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**MEASURING SUSTAINABLE DEVELOPMENT**

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**APPLICATION OF THE GENUINE PROGRESS INDEX TO NOVA SCOTIA**

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**THE COSTS AND BENEFITS OF GAMING**

**A LITERATURE REVIEW WITH EMPHASIS ON**

**NOVA SCOTIA**

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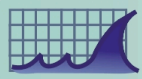
Prepared by:

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Funded by

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July 2004



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**APPLICATION OF THE GENUINE PROGRESS INDEX TO NOVA SCOTIA**

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**THE COSTS AND BENEFITS OF GAMING**

**A SUMMARY REPORT FROM THE LITERATURE**

**REVIEW**

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Nova Scotia Gaming Foundation  
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## 1. Introduction

The rapid expansion of legalized gambling and the increasing reliance of governments on gambling revenues in the last decade have fostered a rapid rise in gambling activity worldwide. In Canada, gambling is now a powerful economic force in Canadian society.<sup>1</sup> Opinions regarding whether gambling provides net benefits or net costs to society are polarized. Governments that rely on the extra revenue generated by gambling generally provide financial arguments in favour of legalized gambling and point to the dangers of criminal activity that is likely to accompany illegal gambling.<sup>2</sup> Critics, including those negatively affected by gambling, generally denounce the activity as causing harm to society.<sup>3</sup> Researchers frequently criticize studies on the benefits and costs of gambling for having biased views.<sup>4</sup>

In order to understand the broad effects of gambling and to minimize its potentially harmful effects, societies need an unbiased, clear accounting of both its costs and benefits within a social and economic context that is multidisciplinary and holistic.<sup>5</sup>

In July 2004, GPI Atlantic produced a review of the literature on the costs and benefits of gambling for the Nova Scotia Gaming Foundation. The review focused on methodological issues and on the applicability of existing materials to Nova Scotia, and was seen as a preliminary step to a potential full-fledged future analysis of the costs and benefits of gambling in Nova Scotia. It was hoped that this future analysis would provide much needed information on the full medical, social, economic, and productivity costs of problem gambling in the province, and would also identify advantages to society, including generation of tax revenues that can be used for the public good, and prevention of organized crime.

Such an impartial analysis could assist both sides of the debate on gambling to move from “win or lose” propositions to informed discussion about how to manage gambling cost-effectively and in such a way as to minimize its potentially harmful effects. More precise knowledge about where and how serious the costs to society of gambling are could potentially help policy makers assess the most cost-effective ways to address existing problems, and the benefits that could be expected from such investments. This information is critical to identify and reduce the negative effects of gambling.

However, the GPI literature review concluded that research in the area is not sufficiently advanced and that methodological obstacles are still too great to conduct a full benefit-cost study for Nova Scotia with requisite scientific credibility at the present time. There is currently no consensus in the research community on the most effective methodology and indicators that should be used in a study on the costs of gambling. Though it did not claim to be an exhaustive review of the literature, the GPI review did describe these methodological difficulties in some detail and focused particularly on the challenges of practical application in light of existing evidence. The review was also able to glean important background information from the existing literature that can help identify a comprehensive set of indicators that could be used in the future to identify the full costs and benefits of gambling in Nova Scotia.

It was recognized that governments in general, and the Nova Scotia in particular, cannot afford to wait until all methodological issues have been resolved in order to identify effective interventions to deal with existing problems associated with gambling. This summary report therefore outlines in brief some of the key findings of the GPI Atlantic literature review in order to provide a reference and policy tool for Nova Scotia gaming and health officials, researchers, and policy makers. It is hoped that it will be a useful starting point for further work in this area, and that the results from the existing evidence summarized here can be practically applied to decisions and priorities in the policy and research realms. The full literature review is attached as a second Appendix to this report for those wishing to examine the issues in greater depth and to cross reference the material presented here.<sup>6</sup>

The literature review focused mainly on research from Canada, the United States, Australia, and New Zealand as well as on research produced in Nova Scotia. In particular it relied on the excellent work being done through:

- the Canadian Centre on Substance Abuse to establish guidelines and consensus for gambling impact studies,
- the Alberta Gaming Research Institute,
- the National Opinion Research Center at the University of Chicago,
- the Australian Productivity Commission, and
- the Australian Social and Economic Research Centre.

New information concerning gambling in Nova Scotia was released, after the literature review was completed, in a report prepared for the Nova Scotia Office of Health Promotion's Addiction Services division. The 2003 Nova Scotia Gambling Prevalence Study offers new statistics concerning problem gambling prevalence, gambling activity, and awareness and use of problem gambling services in Nova Scotia that can update the statistics used in the literature review.<sup>7</sup> A few of the new statistics from that study have been added to this summary paper in Section 4 on relative risk ratios.

The following summary of the literature review covers five main areas:

- Methodological difficulties in determining the costs and benefits of gaming, as debated among researchers;
- A summary of research needs and data gaps that can suggest research priorities for further research and data collection;
- A summary of the relative risk ratios for costs associated with problem gambling as identified in particular international studies;
- A brief review of potential policy implications, interventions, and regulation strategies cited in the literature; and
- A framework listing the major costs and benefits of gaming identified in the literature, which can be used in future cost-benefit studies as well as to evaluate existing and prospective studies in the field. (The full list is provided as a table in the first Appendix of this summary paper.)

The first two of these areas comprise the first 20 pages of this summary, which are addressed primarily to researchers in the field, as is the Appendix. The sections on relative risk ratios and policy implications comprise the next 15 pages and will be of interest to policy makers seeking a summary of the best available evidence in the field as the basis for effective interventions.

## 2. Methodological problems in cost-benefit studies of gambling

Studies designed to estimate the costs and benefits of gambling use a wide range of methodologies that have produced a correspondingly wide range of estimates and a great deal of controversy.<sup>8</sup> Many of the studies have conceptual, empirical, or data problems that are contentious and unresolved. Many studies are considered "seriously flawed" by researchers.<sup>9</sup> In fact, researchers have noted that "existing estimates are of limited usefulness and require further interpretation."<sup>10</sup>

Methodological difficulties in determining the social and economic impacts of gambling revolve around the conceptual framework for gambling impact studies, measurement methods, definitions of costs and benefits, and whether particular costs should be considered as private or as social costs. The approach researchers take to any of these issues seriously affects the outcome of the research.

Two of the major methodological difficulties are the issues of causality and the value of intangible costs and benefits. It is acknowledged that impacts frequently *associated* with gambling are often difficult to attribute directly to gambling as a *cause*. Causation is always multidimensional, but the empirical work required to develop reliable attribution fractions has not yet been done. In addition, researchers find that intangible costs and benefits are difficult to quantify because, in order to determine them, assumptions and value judgments must inevitably be made. As Azmier points out, different communities, regions, and provinces have different values and needs that must be considered when choosing indicators.<sup>11</sup> It is also not clear how to value the "trade off" between the pain and suffering of gambling costs resulting from problem gambling on the one hand and gambling benefits such as government use of gambling revenues for public goods and services on the other. Highlights of some of the main methodological issues are presented below.

### 2.1 Conceptual frameworks

One of the debates in the gambling research literature concerns which analytical framework is most useful in analyzing costs and benefits. Economics-based approaches to determining the economic development effects of gambling most often use the traditional methodology of cost-benefit analysis or economic impact analysis. Azmier argues that neither of these approaches gives a broad picture of actual effects. He argues that the economic impact approach fails to include real private and social costs and therefore tends to inflate the benefits. He criticizes the cost-benefit approach for using easily challenged assumptions that have limited utility because they are not generalisable to other regions. These assumptions are nevertheless necessary to quantify intangible effects. Neither of these approaches, he concludes, provides the extended analysis of the impact of gambling on public health that is needed to inform policy makers.<sup>12</sup>

Economist Douglas Walker has criticized economic studies on gambling impacts undertaken by non-economists such as sociologists, psychologists, political scientists, lawyers, and even

environmental planners, landscape architects, and regional planners. While acknowledging that researchers in a variety of disciplines should address problem gambling, he argues that: "These individuals often give "economic" arguments in favor or against legalized casino gambling, even though their formal training is in some other field. The result is that they often confuse the issues.... We should be cognizant of when we step outside our areas of expertise."<sup>13</sup>

On the other hand, it has been argued that analysis of gambling costs and benefits is too important to be left to economists, who often have too narrow a view. What we measure and count—quite literally—tells us what we value as a society. What we do not count in conventional economic analyses, such as non-monetary and non-material assets like population health, security, and social cohesion, we effectively discount and devalue. And what we do not properly measure and value will in turn be effectively sidelined in the policy arena. For example, reliance on economic growth measures to assess how "well off" we are as a society excludes vital social and environmental indicators and sends highly misleading signals to policy makers. A researcher's view therefore informs which indicators will be included in a cost of gambling study and what value is given to the more intangible impacts of gambling.

In 2002, the Canadian Centre on Substance Abuse (CCSA)<sup>14</sup> held an important international symposium in Whistler, B.C.<sup>15</sup> This First International Symposium on the Economic and Social Impact on Gambling brought together approximately 60 researchers, policy makers, and other experts to establish a methodology for estimating the social and economic impact of gambling so that results would be internationally comparable. The methodology would include a process, analytical framework, and guidelines to integrate various perspectives and values on this issue.

Many of the participants at the Whistler Symposium agreed that a holistic-impact-accounting framework having multiple analytical options was preferable to a more narrowly defined perspective. For example, methods are needed to expand the traditional focus on money-related impacts of gambling to include the many qualitative impacts of gambling on wellbeing.<sup>16</sup>

The Whistler Symposium identified six analytical frameworks from various disciplines that could inform a final framework. These were:

- Financial analysis and accounting used in business;
- Neoclassical economic analysis and theory. e.g. cost-benefit analysis (CBA);
- National income accounting, e.g. macro economic analysis, such as the gross domestic product (GDP) accounting;
- Welfare economics, e.g. cost-effectiveness and cost-utility analysis as well as new sustainable wellbeing measurement systems like the GPI accounting system;
- Social impact analysis; and
- Public health impact analysis.

