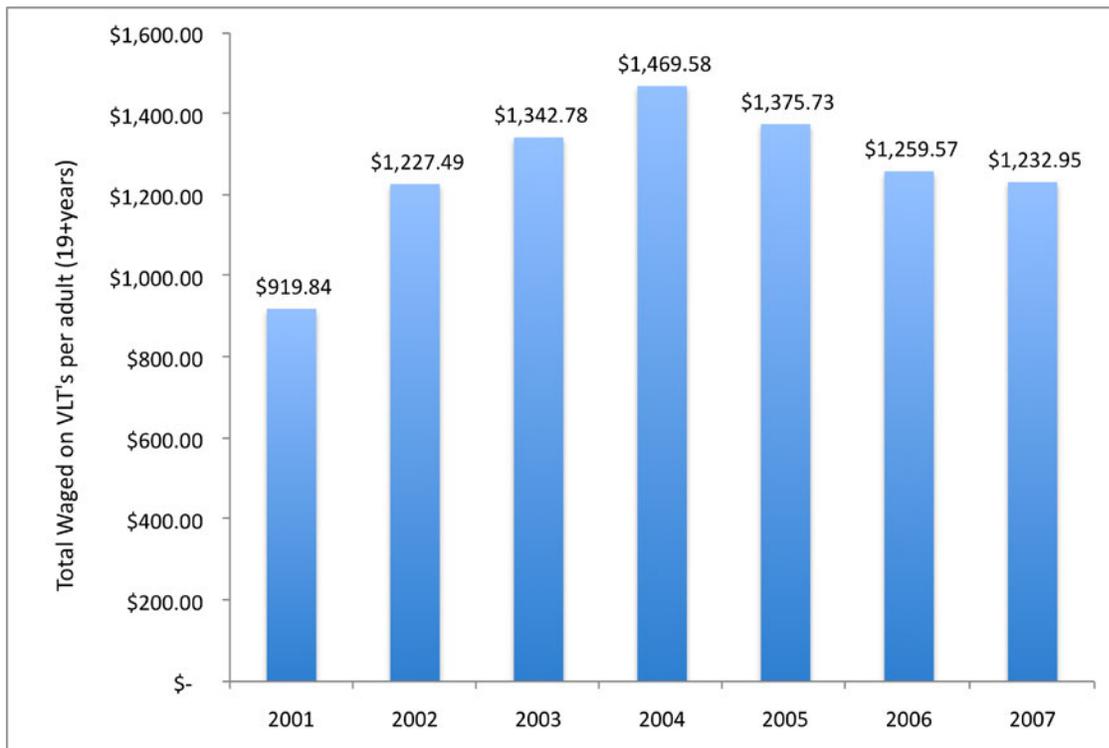
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Revenue Efficiency of VLT Machines

The relative amount wagered per VLT machine (provincial and First Nation machines combined) rose steadily from 2001 to 2004 and has since declined with the decline coinciding with the removal of over 1,000 VLTs in 2005 (Figure 36). In 2007 the average wagered per adult on both provincial and First Nation VLT machines had fallen to \$1,232.95/adult from \$1,469.58 per adult in 2004 or a drop of 16.1% from the 2004 peak. Thus, Nova Scotia adults are wagered less money on fewer VLTs since 2004.

Reference to Figure 36 should be Figure 33.

Figure 33
Average Total Wagered on VLTs per Adult, 2001-2008



Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2001-2008. Statistics Canada (adult population statistics).

Incomplete source citation.
Date range in title is inconsistent with date range in table.

At the same time, the efficiency of revenue generation per provincial VLT machine has experienced a similar decline since 2005 (Figure 37). For example, the total amount wagered

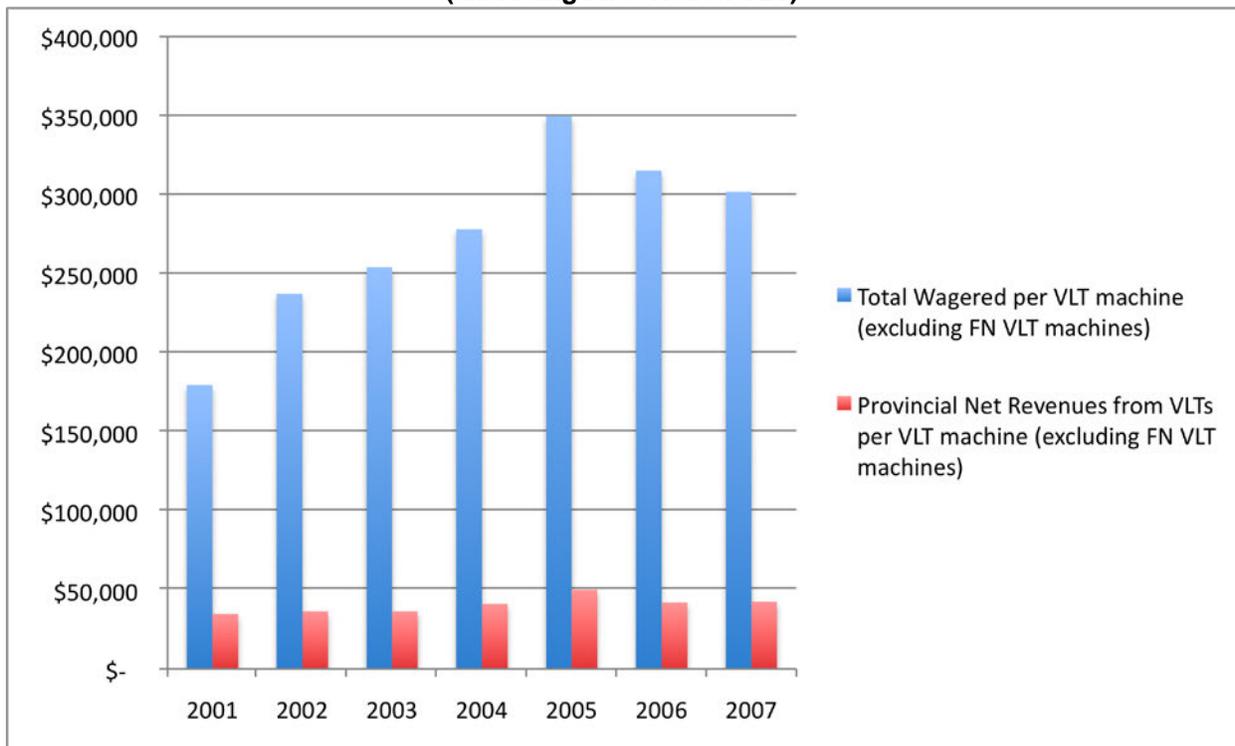
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per provincial VLT machine (excluding First Nation machines) declined from a peak of \$349,813 per provincial VLT machine in 2005 to \$301,815 per provincial VLT in 2007, a drop of 13.7%. Net provincial revenues peaked at \$50,082 per provincial VLT machine in 2005 falling 15.0% to \$42,572 per provincial VLT machine in 2007. Similarly, prizes paid out per provincial VLT machine declined 12.3% from \$272,081 per provincial VLT machine in 2005 to \$238,704 per provincial VLT machine in 2007.

Reference to Figure 37 in text should be Figure 34.

Figure 34
Average Total Wagered and Net Provincial Revenues per VLT machine
(excluding First Nation VLT)



Sources: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2001/02 to 2007/08.

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Prizes paid per dollar of total wagered on VLT machines have been increasing since 2001. Prizes paid as a ratio of total wagered on VLT machines has steadily risen from \$0.742 per every \$1.00 wagered on VLTs in 2001 to \$0.799 per \$1.00 wagered in 2007.²⁷¹

Footnote 271: Citation is incorrect.

In conclusion, despite fewer provincial and First Nation VLT machines in 2007, the amount wagered per provincial and First Nation VLT machine in 2007 compared with 2001 has increased 1.79 times, prize payouts per machine have increased 1.97 times and net revenues per machine increased in 1.33 times. The conclusion is that despite the significant reduction in the number of VLT machines available from both provincial and First Nation VLT sources, the level of use of VLT machines has increased.

First Nations VLTs

VLT machines on First Nation reserve generate significant revenues for First Nation communities. In 2001 there were 449 VLT machines on First Nation reserves and territory (See Table 134). This rose to a high of 611 in 2003 and declined to 594 machines by 2007.²⁷² In 2001 a total of \$82.2 million was wagered on 449 First Nation VLTs, \$61.0 million paid out in prizes for a net revenue of \$21.3 million. After netting out \$1.3 million in administration costs First Nation band revenues were \$20.1 million in 2001. In 2007, \$239.0 million was wagered on 594 First Nation VLT machines generating a net revenue of \$47.9 million and band revenues, after administration costs, of \$44.8 million.

*Table 134 does not contain VLT numbers.
The number "\$21.3 million" is inconsistent with Table 134.*

The amount wagered per First Nation VLT machine reached a high of \$402,419 per VLT in 2007, with the average prize payout of \$321,729 per VLT (for a 79.9% cash prize payout rate) and net revenues (before administrative costs) of \$80,690 per First Nation VLT machine.

²⁷¹ In Nova Scotia, in accordance with the Gaming Control Act regulations, the payout percentage for VLTs must not go below 80%. Currently, VLTs have a prize payout of 93-95%. This number does not refer to or reconcile with the actual amount paid out in prize money but rather to the percentage of "winnings" that are accrued during play as a percentage of total "wagers." (Focal Research. 2008. 2007 Nova Scotia Adult Gambling Prevalence Study, April 2008; p. 25-26). This amount is higher than the actual cash-out percentage because "consumers play the prizes they win in order to extend their play" (Atlantic Lottery Corporation. ALC Products; <http://www.alc.ca/English/ALCProducts/VideoLottery>, accessed August 27, 2008.

²⁷² Data from the Nova Scotia Gaming Corporation.

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VLT Adult Gambler Participation Rates

According to the 2003 and 2007 adult gambling prevalence studies for Nova Scotia, participation in video lottery in Nova Scotia has significantly decreased since the 2003 prevalence study to about 30% of adult gamblers (down from 36.7% in 2002).²⁷³ An estimated 14% of adult gamblers had played a VLT machine in the last year (down from 19.0% in 2002) and 3.6% playing on a regular and continuous monthly basis over the past year (down from 5.1% in 2002). A relatively small proportion of adults (4.1%, down from 6.6% in 2002) were regularly gambling on both VLTs and casino games²⁷⁴ each month in 2007 though contributed about 36% of the annual gambling expenditures in Nova Scotia in 2007.²⁷⁵ While there were fewer adult gamblers participating in regular VLT and casino games, these regular gamblers were spending about \$1,500 more per year in 2007 than in 2002; an increase from \$3,760 per gambler per annum in 2002 to an estimated \$5,293 per gambler per annum in 2007. These regular VLT and casino gamblers were spending almost 9 times more per year than the regular lottery-ticket-only gamblers.²⁷⁶

*Some results from NS Prevalence studies are not reflected accurately.
The term “continuous monthly basis” should be “regular monthly play”.
The concept of “regularly gambling” is not quantifiable.
Footnotes 273, 275, and 276: Citations are incorrect.
Footnote 274: The correct term is “regular monthly gambling”.*

²⁷³ Nova Scotia Health Promotion and Protection. 2008. *2007 Nova Scotia Adult Gambling Prevalence Study*, Study conducted by Focal Research, April 2008; p. 54

²⁷⁴ The 2007 adult gambling prevalence study results do not split out VLT from casino gambling activity for this analysis of regular gambling activity.

²⁷⁵ Ibid. p. vii

²⁷⁶ Ibid. p. vii

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16.2. Economic and Financial Impacts

16.2.1 Introduction

This section examines economic and financial impacts attributable specifically to VLTs. Of the economic and financial indicators adopted for the Nova Scotia SEIG framework we were unable to estimate impacts for the following indicators:

Economic and Financial Indicator	Notes
Gambling GDP.	There was not sufficient data to estimate a gambling GDP value specific to bingo at a game level. Nor has there been an input-output analysis for bingo which might provide GDP estimates for bingo
Consumer surplus.	No consumer surplus estimates available for bingo.
Negative consumer surplus (excessive losses)	There was not sufficient data to estimate a negative consumer surplus value attributable at a game level for Bingo. Ideally, it would be desirable to determine a healthy level of dollars wagered by a bingo player compared with a moderate risk or problem gambler to derive a negative consumer surplus estimate.
Net business sector growth/investment.	There was not sufficient data to estimate a net business sector growth value attributable at a game level for Bingo
Consumer capital gains due to gambling development.	There was not sufficient data to estimate a consumer capital gains due to bingo gambling development.
Government defensive expenditures to mitigate gambling impacts	There was not sufficient data to estimate a government defensive expenditures value attributable at a game level for Bingo
Direct regulatory costs related to gambling industry	There was not sufficient data to estimate direct regulatory costs attributable at a game level for Bingo.
Bad debts, bankruptcies and costs to recover bad debts.	There was not sufficient data to estimate the contribution of bingo to bankruptcies, financial difficulties, and bad debts.
Abused dollars.	There are no estimates of abused dollars for Canada or for Nova Scotia

Table should be labeled.

All references to "bingo" are incorrect and should be references to "VLTs".

Unfortunately, most of these indicators cannot currently be populated with raw data given the absence of game-specific data, with a few exceptions including I-O modeling estimates for VLTs which derived estimates of employment, household income, and provincial revenues, under three different scenarios. Please refer to Part II of this study for a discussion of these impacts across all games.

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Much of the primary data used in this section to evaluate impacts specific to VLTs were drawn from the 2003 and 2007 adult gambling prevalence studies; this is the only currently reliable source for game-specific impact information for Nova Scotia. Unfortunately, while these prevalence studies are relatively robust in identifying relative problem gambling rates by game, age, gender and socio-economic profiles, they were not sufficiently robust to derive empirically defensible estimates of the majority of the financial and economic impacts according to the SEIG indicator framework.

In order to meet these existing data gaps, considerably new primary economic research will be required. This is not unique to Nova Scotia. A similar socio-economic study in Alberta by researchers is finding a similar condition where new research will be required in a field that is still in its infancy of economic impact analysis.

Input-Output (I-O) Analysis

An input-output analysis was conducted for VLTs, under three different analytic scenarios (see Appendix 2 for a detailed description, that estimated employment, household income and provincial revenue estimates for a single year. Attempts to estimate a GDP for VLT and ticket lottery gambling was ultimately rejected by the Nova Scotia Department of Finance, in the absence of a suitably robust output-GDP multiplier associated with VLTs operating expenses (as was done with GDP estimates for casinos). We rejected the GDP calculations for the VLTs and ticket lottery industries because of the method that the model calculates the GDP by extracting the GDP from every industry that has an expense in the vector but the GDP for the household industry is zero. As well, critical assumptions were made regarding the most appropriate use of dividends and employment under the three analytic scenarios. The result was that we were unable to derive a good measure of GDP for VLTs. This I-O analysis represents an exercise in new research, requiring further inquiry in future.

This is an unsourced quotation from a NS Department of Finance e-mail.