The Whistler Symposium report explicitly recognized the GPI model, which incorporates the public health approach, as:

"A holistic impact tool for assessing the full range of physical, qualitative and monetary costs and benefits on the wellbeing of individuals, households, communities, the

economy, and the environment. ... GPI accounting could in principle provide a comprehensive impact analysis tool that embraces virtually all existing methodological impact analysis tools, including those posited."<sup>17</sup>

The Korn, Gibbins, and Azmier paper presented to the Whistler Symposium discusses the potential of the public health perspective to provide a broad lens for analyzing costs and benefits and for understanding the impact of gambling on society.<sup>18</sup> This framework goes beyond the view of gambling as problem behaviour to place gambling in its broader social and economic context. The public health approach also has the potential to identify multiple strategies for action, prevention, and intervention. The public health perspective emphasizes social factors that have a role in determining health. These factors include income and income distribution, social support networks, education, employment and working conditions, gender, and other related social and economic issues. The authors summarize this perspective, listing the benefits of framing gambling as a public health issue:

"A public health approach emphasizes the prevention of gambling-related problems and harm reduction to decrease the adverse consequences of gambling behavior. It addresses not only the risk of problems for the gambler but also the quality of life of families and communities affected by gambling. It takes into consideration the multiple biological, behavioral, socioeconomic, cultural, and policy determinants influencing gambling and health. A public health approach encourages a life-cycle approach to measuring social and economic impacts, one that recognizes significant changes in the social context within which gambling takes place. It embodies public health values that reflect concern for the impact of gambling expansion on vulnerable, marginalized and at risk population groups. Finally, a public health framework recognizes that there are both costs and benefits associated with gambling."<sup>19</sup>

## 2.2 Costs and benefits

In a recent paper, Wynne and Shaffer summarize the benefits and costs of gaming that are most frequently cited in the literature on gambling impacts. The major benefits include:

- Revenues for the public good, including health care, education, social services, and community infrastructure;
- Capital projects that include parks, recreation facilities, museums, and cultural arts centers;
- Job creation;
- Economic development;
- Opportunities for indigenous peoples;
- The entertainment value that gambling affords to the many players; and
- “Legal” gambling formats that keep “illegal” gambling in abeyance, thus reducing crime that can be associated with unsanctioned, illegal gambling alternatives.<sup>20</sup>

The costs of gambling to society are mainly associated with the consequences of problem gambling. According to Wynne and Shaffer, the most frequently cited costs include:

- The rise in the number of people with severe gambling problems;
- The havoc that problem gamblers wreak on themselves, their families, and the community at large;
- Lost productivity at work;
- Increased crime, notably fraud, theft, domestic violence, suicide, counterfeiting, and money laundering;
- The possible cannibalistic effects that large casinos, bingo halls, and electronic gambling in bars and lounges have on local small business revenues and employees; and
- Increased health care, social service, policing, and other public service costs that governments must bear to deal with the negative fallout from legalized gambling.<sup>21</sup>

A comprehensive list of indicators of the costs and benefits of gambling, as gleaned from GPI Atlantic's literature review, is presented in the first Appendix to this summary paper. The organization of that list is adapted from a framework for the evaluation of the impacts of gambling produced by the Australian organization, the Social and Economic Research Centre (SERC).<sup>22</sup> This framework was chosen by GPI Atlantic over others suggested in the literature, for its comprehensiveness, its ability to integrate multiple dimensions, and its clarity. The basic format includes seven areas of impact: health and wellbeing, culture, recreation and tourism, employment and education, crime, economic development (macro level), and financial. In reality, these areas overlap, are interdependent, and have multiple effects on each other. For example, tourism and employment both clearly affect macro-economic impacts; culture affects tourism; and health and wellbeing underlie all of the areas.

Each of the seven impact areas affects society on four separate levels of analysis: the individual and family (e.g. Joe Smith and his close friends and relatives), the community (e.g. youth, or Sydney, Nova Scotia), the region (e.g. eastern Cape Breton), and the province (e.g. Nova Scotia). More comprehensive framework definitions can be found in the full GPI Atlantic literature review that is appended to this summary paper. These levels of analysis are conceptually distinct, although they are also clearly interconnected and ultimately cannot be separated. Impacts in any area function like ripples in a pond after a stone is thrown. For example, if Joe is a problem gambler, his actions radiate out to affect his family, community, region, and the province at large. If the province passes new regulations, or the region introduces more video lottery terminals (VLTs) into his community, this in turn may affect Joe's propensity to gamble, etc.

In addition, although there are overlapping effects, each type of gaming creates impacts distinct from other types and needs to be looked at separately through the framework lens. We have distinguished these key areas as: lotteries, video lottery terminals (VLTs), bingo and charity gaming, and casinos. For example, higher proportions of VLT players develop difficulties than those who purchase lottery tickets.<sup>23</sup> And lotteries might produce more jobs than bingo.<sup>24</sup>

### **2.3 Consumer surplus (benefits)**

Recreation, entertainment, and socialization are among the most commonly mentioned benefits of gaming to the individual and society. Economists often use a technical measurement called



“consumer surplus” to measure benefits. Consumer surplus is the “difference between what rational consumers would be willing to pay for a good or service and the market price that they are actually required to pay. This is based on the assumption that rational consumers will undertake an activity only if the private benefits received at least equal the private costs of that activity, so that there is almost certainly a positive net benefit in the form of consumer surplus.”<sup>25</sup> In cost-benefit analysis, however, consumer surplus tends to be discounted based on the strength of the community’s “moral criticism.” In fact, “entertainment value” for non-problem gamblers has rarely been investigated.

The way consumer surplus is handled in cost-benefit studies is contentious. Researchers criticize this approach for technical reasons concerning the use of economic concepts such as “marginal utility” and “elasticity of demand.” Criticisms also suggest that consumers often do not have an accurate idea of the “price” of a particular gambling activity and hence cannot derive a surplus. The New Zealand Department of Internal Affairs states:

“If we assume, reasonably, that gamblers aim individually to win when they gamble, then we face a contradiction. Some do win, but we know that collectively they will lose. Machine games and casino games, for example, are designed to secure a house ‘edge’ so that gamblers will necessarily lose in the aggregate. In moving from an individual possibility to a collective inevitability the calculation becomes illogical.”<sup>26</sup>

The concept of consumer surplus also depends on the assumption of rational choice by consumers. The extent to which problem gamblers derive benefit from gambling, or to which they can be considered “rational” when they are “chasing loses,” is also debated.<sup>27</sup> In sum, the “rational consumer” assumption underlying many assessments of gambling benefits has been strongly challenged.

## 2.4 Causality, attribution, and comorbidity

Establishing causality is a major difficulty when deciding what costs might be attributed to problem gambling. For any outcome there are likely to be multiple causes. For example, gambling problems are often accompanied by stress, depression, and alcohol or drug abuse. The main questions challenging researchers in this area are whether the gambling problem or the accompanying morbidities and substance abuse problems came first, and whether gambling is the primary or secondary disorder. For example, did gambling lead to depression, or did depression lead to gambling? Or can we identify a portion or fraction of the gambling activity that led to depression?

Whatever portion of a particular outcome cannot be directly attributed to gambling also cannot be considered a cost of gambling. If alcohol is the primary cause of the outcome under consideration (e.g. suicide), then the cost associated with that outcome must be attributed primarily to substance abuse rather than to problem gambling. However, rather than dismissing the gambling-related cost because gambling might be a secondary rather than primary factor, a portion of the outcome that may be attributed to gambling needs to be estimated.<sup>28</sup> This estimation method for any risk factor usually relies on *attribution fractions* that are derived from

large-scale population based empirical studies that have established reliable estimates. Many of these studies are based on surveys or interviews.<sup>29</sup> In the case of gambling, unlike tobacco or alcohol use for example, this work has not been done with any degree of reliability or consistency. In the case of substance abuse, Single et al. recommend as a guideline:

"If an already severely mentally ill individual develops a substance abuse disorder, the additional care that such an individual requires should be attributable to substance abuse. However the expected care for the mental disorder apart from the substance abuse problem would not be attributable."<sup>30</sup>

This would seem to imply the same for gambling disorders — if a substance abuser or depressed person subsequently becomes a gambler, only the cost of the *additional* care required should be attributed to problem gambling.

The United States National Opinion Research Centre (NORC) report estimates the costs of negative consequences of gambling, whether bankruptcy, job loss, health problems, etc., by first determining the "expected" rates among non-problem gamblers, determining the rate experienced by problem gamblers, and then determining whether the difference is larger than might be expected due to chance or confounding demographic and socio-economic variables. It then attributes the excess rates for problem gamblers to gambling. It is this relative difference between the expected rates of a health, employment, or financial difficulty among non-problem gamblers on the one hand and the rates for problem gamblers on the other that is important in determining gambling impacts, rather than the actual or absolute prevalence of the difficulty among problem gamblers per se.<sup>31</sup>

The Australian Productivity Commission (PC) methodology used a "causality adjustment," based on the "rule of thumb" that 20% of problem gamblers would have had the same problem (e.g., divorce or separation) even without their gambling problem. Therefore, the PC adjusted for "causality" in its estimates of personal and family impacts of problem gambling by reducing by 20% the number of problem gamblers estimated to be affected.<sup>32</sup>

In terms of crime, evidence leaves no doubt that there is an *association* between problem gambling and criminal activity such as burglaries, robberies, loan sharking, drug dealing, and money laundering. However, whether or not gambling *causes* crime is controversial.<sup>33</sup> There is some indication that pathological gambling leads to crime.<sup>34</sup> Smith, et al. cite evidence by Brown arguing that there is a causal connection.<sup>35</sup> Brown's argument is that crime is not likely to cause gambling, and that when individuals stop problem gambling activity, they inevitably stop engaging in criminal activity as well.<sup>36</sup> 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 analyst[s are] 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."<sup>37</sup>



## 2.5 Intangible costs and benefits

Intangible effects are those that cannot be quantified easily in monetary terms. Emotional pain and suffering, quality of life, wellbeing, population health, social cohesion, and environmental impacts are a few of the intangible effects that may be involved in gambling outcomes.

Economic analyses usually do not include intangible effects. The current opinion among researchers is that intangible effects are crucial elements in cost-benefit analyses of gambling and must be included, despite the difficulties of quantifying these impacts.<sup>38</sup> Failing to include these effects in gambling impact studies implicitly assigns them a value of zero.

Intangible emotional costs include pain, suffering, and quality of life impacts on individuals, families, neighbourhoods, and society that may be far greater than simple economic production losses due to the victim's inability to perform paid work.<sup>39</sup> Just as insurance companies provide monetary compensation for the loss of limbs, so courts grant awards designed to compensate victims for suffering beyond mere production losses. In the words of the Solicitor-General of Canada:

“Many of the most important costs of crime – the psychological and emotional suffering of victims, the fear and insecurity of those who believe they are at risk, the pain and often anger of the families of victims, the loss of freedom and potential productive labour that incarceration means for the criminal who is caught – cannot be measured in dollars. But these largely unmeasurable costs must be a significant part of any cost-benefit equation.”<sup>40</sup>

Estimating the costs of intangible impacts such as the pain and suffering of crime victims is even more difficult than estimating direct crime costs. These costs are often estimated using court awards to crime victims for suffering, disabilities, and disamenities due to crime. According to the Australian Productivity Commission, when cost-benefit studies of gambling include estimates of the cost of intangible impacts, these costs often contribute the largest proportion of the costs involved.<sup>41</sup> Colman states 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.”<sup>42</sup>

## 2.6 Private (individual, internal transfers) and social (real, external) costs

In a cost-benefit analysis, whether an impact is counted as a private or as a social cost seriously affects the outcome. This issue is another major source of contention among researchers, with different conceptual approaches again determining which impacts are included and excluded in analyses of gambling impacts. In the economic paradigm, for example, only social costs are

included in cost-benefit calculations while private costs are excluded because there is no aggregate gain or loss to society.<sup>43</sup> But researchers do not agree whether the economic paradigm that makes these distinctions is appropriate to gambling impacts studies. On this issue, as with other conceptual and methodological issues raised here, there is considerably less agreement concerning gambling impact studies than in comparable work assessing the costs of tobacco, alcohol abuse, physical inactivity, and other risk factors for health and social costs. This is due partly to the complexity of the subject matter and partly to the newness of the evolving research.

Private or internal costs are individual costs that do not impact society as a whole. For example, the money a gambler loses is a private cost. A social cost creates a change in society as a whole. This seemingly simple observation in fact leads to considerable complications in applied cost-benefit analysis. Just as there are always interconnections and multiple causes of effects associated with gambling, so the boundaries between personal and social costs are often fuzzy. Total costs (and benefits) include both private or individual and social costs. However there is little agreement among researchers concerning what to include in each category.

Private costs, also called pecuniary costs, are transfers from one person or group to another—what is one person's loss is another's gain—so there is no net cost to society as a whole. Basically, transfers redistribute assets rather than produce a net gain or loss. Collins gives examples for some of the benefits and costs frequently associated with gambling:

- The revenues governments raise from taxes are pecuniary (since they don't create new resources) except when that profit comes from outside (e.g. from tourists) or would have been spent outside the jurisdiction (e.g. at a casino in another province).
- If an employee loses his/her job, can't be replaced, and there is an ensuing loss of production, that is a real [social] cost. If the employee can be replaced, and if the unemployed worker collects unemployment compensation, the costs are considered pecuniary or transfers, and not social costs.<sup>44</sup>

The gambling literature lacks an appropriate standardized definition of social cost and a methodology for measuring these costs.<sup>45</sup> Walker defines social cost in the welfare economics paradigm as a decrease in the aggregate real wealth of society compared to what it otherwise would have been. In this case, “transfers” such as bad debts, for example, would not be considered social costs.<sup>46</sup>

Collins and Lapsley argue that social costs are those incurred involuntarily by others including those costs the gambler didn't rationally take into account when starting to gamble. A social cost occurs if an action makes some worse off, but no one better off.<sup>47</sup> Eadington states that, in this case: “A measurement of the social cost would be the amount of income transfer it would take to compensate those who were damaged so that they could be made “whole,” i.e. as well off as they were before the action took place.”<sup>48</sup> Collins and Lapsley also argue that social costs exist if the gambler stops work to gamble, loses the family money, and causes family members to require social welfare benefits. As well, social costs exist if the gambler is not fully informed about the risks of gambling or its expected rate of return. They acknowledge, however, that this formulation is debated in the literature.<sup>49</sup>

Whether to include some indicators in impact studies depends on the approach. For example, the classical economic approach does not include "transfers" such as theft, bad debt, and social welfare payments in a cost-benefit analysis, since no money or goods are increased or decreased on a macro or social level. A sociological view, however, includes transfers and costs to individuals such as theft and bankruptcy in its analysis, and emphasizes the importance of intangible psychic costs. Thompson disputes the classical economic position that gambling-related thefts do not represent a social cost because they are a transfer from one individual to another. He argues 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.<sup>50</sup> Grinols explains that the real resources stolen could be treated as social costs to the victimized public.<sup>51</sup>

Welfare payments to persons unable to work because of gambling problems, considered a transfer rather than a real cost to the economy in a neoclassical economic or "cost-of-illness" approach, *would* be included in a budgetary impact study focusing on the impacts to government revenue.<sup>52</sup>

Henriksson, in a critical review of a Canadian Tax Foundation study on gambling impacts, notes that not including transfers, although good practice from the standpoint of conventional economics, is a reason why:

"Students of the overall effects of gambling dismiss economic studies that take this line as irrelevant. Such studies do tell us something, but they manifestly do not tell us everything about the social impacts of gambling.... [T]he [net economic] costs are much less than the social losses, many of which show up in economists' calculations as "mere" transfers. Thus, the authors' conclusion that gains from gambling exceed losses must be interpreted with extreme caution."<sup>53</sup>

Indeed, Henriksson's critique of conventional economic benefit-cost analysis indicates precisely how and why the GPI approach differs in aiming to reflect accurately the full social benefits and costs of economic activity, and thereby to bring economic analysis into line with social reality.

The massive Australian Productivity Commission study of the gambling industry did include elements of private or internal costs in its calculations, justifying its approach in this way:

"While private benefits and costs do not normally provide a justification for government policy, an exception is that governments may want to take into account the distribution of private benefits and costs among members of society for equity or fairness reasons. Further, when considering an action to address the social benefits and/or costs of an activity, it is also important for governments to consider any impacts such actions might have on private benefits and costs."<sup>54</sup>

Below is a scan of some of the approaches to specific transfers and social costs in the literature, and the unresolved debates among researchers on these issues.

### *Family costs*

The conventional economic argument asserts that family costs are private ones since the gambler takes these costs into consideration when deciding to gamble. How this issue is handled theoretically and conceptually affects how family abuse costs are handled practically in cost-benefit analyses. In the economic paradigm, family abuse costs are considered private, and are therefore not included in a cost-benefit analysis. Single, on the other hand, asks: "How can we ignore the costs of substance abuse upon other people who have had no part in the initial decision and who may find the effects intolerable (for example, resulting in marriage breakups)? The size of abuse cost estimates will depend very significantly on whether family costs are treated as social costs."<sup>55</sup>

### *Economic development and employment*

Increased employment is often seen as a benefit of the gaming industry, although this too is debated in the literature.<sup>56</sup> Basically, the question is whether the jobs created are mainly diverted from other job possibilities or from existing jobs or whether the employment is new – that is, whether it reduces unemployment.<sup>57</sup>

From an economic perspective, the main questions that researchers argue need to be considered when looking at the impact of gaming on economic development and on the overall social and economic wellbeing of regions and provinces include:

- Are expenditures diverted from other commodities and other industrial sectors?
- Is there a shift of resources from one region to another?
- Does the introduction of gambling lead to an increase in aggregate consumption at the expense of aggregate saving, which might provide short-term benefits but incur long-term costs?
- Is there a net increase in new money being introduced into the regional economy, e.g. from tourism?<sup>58</sup>

The gambling industry employs people directly, and industries associated with gambling such as restaurants, hotels, etc. might also see increased employment because of demand from gambling patrons. However, as Vaillancourt and Roy point out in their cost-benefit analysis of gambling in Canada, this does not necessarily mean that new jobs are created.<sup>59</sup> 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, or that the money spent on gambling did not displace other goods and services and hence lead to a reduction in employment elsewhere.

The second criterion 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). A general guideline proposed by Rephann et al. is that when less than half of the gamblers are tourists or from outside the area, the net result is a redistribution of money rather than an economic expansion.<sup>60</sup>

Walker criticizes arguments that the economic benefits of casinos are dependent on new money being brought into the local economy from tourism and that gambling may produce a "leakage"

of money out of the local economy.<sup>61</sup> Walker argues that counting money leaving the region (e.g. to buy gaming machines) as a loss is a misunderstanding of basic economic concepts, since increased purchases of goods and services and the resulting increased trade produce benefits for society. Basically, he argues, money going out of the region will bring money in and vice versa. By contrast, the GPI approach, following the argument of Simon Kuznets, one of the architects of national income accounting, notes that there is no necessary correlation between increased spending and social benefit, and that estimates of social benefit must always ask *what* is growing and at what cost.

A study by the United States General Accounting Office notes that negative economic impacts of new gaming venues may include job losses in surrounding businesses, often called the "cannibalization effect."<sup>62</sup> Calculating the indirect loss of jobs and expenditures created by diverting revenue from other industries to gaming is difficult to calculate since these effects are often not localized or immediately visible. Walker points out that, from an economic perspective, this is not a social cost. It often is the case that new businesses offer products or services that consumers prefer. He says: "The significant issue is not whether some firms are replaced by others, but whether the introduction of the new product increases total societal wealth."<sup>63</sup> Again following Kuznets, the GPI approach recognizes the inadequacy of purely quantitative aggregate assessments of societal wealth, and does include qualitative considerations that distinguish between the social benefits and costs of the new firms compared to those that were replaced.

### *Government revenues and expenditures*

Government revenues are considered transfers from individuals to the government, and some government expenditures are then considered transfers back to individuals. Therefore, in a conventional economic cost-benefit analysis, government revenues are not counted as an economic benefit unless the money comes from outside the area. Government expenditures may or may not be transfers or social costs, depending on whether or not society benefits by an increase in societal wealth. Henriksson notes that, given the very high proportion of provincial budgets applied to health care, if gambling activities cause even a tiny increase in health care expenditures, then "the revenue 'growth' [from gambling] becomes illusory."<sup>64</sup> According to Collins, health care costs in Canada, where there is national insurance, are clearly social costs.<sup>65</sup>

Discretionary costs that governments may incur, such as spending to educate the public about the potential problems of gambling, would not be considered social costs, since, it could be argued, these expenditures are not inevitable consequences of gambling. Payments made to charities and community organizations from government revenues are also not considered a net benefit but are simply a transfer payment from one organization to another.<sup>66</sup> On the other hand, if advertising, promotions and marketing by gambling operators do not provide adequate consumer information that would protect the public from incurring gambling problems, then the money spent on that advertising, promotion, and marketing can be counted as a social cost.<sup>67</sup>

### *Productivity losses from gambling problems*

Persons who have gambling problems are often characterized as being preoccupied with gambling, which in turn may produce productivity losses due to absenteeism and loss of

productivity on the job.<sup>68</sup> It is essential to assess the degree to which problem gamblers have higher productivity losses than other workers, and the degree to which those losses are attributable to problem gambling. The debate in the literature is whether productivity loss is a private transfer that should not be included in estimates of costs since there is no cost to outside parties, or whether these losses should be considered as social costs. Job and employee search and retraining costs are social costs that are often overlooked in the literature on productivity losses and indirect economic costs.