16.2.1 Gambling GDP attributed to VLTs

As noted, preliminary estimates of GDP for VLT gambling were ultimately rejected because of methodological challenges. In the absence of I-O modeling results, it would be difficult to estimate what percentage of the gambling GDP estimates from 4.2 *Gambling GDP* section of this study without some heroic assumptions. For example, the relative amount of total wagered or net revenues from VLT gambling, relative to total wagered and net revenues for all games, might be applied to the gambling GDP estimates. However, this is not a methodologically defensible approach as conducting a more rigorous input-output model might yield.

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16.2.2 Personal Expenditures on VLT gambling

Total wager on VLTs have decreased steadily since 2001 from \$650.9 million in 2001 to a high of \$1,075 million in 2004 then declined to \$912,085 by 2007 (see Table 135). When factoring in the disbursement of prizes, net expenditure²⁷⁷ on VLTs totaled \$194.4 million in 2007, or an average of \$255 per adult Nova Scotian. While net expenditures per adult in Nova Scotia rose 27.7% between 2001 and 2004, they have subsequently declined and by 2007 were marginally lower than net expenditures in 2001.

Table 134
VLTs Total Wager, Prizes, Net Expenditure (Including First Nations VLTs)
Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Total VLT Wager (\$000)	\$657,950	\$885,019	\$975,681	\$1,075,506	\$1,010,227	\$928,645	\$912,085
Total VLT Prizes (\$000)	\$375,191	\$474,162	\$675,115	\$757,918	\$835,122	\$785,849	\$734,233
Net VLT Expenditure	\$165,627	\$183,928	\$210,120	\$217,783	\$240,384	\$224,377	\$194,412
Net VLT Expenditure per adult (19+)	\$257	\$291	\$300	\$328	\$306	\$264	\$255

Source: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007-08. First Nations VLT statistics are from the Office of Aboriginal Affairs.

The figures in Table 135 do not correlate to figures in Table 134.

²⁷⁷ Net expenditure is used to describe net spending (after prize payouts) by Nova Scotia adults and households and is the equivalent of 'net revenues' from previous financial statistics.

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Net Gambling Expenditure by Risk of Gambling Problems

Based on 2003 and 2007 Adult Gambling Prevalence Study data and self-reporting by respondents of VLT gambling expenditures, it is possible to estimate the average net VLT gambling expenditures by gambler subtype as well as predict the distribution of provincial and First Nations VLT net revenues across gambler subtypes. Table 136 shows, for example, that in 2007-08 the moderate risk and problem gambler cohort (n=12,677) expended \$5,746 per gambler. These figures are then used to predict net gambling expenditure by gambler subtype. For example, in 2007-08 predicted net expenditures on VLTs by moderate and problem gamblers was \$72.8 million. Based on these figures, moderate risk and problem gamblers were estimated to have contributed 55.2% of provincial and First Nations net gambling revenues from VLTs in 2002 and 69.1% of VLT net revenues in 2007-08. Also, the moderate risk and problem VLT gambler's estimated expenditures were nearly 23 times greater than a non-problem VLT gambler (n=80,083) and 5.5 times more than a low-risk gambler (n=12,059). Compared to 2002-03, the average net expenditures by a moderate risk and problem gambler in 2007-08 was roughly 18% higher per gambler.

*Statistically, “n” is used to denote “sample size”; here “n” is incorrectly used to denote “population estimate.” Estimates of expenditures based on the NS Prevalence Studies are not statistically sound because of small sample size.
Some individuals participate in more than one gambling activity which influences risk.*

Table 135

Net Gambling VLT Expenditures by Gambler Subtype Predicted by 2002-03 and 2007-08 Adult Gambling Prevalence Studies and Estimated based on Net Revenues from VLT Gambling

Survey Year	Gambler Subtype					Total Adults
	Non-VLT Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers		
	2002 (n=2268) 2007 (n=2161)	2002 (n=415) 2007 (n=259)	2002 (n=71) 2007 (n=39)	2002 (n=46) 2007 (n=41)	2002 (n=2800) 2007 (n=2500)	
Nova Scotia Adult VLT Gambler Population estimates (19 years +)						
2002	594,540	108,789	18,612	12,059		734,000
2007	668,181	80,083	12,059	12,677		773,000
Average Net Gambling Expenditure per Gambler² (VLTs), based on prevalence studies						
2002-03	\$0	\$276.14	\$934.93	\$4,848.26		\$759.40
2007-08	\$0	\$250.08	\$1,045.77	\$5,746.34		\$1,006.36
Provincial and First Nations Net VLT Revenue Estimated from Sample						
2002-03	\$0	\$30,040,994	\$17,400,917	\$58,465,167		\$105,907,078
2007-08	\$0	\$20,027,157	\$12,610,940	\$72,846,352		\$105,484,449
Provincial and First Nations Net VLT Gambling Revenue (Actual)						
2002-03	\$0	\$59,601,548	\$34,523,544	\$115,995,311		\$210,120,404
2007-08	\$0	\$35,820,324	\$22,555,771	\$130,292,081		\$188,668,176
Distribution of Gambling Expenditures by Gambler						

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2002-03	0%	28.4%	16.4%	55.2%	100%
2007-08	0%	19.0%	12.0%	69.1%	100%

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; estimates of net gambling expenditure distribution conducted by Anielski Management Inc. Estimated distribution of net gambling expenditures by CPGI are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc. Provincial and First Nations VLT net revenues are considered in aggregate. Provincial net VLT gambling revenue statistics are for fiscal year 2002-03 and 2007-08 from Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2002-03 and 2007-08. First Nations VLT net revenue statistics are from the Office of Aboriginal Affairs. Notes: Adult VLT gambler population estimates were derived from prevalence rates calculated to two decimal points. Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or losses).

Estimates of expenditures based on the NS Prevalence Studies are not statistically sound because of small sample size.

Some individuals participate in more than one gambling activity which influences risk.

Population estimates are derived based upon incorrect representations of risk categories and small sample sizes.

Population source is not noted.

The term "Predicted" in the table heading should be "Estimated".

Dates cited in the heading are incorrect.

Some figures in Table 136 do not correlate with figures in Table 134.

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To check the validity of our findings we check the predicted net revenues from all VLT gambling with the actual net revenues as reported by the Nova Scotia government. Comparing these figures from Table 136 shows that gamblers involved in the prevalence studies underestimated these expenditures in comparison with actual net revenues (wagered less prizes). This is clear from Table 136 that both the 2003 and 2007 prevalence studies under-estimated the actual net VLT gambling revenues. For example the predicted net gambling revenues from the 2007 prevalence sample was \$105.5 million compared with the 2007-08 actual net gambling revenues from provincial VLTs (\$140.7 million) and First Nation VLTs (\$47.9 million) or \$188.7 million. This suggests that gamblers underreported their expenditures by as much as 56% of the actual net revenues generated by VLT use. This also means that the estimated net expenditures per gambler type would also be under-estimated.

Expenditure estimates based on the NS Prevalence Studies are not statistically sound because of small sample size. In addition, these studies include only Nova Scotians while government reported revenues includes revenues from people living outside of Nova Scotia.

If gamblers had reported expenditures equal the actual amount of net gambling revenue then we would have some assurance that the observed proportions of total expenditures reported by moderate risk and problem gamblers is a true reflection of the actual proportion of gambling revenue generated by problem gamblers.

The underreporting of expenditures by participants in the prevalence studies in Nova Scotia is not unusual. For example, in a 2004 Canadian study by Williams and Todd (2004)²⁷⁸ attempts to estimate the proportion of gaming revenues from problem gamblers across Canadian provinces found that there was both under and over reporting of gambling expenditures relative to actual net revenues reported by provincial governments.

Notwithstanding, these prevalence studies are an important methodological tool for assessing the distribution of net expenditures across gambler type, which all things being equal, could be applied to actual or reported provincial gambling net revenue statistics to determine the relative distribution across the population of VLT gamblers by gambler type.

²⁷⁸ Williams, Robert and Robert T. Wood. 2004. The Proportion of Gaming Revenue Derived from Problem Gamblers: Examining the Issues in a Canadian Context. *Analyses of Social Issues and Public Policy*, Vol. 4, No. 1, 2004, pp. 33-45.

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The analysis does yield important estimates of the distribution of gambling. In 2007 the estimated 12,677 moderate risk and problem gamblers (1.7% of the 773,000 adult Nova Scotians) contributed to an estimated 69.1% of net VLT gambling revenues in 2007 (or \$188.7 million in net expenditures) which represented roughly 32.7% of the net revenues to both the province and First Nations (\$399.7 million) from gambling for 2007. The importance of VLTs is heightened by the fact that in 2007-08 VLT net gambling revenues from provincial VLT machines represented the largest share of net gambling revenues (40.1% of 2007 net gambling revenues from all games, excluding First Nation VLT net gambling revenues from VLTs) and contributed the most to net provincial gambling revenues (56.1% of 2007 net provincial gambling revenues) of any other game.

Expenditure estimates for VLTs by gambler type are not statistically sound because of small sample size.

16.2.3 Household Expenditures on VLTs

The average VLT net expenditure (based on combined provincial and First Nation VLT net net revenues from VLTs) per Nova Scotia household rose from \$510.88 per household in 2001 to a peak of \$649.48 per household in 2004 and has since declined to \$501.14 per household in 2007 (see Table 137). By contrast, the Statistics Canada Survey of Household Spending, estimates of the combined spending on casinos, slot machines and VLTs are considerably lower than the imputed per household VLT expenditures from actual VLT net revenue (or net VLT expenditures) statistics. To put the average \$600.77 per household expenditure on VLTs in 2005 in context, consider that the average Nova Scotia household spent \$545 on public transportation (see Table 24 in this study).

Methodology issues: caution must be exercised when using a data sample; as well, literature in prevalence studies indicates there is an issue about recall of gambling expenditures in surveys. [Reference: http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30]

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Table 136
Average Household Net Expenditure on VLTs,
2001 to 2007.

	2001	2002	2003	2004	2005	2006	2007
Net expenditures on VLTs (\$000), provincial and First Nation VLTs	\$183,928	\$210,120	\$217,783	\$240,384	\$224,377	\$194,412	\$188,668
Number of Nova Scotia Households	360,020	363,385	366,750	370,115	373,480	376,845	376,481
Average Nova Scotia Household Net Expenditures on VLTs	\$510.88	\$578.23	\$593.82	\$649.48	\$600.77	\$515.89	\$501.14
Average Nova Scotia Household Net Expenditures on Casinos, VLTs, and Slots (Statistics Canada)	\$75	\$102	\$91	\$85	\$186	\$86	n.a.

Sources: Nova Scotia Government. Alcohol and Gaming Authority. Annual Gaming Reports, 2001/02 to 2007-08. Household statistics for Nova Scotia are from Statistics Canada. Statistics Canada household expenditure data [CANSIM Table 62F0032](#). The number of Nova Scotia Households is from Statistics Canada Census for 2001 and 2006; other years are estimated. Statistics Canada data does not break out VLT expenditures from casinos and slots.

The estimated number of NS households has not been consistent in all tables. Methodology issues: caution must be exercised when using a data sample; as well, literature in prevalence studies indicates there is an issue about recall of gambling expenditures in surveys. [Reference: http://www.gov.ns.ca/hpp/publications/adult_gambling_report.pdf 2007 Adult Gambling Prevalence Study p.29-30] CANSIM Table 62F0032 does not exist; more recent research data was available at time of writing.

16.2.4 Government Gambling Revenues

VLT gambling revenues are the most important source of gambling revenues to the Nova Scotia Government. Net revenues to the provincial government (i.e. total wagered less prize money less operating expenditures and disbursement to commercial gambling enterprise and charitable revenues) rose 26.6% from \$111.5 million in 2001 (representing 60.4% of total provincial net gambling revenues or 1.98% of total provincial revenues from all sources) to a peak of \$132.6 million in 2004 (see Table 138). Since 2004, net provincial revenues from VLTs has steadily declined with 2007 net revenues of \$94.9 million, representing a 28.4% decline over 2004 levels. In turn, VLT revenues contribute less (56.1%) to total net provincial gambling revenue in 2007 and less (1.07%) to total provincial government revenues (from all sources).

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Table 137

Net Revenues to Nova Scotia Government from VLT Gambling Revenues

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Net Revenues from VLTs to Provincial Government	\$111,513	\$117,945	\$117,872	\$132,555	\$117,392	\$95,703	\$94,935
VLT Net Provincial Government Revenues as % of Total Net Provincial Gambling Revenues	60.4%	59.9%	64.6%	67.8%	63.0%	54.3%	56.1%
% of Total Provincial Government Revenues	1.98%	2.08%	1.95%	1.89%	1.56%	1.20%	1.07%

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007-08. Nova Scotia Government Annual Reports 2000 to 2007-08. Nova Scotia Government revenue statistics are from Province of Nova Scotia. Public Accounts Vol. 1. Financial Statements. Reports for fiscal year ending March 31 2001 - fiscal year ending March 31 2008.

In addition to provincial gambling revenues, there is personal tax revenues from employment earnings (from those employed directly or indirectly in the gambling sector) that accrue to the provincial government from employment earnings. Estimates of personal tax revenues from estimated employment related to VLT gambling are provided in the employment impact section 16.4.2 of this section of this report.

16.2.5 Producer Surplus (Industry Profit)

This is not consistent with Table 1, “The SEIG Analytical Framework” which uses “gambling industry profits” as terminology, not “producer surplus.”

A key benefit of gambling is the producer surplus or gambling industry profit that is earned by the gambling industry, and additional profit earned by other associated industries that benefit directly or indirectly from the existence of the gambling industry. In economic theory, producer surplus is the difference between what producers actually receive when selling a product and the amount they are willing to accept for a unit of the good. How should industry profit or producer surplus be measured?

For purposes of this study we use **commercial revenue** (payments to the gambling industry out of net revenues) as a proxy for producer surplus. **Commercial revenues** from VLTs has been dropping significantly over the years reaching a low of \$23.1 million in 2007 from a peak of \$34.7 million in 2004 (Table 139). As a percentage of total commercial revenues, VLTs now only contribute 27.1% of total gambling industry revenues compared with 65.4% in 2004.

Commercial revenue is not a reasonable proxy for profit or for producer surplus.

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Table 138

Commercial Revenues to Nova Scotia Gambling Industry from VLTs

\$ thousands	2001	2002	2003	2004	2005	2006	2007
Commercial Revenues from VLTs	\$28,404	\$32,145	\$32,779	\$34,756	\$30,706	\$25,401	\$23,066
% of Total Commercial Revenues From All Gambling.	58.2%	60.9%	62.2%	65.4%	35.9%	27.9%	27.1%

Source: Nova Scotia Department of Environment and Labour. Alcohol and Gaming Division. Annual Gaming Reports, 2000/01-2007-08. Nova Scotia Government Annual Reports 2000/01 to 2007-08.

Clarification is required as regards "all gambling".

16.3 Tourism and Recreation Impacts

Tourism and recreation impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Gambling patronage (out-of-province visitors)
- Incremental tourist expenditures on gambling venues
- Income and employment losses sustained by other entertainment and recreation tourism-related industries.

As noted, tourism statistics related specifically to VLT gambling activity is not available and therefore estimating impact values at a game level for VLT gambling. Please refer to the all-games section for a discussion of tourism and recreation impacts.

16.3.1 Gambling patronage (participation rates).

While some tourism visitation statistics are available for non-resident visitors to Nova Scotia who self-identify gambling as one amongst several reasons for visiting the province, these statistics are only relevant to casinos (Halifax and Sydney casinos) as one of the destinations (Nova Scotia Department of Culture; Visitor Exit Surveys). Data on non-resident tourist visitations for VLT gambling are not available. Nor do VLT financial statistics (wagered, prizes) distinguish between residential and non-residential activity.

Future visitor exit surveys could collect data from visitors with respect to their patronage of provincial VLT venues or establishments to help populate this domain with tourism statistics. Experiential data from the 2003 and 2007 prevalence studies are not helpful since they only survey Nova Scotia residents.

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16.3.2. Incremental tourist expenditures on gambling venues.

Given the absence of tourism data related to VLT activity by non-residents, incremental tourist expenditure data is also not available.

16.3.3. Income and employment losses sustained by other entertainment and recreation industries

On the negative side of the tourism equation is the income and employment losses sustained by traditional forms of entertainment and recreation industries in the community. Data for this impact were potentially available from key informant interviews, however, our inquiry failed to gather sufficiently robust information to warrant inclusion in this study.

16.4. Employment Impacts

16.4.1 Introduction

This section examines employment impacts that are estimated to be attributable to VLT gambling, using the results of the Input-Output modeling that was conducted for VLTs and ticket lotteries (see Appendix 2 for details). The I-O results provides an estimate of employment (person years), both direct and spin-off employment estimates, estimates of household income associated with this employment, and government tax revenues associated with household income related to VLT gambling activities. Three different analytic scenarios are considered.

Following the employment impact indicators framework in Part II of this report, the following employment indicators were examined related to VLT gambling:

- Net job creation in the gambling industry (including estimated household income and personal provincial income taxes from I-O analysis associated with VLT employment)
- Indirect employment related to the gambling industry
- Changes in unemployment and underemployment resulting directly from gambling industry development
- Productivity losses and absenteeism.

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16.4.2 Net Job Creation in the Gambling Industry

“Net job creation” is not discussed.

There are no official employment statistics related to VLT gambling and the venues (e.g. bars, lounges) where VLTs are located. Instead, an input-output (I-O) analysis was completed for VLTs and ticket lotteries by Anielski Management Inc. with the analytic support of the Nova Scotia Department of Finance with data input obtained from a combination of sources, including the Nova Scotia Gaming Corporation and the Atlantic Lottery Commission (see Appendix 2). Please also refer to section 6.2 of this report which discussed the results of the I-O analysis for both VLTs and ticket lotteries.

Three scenarios were developed for the VL sector (see Tables 140 to 142). The VL terminals by their design are not seen as requiring constant attention for their operation, so another scenario was developed so the impact of commissions and bonuses could be isolated. In scenario 1, household income and employment is provided only by the ALC and NSGC. This provided the lowest range of impacts. Scenario 2 has 50% of commissions and bonuses for companies going to employment income, while scenario 3 has 100% of commissions and bonuses going to employment.

This paragraph contains a direct quotation from a NS Department of Finance report which has not been cited.

Table 139
Video Lottery Scenario 1
(100% leakage of commissions and bonuses)

	Direct	Spinoff	Total
Employment (PYs)	24	175	199
Household Income (\$000s)	1,410	6,631	8,041
Provincial Government Revenue (\$000s)	185	757	942

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Source not cited.

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Table 140
Video Lottery Scenario 2

(50% of commissions and bonuses to employment income, 50% to dividends)

	Direct	Spinoff	Total
Employment (PYs)	548	338	886
Household Income (\$000s)	24,813	12,816	37,629
Provincial Government Revenue (\$000s)	1,045	1,463	2,508

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Source not cited.

Table 141
Video Lottery Scenario 3

(100% of commissions and bonuses to employment income)

	Direct	Spinoff	Total
Employment (PYs)	1,072	338	1,410
Household Income (\$000s)	24,813	12,816	37,629
Provincial Government Revenue (\$000s)	1,904	1,463	3,367

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Source not cited.

Scenario 1 simulation assumes that 100% of bonuses and commissions do not accrue to employment income or benefits but rather ‘leak’ out accruing perhaps to the VLT terminal venue vendors. Scenario 2 assumes that 50% of bonuses and commissions goes to employment income while 50% goes to VLT vendor dividends. Scenario 3 assumes that 100% of bonuses and commissions goes to employment income. Employment associated with commissions and bonuses to private enterprises may be misleading (overstated). It may be that the amount of commissions and bonuses going towards household income is used to support employment, possibly even pre-existing employment, rather than be associated with creating employment. It would be rare that a high percentage of any single person’s job where VLTs are present would be dedicated to VLT activities

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Which VLT employment simulation scenario is most relevant to Nova Scotia? The answer depends on the unique conditions of operations for each VLT venue or vendor in Nova Scotia. However, in our opinion it would seem reasonable to assume that VLT related direct employment probably falls somewhere between scenario 1 (24 person-years (PYs) of employment) and scenario 2 (548 PYs) person-years of employment. We believe it is highly unlikely that VLT venue owners (e.g. bars and clubs) would spend 100% of the VLT commissions and bonuses on employee salaries either directly or indirectly related to the existence of the VLT machines in their establishments.²⁷⁹

Source is not cited.

Footnote 279: This is a direct quote from the NS Department of Finance I-O (Input-Output) Study.

How important are VLT-related gambling jobs to overall Nova Scotia employment? As noted in section 6.2 of this report, the numbers of estimated direct PYs of employment related to VLT gambling would represent a relatively small as a percent of total Nova Scotia employment. For example, using I-O analysis scenario 2 estimates of direct employment, 548 PYs of VLT-related employment would represent 1.8% of the 30,200 persons employed in the accommodation and food services industries (the sector most likely to include bars and other VLT venues) in Nova Scotia in 2007.²⁸⁰

Scenarios were provided to the consultant by the NS Department of Finance for the purpose of further research related to this study.

²⁷⁹ 2. Employment associated with commissions and bonuses to private enterprises may be misleading (overstated). It may be that the amount of commissions and bonuses going towards household income is used to support employment, possibly even pre-existing employment, rather than be associated with creating employment. It would be rare that a high percentage of any single person's job where VLTs are present would be dedicated to VLT activities.

²⁸⁰ Employment statistics are from Statistics Canada, CANSIM Table 282-0061, Labour force survey estimates and are reported in terms of number of persons employed. While person-years of employment are not directly comparable with the number of persons employed, the comparisons are made to provide a relative sense of magnitude of VLT-related employment estimates.

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Household income related to VLT gambling

Household income associated with the estimated employment impacts of VLT gambling were also estimated using I-O analysis (see Appendix 2 for details of how household income was estimated). Assuming that scenarios 1 and 2 best reflect the most likely employment and income scenario for VLT gambling, the I-O results estimate household income of \$1,401,000 (scenario 1, **direct employment**) and \$24,813,000 (scenario 2, **direct employment**). There is also household income related to estimates of **spin-off or indirect** employment which range from \$6,631,000 (scenario 1) to \$12,816,000 (scenario 2). Combining direct and spin-off household income statistics, a range from \$8,041,000 (scenario 1) to \$37,629,000 (scenario 2). Relative to the total Nova Scotia personal incomes for the province (\$27,323 million in 2006)²⁸¹ the estimated household income from VLT-related employment would represent between 0.029% (scenario 1) and 0.138% (scenario 2) of total provincial household income in 2006.

*The reference “direct employment” is incorrectly used in this context.
“Indirect” and “spinoff” are two different terms which cannot be used interchangeably.
Direct household income should be used in relative comparison to total NS personal income in this context.*

16.4.3 Indirect Employment Related to Gambling Industry

Indirect (spinoff) employment related to VLT gambling venues were estimated using I-O analysis. Tables **105, 106 and 107** show the results for the three scenarios examined ranging from 175 (scenario 1) to 338 PYs (scenario 2 and 3). **Indirect** employment is estimated by adjusting direct employment with an indirect job multiplier variable. The indirect job multipliers ranged from 7.29 (scenario 1), 0.62 (scenario 2) to 0.31 (scenario 3).

*“Indirect” and “spinoff” are two different terms which cannot be used interchangeably.
There is an incorrect reference to Tables 105, 106, and 107.*

16.4.4 Changes in Unemployment and Underemployment

Please refer to all-games section. There was not sufficient data to estimate the contribution of **charity bingo** to changes in unemployment and underemployment.

Text contains incorrect reference to “charity bingo”.

²⁸¹ Statistics Canada CANSIM 384-0012, Sources and disposition of personal income, provincial economic accounts.

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16.4.5 Productivity Losses and Absenteeism

Please refer to all-games section. There was not sufficient data to estimate the contribution of VLT gambling to productivity losses and absenteeism.

16.5 Health and Well-being Impacts

16.5.1 Introduction

This section examines the potential impacts on physical, mental and social health and well-being²⁸² impact of VLTs on individual gamblers, their families and society. Health and Well-being impact indicators adopted for the Nova Scotia SEIG framework include:

- Problem gambling prevalence rates
- Gains from gambling as a leisure activity
- Health problems, disease rates and morbidity
- Premature mortality rates (other than suicide)
- Stress, anxiety and depression
- Suicide (thoughts, attempts, actual)
- Social isolation
- Loss of quality time with family, friends and community
- Substance abuse related to gambling
- Psychological impacts on family and friends of gamblers
- Family break-up (separation, divorce, impact on children)
- Domestic violence

Unfortunately, due to the limitations of data and sample sizes from previous adult gambling prevalence studies, most of the health and well-being impact specific to VLT gambling or any other game-of-chance in Nova could not be analyzed, with the exception of data on problem gambling prevalence rates gambling prevalence studies.

²⁸² This definition of health comes from the World Health Organization framework which replaces earlier definitions of health as “the absence of disease.” (World Health Organization. (1947-2004). *WHO Definition of Health*).

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For example, the 2007 adult gambling prevalence study for Nova Scotia found that problem gamblers were more likely than others to suffer from depression and anxiety and to have experienced problems with debt and finding a job. Also, rates of smoking were higher among problem gamblers although there were no differences in rates of self-reported problems for drugs or alcohol by self or others. And, 4.1% or about 32,000 adults in Nova Scotia reported problems over the past year due to someone else's gambling.²⁸³ The challenge is that because of small sample sizes, it was not possible to attribute these impacts to specific games-of-chance. Such detailed or forensic game-specific impact analysis was beyond the scope of this project.

Clarification is required that this paragraph refers to all games, not only VLTs.

While the adult gambling prevalence studies contain useful information on impacts related to health and well-being, they are not specific enough to the health indicators in the SEIG framework. Our attempts to resample the problem gambler cohort and their families from the 2007 adult gambling prevalence study in the 2008 telephone survey did provide some additional anecdotal information (see responses to the open-ended 2008 telephone survey question of problem gamblers and family members related to their feelings about the impacts of gambling on themselves, their family and society in Appendix 3.2) to potentially populate the health and well-being indicators. However, because of a relatively small sample size of problem gamblers, it is still not feasible nor is it statistically defensible to attribute health problems to a specific gambling activity.

This suggests the need for a new primary research agenda that would probe more deeply the health, well-being and social impacts of specific games-of-chance particularly those, like VLT, ticket lotteries, and slot machines at casinos which are known currently to be the most deleterious in terms of problem gambling impacts experienced by adult gamblers.

²⁸³ Nova Scotia Health Promotion and Protection. 2008. *2007 Adult Gambling Prevalence Study*. p. xvi.

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16.5.2 Problem Gambling Prevalence Rates

According to the 2003 and 2007 Adult Gambling Prevalence Study results an estimated 1.60% of Nova Scotia adults (19 years and older) were moderate risk and problem VLT gamblers in 2002 and 2007 gamblers according to the CPGI classification system. That is, an estimated 12,059 adults in 2002 and 12,677 adults in 2007 had a gambling problem with VLTs (see Table 143),²⁸⁴ second only to the estimated 17,934 ALC lottery gamblers with moderate risk to problem gambling behaviour. The number of Nova Scotia adults who gambled on VLTs in 2007 of all gambler types was down to 13.6% of adults compared to 19.0% of adults in 2002.

Individuals who play VLT machines may participate participate in more than one gambling activity, which influences risk.

Table 142
Estimated Nova Scotia VLT Gamblers by Gambler Type (CPGI),
2003 and 2007

Survey Year	Gambler Subtype				Total Adults
	Non-VLT Players	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers	
	2002 (n=2268) 2007 (n=2161)	2002 (n=415) 2007 (n=259)	2002 (n=71) 2007 (n=39)	2002 (n=46) 2007 (n=41)	2002 (n=2800) 2007 (n=2500)
Percentage of Sample					
2003	81.00%	14.80%	2.50%	1.60%	19.00%
2007	86.40%	10.40%	1.60%	1.60%	13.6% ↓
Nova Scotia Population Estimates (adults ≥ 19 years)					
2003	594,540	108,789	18,612	12,059	734,000
2007	668,181	80,083	12,059	12,677	773,000

Source: Nova Scotia 2003 and 2007 Adult Gambling Prevalence Studies; **estimates of net gambling expenditure distribution conducted by Anielski Management Inc.** Estimated are based on raw data from the 2003 and 2007 Adult Gambling Prevalence Studies conducted by Focal Research Inc.

Notes: Arrows indicate the direction of significant change over time (p <.05). Population estimates were derived from prevalence rates calculated to two decimal points.

Individuals who play VLT machines may participate participate in more than one gambling activity, which influences risk.

Source of population estimates needs to be noted.

The citation is incorrect, as it refers estimates of net gambling expenditure distribution when the table is about estimated NS VLT gamblers by gambler type.

²⁸⁴ As previously noted, the 2007 Adult Gambling Prevalence study found that problems with gambling may be associated with more than one game so that a VLT player with a gambling problem may also be a person who has problems with casino games or with daily lotteries. Therefore, caution should be used when interpreting the estimated problem gambler population figures since there could be overlap or duplication across other games. However, the 2007 prevalence study noted that currently gambling problems are becoming more strongly skewed towards a single type of gambling activity; 85% of those who reporting having an ongoing gambling problem cited only one type of gambling as being associated with problems for them.