Vaillancourt and Roy consider lost or reduced income attributable to gambling as a transfer or private cost, and therefore they do not include it in their own analysis. However, the authors do assume that an employee who misses work due to gambling loses income and is not replaced, so they calculate and include as a cost the tax revenue attributable to gambling that is lost by government.

By contrast, Single et al. take a broader approach and suggest that the valuation of lost production as a result of gambling by the employed should be the loss of wages attributable to gambling problems, plus the associated loss of unpaid output, plus the value of life or quality of life lost due to gambling. For the unemployed or people out of the workforce, the net cost is calculated as the loss of unpaid output plus the value of life lost due to gambling.<sup>69</sup> Estimates of the value of unpaid work are calculated by the cost of replacing the unpaid work activity if it is purchased from an outside (market) source. Types of unpaid work activities here include childcare, domestic activities like cooking and cleaning, purchasing of goods and services, and volunteer and community work. The value of each of these activities is calculated by the cost of hiring a replacement, and adjusting for pension and benefit contributions.

Compensation for unemployment is sometimes considered as a social cost, as the cost is borne by taxpayers. The general consensus among economists, however, is that this represents an income transfer from the employed to the unemployed, and therefore should not be counted as a social cost in cost-benefit analyses.<sup>70</sup>

### *Unpaid debt and bankruptcies*

In a traditional economic analysis unpaid debts and bankruptcies, although damaging to the creditors, are considered transfers from the creditor to the debtor and are therefore not considered as social costs in the aggregate. However, money spent to recover the bad debt or process the bankruptcy is considered a social cost since that money could have had an alternative use.<sup>71</sup> For example, bankruptcies incur lawsuits and other legal costs such as court time and resources, bill collector fees, and harassment costs.<sup>72</sup> Some researchers agree with this basic methodological distinction, but point out that bad debts and bankruptcies should still be measured and tracked in order to inform gambling policy.<sup>73</sup> Welfare payments incurred by gamblers are also considered transfers and therefore excluded from conventional cost-benefit analyses. However, as Wildman and Chevalier explain, a budgetary impact study focusing on government revenue would include such welfare payments.<sup>74</sup>

Arguing against the conventional economic logic described above, Thompson, Gazel, and Rickman consider that the unrecoverable debts of problem gamblers in bankruptcy court



proceedings should be considered as social costs. In their study of the social costs of gambling in Wisconsin, they assumed that 50% of the gambler's debts would not be repaid and therefore should be considered a social cost. They actually found 50% a low estimate, since evidence indicates that many problem gamblers actually pay few of their debts.<sup>75</sup>

## 2.7 Social Issues

### *Implicit taxation*

Government revenue from gambling, according to some researchers, is an implicit tax.<sup>76</sup> This is because net government revenue – the remainder of revenue after winnings and expenses – has the same effect that a direct tax on expenditures would have. In one example, Clotfelter explains that if the net government revenue were 33 cents on the dollar, this would represent the equivalent of a 50% excise tax on the 67 cents used to operate and reap profits from the gaming activity, which is much higher than the excise taxes on alcohol and tobacco products.<sup>77</sup> From this perspective, the gambling tax revenue is one that gamblers pay, whereas both gamblers and non-gamblers theoretically benefit when government spends that revenue – if social costs are not considered. Azmier points out that it is important to recognize that gross profits from gambling actually are net losses for the gambling adults in the region.<sup>78</sup>

### *Sustainability*

Some researchers also note that it is important to consider in a cost-benefit analysis whether or not the level of revenue the government receives from gaming is sustainable in the long run.

### *Progressive or regressive taxation*

According to Wildman and Chevalier, one of the main issues in looking at the associations between gambling and social problems is whether or not the implicit taxes on gambling are progressive or regressive.<sup>79</sup> Regressive taxes are those that take a greater proportional share from the poor than from the wealthy. Wildman and Chevalier note that economists reached a consensus as early as the mid-1970's, that gambling taxes were "overwhelmingly regressive" and were twice as regressive as the much criticized sales tax. Many studies have found that people in low-income brackets spend roughly the same absolute amount of money each year on lottery purchases as those in middle and upper-income brackets. However, the percentage of their income spent on lotteries is higher than among those who are more affluent. Clotfelter notes that this conclusion was found in every case he examined.<sup>80</sup> He stresses that this observation is drawn entirely from empirical studies of actual spending patterns.

Azmier remarks that most economic impact studies do not consider the source of the revenue.<sup>81</sup> However, 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.

## *Income distribution*

Traditional economic cost-benefit analysis does not consider distribution effects since they cancel each other out and do not represent a net gain or loss to society from a macro-economic perspective. Governments are concerned to ensure that benefits from gaming are enjoyed by the population at large and that any harm is minimized.<sup>82</sup> However, the costs and benefits of gambling are not shared equally among the population and those who are harmed are generally different population groups than those who benefit.<sup>83</sup>

As noted above, lower-income people are effectively taxed regressively through implicit government taxes on gambling. In general, as we have seen, low-income groups also spend a higher proportion of their income on gambling than do higher income people. These factors may widen both income and health gaps within the population. The poor are at an increased risk for gambling problems. Evidence indicates that low-income groups experience gambling-related problems at rates that are higher than those with higher socio-economic status.<sup>84</sup> This unequal distribution of costs and benefits may be concealed in standard cost-benefit analyses that reveal only net aggregate social benefits and costs. Researchers also speculate that gambling may impact the way income is distributed in a region and thereby affect population health.<sup>85</sup> Evidence documented in the *British Medical Journal* indicates that regions with wider income inequality generally have poorer health profiles than those with narrower gaps between rich and poor.<sup>86</sup>

Growing income and wealth disparities are also potentially destructive of social cohesion and therefore of aggregate social wellbeing, and can be correspondingly costly to the health and justice systems. The Whistler Symposium report also finds that gambling involves a redistribution of income and expenditures in society. The report states that the "unique challenge is to differentiate between the redistribution effects and true costs...this dimension will need to be elevated in gambling research studies."<sup>87</sup> The Whistler Symposium recognizes the "need to assess the redistribution effects of gambling in terms of money flows (government revenues, charitable donations, etc.), resources (e.g. labour), and time-use impacts of gambling."<sup>88</sup>

## **3. Research needs and data gaps**

### **3.1 General needs**

Gaming research that looks at the social and economic impacts of gambling is relatively new and very uneven. There are many more studies, for example, researching the connection of gambling to crime than there are studies examining the workplace impacts of gambling. Economists who want to ensure a clear, rigorous, and disciplined economic approach have spearheaded the debate on assessing the economic benefits and costs of gambling. Recently, investigators from other disciplines such as sociology, population health, psychology, anthropology, and geography have joined the debate, as have others who are concerned that qualitative information and intangible costs should also be valued and counted. At least some of this new interest has been generated by



a reaction against what has been perceived as too narrow and restrictive a focus on the part of many economists leading to potentially misleading results, conclusions, and policy implications.

At the same time, problem/pathological gambling and its harmful consequences have received a great deal of attention by researchers, while studies of beneficial aspects, like the positive impacts of gambling revenues that are used for the public good, are rare. In fact, in their 2002 comprehensive literature review, Wildman and Chevalier found only one article dedicated solely to the beneficial impacts of gambling on individuals.<sup>89</sup> This study showed bingo to be therapeutic to Alzheimer's patients.<sup>90</sup> Wildman and Chevalier also found no studies that dealt specifically with potentially beneficial impacts of gambling on the gambler's proximal environment, defined as spouse, children, family, friends, and life at work, at school, or in the local community.<sup>91</sup> Wildman and Chevalier found numerous reports dealing with beneficial impacts of gaming to society at large, such as increased employment, income, and tax revenues. However, they found no reliable studies quantifying these impacts. "Entertainment value" for non-problem gamblers has rarely been investigated.<sup>92</sup>

Studies also often look at one aspect of gambling, ignoring the interconnections with other aspects, or they are descriptions of costs and benefits without adequate empirical basis. There also has been no attempt to measure impacts of gambling on the wellbeing of the population over the long-term. Researchers have produced very few analyses of the full costs and benefits of gaming and many of those studies have been discredited because of methodological issues.

The National Research Council in the United States categorized economic impact studies into three groups. The first group, "gross impact studies," focuses on only one aspect of an economic effect and these studies therefore do not provide a balanced perspective. Typically, these studies provide a simple accounting of aggregate effects of gaming such as gambling revenues, taxes collected, and jobs created. The second group consists of descriptive studies that simply identify benefits and costs associated with gambling without estimating their value. The third type attempts to provide a balanced analysis of costs and benefits, but these studies are hampered by numerous methodological problems as noted above.<sup>93</sup>

Studies are frequently criticized for having faulty methodology such as small sample sizes that lack generalisability, having cross-sectional rather than longitudinal research designs, and focusing on single social impact measures that are not linked to clustered effects. Investigators acknowledge, however, that gambling research is relatively new and has been hampered by lack of data, empirical evidence, and research consensus concerning indicators and methodology.<sup>94</sup>

Researchers do agree, however, that a key area for further research is the determination of attribution fractions (relative risk ratios) that link gambling in general and problem gambling in particular to particular health and justice outcomes, and to a wide range of social and economic impacts. Since this need is a consensus area among researchers that can dramatically advance the study and understanding of gambling impacts, further work in determining these attribution fractions is also a key recommendation of this report. By supporting the current efforts of the Canadian Centre for Substance Abuse in this field, the Nova Scotia Gaming Foundation can help to advance research on gambling impacts in a significant way.