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Compared with other games of chance, video lottery (VLTs) was cited as the principal cause of ongoing gambling problems (67%) or more than two-thirds of adult gamblers reporting a gambling problem versus 3%-18% for other gambling activities in 2007, even though only 13.6% of adult gamblers who had gambled in the last year had played VLTs.²⁸⁵ About one out of every 21 people (4.7%) who had ever tried VLT machines experienced problems. The rate of self-identified problem gambling with VLTs was almost three times as high as any other form of gambling in the province including casino gambling (0.4% of adults), slot machines (0.3% of adults) and daily draw tickets (0.5% of adults). According the 2007 adult gambling prevalence study, VLT gambling, and to a lesser extent daily lottery games, were the only two forms of gambling for which past-year participation rates increased by risk for gambling problems, suggesting that VLTs are one of the most difficult gambling problems to overcome.²⁸⁶

*Representation of the data does not match the data in the published NS Prevalence studies.
Drawing conclusions from the analysis of the data used is questionable.
Some individuals participate in more than one gambling activity which influences risk.
Footnotes 285 and 286: Citations are incorrect.*

Furthermore, the 2007 adult gambling prevalence study found that among past-year VLT gamblers, the proportion jumped to one in 12 (8.8%) but increased dramatically to about one out of every four adults (26.7%) who took part in VLT gambling on a regular basis. This is the highest rate of problem gambling development of any other game available in Nova Scotia and represents a significant increase over 2003 prevalence findings, when 16% of regular VLT players reported having problems.²⁸⁷

*Representation of the data does not match the data in the published NS Prevalence studies.
Drawing conclusions from the analysis of the data used is questionable.
Some individuals participate in more than one gambling activity which influences risk.
The reference to “regular basis” and “regular VLT players” in the text should be “regular monthly basis” and “regular monthly VLT players”.
Footnote 287: Citation is incorrect.*

16.5.3 Gains from VLTs as a Leisure Activity

Please refer to all-games section 7.3 that deals with the gains from gambling as a leisure activity (i.e. fun and entertaining). Unfortunately data from the 2003 and 2007 adult gambling prevalence studies do not provide a statistically robust data set to provide insights into game-specific impacts.

²⁸⁵ Ibid. p. 50. The 2007 adult gambling prevalence study noted a shift towards negative impacts associated with ALC daily lottery products and commercial versions of poker in addition to slots and casino table games.

²⁸⁶ Ibid. p. vi.

²⁸⁷ Ibid. p. viii

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16.5.4 Health Problems, Disease Rates and Morbidity

Please refer to all-games section 7.4 dealing with health impacts from gambling. While VLT gambling is the greatest source of problem gambling experienced by adult gamblers, based on the adult gambling prevalence research, there is insufficient data to attribute specific health problems with a specific game. At present there is only anecdotal information about the impact of VLTs on problem gambling experienced revealed in the 2008 adult problem gambling telephone survey (see Appendix

16.5.5 Stress, Anxiety and Depression

Please refer to all-games section. There was not sufficient data to estimate the contribution of VLT gambling to stress, anxiety, and depression.

16.5.6 Suicide

Please refer to all-games section. There was not sufficient data to estimate the contribution of VLT gambling to suicide.

16.5.7 Social Isolation

Please refer to all-games section. There was not sufficient data to estimate the contribution of VLT gambling to social isolation.

16.5.8 Substance Abuse

Please refer to all-games section. There was not sufficient data to estimate the contribution of VLT gambling to substance abuse, including smoking.

16.5.9 Psychological Impacts on Family and Friends

Please refer to all-games section. There was not sufficient data to determine the psychological impacts on family and friends of VLT players.

16.5.10 Family Break-up (Separation, Divorce, Impact on Children)

Please refer to all-games section. There was not sufficient data to determine the role VLT plays in family break-ups.

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16.5.11 Domestic Violence

Please refer to all-games section. There was not sufficient data to determine the relationship between VLT gambling and domestic violence.

16.6. Crime, Legal and Justice Impacts

Crime, legal and justice impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Reduced illegal gambling rates (as a positive benefit of the availability of legalized gambling).
- Crime rates related to gambling (e.g. money-related crimes including theft, other property crimes, fraud, embezzlement).
- Policing and incarceration costs
- Security costs
- Social cost of gambling-related crime

Given data limitations, there was not sufficient data to estimate impact values at a game level for VLT gambling. Please refer to all-games section for a discussion of crime, legal and justice impacts associated with gambling in Nova Scotia.

16.7. Community and Culture Impacts

16.7.1 Introduction

This section examines the potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations that benefit from gambling revenue transfers from the provincial government, and the public attitude, beliefs, and values toward gambling by citizens.

Community and culture impact Indicators examined for Nova Scotia SEIG framework include:

1. Local charities and non-profit sector dependence on gambling revenues
2. Feelings of loss or gains community quality of life and social cohesion.
3. Sense of safety from gambling venues.

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16.7.2 Impacts on Local Charities, Non-Profit Organizations and other Public Sector Agencies

Charitable revenues from VLT gambling activity ranked third most important in terms of charitable revenues in 2007, after bingos and charitable ticket lotteries), contributing \$5.8 million or 21.6% of total gambling charitable revenues of \$27.1 million (Table 144). Charitable revenues from VLT gambling represent a declining share of total charitable revenues having decreased 8.1% compared to 2001 (\$6.37 million). In constrast, charitable revenues from bingos have fallen 34.6% since 2001, while charitable lottery ticket charitable revenues increased 140.0% for a total increase in provincial charitable revenues from all games of 7.0% since 2001.

Table 143
Charitable Revenues from VLTs, Nova Scotia, 2001-2007 (\$ thousands)

	2001	2002	2003	2004	2005	2006	2007
Charitable revenues (VLT)	6,371	7,022	6,554	6,521	5,777	5,496	5,857
Charitable revenues (all games)	\$25,342	\$24,365	\$22,960	\$26,960	\$28,634	\$28,536	\$27,107
VLT charitable revenues as a percent of charitable revenues	26.1%	30.6%	24.3%	22.8%	20.2%	20.3%	21.6%

Source: Nova Scotia Government. Alcohol and Gaming Authority, Annual Gaming Reports. 2001-02 to 2007-08

Some figures in Table 144 are incorrect.

16.7.3 Citizen Attitudes Towards Gambling and Gambling Venues

While there has been mixed public opinion toward gambling and several game types, VLTs had the second strongest negative public approval in a 2005 Nova Scotia public opinion poll on gambling. Roughly 25% of the public either approved or strongly approved of video lottery second only to internet gambling (20% approval).²⁸⁸ Other strong feelings towards VLTs and slot machines were revealed in the 2008 telephone survey by the problem gamblers and family members from the cohort of gamblers surveyed in the 2007 adult problem gambling study (see Appendix 3.2).

16.7.4 Feelings of Safety Due to Gambling Venues

Please refer to all-games section. There was not sufficient data to evaluate citizen feelings of safety due to VLT venues.

²⁸⁸ Omnifacts Bristol Research. 2005. Public Attitudes on Gaming in Nova Scotia. February 25, 2005. ISBN # 7073-1006.

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17. Impacts of On-line Gambling in Nova Scotia

Reference to an analysis of data on PlaySphere is also included in Section 15 of this document (Impacts of ALC Lottery Products in Nova Scotia).

17.1 Description of Online Gambling

The delivery of provincially-sanctioned online gambling products to people in Atlantic Canada began in August 2004 with the launch of PlaySphere by the Atlantic Lottery Corporation. The ALC shareholders include the Nova Scotia Gaming Corporation, Lotteries Commission of New Brunswick, Prince Edward Island Lotteries Commission, and Province of Newfoundland and Labrador.

PlaySphere is a secure website portal where Nova Scotians and other Maritimers may purchase lottery products online from ALC. Online game offerings presently include the following:

- Jackpots and draws (Lotto 6/49, Atlantic 49, Lotto Super 7, Twist, Millionaire Life, Bucko, Salsa Bingo)
- Interactive games (Hold 'em Poker, Mini-Golf, Gong, Memento, Eldorado)
- iBingo (Kitchen Party Bingo, East Coast Bingo, Lighthouse Bingo, Wave Bingo)
- Pick 'n Click (Lobster Chase, Diamond Hunt, Lucky Dice, 3 Card Poker, Shootout)
- Pro-Line Stadium.com

The PlaySphere online gambling portal is only available to residents of the four Atlantic provinces who are 19 years-of-age or older. Players must first register and sign up for a PlaySphere account and then deposit funds to the account prior to playing. Once the player's account has been funded (using Interac, WebCash, credit card, electronic funds transfer), he or she may pick any of the available games and submit wagers according to the rules established for that game. PlaySphere automatically checks for winners and notifies players when they have won and wins that are less than \$10,000 are deposited directly into the player's account. PlaySphere also has a group play feature that allows a number of people to contribute to purchasing lottery tickets for a draw.

As well as playing on the provincially-sanctioned ALC PlaySphere website, many Nova Scotians wager on gambling websites that are ubiquitous on the Internet. In a comprehensive review and synthesis of the literature on Internet gambling, Williams and Wood²⁸⁹ report that, in 2007, online sites worldwide included: 793 online casinos, 466 poker rooms, 420 sports and

²⁸⁹ Williams, R. and Wood, R. (2007). *Internet Gambling: A Comprehensive Review and Synthesis of the Literature*. Report prepared for the Ontario Problem Gambling Research Centre, Guelph, Ontario, CANADA. August 30, 2007.

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racebooks, 258 online bingos, 53 skill game sites, 31 lottery sites, 22 betting exchanges, and 16 backgammon sites. Undoubtedly, many Nova Scotians gamble on these sites; however, it is virtually impossible to estimate how extensive this practice is in the province. The 2007 Adult Gambling Prevalence Study²⁹⁰ in Nova Scotia posited the following conclusions regarding Internet gambling and use of the ALC Playsphere portal:

Internet Gambling

- In general there were very low involvement levels with non-regulated internet gambling in Nova Scotia, with only 1.6% (n=41) having ever tried gambling on-line, including on-line poker (1.0%), sports betting (0.6%) and other forms of on-line wagering (0.4%).
- In the past year, less than 1% reported wagering on any of these forms of internet gambling: on-line poker (0.4%), sports betting (0.2%), other forms of on-line wagering (0.2%).
- Among those who have ever tried internet gambling about 1 in 20 (4.9%) reported developing problems with the amount of time and/or money they spent on this activity. This preliminary rate of problem development was almost identical to that well documented for VLTs (4.7%).

The above text is a direct quote from 2007 NS Prevalence Study which is not acknowledged.

Use of ALC PlaySphere

- About 2.1% of adults have tried ALC's new online gambling site at some point in time. While just under a third of trial visitors dropped the service, 70% were current members and about half had purchased through the site over the last year (1% of adults)
- For the most part, purchasing was reported to be casual although 0.4% (3,000) of adults indicated that they were making regular monthly purchases.
- It is unclear whether the site attracts those at higher risk or contributes to risk. But the evidence indicates that those playing on the PlaySphere site were at higher levels of risk for gambling problems than those who did not use the site.

Text includes an incorrect number.

As Labrie et al.²⁹¹ point out, there is very little empirical research on Internet gambling. Moreover, most of the research is based on self-reported behaviour, such as in the 2007 Nova Scotia prevalence study, which is a significant limitation to accurately measuring participation rates. To address this paucity of information and limitations of self-reports, this Harvard

²⁹⁰ 2007 Adult Gambling Prevalence Study. Nova Scotia Health Protection and Promotion.

²⁹¹ LaBrie, R., LaPlante, D., Nelson, S., Schumann, A., and Shaffer, H. (2007). Assessing the playing field: A prospective longitudinal study of Internet sports gambling behavior. *Journal of Gambling Studies*, 23, 347-362.

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University research team is presently collaborating with a major international Internet-based sports betting company (BWIN) in a longitudinal study that tracks the actual wagering behaviour of online gamblers. This type of longitudinal research is needed in Nova Scotia to gain a more precise estimate of the number of players who are playing on various Internet gambling sites throughout the world.

17.2 Economic and Financial Impacts

17.2.1 Introduction

This section examines economic and financial impacts attributable to online gambling. Economic and financial indicators adopted for the Nova Scotia SEIG framework include:

- Gambling GDP
- Personal expenditures on online gambling
- Household spending on online gambling
- Consumer surplus
- Negative consumer surplus
- Distance surplus
- Online gambling revenues
- Gambling industry business profits
- Net business sector growth (business investments)
- Government defensive expenditures
- Direct regulatory costs
- Bankruptcies, financial difficulties, and bad debts
- Abused dollars.

17.2.2 Gambling GDP

Please refer to the all-games section. There was not sufficient data to estimate a gambling GDP value specific to online gambling at a game level.

17.2.3 Personal Expenditures on Online Gambling

17.2.4 Household Expenditures on Online Gambling

17.2.5 Consumer Surplus

There are no consumer surplus estimates for gambling for Nova Scotia.

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17.2.6 Negative Consumer Surplus

Please refer to the all-games section. There was not sufficient data to estimate a negative consumer surplus value attributable at a game level for online gambling.

17.2.7 Distance Surplus

There are no distance consumer surplus estimates for gambling for Nova Scotia.

17.2.8 Online Gambling Revenues

There are no official and publicly available online gambling revenue statistics currently available for Nova Scotia.

17.2.9 Gambling Industry Business Profits

There are no official and publicly available online gambling revenue statistics, including business or commercial gambling revenues, currently available for Nova Scotia.

17.2.10 Net Business Sector Growth (Business Investments)

Please refer to the all-games section. There was not sufficient data to estimate a net business sector growth value attributable at a game level for online gambling.

17.2.11 Government Defensive Expenditures

Please refer to the all-games section. There was not sufficient data to estimate a government defensive expenditures value attributable at a game level for online gambling.

17.2.12 Direct Regulatory Costs

Please refer to the all-games section. There was not sufficient data to estimate direct regulatory costs attributable at a game level for online gambling.

17.2.13 Bankruptcies, Financial Difficulties, and Bad Debts

Please refer to the all-games section. There was not sufficient data to estimate the contribution of online gambling to bankruptcies, financial difficulties, and bad debts.

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17.2.14 Abused Dollars

There are no estimates of abused dollars for Canada or for Nova Scotia. Please refer to the all-games section for a discussion of abused dollars as it relates to gambling.

17.3 Tourism and Recreation Impacts

Tourism and recreation impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Gambling patronage (out-of-province visitors)
- Incremental tourist expenditures on gambling venues
- Income and employment losses sustained by other entertainment and recreation tourism-related industries.

Given data limitations, there was not sufficient data to estimate impact values at a game level for online gambling. Please refer to the all-games section for a discussion of tourism and recreation impacts.

17.4 Employment Impacts

17.4.1 Introduction

This section examines employment impacts attributable to online gambling. The emphasis is on direct and indirect job creation but also includes potential productivity losses stemming from gambling problems. Employment impact indicators adopted for the Nova Scotia SEIG framework include:

- Net job creation in the gambling industry
- Indirect employment related to the gambling industry
- Changes in unemployment and underemployment resulting directly from gambling industry development
- Productivity losses and absenteeism.

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17.4.2 Net Job Creation in the Gambling Industry

According to a *GPI Atlantic* study, almost all of the direct employment from gambling are products of casinos and government regulated authorities.²⁹²

*Net job creation is not the same as direct employment.
Text does not contain information on on-line gambling.*

17.4.3 Indirect Employment Related to Gambling Industry

Indirect employment related to internet gambling was not estimated as we were not able to determine a direct job employment value. Indirect employment is estimated by adjusting direct employment with an indirect job multiplier variable. Indirect job multipliers used in this report range from 0.80 for Casinos to 0.90 for VLT venues.

“Indirect job multiplier” is incorrect terminology for the data provided. Also, these multipliers would not apply to on-line gambling because of its industry structure.

17.4.4 Changes in Unemployment and Underemployment

Please refer to the all-games section. There was not sufficient data to estimate the contribution of online gambling to changes in unemployment and underemployment.

17.4.5 Productivity Losses and Absenteeism

Please refer to the all-games section. There was not sufficient data to estimate the contribution of online gambling to productivity losses and absenteeism.

17.5 Health and Well-Being Impacts

17.5.1 Introduction

This section examines the potential impacts on physical, mental and social health and well-being²⁹³ impact of online gambling on individual gamblers, their families and society. Health and Well-being impact indicators adopted for the Nova Scotia SEIG framework include:

²⁹² GPI Atlantic. 2004. *The Costs and Benefits of Gaming: A Literature Review with Emphasis on Nova Scotia*. Study prepared by Karen Hayward for the Nova Scotia Gaming Foundation. July 2004, p. 89.

²⁹³ This definition of health comes from the World Health Organization framework which replaces earlier definitions of health as “the absence of disease.” (World Health Organization. (1947-2004). *WHO Definition of Health*).

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- Problem gambling prevalence rates.
- Gains from online gambling as a leisure activity.
- Health problems, disease rates and morbidity.
- Stress, anxiety and depression.
- Suicide
- Social isolation.
- Substance abuse related to online gambling.
- Psychological impacts on family and friends of online gamblers.
- Family break-up (separation, divorce, impact on children).
- Domestic violence.

17.5.2 Problem Gambling Prevalence Rates

As stated above, the 2007 Adult Gambling Prevalence Study²⁹⁴ report concluded that among those who ever tried Internet gambling, about 1 in 20 (4.9%) reported developing problems with the amount of time and/or money they spent on this activity. The researchers also concluded that it is unclear the ALC PlaySphere website attracts those at higher risk for developing a gambling problem or contributes to the risk. They did conclude that those gambling on the PlaySphere website were at higher levels of risk for gambling problems than those who did not use the site. It is difficult to interpret this nominal finding, given the very low number of PlaySphere players in the survey sample and the limitations of self-reported participation rates. It is evident that more research is needed to illuminate the relationship between Internet gambling and moderate-risk and problem gambling in Nova Scotia.

17.5.3 Gains from Online Gambling as a Leisure Activity

Please refer to the all-games section. There was insufficient data available to determine whether online gambling provided gains as a leisure activity.

17.5.4 Health Problems, Disease Rates and Morbidity

Please refer to the all-games section. There was no sufficient data to estimate the effects of Internet gambling on health problems, disease rates and morbidity.

17.5.5 Stress, Anxiety and Depression

Please refer to the all-games section. There was not sufficient data to estimate the contribution of online gambling to stress, anxiety, and depression.

²⁹⁴ 2007 Adult Gambling Prevalence Study. Nova Scotia Health Protection and Promotion.

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17.5.6 Suicide

Please refer to the all-games section. There was not sufficient data to estimate the contribution of online gambling to suicide.

17.5.7 Social Isolation

Gambling online is a solitary activity and it seems intuitively logical that a preoccupation with this form of gambling is socially isolating. However, there has been no research to date that has explored the relationship between the negative effects of social isolation and Internet gambling. In fact in their thorough review of the literature on Internet gambling, Williams and Wood identified problems associated with Internet gambling as being related to unfair, illegal or irresponsible business practices; unfair or illegal player practices; gambling by prohibited groups including minors; problem gambling; and lack of responsible gambling practices. Nowhere did they cite concerns that they or other researchers had regarding the socially isolating effects of Internet gambling. Clearly, more research is needed to determine whether the solitary pursuit of this form of gambling is contributing to a deterioration of social skills; negative physical and mental health outcomes; a deterioration of personal relationships; or other deleterious effects.

17.5.8 Substance Abuse Related to Online Gambling

Please refer to the all-games section. There is insufficient data to determine if there is any relationship between substance abuse and online gambling.

17.5.9 Psychological Impacts on Family and Friends of Online Gamblers

Please refer to the all-games section. There was not sufficient data to determine the psychological impacts on family and friends of online gamblers.

17.5.10 Family Break-up (Separation, Divorce, Impact on Children)

Please refer to the all-games section. There was not sufficient data to determine the role online gambling plays in family break-ups.

17.5.11 Domestic Violence

Please refer to the all-games section. There was not sufficient data to determine the relationship between online gambling and domestic violence.

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17.6 Legal and Justice Impacts

Crime, legal and justice impact indicators were developed as part of the NS SEIG framework. Indicators examined for Nova Scotia include:

- Reduced illegal gambling rates (as a positive benefit of the availability of legalized gambling).
- Crime rates related to gambling (e.g. money-related crimes including theft, other property crimes, fraud, embezzlement).
- Policing and incarceration costs
- Security costs
- Social cost of gambling-related crime

Given data limitations, there was not sufficient data to estimate impact values at a game level for online gambling. Please refer to all-games section for a discussion of crime, legal and justice impacts associated with gambling in Nova Scotia.

17.7 Community Impacts

This section examines the potential impact of gambling on the quality of life of communities in Nova Scotia, including impacts on local charities and non-profit organizations that benefit from gambling revenue transfers from the provincial government, and the public attitude, beliefs, and values toward gambling by citizens.

Community and culture impact Indicators examined for Nova Scotia SEIG framework include:

1. Impacts on local charities, non-profit organizations, and other public sector agencies.
2. Citizen attitudes towards gambling and gambling venues
3. Feelings of safety due to gambling venues.

17.7.1 Impacts on Local Charities, Non-Profit Organizations and other Public Sector Agencies

Please refer to the all-games section. There are insufficient data to determine whether, and to what extent, online gambling has an impact on local charities, non-profit organizations or other public sector agencies.

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17.7.2 Citizen Attitudes Towards Gambling and Gambling Venues

Please refer to the all-games section. As Internet gambling opportunities in Nova Scotia are a relatively new available form of gambling, the attitudes of the citizenry are not known at this time.

17.7.3 Feelings of Safety Due to Gambling Venues

Please refer to all-games section. Given that Internet gambling occurs, in the main, in the players residence, workplace or other secure environment, it is unlikely that there are safety-related impacts associated with this form of gambling.

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Conclusions and Recommendations for Future Research

This study into the socio-economic impacts of gambling in Nova Scotia is the first of its kind in Canada to use the new national Socio-Economic Impacts of Gambling (SEIG) framework released in February 2008. The objective of this study, commissioned by the Nova Scotia Government Department of Environment and Labour, was to establish a base-line analysis of a range of social and economic impacts that can be attributed to gambling in Nova Scotia and present a snap-shot of impacts that is analytical, factual and objective. This study was commissioned as part of a five-year strategy *A Better Balance: Nova Scotia's First Gaming Strategy* released in 2005.

The study used the national Socio-Economic Impacts of Gambling (SEIG) analytic framework developed by Anielski Management Inc., which was released in February 2008 as the blueprint for conducting the gambling impact assessments in Canada. The slightly modified version of the national SEIG framework was adopted for this study of the socio-economics of gambling in Nova Scotia across six impact domains: economic and financial; tourism and recreation; employment; health and well-being; crime, legal and justice, and; community.

The study examined the overall impact (using the six impact domains) of all regulated gambling to Nova Scotia study as well as a detailed analysis of impacts attributed to video lotteries (VLTs), casinos, ticket lotteries, bingo, harness racing, and internet gambling.

Impacts and trends in Nova Scotia were limited to the accounting period 2001 to 2007. The study relied on some primary data (e.g. financial statistics were drawn from government sources including the Nova Scotia Gaming Corporation annual reports). Financial and some economic data were the most reliable data source for this study. Measuring impacts for other domains within the SEIG framework proved to be more challenging, requiring the use of secondary data and new research.

The most important secondary data source were the 2003 and 2007 adult gambling prevalence studies for Nova Scotia, which provided statistics of problem gambling prevalence rates. These prevalence studies provided some, although limited, information for assessing specific impacts such as health and well-being impacts. In our attempt to fill in outstanding data gaps in the SEIG impact indicator framework, qualitative research was conducted including a telephone interview (September 2008) with problem gamblers and their families (consulting the same 2007 adult gambling prevalence survey cohort). In addition, interviews with over 20 key informants, with knowledge about various facets of the social and economic impacts of gambling in Nova Scotia, were held in June 2008 in Nova Scotia. While providing some useful information, there are

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limitations to the use of this data which relate mostly to interpreting results from a relatively small sample of Nova Scotia problem gamblers.

Input-output analysis was conducted to estimate some economic and employment benefits of selected gambling activities (casinos, VLT, ticket lottery) in Nova Scotia; an independent input-output analysis of harness racing was also used. Various statistical methods (linear regression analysis) were used to analyze the relationship between gambling activity and various economic and social impacts. Quantitative methods were used to examine the distribution of gambling expenditures and revenues in Nova Scotia for non-problem, low-risk and moderate-risk/problem gambler cohorts and for individual games, using the 2003 and 2007 adult gambling prevalence study data. This analysis was augmented with the results of the 2008 telephone survey of problem gamblers and their families.

The results of this study provide a reasonably complete snap-shot of the social and economic impacts of gambling in Nova Scotia between 2001 and 2007, though significant data gaps remain and will require future research.

CAVEATS, LIMITATIONS and FUTURE RESEARCH

Because this study represents one of the first attempts to conduct a comprehensive socio-economic assessment of gambling in Canada using the new national SEIG framework, it comes with some risks and several caveats.

First, the main limitations of this study are associated with the quality and completeness of the secondary data that were gathered. Some data sets, such as the financial statements of Nova Scotia Gaming Corporation, are complete and highly accurate in their reporting of gambling revenues and expenditures. However, other data sets are incomplete and/or the data is less trustworthy.

Secondly, a related limitation stems from the acknowledgment by the original researchers themselves that their data have limitations. This is true of sources such as Statistics Canada as well as acknowledged limitations researchers conducting adult gambling prevalence surveys. Issues include small sample sizes (e.g. problem gamblers), trustworthiness of self-report data; sample being representative of only those living in private households; and possible influence of others on participants' responses to some questions. Insofar as the present study relies on these data sets, any limitations reported in the original research also apply to the use of these data in the present study.

A third limitation, and most likely the most important for this study of socio-economic impacts of gambling, is the difficulty translating many of the quantitative or qualitative impacts of gambling into economic or monetary terms. This study was unable to calculate any monetary cost

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estimates associated with health or social impacts of problem gambling. Developing such monetary estimates will require years of primary economic research into gambling in Canada; some of this research is only beginning.

A fourth limitation is the challenge of attributing a portion of impact is associated with conducting any gambling socioeconomic impact assessment. Calculating etiological or attribution fractions is a central measurement issue in the science of epidemiology, as researchers strive to determine what proportion of a disease or public health problem is attributable to particular causes.

Fifth, tests of statistical significance used to explore relationships amongst the numerous quantitative study variables are limited given that most of the analyses in this study rely on reports of secondary data. In some data reports—notably the 2003 and 2007 prevalence surveys—statistical tests were conducted, including calculations of margins of error for the sample sizes; confidence intervals for responses to some survey questions; and significance correlations between some survey variable. This points to opportunities for improving prevalence study methods in future research in Nova Scotia and Canada.

Our study was thus primarily limited to a focus on the known economic and financial impacts, and some tourism/recreation, and employment impacts, of gambling to the Nova Scotia economy, as a whole, and individual households, complimented with non-monetary, quantitative and qualitative impacts from the health and well-being, legal and justice (crime), and community domains of the SEIG framework. Given the absence of objective and quantitative economic cost (and benefit) estimates of gambling's impacts in these domains of health, crime, and community, it is currently not possible to express these impacts in monetary terms without considerably new primary economic research (which is only now beginning, for example, at the University of Alberta in the Department of Economics). Consequently, to the extent that impacts are seen by some to be only valid if they are monetized, this study will appear limited.

Notwithstanding these measurement limitations, this study represents a benchmark in socio-economic impact assessment of gambling in Canada as it shows the possibility of integrating and balancing economic benefits and costs of a sector (gambling) with the non-monetary social, human health and community well-being impacts within an integrated analytic framework.

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Glossary of Terms and Definitions

Abused Dollars: Abused dollars represent lost gambling money acquired by the problem gambler from family, friends, or employers under false pretenses.

Consumer Surplus: Benefit to consumers from lower prices, measured as the difference between what consumers would be willing to pay for a good or service and the market value they are actually required to pay.

Cost-Benefit Analysis (CBA): An important technique used by economists for project appraisal – the process of weighing the total expected cost against the total expected benefit of one or more actions in order to choose the best or most profitable option.

Distance Surplus: A measure of the willingness of a gambler to pay for incremental costs to travel from their home to a specific gambling venue rather than a venue in closer proximity. Measuring distance consumer surplus addresses the question: How much would a gambler be willing to pay each year to have the opportunity to gamble in a venue (e.g. casino) nearby, compared with having to travel to an alternative venue a greater distance from your home?

Excess Loss (or Negative Consumer Surplus): The excess losses sustained by the problem gambler population are calculated as the difference between what the problem gamblers actually spent (net of prize payout) and a non-problem gambler who is playing for recreational motives.

Gambling: Risking money or something of value on the outcome of an event involving chance when the probability of winning or losing is less than certain.

Gaming: A term used most often by the gaming industry since, presumably, it does not carry the same stigma as the term “gambling” often does. It includes all legal forms of gambling regulated by government and is intended to invoke entertainment and recreation. "Gaming" is often used interchangeably with gambling in the literature.

Genuine Progress Indicator (GPI) Accounting: An alternative measure of economic progress to the conventional economic measure, the GDP, which attempts to account for the societal and environmental costs (e.g. pollution costs) and unaccounted benefits (e.g. the value of unpaid work) in order to derive a more genuine measure of societal well-being and progress. The GDP vs the GPI is analogous to the difference between the Gross Profit of a company and the Net Profit; the Net Profit is what determines the long-term health of the company.

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Government Defensive Expenditures: Expenditures by government agencies to reduce the adverse welfare effects or negative social conditions (e.g. poverty, crime) due to various social, economic or environmental conditions. In the case of problem gambling, defensive expenditures would include government expenditures allocated for problem gambling treatment, education and prevention by specific agencies responsible for problem gambling as well as incremental health, welfare and social service program expenditures from other government departments or agencies that are indirectly impacted by problem gambling.

Gross Domestic Product (GDP): The market value of all final goods and services produced within a country in a given period of time.

Pathological Gambler: A pathological gambler is a US term that refers to a gambler whose persistent and recurrent maladaptive gambling behavior disrupts personal, family, or vocational pursuits. The descriptive level of a pathological gambler is based on a different measurement instrument and score than the Canadian Problem Gambling Index.

Problem Gambler: There is no universally accepted definition of problem gambling, however, a problem gambler is defined by the Canadian Problem Gambling Index taxonomy of gambling as a gambler who has experienced adverse consequences from gambling and may have lost control of her/his behaviour. The problem gambler's involvement in gambling can be at any level, but the key is that this player cannot adhere to pre-set time or spending limits. In the US, the term pathological gambler is used instead of problem gambler.

Producer Surplus: In economic theory, producer surplus is the difference between what producers actually receive when selling a product and the amount they are willing to accept for a unit of the good.