In a 2003 report, Harold Wynne of the University of Alberta commented on the quality of gambling research:

- There is a paucity of research into the socioeconomic impact of gambling expansion;
- Much of the research that has been done is not scientifically rigorous, and in some instances, it is outright biased towards a particular perspective; and
- There is little agreement as to conceptual or analytical frameworks and methodologies that are best suited to guide cost-benefit analyses of gambling policy decisions."<sup>95</sup>

As well, empirical evidence is limited and data are often unavailable, not appropriate, or buried deep in government departmental budgets in areas such as health, judicial and penal systems, and social welfare.<sup>96</sup>

Recognizing the limitations of sparse literature and research, the Whistler Symposium identified major methodological issues that need resolving, and produced a comprehensive list of recommendations for further research. These research needs include the following:

- measurement of intangible and qualitative impacts of gambling
- the identification of causality and impact outcomes
- the identification of attribution factors
- the transparency of data, funding, and methods
- recognition of the importance of qualitative measurements
- measurements of quality of life issues
- consideration of problem gambling in the context of concurrent disorders
- examination of gambling impacts on high-risk populations
- study of gambling behaviours that are not considered as problems
- separation of problem gambling impacts from regular gambling impacts
- an impact framework using socio-economic and age-sex profiles, population health data, and a social determinants of health approach, to determine the distribution of gambling impacts, including assessment of prevalence
- indicators that are repeatable, comparable at the provincial and national levels, and that show rates of change (i.e. trends) from a baseline
- assessment of gambling by type (e.g. casinos, VLTs, lotteries, bingo), and by the different types and structures of cost and benefit impacts that are associated with each form of gambling, avoiding simplified aggregation that can conceal these differences<sup>97</sup>

The Symposium participants were not able to resolve these complex issues in the few days available to them. They established an international steering committee to continue the work on developing methodological guidelines, identifying data needs, and deriving attribution fractions that eventually could be used to produce balanced cost-benefit analyses of gambling. This project is expected to have preliminary results by 2006.<sup>98</sup>

### **3.2 Regional impacts**

Sub-provincial and local regional impacts are often obscured in provincial aggregates. A major research need in looking at these regional impacts is the assessment of the micro-economic aspects and impacts of gambling. There is currently a lack of data examining both the positive and negative regional impacts of gaming. Conclusions about the nature and extent of local impacts often have to be indirectly inferred from aggregate data, surveys or qualitative studies. In Nova Scotia, it might be helpful to examine data for the nine administrative health districts, or the six statistical health regions used by the Canadian Community Health Survey (CCHS), to assess potential intra-provincial differences in gambling impacts on health.<sup>99</sup> Such a preliminary analysis may lead to recommendations to Statistics Canada for future survey questions. There also may be differences in the impact of gaming on rural as opposed to urban venues.

### **3.3 Social environment**

Recently, Australian researchers have adopted the view that problem gambling is a social and public health issue subject to the broader range of environmental, socio-cultural, political, and economic factors.<sup>100</sup> Much of the literature, however, especially from the United States, is dominated by the medical disease paradigm that sees gambling problems in terms of individual pathology or mental disorders. This view locates the origin of physical and mental gambling problems primarily within the individual, interacting with selected environmental and biological factors.<sup>101</sup> Shaffer and Korn explain: “There are few studies of the contextual determinants of gambling and disordered gambling. Most of the research on the causes of disordered gambling has focused on psychological factors at the expense of the social environment.”<sup>102</sup>

As noted above, there are many studies that investigate particular aspects of gambling, but there are very few comprehensive cost-benefit analyses. In 1999, Vaillancourt and Roy, who produced the first such study for Canada, identified only four— a 1999 national study from the United States, one from Australia also published in 1999, and two studies from Manitoba, both published in 1995.<sup>103</sup> They criticize the two Manitoba studies as being weak since they “rely on assumptions and outside information in order to estimate key numbers.” The U.S. national study, while massive, does not include intangible costs and could come to no definite conclusion about the amount of costs.<sup>104</sup> The Australian national study relies heavily on intangible costs but also came to no definite conclusion about the amount of costs.<sup>105</sup>

### **3.4 Culture or community groups**

There are very few studies, with the exception of some relating to adolescents, addressing cultural or community groups. Although similarities exist, drawing generalities from small community studies might be difficult since communities vary considerably in size, composition, age, interest, etc. Also, groups within spatial communities may experience different impacts, e.g. low-income groups have different experiences and outcomes than higher income groups.<sup>106</sup> The cultural impacts of gaming and the role of culture in moderating other gaming impacts (e.g. impacts on health and wellbeing) require further research and investigation. Researchers have recommended that gambling impact data be disaggregated across several dimensions, including the following:

## *Gender*

Most problem gambler studies have been done with male subjects despite the fact that at least one-third of problem gamblers are women. Most of the studies of female problem gamblers have been performed in clinical populations. This may not be representative of female gamblers since the majority of female problem gamblers do not seek help in treatment programs and in help groups such as Gamblers Anonymous. Further, treatment groups usually represent severe problem gamblers and may not provide adequate information on moderate problem gamblers.<sup>107</sup>

## *First Nations peoples*

Most of the literature on the social and economic impacts of gambling on First Nations peoples comes from the United States. There are very few studies on the impacts of gaming on First Nations communities in Canada, despite the fact many of these communities host legalized gambling venues.<sup>108</sup> A Canada West Foundation report on First Nations gambling policy in Canada points out that studies on problem gamblers have been criticized for not looking at the larger population health picture and its socio-economic determinants. The report states,

“Studies that conclude Aboriginal Peoples tend to have above average levels of problem gambling have been criticized for failing to disentangle race and ethnicity from issues of poverty and low socio-demographic status. It has been pointed out that these factors may indeed be a large reason why many American Indians and other indigenous peoples have a tendency to display higher than average levels of problem gambling. Risk factors such as low income, low education, high rates of unemployment and substance abuse have been associated as being precursors to gambling addiction. If these factors do make people more predisposed to becoming problem gamblers, First Nations communities in Canada likely will be at greater risk, as many of their communities experience high rates of substance abuse and have lower than average levels of income and education.”<sup>109</sup>

## *Adolescents—Education*

The social and economic impacts of gaming on educational processes and institutions have rarely been addressed, although some reference to educational impacts is found in the literature on adolescent gambling. The Nova Scotia Alcohol and Gaming Authority report, *Convenience Gaming and Social Impacts in Nova Scotia* suggests that, in studying educational impacts, it is important to look at how use of time and money for gambling affects academic achievement and commitment, and also to examine the implications of gambling on future career possibilities.<sup>110</sup> The report hypothesizes that, among gambling types, VLTs will have the most negative effect on education.

## **3.5 Types of games**

Noting that there is no clear understanding in the literature of how each type of game contributes to the benefits and costs of gambling, Wildman and Chevalier recommend that differentiation by types of gambling activities should be included in research designs, and that research data and conclusions on gambling impacts should be presented by type of game.<sup>111</sup>

## **4. Relative risk ratios and gambling statistics**

Researchers have identified particular factors that increase risks for problem gambling. Following is a listing of some of the key risk factors identified in the literature as well as a selection of general gambling statistics. The risk factors are not always consistent in the different studies, but the following summary of key findings and results to date may be useful to Nova Scotia policy makers in prioritizing needs and identifying potentially cost-effective policy interventions. As noted in the introduction to this summary, policy makers and the general public cannot afford to wait until all the methodological issues and research needs noted in the first 20 pages of this summary have been resolved. They have to make current policy decisions and act now to ameliorate potentially negative impacts of gambling based on the best available evidence in the field, however inadequate that may be.

While the first 20 pages of this summary are therefore addressed primarily to researchers, the remainder of this summary is presented primarily for a policy audience that can benefit from a summary of some of the key results produced to date. Please note that the following is by no means a full selection of the wide range of gambling statistics and estimates of relative risk ratios contained in the full 212-page literature review, which is attached as an appendix. Rather, the next few pages are simply illustrative of some of the key associations with gambling that have been identified in the research to date, along with a sampling of a few of the better documented statistics and estimates used to verify those associations. For a more complete description of the statistical research, survey results, and gambling-related estimates in the literature, please see the full literature review in the appendix to this summary report. If a statistic has no reference in the following section, this indicates that it part of a group of statistics, and the corresponding endnote number is listed at the end of the particular grouping of statistics.

### **4.1 General risk conditions**

The risk conditions most often found for problem gambling are:

- youth; the percentage of problem gambling risk declines with age
- gender (males are at higher risk although this may be changing)
- psychiatric problems and substance abuse co-morbidity
- a history of anti-social behaviour
- low income and unemployment
- low educational attainment<sup>112</sup>

More arguable risk conditions include:

- availability of gambling outlets
- a family history of problem gambling

- coming from a lower socio-economic background.<sup>113</sup>

## 4.2 Expenditures

### *In Canada:*

- In 1999, statistics from Statistics Canada show 59% of households with an average income of less than \$20,000 bought lottery tickets and 8% spent money at casinos, slot machines or VLTs.
- 78% of households with an income of \$80,000 or more bought lottery tickets and 24% spent money on casinos, slot machines or video lottery terminals (VLTs).
- While higher-income households spent more in absolute terms on gambling, the **proportion** of total income spent on gambling was considerably higher for low-income people. Thus, low-income households spent an average of 2.2% of their total household income per year on gambling, or an average of \$296 per household, while high-income households spent 0.5% of their total household income per year, or about \$536 per household, gambling.<sup>114</sup>

### *In Nova Scotia:*

- 25% of all those who play VLTs each year contributed approximately 96% of the annual provincial net revenue for VLT gambling.
- VLT gamblers identified as problem gamblers contributed just over half of the net revenue for VLT gambling.<sup>115</sup>

### *New information from Nova Scotia:*

- 40% of net gambling expenditures (i.e. losses) in Nova Scotia are estimated to come from the 6.9% of adults in the province who are currently scoring at any level of risk for problem gambling. (Scoring systems for “at risk”, “problem”, and “pathological” gambling are described in the full literature review attached as an appendix to this summary report).
- VLT expenditures accounted for 60% of net provincial gambling revenue.
- In Nova Scotia, “No Risk” Gamblers spend an average of \$430.00 /year; “At Risk” Gamblers spend \$1,800.00/year, “Problem Gamblers” spend \$7,000.00/year.
- Adults at all levels of annual household income are equally likely to be “At Risk” or score for problem gambling. For those in the highest income bracket (\$60,000+), increased involvement in gambling activities did not translate into greater risk but rather into higher rates of No Risk gambling. Those with household incomes under \$30,000 per year had more risk of becoming problem gamblers if their gambling activities increased.<sup>116</sup>
- (Also see VLT section below)