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Appendix 1: Study Terms of Reference and Deliverables

This appendix is not fully representative of the Terms of Reference and the deliverables contained in the RFP.

The following is the project objectives and timelines according to the original request for proposal (RFP) #60130860, dated November 23, 2006.

1. Project Requirements

1.1 Project Objective and Timeline

The objective of the initiative is to complete a socio-economic study of gambling in Nova Scotia. Specifically, the study will provide a snapshot of the social and economic impacts associated with gambling in the Province. The study is to be analytical, factual and objective, using credible and justifiable methods to provide a better understanding of the nature and extent of the impacts that gambling activity has on Nova Scotia.

1.2 Basic Requirements

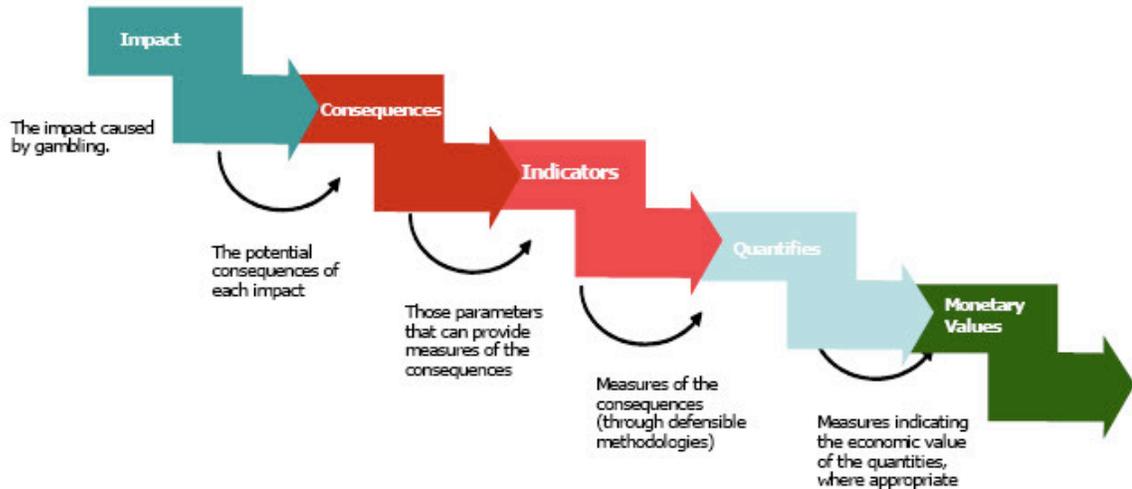
1.2.1 Scope

- Describe and analyze the following forms of gambling in Nova Scotia:
 - Bingo
 - Casinos (tables and slots)
 - Harness racing
 - Ticket lottery
 - Video lottery
 - On-line gambling
- Each form of gambling should be individually analyzed to understand its social and economic impacts. Given time and financial resources, it is critical that the level of effort to analyze a particular form of gambling be proportional to the anticipated social and economic impacts associated with that form of gambling.
- Each form of gambling will be examined from a societal perspective (including both public and private perspectives). This will include examining the impacts on individuals, households, communities, business, government and the economy. Within the analysis of each form of gambling, the study should identify trends and, where appropriate and available, include observations on geographic and demographic impacts.
- For each form of gambling, provide a description of the social and economic impacts resulting from that form of gambling. For each impact, identify all potential consequences. For each consequence, identify potential indicators that could be used to

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measure that consequence. If supported by sound methodologies, quantify and then monetize each consequence. This requirement is represented graphically below.



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Appendix 2: Input-Output Analysis

Appendix 2.1 Ticket and Video Lottery Input-Output Analysis

NS Department of Finance as the source of this Input-Output analysis is not cited.

Introduction and background

An input-output analysis was undertaken for the operations of ticket lottery (TL) and video lottery (VL) in Nova Scotia for the year 2007. Information was provided by Anielski Management Inc. (the consultant), and was originally obtained from a combination of sources, including the Nova Scotia Gaming Corporation and the Atlantic Lottery Commission.

The data was provided by the consultant in vector format, however the issue of commission and bonus payments raised a level of complexity to the analysis, which led to multiple scenarios, and issues that must be given additional consideration. In working with the input vectors for the 2003 Nova Scotia Input-Output Model (the “Model”), certain assumptions had to be made regarding the breakdown of commissions and the creation of employment from these commissions. They will be discussed separately, with presentation of the results in the respective sections.

Methodology

To obtain economic impacts, economic impact simulations were performed on annual operating costs using the 2003 Nova Scotia Input-Output Model. Economic impacts are divided into three components: direct; spinoff; and total impacts. Direct impacts are those that result directly from the company’s expenditures on, or purchases of, goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (due to inter-industry transactions) and induced impacts (from the repercussive effects caused by household spending and re-spending). Total impacts are the sum of direct and spinoff impacts.

The direct impact to provincial government revenue is derived using tax proformas developed by the Department of Finance. The tax templates are based upon the 2006 tax year. Spinoff provincial government revenue is also estimated from spinoff wages and salaries and from the tax pro forma developed by the Department of Finance. The provincial personal income tax rate on household income is based on a single wage earner with one direct dependent and two children. The proforma is developed on the basis of Nova Scotia personal income from sources proportional to the average Nova Scotian. Therefore in scenarios that involved dividend income to households, the tax proforma would not have provided accurate results and therefore was not used.

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No provision is made for the inclusion of corporate income tax (CIT). The businesses are considered to produce a taxable supply, which implies that they effectively do not pay HST on their business inputs.

Model Inputs, Including Commissions and Bonuses

Inputs to the model were specified by industry by Anielski Management Inc., and payments to companies outside the province for bonus and commission (leakages) and payments to nonprofits were included. It was assumed that the only leakages from the economy for commissions and bonuses were those noted by the consultant, which only represented 7% of ticket lotteries and 5% of video lottery.

Household income was generated from two sources: household income of government bodies associated with the industry (e.g. the Atlantic Lottery Corporation (ALC) and the Nova Scotia Gaming Commission (NSGC)) and commissions and bonuses paid by these bodies to retailers. Employment is estimated from the household income. It was assumed that other nonprofits serving households (e.g. NGOs) did not hire people to sell or operate TL or VL so all commissions and bonuses were allocated to the industry.

Household income (including benefits of 21.78%) from ALC and NSGC were provided by the consultant in salary bands. A midpoint of the band was used to determine person-years of employment (household income / midpoint of band = PY equivalent). The salary band under \$10,000 was eliminated for these calculations as, by minimum wage law, a person cannot earn less than \$10,000 per year working full-time.

For each of the scenarios the assumption of the amount of commissions and bonuses going to employment income was critical. Employment associated with commissions and bonuses was derived from household income associated with employment and the estimated annual wage for the Retail Grocery Stores industry (NAICS code 4451) and the Food Services and Drinking Places industry (NAICS code 772), for Ticket Lottery and Video Lottery, respectively. The hourly wage was provided by the consultant and was adjusted by average Nova Scotia benefits and multiplied by 2,000 hours per person-year to provide an estimated annual wage.

The treatment of commissions and bonuses determines the impact of this analysis and as such there are a number of issues for consideration.

Questions for consideration include:

- Do commissions and bonuses truly represent incremental employment? Is employment associated only with selling lottery tickets or having video lottery terminals?
- Do commissions and bonuses going to employment support existing employment? To what extent do entities use it to subsidize employment?

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- Do commissions and benefits go to profits? Are these profits reinvested in the business? Do they remain in the province?
- Do commissions and bonuses go to profits, which are then paid out in dividends to shareholders? Are these shareholders within the province? Is money received as dividends spent the same as other household income?

Thus, assumptions made about how we consider these model inputs are critical.

Economic Impacts

Ticket Lottery

Inputs to the Model were broken down into supply industries, proceeds to non-profit and community minded sectors, and household income, with contribution of wages and salaries to NSGC and ALC employees. As well, employment (person-years) was calculated for NSGC and ALC based on the salary data supplied, and imputed employment was calculated by the consultant based on the average wage for the Retail Grocery Stores industry (NAICS code 4451). Employment estimates were made based on a 2,000 hour work-year and included average Nova Scotia benefit rates.

Interpretation of ticket lottery activities and the input vector considered several points, which could increase or decrease impacts on the Nova Scotia economy:

- Some commissions and bonuses would support employment
- Some commissions and bonuses would go to dividends, or be redirected into profits (capital residual) where spending and taxation patterns are unknown.
- Some commissions and bonuses would be leaked directly from the province

Because of these variables, we have made assumptions and present two scenarios: the first scenario has 50% of commissions and bonuses going to household income (supporting employment) and 50% going to dividends, and the second has 100% going to employment income. Their results are presented in the following two tables:

Table 1
Ticket Lottery Scenario 1
(50% to employment, 50% to dividends)

	Direct	Spinoff	Total
Employment (PYs)	288	202	490
Household Income (\$000s)	16,004	7,647	23,651
Provincial Government Revenue (\$000s)	854	1,006	1,860

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

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Table 2
Ticket Lottery Scenario 2
(100% to employment income)

	Direct	Spinoff	Total
Employment (PYs)	543	202	745
Household Income (\$000s)	16,004	7,647	23,651
Provincial Government Revenue (\$000s)	1,443	1,006	2,449

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Video Lottery

Three scenarios were developed for the VL sector. The VL terminals by their design are not seen as requiring constant attention for their operation, so another scenario was developed so the impact of commissions and bonuses could be isolated. In scenario 1, household income and employment is provided only by the ALC and NSGC. This provided the lowest range of impacts. Scenario 2 has 50% of commissions and bonuses for companies going to employment income, while scenario 3 has 100% of commissions and bonuses going to employment.

Table 3
Video Lottery Scenario 1
(100% leakage of commissions and bonuses)

	Direct	Spinoff	Total
Employment (PYs)	24	175	199
Household Income (\$000s)	1,410	6,631	8,041
Provincial Government Revenue (\$000s)	185	757	942

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Table 4
Video Lottery Scenario 2
(50% of commissions and bonuses to employment income, 50% to dividends)

	Direct	Spinoff	Total
Employment (PYs)	548	338	886
Household Income (\$000s)	24,813	12,816	37,629
Provincial Government Revenue (\$000s)	1,045	1,463	2,508

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

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Table 5
Video Lottery Scenario 3
(100% of commissions and bonuses to employment income)

	Direct	Spinoff	Total
Employment (PYs)	1,072	338	1,410
Household Income (\$000s)	24,813	12,816	37,629
Provincial Government Revenue (\$000s)	1,904	1,463	3,367

Note: Provincial Government Revenue is derived from applying tax rates on household income net of benefits. The above household income is reported inclusive of fringe benefits. Provincial Government Revenue does not include Corporate Income Tax, nor does it include revenues from dividends paid to individuals.

Overall Comments and Cautionary Statements

1. Commissions to non-profits have a significant impact on household income. For instance, in scenario 1, 56% of spinoff household income is associated with other non-profits serving households.
2. Employment associated with commissions and bonuses to private enterprises may be misleading (overstated). It may be that the amount of commissions and bonuses going towards household income is used to support employment, possibly even pre-existing employment, rather than be associated with creating employment. It would be rare that a high percentage of any single person's job where VLTs are present would be dedicated to VLT activities.
3. In assuming dividends going directly to household income, the underlying assumption is that recipients have spent it all in the same manner as the average household. To the extent that the commissions and bonuses went to capital residual of the business, we have overstated its impact on household income, employment and spinoff Provincial Government revenue derived from household spinoffs. Other assumptions could also be made for the commissions and bonuses being retained by the company as earnings rather than going to dividends.

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Appendix 2.2 Economic Impact on Nova Scotia of Halifax and Sydney

Casino Operations and Halifax Casino Capital Expenditures

The following input-output analysis was prepared for Anielski Management Inc. by the Economics and Statistics Division Nova Scotia Department of Finance, May 2008

Introduction

Anielski Management Inc. has commissioned the Economics and Statistics Division of the Nova Scotia Department of Finance to prepare an economic impact analysis on the Nova Scotia economy related to 2004 casino operations in Halifax and Sydney and on capital expenditures related to the 2005 renovations of the Halifax casino.

Methodology and Data

Data were provided by Jeff Wilson on 2004 annual operations expenditures for both Halifax and Sydney and on renovation expenditures that were incurred in 2005 for the Halifax casino. Data for annual operations included operations expenditures and employment and wage and salary information by income class range. These expenditures were provided for a one-year period.

To obtain economic impacts, economic impact simulations were performed on annual operating costs using the 2003 Nova Scotia Input-Output (I-O) Model. Economic impacts are divided into three components: direct; spinoff; and total impacts. Direct impacts are those that result directly from the company's expenditures on, or purchases of, goods and services in Nova Scotia. Spinoff impacts are the sum of indirect impacts (due to inter-industry transactions) and induced impacts (from the repercussive effects caused by household spending and re-spending). Total impacts are the sum of direct and spinoff impacts.

The direct impact to provincial government revenue is derived using tax proformas developed by the Department of Finance. The tax templates are based upon the 2004 tax year for annual operations impacts and on 2005 tax year for Halifax casino renovations. Spinoff provincial government revenue is also estimated from spinoff wages and salaries and from the tax proforma developed by the Department of Finance. The provincial personal income tax rate on household income is based on a single wage earner with one direct dependent and two children.

No provision is made for the inclusion of corporate income tax (CIT). The casinos are considered to produce a taxable supply, which implies that they effectively do not pay HST on their business inputs.

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Economic Impact Assumptions

The following assumptions were made in the course of performing impact simulations: All expenditures are in current dollar terms, as they were incurred.

- Direct employment figures for the annual operations of the casinos are based upon Full Time Equivalents (FTE's) as supplied by Jeff Wilson. Spinoff employment is IO Model generated. Direct wage bill (direct household income) as supplied by Jeff Wilson is delimited by income groups, which is used for calculating provincial government tax revenue estimates. Spinoff household income is IO Model generated.
- Direct and spinoff employment and household income estimates related to Halifax casino renovations are all IO Model generated.
- GDP estimates for the casinos annual operations are based upon GDP I-O coefficients for the gambling industry.

Economic Impact

Table 1 presents the economic impact on Nova Scotia of 2005 Halifax casino renovations expenditures of \$4.1 million.

Table 1
Incremental Economic Impact on Nova Scotia of \$4.1 million of Halifax Casino Renovations in 2005

	Direct	Spinoff	Total
Employment (PYs): ¹	33	27	60
Household Income (\$'000) ² 2005\$	1,452	984	2,436
Provincial Tax Revenue (\$'000) ³ 2005\$	174	101	275
GDP at Market Prices ('000) 2005\$	1,662	1,604	3,266

Notes:

1. For direct employment, 2,000 person-hours are full-time equivalents.
2. Household Income is reported inclusive of benefits.
3. Provincial Tax revenue does not include corporate income tax revenue and is calculated on household income net of fringe benefits of 14.58% (Nova Scotia 2005 average fringe benefit rate).

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The Halifax casino's 2004 annual operations impact on the Nova Scotia economy are presented in Table 2.