## 4.3 Types of gaming



- VLTs are the gaming activity most associated with problem gambling. In Alberta, 25% of VLT users are classified either as problem gamblers or at risk for problem gambling.<sup>117</sup> (See below)
- Lottery ticket purchasers represent the majority of adult gamblers in Nova Scotia with 88% of the adult population having purchased a ticket at some time. Lottery purchasers have the lowest risk of becoming at-risk or problem gamblers.
- Casino participation in Nova Scotia in 2003 was 23% of the adult population, but only 1.9% of adults participate regularly (at least once a month).
- 15% of the adult population in Nova Scotia 2003 played *bingo* in the past year, and 3.2% of regular adult players report problems related to their bingo activity.<sup>118</sup>

### VLTs

- Statistics Canada recently reported that 25% of those playing VLTs were at risk for problem gambling, or already were problem gamblers.<sup>119</sup>
- A Montreal survey found that 21% of VLT and slot machine players are problem gamblers compared to 2% of the population for all games of chance.<sup>120</sup>
- Problem VLT gamblers in Nova Scotia comprise 16% of all of those who play the machines on a regular basis, which represents approximately 0.92% of all adults in the province.<sup>121</sup>

### *New information from Nova Scotia:*

- VLTs are associated with over half of all past problem gamblers (1.4% of Nova Scotia's adult population;  $\approx$  10,000 adults) and of all current self-reported problem gamblers (0.8% of adult population;  $\approx$  6,500 adults) despite the fact that only about 5% of adults are regularly involved in the activity each month.
- VLT gambling exhibits the highest levels of problem gambling in relation to time, money, and other forms of gambling. About one out of every 28 people (3.6%) who have ever tried these gambling machines reports having experienced problems with the amount of time or money spent on the activity. Among past year VLT gamblers, the proportion jumps to one in 17 (5.8%) and it increases dramatically to about one out of six adults (16%) who take part in VLT gambling at least once per month. This is the highest rate of self-reported problem development compared to any other form of gambling available in Nova Scotia.
- Video Lottery gambling is the only gambling activity in past year gambling involvement among adults in Nova Scotia for which the risk of problem gambling (as identified by the Canadian Problem Gambling Index - CPGI) increases if the amount of time spent gambling increases.
- Just under half (43%) of regular VLT gamblers are currently scoring at some level of risk for problem gambling on the CPGI, with 20% identified at moderate to severe problem levels. In other words, almost one in two monthly VLT gamblers in Nova Scotia is scoring at some level of risk, with one in five scoring for significant problems.<sup>122</sup>

### Casinos

- Casinos benefit financially from the gambling habits of problem and pathological gamblers. The typical problem and pathological gambler loses from 10 to 20 times as much as a non-problem gambler might lose in a year.<sup>123</sup>

- Casinos derive a significant share of their revenue from problem gamblers. The portion of total revenue derived from problem gamblers in casinos is estimated at 41.4% for table games and 74.6% for machine gambling.<sup>124</sup>
- In Nova Scotia, 11.5% of regular casino players experience problems with gambling, especially slot machines.

#### 4.4 Problem gaming demographics

- In 1998, the typical Atlantic Canadian who purchased *lottery* tickets was female (54%), married, aged 25 to 59, had a trade school or less education, lived equally in urban and rural areas, and had an annual income lower than \$45,000.<sup>125</sup>
- *Casino* gamblers in Nova Scotia were almost equally divided between men (53%) and women (47%). The average player was in his or her fifties, with an annual income of between \$25,000 and \$50,000. People with an annual income of over \$50,000 were more likely to have visited one of the casinos than those whose income was under \$30,000. People with a university education also had a higher attendance rate than those with less than high school education, who had the lowest rate.<sup>126</sup>
- 59% of *bingo* players in Nova Scotia have less than high school education, 63% percent are married, and 71% are between the ages of 25 and 54. Women make up 68% of occasional bingo players and 92% of weekly players.<sup>127</sup>
- 26.2% of men who participated in gambling in Nova Scotia in the past year played *VLTs* compared with 16.8% of women who gambled in the past year. Participation decreases with age with the highest participation rates being 36.9% for those aged 19-24, and 32.9% for those aged 25-34. The highest participation rate by income is found in those who have incomes in the mid range of \$30-\$59,999 per year, and who comprise 25% of VLT players.<sup>128</sup>

#### *Gender*

- A U.S. study reports that male problem gamblers outnumber women in the 24-35 age group; the numbers are equal in the 35-44 age group; and women problem gamblers greatly outnumber men in the 45-64 age group, a disparity that evens out again after age 65. Women problem gamblers often follow a faster trajectory to problem gambling than men. Women typically move from being "escape gamblers" to more heavy gamblers to compulsive gamblers within three to four years.<sup>129</sup>

#### *New information from Nova Scotia:*

- The percentage scoring at any level of risk for problem gambling is about 1.5 times higher among men in Nova Scotia than among women (8.3% versus 5.5%). However, the percentage of men identified at moderate to severe problem levels only differs from women at the 90% confidence level (2.5% versus 1.6%). Women comprise about 40% of those scoring on the CPGI for Problem Gambling in Nova Scotia.<sup>130</sup>

#### *Age*

#### *New Information from Nova Scotia:*



- The percentage scoring for moderate or severe problem gambling is fairly constant for all age groups under the age of 65.
- The only significant difference for problem gambling by age in the province is that the 25-34 year old age segment has notably higher rates of problem gambling than those 55 years or older (3.4% versus 0.5% for those 65 and older and 1.5% for those aged 55-64).
- Adults under 35 years of age (19-34 years) are significantly more likely than those over 35 years to be involved regularly with VLTs. Of those who gambled on a regularly monthly basis, 10.2% of the 19-24 year olds and 9.7% of the 25-34 year olds played VLTs. Of the adults in the 35 –44 year age range who gambled regularly, 6.7% played VLTs. The percentages continue to decline with age.<sup>131</sup>

### *Adolescents*

- Gambling is more popular among young males than young females, and more young males than females exhibit pathological gambling behaviours.
- Prevalence rates of problem gambling among adolescents are higher than those reported by adults.
- Among adolescents there is often a rapid movement from social gambler to problem gambler.<sup>132</sup>
- In Nova Scotia in 1998, 8.7% of youths in grades 7, 9, 10, and 12 were at-risk for problem gambling, and 6.6% were already problem gamblers.
- In the same study of youth conducted by Dalhousie University researchers, male problem gambler rates were three times those of females. Scratch tabs were the most popular form of gambling activity, presumably because they are the most easily accessible for youth.<sup>133</sup>
- In 2002, results for adolescent problem gambling in Nova Scotia were similar to those found in 1998. But the proportion of students who reported having participated in one or more gambling activities decreased from 75% of surveyed students in 1998 to about 62% in 2002.<sup>134</sup>
- In one study, 27% of pathological adolescent gamblers reported skipping school more than five times to gamble in the past year. Poor academic performance by pathological adolescent gamblers has also been reported.<sup>135</sup>

### *Children*

- One study found that children of problem gamblers used tobacco, alcohol, and illicit drugs during the previous twelve months more often than did the control group, and they were more likely to over-eat.
- Children of problem gamblers experienced almost twice the incidence of homes broken by separation, divorce, or death of a parent before they had reached the age of fifteen than did the control group (37% compared to 20%).<sup>136</sup>

### *Seniors*

- An Alberta study estimated that 1% to 3% of seniors have problems with gambling.<sup>137</sup>
- In New Brunswick, males in general and younger seniors aged 55 to 64 appear to have more problems gambling than do women and older seniors.<sup>138</sup>

### *First Nations People*

- In Saskatchewan in 2002, 34.7% of Aboriginal gamblers were at-risk for developing a gambling problem and 12% of the Aboriginal population was experiencing serious gambling problems.<sup>139</sup>

## **4.6 Problem gambling impacts**

- Problem gamblers negatively affect an average of 10 to 17 people around them, including family, friends, and employers.<sup>140</sup>
- In 2002 in Saskatchewan, 26% of problem gamblers reported not purchasing needed food or groceries, 13% reported not paying medical, dental, or eye care bills, 8.7% reported not paying credit cards, bank loans, or other debts, and 8.6% reported not paying power, heat, or water bills.<sup>141</sup>
- It is estimated that between 5% and 10% of all personal bankruptcy cases in Nova Scotia can be attributed to gambling problems.<sup>142</sup>
- As a rule of thumb, 15-20% of problem gamblers would likely have problems for a number of adverse impacts ascribed to problem gambling, such as depression, divorce, and separation, even if they did not gamble. For this reason, the Australian Productivity Commission discounted its estimates for difficulties attributable to problem gambling by 20%.<sup>143</sup>

### *New Information from Nova Scotia:*

In the past year problem gamblers reported the following difficulties:

- Almost 50% cite debt and financial problems.
- 33% note relationship problems.
- 25% report job and income losses over the past 12 months.
- About 20% report depression, loneliness, and work-related problems.
- Problem gamblers in Nova Scotia did not cite gambling as a contributing factor in most of the difficulties they experienced in the past year, although about 40% of those Nova Scotians who score as Problem Gamblers did directly attribute financial problems and debt to their gambling.
- Gambling is implicated in about 6% of all relationship problems reported by adults in the province and in about 5% of all financial problems in Nova Scotia over the past year.<sup>144</sup>

### *Co-morbidity and health status*

A 2002 Saskatchewan report found:

- 39.1% of problem gamblers have *emotional problems* compared to 3.7% of non-problem gamblers and 3.5% of low risk gamblers
- 34.8% of problem gamblers have problems with *alcohol* compared with 0.9% of non-problem gamblers and 2.3% of low risk gamblers;
- 13% of problem gamblers have problems with *drugs* compared with 0.2% of non-problem gamblers and 1.8% of low-risk gamblers;
- 13% of problem gamblers have *learning disabilities* compared with 1.1% of non-problem gamblers and 2.3% of low risk gamblers.

- 26.1% of problem gamblers reported *long-term illness* of some kind compared to 13.2% of non-problem gamblers, and 12.4% of low risk gamblers.
- 56.5% of the problem gamblers felt *depressed* for two weeks or more compared with 13.3% of those with no problems gambling and 15.2% of low risk gamblers;
- 43.5% of the problem gamblers have had serious *thoughts of suicide* compared to 5.7% of non-problem gamblers and 6.4% of low risk gamblers.<sup>145</sup>

Problem gambling has been associated with higher suicide rates:

- Estimates for *attempted suicide* usually range from 17% to 24% of pathological gamblers.<sup>146</sup>
- Pathological gamblers have a *suicide rate* five to ten times higher than the general population<sup>147</sup> and their spouses have suicide attempt rates three times higher than the general population.<sup>148</sup>
- Between 2000 and 2002, 6.3% of *suicides in Nova Scotia* were found to be gambling related.

Problem gambling has been associated with higher substance abuse rates:

- A review of the literature on pathological gambling and substance abuse found *substance misuse* among pathological gamblers to be from two to three times higher than among the general population.<sup>149</sup>
- In Nova Scotia, 74% of regular VLT players *drank alcohol* while they were gambling.<sup>150</sup>

### **Table 1. Pathological and Problem Gambler Risk Ratios**

The following table is adapted from Gerstein, Hoffmann, and Larison's *Gambling Impact and Behavior Study* conducted for the U.S. National Opinion Research Center at the University of Chicago. The following **methodological notes** are from that study:

"The following table presents certain values and calculations used to estimate the cost per problem and pathological gambler. Specifically, the estimates of this study compare the rate of costly consequences for these gamblers relative to "predicted" or expected rates for individuals with similar characteristics, but who are low-risk gamblers (they have gambled, but never experienced any symptoms of problem gambling). Specifically, the analysis adjusts for a standard set of characteristics that are believed to be predictive of the behaviors and outcomes of interest. These factors... include age, gender, ethnic identity, educational attainment, use/problems with alcohol and drugs, respectively, and region of the country in addition to variables representing the gambling type of the individual. The purpose of these calculations is to adjust for basic and systematic differences between different types of gamblers that might be related to the outcomes of interest, rather than simply take the difference in outcomes for pathological and problem gamblers and compare them to those with no history of problems.

"The costs are based on the "excess" or difference between the actual rate and the predicted rate, where the predicted rate is calculated from the "odds ratio." Note that for all types of consequences except one the "predicted" rate of problems for problem and pathological is greater than the unadjusted rate for low-risk gamblers. This indicates that problem and pathological gamblers on average are more likely to have characteristics that are associated with the consequences of concern, even if they were not problem gamblers. For example, other tabulations have shown that problem and pathological gamblers are more likely to have alcohol and drug problems and lower educational attainment. If these factors are not

adjusted for, the cost estimates will be somewhat inflated, as having these characteristics (alcohol and drug problems) is generally significantly and negatively related to measures such as divorce, health, and criminal justice involvement.

"For example, the problem of "job loss" was reported by 13.8 percent of pathological gamblers who had been employed during the prior year, compared to a rate of 4.0 for low-risk gamblers. In the logistical regression the "odds ratio" is 2.62, which means that the odds of pathological gamblers experiencing job loss is 2.62 times greater than for low-risk after adjusting for other characteristics. These data imply that pathological gamblers without their gambling problems would have a predicted rate of 5.8 percent. This is greater than the value for low-risk gamblers of 4.0 percent, due to the other characteristics which indicate that pathological gamblers are at higher risk of job loss even without the gambling issues. Predicted rates are estimated from the rates for pathological and problem gamblers, respectively, and their "odds ratios" from multivariate logistical regressions comparing each respective type of gambler to low-risk gamblers."<sup>151</sup>

Type of Costly Consequence/ Problem	Actual rate of consequence per problem for (1) pathological and (2) problem gamblers	Predicted rate of problem without gambling (see methodological notes above)	Unadjusted rate of problem for low-risk gamblers (for comparison)	Rate of consequences that can be directly attributed to gambling
<b>(1) Pathological gamblers (severe problem)</b>	%	%	%	%
Job loss	13.8	5.8	4.0	8.0
Unemployment insurance	15.0	5.9	4.0	9.1
Welfare benefits	4.6	2.4	1.3	2.2
Bankruptcy	19.2	10.8	5.5	8.4
Divorced ever	53.6	33.5	29.8	20.1
Health poor or fair	31.1	15.7	13.9	15.4
Mental health utilization	13.3	6.7	6.5	6.6
Arrested ever	32.3	19.3	11.1	13.0
Incarceration ever	21.4	6.3	4.0	15.1
<b>(2) Problem gamblers (moderate problem)</b>				
Job loss	10.8	5.5	4.0	5.3
Unemployment insurance	10.9	5.3	4.0	5.6
Welfare benefits	7.3	2.3	1.3	5.0
Bankruptcy	10.3	6.3	5.5	4.0
Divorced ever	39.5	32.1	29.8	7.4
Health poor or fair	16.4	not significant	13.9	16.4
Mental health utilization	12.8	5.6	6.5	7.2
Arrested ever	36.3	15.3	11.1	21.3
Incarceration ever	10.5	6.2	4.0	4.3

Adapted from: Gerstein, D. R., J Hoffmann, and C Larison. *Gambling Impact and Behavior Study*. National Opinion Research Center. The University of Chicago, 1999 [cited April 2004]. Available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

## 5. Policy Implications

### 5.1 Strategies that address problem gambling

As noted above, policy makers cannot afford to wait for the perfect research methodologies to determine how to manage gaming most effectively and how to reduce potential harm to society. For the most part, the vast majority of the population who gamble do so responsibly and may enjoy the occasional bingo game, trip to the casino, or the vague hope of winning the lottery. The large number of people with gambling problems, however, and particularly their use of VLT machines, appears to create substantial costs to society. Although problem gamblers or those at risk for problem gambling in Nova Scotia represent only 6.9% of the adult population, new information shows that 40% of gambling expenditures come from the losses of this segment of the population.<sup>152</sup> Earlier evidence indicated that the portion of total casino revenue derived from problem gamblers is 41% for table games and 75% for machine gambling.

The trade-off between the very sizeable gambling revenues and profits generated by problem gamblers and the apparently high costs of problem gambling both to victims and to society at large is a crucial issue that needs to be evaluated by policy makers in making gambling industry decisions. Perhaps the key policy issue raised by GPI Atlantic's extensive literature review is simply this: Can we be really serious about programs designed to reduce or eliminate problem gambling and its associated costs when we are increasingly dependent on the losses of problem gamblers and the revenues they generate? Can the industry, and government at large, afford to see the 40% decline in gambling revenues that would likely occur if problem gambling were eliminated? Or do we need problem gamblers? Openly debating this trade-off in the policy arena, supported by the substantial evidence now available within Nova Scotia, would provide a vital service to Nova Scotians.

Strategies to address problem gambling are clearly the most crucial element of any gambling management plan, as well as the most contentious. The controversy arises not only because the intention and motivation of these strategies are called into question by the dependence of the industry on problem gambler losses, but also because programs may be mis-directed. Most of the strategies to date have considered individual problem gambler behaviour, but have generally not taken the larger societal context and the socio-economic determinants of problem gambling into consideration. As well, the long-term effectiveness of these strategies is unknown and in fact questionable, in light of evidence from the research that the prevalence of problem gambling remains relatively constant and in some cases may be increasing. As the new *2003 Nova Scotia Gambling Prevalence Study* points out:

“Use of the CPGI [Canadian Problem Gambling Index] has resulted in the identification of approximately 15,000 more adults at potential risk for a gambling problem than was the case 10 years ago (1993: 3.1% [percentage of adults identified as Problem Gamblers]; 1996: 3.6%; 2003: 4.8%). This represents an increase of almost 50% in NS over the last decade and is a conservative estimate given that the 1993 figures represent lifetime rates of problem gambling rather than current rates, as is the case in 1996 and 2003.<sup>153</sup>”

Strategies to address problem gambling identified in the literature have included those that target the problem gambler as well as general strategies that effectively restrain all gambling activities. As listed by Eadington, these restraints include: limitations on financial conveniences such as prohibitions against automatic teller machines in casinos; limitations on casino marketing tools and advertising; limitations on locations of venues; education of the general public; self-exclusion of problem gamblers from casinos; and training programs for gaming employees to identify problem gamblers.<sup>154</sup>

All Canadian provinces with casinos have voluntary self-exclusion programs that problem gamblers can sign, requesting that the casino exclude them for a specific period of time, usually from 6 to 18 months. During that time the gambler may request a review in order to be reinstated.<sup>155</sup> A number of provinces, including Nova Scotia, have developed public education and training programs and media campaigns to discourage problem gambling. And school-based gambling awareness programs have been initiated in some provinces including Nova Scotia, New Brunswick, and Manitoba.<sup>156</sup> In a major study on the costs and effects of substance abuse, Single et al. discovered that the two provinces with the lowest per capita costs of substance abuse, Ontario and Alberta, were those that invested the most in prevention and research.<sup>157</sup>

All provinces fund treatment programs for problem gamblers. Most of these programs are administered within the mental health and addiction treatment sections of the provincial departments of health.<sup>158</sup> Current treatment approaches involve traditional addictions treatment formats that can be either on an outpatient or inpatient basis, hot lines or crisis lines that gamblers can call, and financial counselling.<sup>159</sup>

Nova Scotia is a recognized leader in the field of providing both education and research for responsible gaming, and problem gambling services for prevention and treatment. In 2002, the Nova Scotia Gaming Corporation sponsored the first province-wide Responsible Gaming Awareness Week in Canada.<sup>160</sup> The Nova Scotia Department of Health and the Office of Health Promotion are responsible for problem gambling services as well as for the community and research services of the “arms length” Nova Scotia Gaming Foundation (NSGF). In October 2004, the NSGF is sponsoring a major international gaming conference that will raise awareness of the impacts of gambling and promote an important exchange among researchers and policy makers. In sum, Nova Scotia is increasingly in the lead in research and policy formation in this field.

The province’s Problem Gambling Services website states that the service “provides planning, funding, and administration within a public/private partnering model for projects and services for information, prevention, treatment and research in the area of problem gambling.”<sup>161</sup> The Problem Gambling Hot Line provides counselling information and advice 24 hours per day 7 days a week—the same hours that the casinos are open. Approximately 80% of the calls received are from VLT problem gamblers.<sup>162</sup>

As noted in the previous section, VLTs are the type of gambling associated most often with gambling problems. In 2002, the Nova Scotia Gaming Corporation released a study on the effectiveness of Responsible Gaming Features (RGFs) on VLTs.<sup>163</sup> The study showed that



problem gamblers have different behaviours than do non-problem gamblers. Problem gamblers lose track of time and money spent, chase losses, spend more time playing, and play more often than non-problem gamblers. An Alberta report describes VLTs as being faster paced than other forms of gambling, allowing more money to be wagered per session. They are located in bars and licensed restaurants, making them very accessible, and particularly accessible to people who have been drinking alcohol. The design of VLTs, with their bright colors, flashing lights, and pleasant sounds, helps put the gambler into a psychologically detached, dissociative state, according to the Alberta study. As well, there is little skill required to play, and it is easy to learn.<sup>164</sup>

In short, the evidence to date indicates that, among the different forms of gambling, VLTs emerge clearly as the primary target of any serious strategy to curb problem gambling. Again, Nova Scotia has been a leader worldwide in promoting responsible gaming for VLT players. The province has capped the number of VLT machines; has restricted them to licensed establishments that exclude youth playing; and offers a training program to VLT retailers in responsible gaming. All of the VLTs in the province now support four Responsible Gaming Features designed to help problem gamblers reduce the amount of time and money spent while playing, without affecting non-problem playing.<sup>165</sup> In fact, the Nova Scotia Gaming Corporation was the first gaming jurisdiction in North America to introduce such features on its VLTs. These machines have a permanent clock, pop-up reminders of play duration, wagers shown as cash rather than credits, and a cash-out after a prescribed time limit.