Table 2
Incremental Economic Impact on Nova Scotia of Halifax Casino
Annual Operations Expenditures of \$35.9 Million
2004

	Direct	Spinoff	Total
Employment (PYs): ¹	584	460	1,044
Household Income (\$'000) ² 2004\$	19,192	15,246	34,438
Provincial Tax Revenue (\$'000) ³ 2004\$	2,236	1,490	3,726
GDP at Market Prices ('000) 2004\$	33,586	22,686	56,272

Notes:

1. For direct employment, 2,000 person-hours are full-time equivalents.
2. Household Income is reported inclusive of benefits.
3. Provincial Tax revenue does not include corporate income tax revenue and is calculated on household income net of benefits. The fringe benefit rate on direct household income is 3.1% (Source: Jeff Wilson) and on spinoff household income it is 14.84% (2004 Nova Scotia average)

There is an error in the GDP numbers in the original study.

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The Sydney casino's 2004 annual operations impact on the Nova Scotia economy are presented in Table 2.

Table 2
Incremental Economic Impact on Nova Scotia of Sydney Casino
Annual Operations Expenditures of \$11.5 Million
2004

	Direct	Spinoff	Total
Employment (PYs): ¹	171	144	315
Household Income (\$'000) ² 2004\$	5,675	5,008	10,683
Provincial Tax Revenue (\$'000) ³ 2004\$	643	498	1,141
GDP at Market Prices (\$'000) 2004\$	9,931	7,452	17,383

Notes:

1. For direct employment, 2,000 person-hours are full-time equivalents.
2. Household Income is reported inclusive of benefits.
3. Provincial Tax revenue does not include corporate income tax revenue and is calculated on household income net of benefits. The fringe benefit rate on direct household income is 2.05% (Source: Jeff Wilson) and on spinoff household income it is 14.84% (2004 Nova Scotia average)

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Appendix 3: Data Tables

A3.1 Gambling-Related Crime Occurrences in Halifax Regional

Municipality 2007

Table 144
2007 Halifax Regional Municipality Gambling-Related Crime Occurrences

Type of Gambling-related Crime Occurrence	Description of Occurrence
Abduction	Abductee released - mother thinks it is because she started an alcohol and gambling treatment program
Assault	Took place at Casino in poker room
Breach of restraining order	Ind. Has alcohol, drug, and gambling addiction
Concern	Women contacted police to have them present when she told husband she lost \$1000 gambling
Dispute	Brothers - in regards to spending money on gambling
Disturbance	Possible mental illness, yelling about gambling machines
Disturbance	Numerous issues (including smashing lotto machine)
Domestic abuse	Gambling cited as a factor
Domestic dispute	Gambling cited as a factor
Domestic dispute	Boyfriend took purse and car - leaving complainant at VLT establishment
Domestic dispute	Gambling cited as a factor
Domestic dispute	Over spending money gambling
Domestic dispute	Gambling cited as a factor
Domestic dispute	Girlfriend took wallet due to partners gambling problem - who subsequently called police
Domestic dispute	Over spending money gambling
Domestic dispute	Gambling cited as a factor
Domestic dispute	Gambling cited as a factor
Domestic dispute	Gambling cited as a factor
Domestic dispute	Gambling cited as a factor
Domestic dispute	Claims a side effect of medication is gambling

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Domestic dispute	Recently separated husband harassing family - left him over gambling
Domestic dispute	Son - taking money from parents to gamble
Domestic dispute	Father-son over gambling problem
Domestic dispute/ custody battle	Gambling cited as a factor
Domestic violence/ dispute	Son being abusive to mother
Domestic violence/ dispute	Gambling cited as a factor
Domestic violence/ dispute	Mother - daughter over loaned money
Domestic violence/ dispute	Son has gambling problem
Domestic violence/ dispute	Son violent against parents - supporting son's gambling habit
Domestic violence/ dispute	VLT use
Impaired driving	Had been drinking and gambling
Impaired driving	Left from Casino
Missing person	Not missing - leaving husband because of his gambling problem
Missing person	Had been gambling (returned)
Missing person	Suicidal/ gambling addiction, recently lost job
Missing person	Has VLT addiction (potentially suicidal)
Missing person	Has gambling problem and other mental health issues (potentially suicidal)
Missing person	Suffers from schizophrenia and pathological gambling
Suicide attempt	Suffering post traumatic stress (just returned from Afghanistan) - drinking heavy and gambling
Suicide attempt	Gambling cited as a factor
Suicide attempt	Gambling cited as a factor
Suicide threat	Called girlfriend has lost money at casino
Suicide threat	Citing gambling problem
Suicide threat	Gambling an issue
Suicide threat	Has gambling addiction
Theft	Stolen vehicle - believed theft motivated by gambling problem
Theft	Stolen copper pipes (internal from construction site)
Theft	Accused has a gambling problem
Theft	Son stealing from parents (has gambling problem)
Theft	Victim may have fabricated story and spent money gambling
Theft	Gambling establishment (suspect was playing VLTs robbed till)
Theft	Internal theft spent at casino
Theft	Potential suspects - seen gambling
Theft/ Break and enter	Suspect has a gambling problem
Theft/ Break and enter	Suspect has a gambling problem

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Theft/ Fraud	Ex partner using credit card
Theft/ Fraud	Accused - cashing cheques of ex partner - gambling cited as a factor
Theft/ Fraud	Accused known to have gambling problem
Theft/ Fraud	fraudulent loan - has gambling problem
Theft/ fraud	Internal theft \$110,000 from grocery store - used money for gambling
Theft/ fraud	Credit card fraud - suspects daughter who has gambling problem
Theft/ Fraud and threats	Employee stole deposits and other goods
Theft/ robbery	Suspect linked with gambling
Threats	NS Gaming Commission receiving threats
Threats/ breached emergency protection order	Accused has gambling problem
Threats/dispute	Both members have gambling problem
Trespassing/ casino	Banned from casino
Vandalism	Incident result of employee being asked to step down due to gambling problem

Source: Special query of over 70,000 police records (occurrences of crime) for 2006 and 2007 which were related to gambling from the Halifax Regional Police, Halifax Regional Municipality (Bill Moore, Superintendent, December 2008).

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A3.2 2008 Telephone Survey Responses to Question 29a.

Q29a. How do you feel your family, community and Nova Scotia society has changed?

Moderate-risk/Problem Gamblers

- More people are getting themselves into serious trouble from VLT machines. I know a guy who lost his business and everything he owned.
- More people are getting addicted and drinking because of it (gambling). It is definitely affecting their family life, if they have any.
- More people are spending money on gambling, even their last cent. They go broke because of gambling.
- More VLT's have come to Nova Scotia and more people started playing them and some got addicted which affects the whole community. People lose jobs and families because of addictions to the VLT's. People would spend all of their time and money playing the VLT's which leads to job loss and family break ups.
- I find that a lot more people spend a lot of money on the video machines to try and win money. I've heard people have lost everything, i.e. family members, homes and money.
- Everything degraded, violence all negative ways it is just not a good thing all around. People are losing money and getting depressed.
- Gambling has had a negative impact on families, because lots of money has been lost and families do without things because family members are gambling and the government gets richer.
- More money now is spent on gambling and the money is not being put back into the economy in anyway. Not enough money to help people with problems or living expenses. The government is getting richer and ALC is too.
- First, more people get greedy and go to the casinos and spend more money to try and win money. Also, the casinos and government are in connection to get more people to gamble so they can get rich.
- More people are trying to make their fortune and they are losing more and more money than in previous years.
- The only change I know of, is that certain places had VLT's (so many machines) removed, but more people are spending more money to compensate for that.
- Around our community more people are going to the casino to gamble and less people are in bingo halls so lots of bingo halls have closed.
- As years go by, more and more people lose more money, because of gambling. Gambling is advertised more as fun.
- Increased access to gambling machines. I think that between the casino and the bars there are more machines to play, so more money is being lost.

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- More parents are leaving children alone to go out to gamble, mother, father or both are gone from the home.
- A lot more crime in recent years, because of gambling, is all I can think of. More crime so people can get money to gamble.
- I think there are more machines available now. It seems like places open up and have machines, so basically more people are gambling.
- There is a profound difference in the attitude toward gambling. They don't have a moral attitude toward gambling. More people are gambling and are open about gambling, so children who grow up with gamblers will gamble.
- More families are being separated because of gambling, plus there is more violence from people losing money. That's what I think anyway.
- I lost my wife, she left me. More people are losing money and gambling isn't fun anymore. I noticed more women are gambling now.
- Too many more people are getting hooked on the VLT's and slots at the casino.
- The casino's hours have been cut back, I believe and the VLT's have time limits now. They shut down earlier so people can't gamble all hours of the night.
- A lot of younger people are starting to gamble and the machines aren't paying out as much.
- I know that less people are going to bingo, because you're not allowed to smoke anymore.
- There's more publicity promoting gambling and discouraging it, both ways. That's all.
- More young people are frequently at the casino playing slots I've noticed, even playing the machines.
- More bankruptcy is occurring, because of gambling. More people in general are gambling.
- I guess I've heard of more people losing money, because of gambling over the last five years than in the years before that.
- Gambling is not a social thing anymore. People now just want to play the machines and no one talks to the person on the machine next to them anymore.
- I think there are more people gambling now, in my opinion.
- More people are losing jobs, families and homes, because of gambling.
- A lot more people are getting into money trouble, because of gambling. That's what I believe from listening to people talk.
- There are more people gambling that really can't afford to do it.
- More people are gambling away all their money and are becoming miserable.
- There are a lot more people gambling today, so they are not financially well off at all. So basically, more people are in the hole because of gambling.
- There are more problems associated with gambling than a few years back. There are more bankruptcies, broken homes and people losing their shirts to play a machine.

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Non-Problem Gamblers

- A lot more Native people are getting addicted and wasting their pay cheque by gambling and drinking than five years ago.
- Community and Nova Scotia; non-smoking venues for gambling in public places has caused a dramatic decrease in the number of people out gambling. Most gamblers smoke too.
- I know of more people who have gone bankrupt or spent all their savings which is sad. I no longer associate with them.
- I think that it has created more addicts and created more hardships for those addicts. It has not benefited our society in anyway.
- People are spending money and more time at these places (gambling locations) and not owning up to their responsibilities at home and debts as well.
- Over the past few years people that I know personally have lost their homes and some have committed suicide, because of getting addicted to gambling. It takes away from the family if you gamble the money away, not mine, but others.
- I think it has had a negative impact on the family income. More families are splitting up because of it, it is causing financial hardship for families.
- Gambling is a more accessible addiction than drinking and etc. Maybe too accessible. Gambling is more advertised than it used to be and more ads about gambling makes it look like you could have a good time.
- More people, I've heard, lost their homes, trucks and everything because they gamble on those machines.
- I believe more people are gambling in my opinion. There has been more advertising promoting gambling so maybe that's the reason more people are gambling.
- Maybe there are more ads saying to be sensible about gambling and you hear more about programs available to help people with gambling problems.
- From what I read and hear, there are more people in distress, because of gambling problems.
- Too many people are dependent or addicted to gambling. Each year more and more people get addicted.
- I had a conversation once and my son said that in Cape Breton, where he goes to school, a lot of people are addicted to gambling there than anywhere else in Nova Scotia. More people become addicted because there is no work there at all.
- A lot more gambling going on every place possible, as well as, advertising implying you could win this large amount so people end up buying lotto tickets and get addicted and lose a lot.
- More and more people are getting into gambling each and every year in my opinion.
- I think there is higher crime, families are breaking up and they spend too much time at it.

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- All the Yellow Flag commercials, and all the ads, there is more prevention. Prevention tells me that government is thinking there are more problems and society has changed in that people need the awareness.
- There are more people doing it, gambling all the time that is. That's what I see going on.
- I bet twenty-five cents myself and I can play for an hour, if I double my money I take it out and try another \$20. I see more people putting \$20 after \$20 and others who have \$100 or more for a cash out but they don't take it out.
- It is accepted more by people. There are a lot more gambling accessories like tickets, poker games, etc available.
- More people are spending more money on gambling is all I can think of really.
- More people are losing their pensions because of gambling. They stay at the casino all day long and gamble with money they don't have.
- More people in general are gambling, I believe.
- There is more advertising talking about the age restrictions on gambling. "You have to be 19 to gamble", is made known throughout Nova Scotia.

Family Members

- There are more ads for help for people who have gambling problems. There are less machines (VLT's) available for people to play on, is about all I know about or have seen on television.
- More people are using money they don't have to gamble. More credit card debt because of gambling.
- A lot more people go to the Indian Reserve to play the VLT's now than five years ago. The reserve got more machines so more people play.
- There are too many more people having problems, because of gambling, financial, family and relationships. Gambling is too easily accessible and with all your money gone there is none left, it makes it hard on everyone involved in your life (life of a gambler).
- I think people are gambling more hoping to win a bit to pay off debts.
- Our family has been hurt financially helping our son with his gambling problem. For every one person who gets help there are two more who end up with gambling problems.
- We have more and more people becoming addicted to gambling and more people are struggling financially and families doing without necessities.
- There is more crime, stealing and drugs being used then five years ago.
- More people continue to gamble and get themselves into trouble financially.
- More people are spending more money on gambling and their families are suffering. Also, people who play the machines are more rude lately, they run to a certain machine because its their favourite.

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- More people are going to where you can gamble and it is destroying families, because the person gambles all the money that is needed to pay bills, buy food, etc. The money is gone so they have nothing.
- There are more restrictions put on gambling. Bars are now non-smoking so not as many people are gambling, because now that you can't smoke. You can't play the VLT's as long now, the time you can play until has been cut back a couple of hours.
- I think more people are gambling now than five years ago. There are more younger people gambling because of the new Texas Hold 'em.
- Incidence of suicide and financial hardships has increased.
- Gambling is more available and easily accessible for the newer gambler. I've seen kids buying break opens before; you know they are young teenagers. More younger people are gambling and there is more advertising promoting gambling as well.
- There is more of it, gambling because it is so easy to access the internet, people get addicted and lose money and belongings.
- More people are going to the casino to gamble now a days to play those slot machines.
- More people are gambling today than a few years ago. They all flock at the casino on cheque day.
- The government has become greedy and the only change is the government is getting richer from people who gamble.
- There are more people addicted to gambling now.
- I think each and every year more people become addicted to VLT machines.

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Appendix 4: Nova Scotia Gambling Population and Expenditure Estimates from 2003 and 2007 Nova Scotia Adult Prevalence Study Survey Data

The 2007 NS Prevalence Study (pgs. 29-31) discuss the inadvisability of producing estimates of expenditures by gambler type by game.

Nova Scotia Gambling Population and Expenditure Estimates from 2003 and 2007 Nova Scotia Adult Prevalence Study Survey Data

Prepared by Harold Wynne, Ph.D.

January 6, 2009 v.8

Following is a comparative analysis of the Nova Scotia 2003 and 2007 prevalence studies for gambling population and expenditure estimates.

Table 1

Nova Scotia Gambling Population and Expenditure Estimates (Past Year Gamblers—All Games in Surveys)

	Gambler Subtype				Total
	Non-Gamblers	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹	
	2003 (n=299)	2003 (n=2311)	2003 (n=134)	2003 (n=56)	
	2007 (n=326)	2007 (n=2022)	2007 (n=91)	2007 (n=61)	
Percentage of Sample					
2002	10.70%	82.40%	4.80%	2.10%	100%
2007	13.00%	80.90%	3.6% ↓	2.50%	100%
Nova Scotia Population Estimates (adults ≥ 19 years)²					
2002	78,381	605,812	35,127	14,680	734,000
2007	100,799	625,202	28,137	18,861	773,000
Average Net Gambling Expenditure/Player for Sample³(all games)					
2002	\$0.00	\$427.07	\$1,787.47	\$6,981.41	\$646.72
2007	\$0.00	\$457.58	\$2,244.78	\$6,461.14	\$700.11
Nova Scotia Population Net Gambling Expenditure—All Games (Estimate from Sample)					
2002	\$0	\$258,724,131	\$62,788,459	\$102,487,099	\$423,999,688
2007	\$0	\$286,081,250	\$63,161,280	\$121,863,530	\$470,616,033

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Margin of Error around the population estimates					
2002	±1.14%	±1.41%	±0.79%	±0.53%	N/A
2007	±1.32%	±1.54%	±0.73%	±0.61%	N/A
Maximum Margin of Error within each subgroup (50% point estimate)					
2002	±5.67%	±2.04%	±8.47%	±13.10%	±1.85%
2007	±5.43%	±2.18%	±10.27%	±12.55%	±1.96%

Shading indicates significant differences among gambler subtypes (p<.05)

Arrows indicate the direction of significant change over time (p

↑↓ <.05).

¹ CPGI scores for moderate risk and problem gambles have been combined for the 2003 and 2007 surveys.

² Population estimates were derived from prevalence rates calculated to two decimal points.

³ Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or “losses”).

Table 2

Nova Scotia Gambling Population and Expenditure Estimates

(Past Year Gamblers—Lottery Tickets, Bingo, Casinos, VLTs, Horse Racing, Charitable Lotteries)

	Gambler Subtype				Total
	Non-Game Player	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹	
	2003 (n=320)	2003 (n=2290)	2003 (n=134)	2003 (n=56)	
	2007 (n=366)	2007 (n=1983)	2007 (n=91)	2007 (n=60)	
Percentage of Sample					
2002	11.40%	81.80%	4.80%	2.00%	88.60%
2007	14.60%	79.30%	3.60%	2.40%	85.40%
Nova Scotia Population Estimates (adults ≥ 19 years) ²					
2002	83,886	600,307	35,127	14,680	734,000
2007	113,167	613,144	28,137	18,552	773,000
Average Net Gambling Expenditure/Player for Sample ³					
2002	\$0	\$385.86	\$1,622.81	\$7,612.43	\$615.88
2007	\$0	\$406.52	\$1,874.24	\$6,222.16	\$632.63
Provincial Net Revenue Estimated from Sample					
2002	\$0	\$231,634,435	\$57,004,397	\$111,750,517	\$400,389,349

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2007	\$0	\$249,258,145	\$52,735,599	\$115,433,496	\$417,427,240
Provincial Net Gambling Revenue (Actual)					
2002/03	\$0	\$255,869,320	\$61,761,560	\$123,523,120	\$441,154,000
2007/08	\$0	\$239,834,400	\$51,964,120	\$111,922,720	\$399,724,000
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002	0%	58%	14%	28%	100%
2007	0%	60%	13%	28%	100%

Shading indicates significant differences among gambler subtypes (p<.05)

Arrows indicate the direction of significant change over time (p <.05).

↑↓

1 2003 and 2007 surveys. CPGI scores for moderate risk and problem gambles have been combined for the surveys.

2 Population estimates were derived from prevalence rates calculated to two decimal points.

3 Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or “losses”).

**Table 3
Nova Scotia Gambling Population and Expenditure Estimates**

(Past Year Gamblers—ALC Lottery Tickets Total)

	Gambler Subtype				Total
	Non-Lottery Ticket Player	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹	
	2003 (n=584)	2003 (n=2031)	2003 (n=131)	2003 (n=54)	
2007 (n=557)	2007 (n=1796)	2007 (n=89)	2007 (n=58)	2007 (n=2500)	
Percentage of Sample					
2002	19.90%	72.50%	4.70%	1.90%	79.10%
2007	22.30%	71.80%	3.60%	2.30%	77.70%
Nova Scotia Population Estimates (adults ≥ 19 years) ²					
2002	153,091	532,412	34,341	14,156	734,000
2007	172,224	555,323	27,519	17,934	773,000
Average Net Gambling Expenditure/Player for Sample ³					
2002	0%	\$207.69	\$476.54	\$1,517.11	\$255.49

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2007	0%	\$266.19	\$696.19	\$1,167.98	\$312.81
Provincial Net Revenue Estimated from Sample					
2002	\$0	\$110,576,648	\$16,364,860	\$21,476,209	\$148,417,717
2007	\$0	\$147,821,429	\$19,158,453	\$20,946,553	\$187,926,435
Provincial Net Gambling Revenue (Actual)					
2002/03	\$0	\$73,230,404	\$10,837,779	\$14,222,817	\$98,291,000
2007/08	\$0	\$70,591,912	\$9,149,092	\$10,002,996	\$89,744,000
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002	0%	75%	11%	14%	100%
2007	0%	79%	10%	11%	100%

Shading indicates significant differences among gambler subtypes (p<.05)

Arrows indicate the direction of significant change over time (p <.05).

↑↓

1 CPGI scores for moderate risk and problem gambles have been combined for the 2003 and 2007 surveys.

2 Population estimates were derived from prevalence rates calculated to two decimal points.

3 Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or “losses”).

Table 4
Nova Scotia Gambling Population and Expenditure Estimates
(Past Year Gamblers—Bingo)

	Gambler Subtype				
	Non-Bingo Player	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹	Total
	2003 (n=2372)	2003 (n=368)	2003 (n=41)	2003 (n=19)	2003 (n=2800)
	2007 (n=2210)	2007 (n=252)	2007 (n=29)	2007 (n=9)	2007 (n=2500)
Percentage of Sample					
2002	84.70%	13.10%	1.50%	0.70%	15.30%
2007	88.40%	10.10%	1.20%	0.40%	11.6% ↓
Nova Scotia Population Estimates (adults ≥ 19 years)²					
2002	621,803	96,469	10,748	4,981	734,000
2007	683,332	77,918	8,967	2,783	773,000

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Average Net Gambling Expenditure/Player for Sample ³					
2002	\$0	\$567.38	\$1,292.10	\$1,214.58	\$665.53
2007	\$0	\$572.27	\$977.79	\$1,627.78	\$645.58
Provincial Net Revenue Estimated from Sample					
2002	\$0	\$54,734,581	\$13,887,491	\$6,049,823	\$74,671,895
2007	\$0	\$44,590,134	\$8,767,843	\$4,530,112	\$57,888,089
Provincial Net Gambling Revenue (Actual)					
2002/03	\$0	\$15,635,646	\$3,967,143	\$1,728,211	\$21,331,000
2007/08	\$0	\$11,666,686	\$2,294,043	\$1,185,271	\$15,146,000
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002	0%	73.0%	19.0%	8.0%	100%
2007	0%	77.0%	15.0%	8.0%	100%

Shading indicates significant differences among gambler subtypes (p<.05)

Arrows indicate the direction of significant change over time (p

↑↓ <.05).

¹ CPGI scores for moderate risk and problem gambles have been combined for the 2003 and 2007 surveys.

Population estimates were derived from prevalence rates calculated to two decimal

² points.

Net gambling expenditure refers to the money wagered during a gambling session not

³ counting the players winnings (i.e., money out-of-pocket or “losses”).

**Table 5
Nova Scotia Gambling Population and Expenditure Estimates
(Past Year Gamblers—Casinos Total)**

	Gambler Subtype				Total	
	Non-Casino Player	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹		
	2003 (n=2148)	2003 (n=561)	2003 (n=67)	2003 (n=24)		2003 (n=2800)
	2007 (n=2082)	2007 (n=356)	2007 (n=39)	2007 (n=23)		2007 (n=2500)
Percentage of Sample						
2002	76.70%	20.00%	2.40%	0.90%	23.30%	
2007	83.30%	14.20%	1.60%	0.90%	16.7% ↓	
Nova Scotia Population Estimates (adults ≥ 19 years) ²						
2002	563,083	147,062	17,564	6,291	734,000	

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2007	643,754	110,075	12,059	7,112	773,000
Average Net Gambling Expenditure/Player for Sample³					
2002	\$0	\$148.09	\$426.19	\$4,005.21	\$318.64
2007	\$0	\$85.98	\$554.87	\$2,224.57	\$247.40
Provincial Net Revenue Estimated from Sample					
2002	\$0	\$21,778,412	\$7,485,601	\$25,196,776	\$54,460,789
2007	\$0	\$9,464,249	\$6,691,177	\$15,821,142	\$31,976,568
Provincial Net Gambling Revenue (Actual)					
2002/03	\$0	\$39,943,572	\$13,729,268	\$46,213,160	\$99,886,000
2007/08	\$0	\$25,141,259	\$17,774,745	\$42,027,996	\$84,944,000
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002	0.0%	40.0%	14.0%	46.0%	100.0%
2007	0.0%	30.0%	21.0%	49.0%	100.0%

Shading indicates significant differences among gambler subtypes (p<.05)

Arrows indicate the direction of significant change over time (p

↑↓ <.05).

¹

CPGI scores for moderate risk and problem gamblers have been combined for the 2003 and 2007 surveys.

Population estimates were derived from prevalence rates calculated to two decimal

² points.

Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or “losses”).

³

Table 6

**Nova Scotia Gambling Population and Expenditure Estimates
(Past Year Gamblers—VLTs)**

	Gambler Subtype				Total
	Non-VLT Player	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹	
	2003 (n=2268)	2003 (n=415)	2003 (n=71)	2003 (n=46)	
2007 (n=2161)	2007 (n=259)	2007 (n=39)	2007 (n=41)	2007 (n=2500)	
Percentage of Sample					
2002	81.00%	14.80%	2.50%	1.60%	19.00%
2007	86.40%	10.40%	1.60%	1.60%	13.6% ↓

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Nova Scotia Population Estimates (adults ≥ 19 years)					
2002	594,540	108,789	18,612	12,059	734,000
2007	668,181	80,083	12,059	12,677	773,000
Average Net Gambling Expenditure/Player for Sample ²					
2002	\$0	\$276.14	\$934.93	\$4,848.26	\$759.40
2007	\$0	\$250.08	\$1,045.77	\$5,746.34	\$1,006.36
Provincial Net Revenue Estimated from Sample					
2002	\$0	\$30,040,994	\$17,400,917	\$58,465,167	\$105,907,078
2007	\$0	\$20,027,157	\$12,610,940	\$72,846,352	\$105,484,449
Provincial Net Gambling Revenue (Actual) ³					
2002	\$0	\$59,601,548	\$34,523,544	\$115,995,311	\$210,120,404
2007	\$0	\$35,820,324	\$22,555,771	\$130,292,081	\$188,668,176
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002	0%	28.4%	16.4%	55.2%	100%
2007	0%	19.0%	12.0%	69.1%	100%

Shading indicates significant differences among gambler subtypes (p<.05)

Arrows indicate the direction of significant change over time (p

↑↓ <.05).

¹ CPGI scores for moderate risk and problem gamblers have been combined for the 2003 and 2007 surveys.

² Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or “losses”).

³ Net revenues for First Nations are included in total (2002/03=\$28,000,000 and 2007/08=\$43,632,270)

**Table 7
Nova Scotia Gambling Population and Expenditure Estimates**

(Past Year Gamblers—Horse Racing)

	Gambler Subtype				Total
	Non-Horse Racing Player	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹	
	2003 (n=2763)	2003 (n=36)	2003 (n=1)	2003 (n=0)	
2007 (n=2467)	2007 (n=21)	2007 (n=9)	2007 (n=3)	2007 (n=2500)	

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Percentage of Sample					
2002	98.70%	1.30%	0.04%	0%	1.30%
2007	98.70%	0.80%	0.40%	0.10%	1.30%
Nova Scotia Population Estimates (adults ≥ 19 years) ²					
2002	724,301	9,437	262	0	734,000
2007	762,796	6,493	2,783	928	773,000
Average Net Gambling Expenditure/Player for Sample ³					
2002	\$0	\$91.08	\$40.00	\$0	\$89.70
2007	\$0	\$362.67	\$1,365.78	\$4.33	\$603.67
Provincial Net Revenue Estimated from Sample					
2002	\$0	\$859,522	\$10,480	\$0	\$870,002
2007	\$0	\$2,354,816	\$3,800,966	\$4,018	\$6,159,800
Provincial Net Gambling Revenue (Actual)					
2002/03	\$0	\$3,379,062	\$41,200	\$0	\$3,420,262
2007/08	\$0	\$1,124,699	\$1,815,405	\$1,919	\$2,942,023
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002	0%	99%	1%	0%	100%
2007	0%	38%	62%	0%	100%

Shading indicates significant differences among gambler subtypes (p<.05)

↑↓

Arrows indicate the direction of significant change over time (p <.05).

1. CPGI scores for moderate risk and problem gamblers have been combined for the 2003 and 2007 surveys.
2. Population estimates were derived from prevalence rates calculated to two decimal points.
3. Net gambling expenditure refers to the money wagered during a gambling session not counting the players winnings (i.e., money out-of-pocket or “losses”).

**Table 8: Nova Scotia Gambling Population and Expenditure Estimates
(Past Year Gamblers—Charitable Ticket Lotteries)**

	Gambler Subtype				Total	
	Non-Charitable Lottery Player	Non-Problem Gamblers	Low Risk Gamblers	Moderate risk and Problem Gamblers ¹		
	2003 (n=995)	2003 (n=1679)	2003 (n=89)	2003 (n=37)		2003 (n=1805)
	2007 (n=1237)	2007 (n=1173)	2007 (n=56)	2007 (n=34)		2007 (n=1263)
Percentage of Sample						

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2002	35.50%	60.00%	3.20%	1.30%	64.50%
2007	49.50%	46.90%	2.20%	1.40%	50.5% ↓
Nova Scotia Population Estimates (adults ≥ 19 years) ²					
2002	260,832	440,138	23,331	9,699	734,000
2007	382,480	362,692	17,315	10,513	773,000
Average Net Gambling Expenditure/Player ³					
2002	\$0	\$31.00	\$79.51	\$58.00	\$33.95
2007	\$0	\$68.93	\$98.54	\$122.26	\$71.68
Provincial Net Revenue Estimated from Sample					
2002	\$0	\$13,644,278	\$1,855,048	\$562,542	\$16,061,868
2007	\$0	\$25,000,360	\$1,706,220	\$1,285,319	\$27,991,899
Provincial Net Gambling Revenue (Actual)					
2002	\$0	\$6,078,898	\$826,474	\$250,628	\$7,156,000
2007	\$0	\$15,584,197	\$1,063,587	\$801,215	\$17,449,000
Net Gambling Revenue Estimate by Gambler Subtype (%)					
2002	0%	85%	12%	4%	100%
2007	0%	89%	6%	5%	100%

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