Smith and Wynne, however, cite a study by Dickerson<sup>166</sup> who questions whether any harm reduction strategy used with VLTs can be effective, since the nature of VLT continuous play encourages loss of control even among non-problem gamblers, and any attempt to reduce the features that impair control would reduce the entertainment value of the machines.<sup>167</sup> As well, the fact that 60% of net provincial gambling revenue comes from VLT losses and that more than half these revenues are generated by problem gamblers again raises the question whether the province is able to or can afford to control VLTs and problem gambling effectively. Again, the policy debate would be enhanced if this trade-off were made more explicit.

Nova Scotia also has enacted regulations that prohibit targeting gambling advertising to youths and prohibit advertising that implies an attractive lifestyle and personal success from gaming. Advertising for bingo and VLTs is regulated by government legislation. Other forms of gaming marketing and advertising are subject to the general terms of Advertising Standards Canada.<sup>168</sup>

According to a Canada West Foundation report on 1999-2000 problem gambling treatment expenditures, Nova Scotia's total treatment expenditure as a percentage of the net gambling revenue was the second highest in Canada after Prince Edward Island. Nova Scotia spent \$1,700,000 or 0.96% of the net gaming revenues on treatment for problem gamblers. This was an average of \$2.38 per adult—the highest expenditure in Canada per adult, and nearly twice the national average. Prince Edward Island spent \$150,000 – 1.2% of its net gaming revenue – or \$1.47 per adult, on problem gambling treatments. The Canadian average was \$1.21 spent per adult.<sup>169</sup>

## 5.2 Public Opinion

Public opinion is potentially an important factor in influencing government determination of gambling regulations. LaBrie and Shaffer hypothesize that of the many factors that influence the development of gambling-related policy, some of the most important factors are political ideologies, media coverage, and public opinion.<sup>170</sup> However, a recent Canadian report found a strong dissonance between public policy and public opinion on gambling, particularly in Atlantic Canada.

The Canada West Foundation interviewed Canadians from across the country in 1999 to identify public perceptions and attitudes toward gambling issues. The resulting report claimed that the Canada West survey provides a benchmark on gambling behaviours and attitudes that can be used to track future changes in gambling opinions and behaviour, and that the findings provide a useful context for the current debate. Generally, the survey found that most Canadians tolerate 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.<sup>171</sup>

Regional results presented specific patterns. Atlantic Canadians (AC), in particular, showed the strongest anti-gambling attitudes in the country. The Atlantic respondents were the most likely to disagree that gambling is acceptable. Findings from the Atlantic region included the following:

- 60% of Atlantic Canadians (AC) prefer more restrictions on gambling.
- AC were most opposed to VLT gambling, with 62% in favour of a ban. However, gamblers in the 18-34 age range did not agree with such a ban. The report stated: "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."<sup>172</sup>
- AC were the least willing in Canada to support use of gaming revenue in general or for charities specifically. Only 12% of AC favoured use of gaming revenues to fund charities.
- 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.
- AC had the strongest opinion that gambling has negative consequences on the community with 42% agreeing with this view. Only 7% of 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 gaming.
- 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 their province. 63% strongly disagreed and 82% disagreed overall.



In general, the report reached four main conclusions:

- There is a dichotomy between public opinion and gambling policy, with current regulations running counter to public attitudes.
- Nearly every issue has statistically significant regional variations. Atlantic Canada has the lowest level of gambling tolerance and Ontario has the highest.
- The gambling debate seems driven by a relatively small group with strong opinions, while Canada as a whole seems fairly tolerant. Knowing someone with a gambling problem or personally having a problem reduces the level of tolerance.
- Acceptance of gambling is linked to feelings that it is inevitable and important as a source of government revenue.

Nova Scotia produced an analysis of public attitudes toward gaming that is reported in the 1998-1999 Alcohol and Gaming Authority Annual Gaming Report.<sup>173</sup> 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; 49% reported knowing a person with a gambling problem; and 81% of these said that VLTs were the source of the problem.

### **5.3 Women and Adolescents**

The risk factors for problem gamblers among cultural groups and the demographic profiles of problem gamblers appear to be changing. Women and youth, in particular, appear to be more at risk for gambling problems than they were ten years ago. This is important for policy makers to recognize in planning intervention strategies and in targeting such strategies effectively to reach at-risk groups.

Martins et al. reviewed ten years of studies on the clinical and epidemiological characteristics of female gamblers as compared to male gamblers.<sup>174</sup> They saw an increase in the number of women with gambling problems, which is similar to trends seen in alcohol and drug addiction. They pointed out that the progression from social gambler to problem gambler is faster in women than in men, and that the time available for intervention between the onset of gambling and the development of problem gambling and need for treatment is reduced in women.

Volberg found that an increase in female problem gamblers was linked mainly to the increased availability of VLTs. Volberg cautions that, given the preference women have for VLT gaming, the prevalence of women problem gamblers is likely to continue to rise with the increased availability of these machines. She also sees the rapid growth of Internet gambling as a special risk for women since it can be done in the comfort of the home.<sup>175</sup>

Australian researchers have also noted that, considering the rising prevalence of women with gambling problems, "it is critical that the relationship between public policy, social impacts and gender be given priority on academic and government research agendas."<sup>176</sup>

In a 2003 literature review of adolescent problem gambling, the South Australian Centre for Economic Studies (SACES) voiced its concern that, given the preference of youth for VLT gaming, technological developments could create further risks for youth: “Technological developments such as the internet and the mobile telephony (and also, sophisticated video games) provide new or potentially new distribution channels for gambling participation by young people, who it is recognized are more ‘technologically savvy and astute’ than their parents.”<sup>177</sup>

A key policy concern, therefore, is the development of strategies to educate youth and prevent gambling problems before they take hold.<sup>178</sup> Many school systems, including the Nova Scotia system, have gambling educational programs in place. The Drug Dependency and Problem Gambling Services of the Nova Scotia Department of Health, in consultation with the Nova Scotia Department of Education and Culture, produced a two-volume resource manual designed to prevent problem gambling among junior and high school students. The document, entitled *Drawing the Line: A Resource for the Prevention of Problem Gambling*, presents gambling from the perspectives of career and life management, mathematics, and economics. The goal, in part, is to increase awareness of the dividing line between social and problem gambling.<sup>179</sup> There is some evidence of success in these preventive programs, with a 2002 survey indicating a decline in the proportion of Nova Scotia students participating in gambling activities (62% compared to 75% four years earlier), even though the prevalence of problem gambling among students did not change during this period.<sup>180</sup>

## 6. Conclusion

Gambling activities provide entertainment, venues for socializing, and some kind of hope, however illusory, for a better life—at least financially—for some participants. As we have seen, gambling activities, which basically depend on gamblers wagering money and generally losing in the long run, bring a great deal of revenue to governments in the form of implicit taxes. This money may be used to support governmental and non-governmental programs for the public good.

On the other hand, gambling may produce considerable social and economic costs to society. People with gambling problems are the most visible reflection of these costs. But other impacts on the quality of life and social cohesion of the rest of society might also be present. It is important for policy makers to have accurate information about gaming within the larger socioeconomic context, including distributive issues and relative impacts of gambling on lower-income and disadvantaged groups. This knowledge is necessary in order to make informed decisions that will benefit all segments of the population.

Policy makers can either wait to analyze costs and benefits until the contentious issues are resolved with an agreed upon methodology and improved data sources, or, as Wildman suggests:

“In the meantime cost studies could still be undertaken (given the limits imposed by our current knowledge). Methodological work aimed at better evaluating costs can also be of great help and should be facilitated.”<sup>181</sup>

In assessing the results of its extensive literature review, GPI Atlantic adheres to Wildman's position, and recognizes that gambling impact assessments are essential at the present time, based on the best available knowledge, however inadequate, both to deal with current issues facing governments and to contribute to the state of knowledge in the area. Governments have important policy choices to make at the present time on the management of gaming that cannot wait for the development of a perfect methodology. At the same time, as this summary and the larger literature review recognize, the limitations of current knowledge and methodology should be openly acknowledged and completely transparent, and further research in the field should be encouraged. In particular, the most important current work, which has the greatest potential to advance research and knowledge on gambling impacts and costs, is the development of agreed attribution fractions and relative risk ratios, as spearheaded by the Canadian Centre for Substance Abuse. As with successful work on the costs of tobacco, alcohol abuse, physical inactivity and other risk behaviours, accepted relative risk ratios are the essential basis for any costing studies.

Preliminary evidence available to date further indicates clearly that it is important to go beyond a narrow economic paradigm that excludes many crucial gambling impacts, and to address both the tangible and intangible effects of gambling in any credible analysis of the costs and benefits of gambling. As well, these effects need to be viewed through a multidisciplinary lens within a social and economic context and framework that accounts for different forms of gambling and their impact on different demographic and socio-economic groups. The available evidence indicates that it is only through seeing gaming activities and impacts within the context of the larger society that policy makers will have the knowledge required to provide benefit to all segments of the population and to reduce the harm that can be associated with gambling.

APPENDIX 1  
SUMMARY TABLE OF INDICATORS, COSTS, AND  
BENEFITS

**Table 2. Indicators of Costs and Benefits of Gambling**  
(to be collected for each type of gambling)

The following table provides a potential framework listing the major costs and benefits of gaming identified in the literature, which can be used in future cost-benefit studies as well as to evaluate existing and prospective studies in the field. The organization of this list is adapted from a framework for the evaluation of the impacts of gambling produced by the Social and Economic Research Centre (SERC) in Australia.<sup>182</sup> This framework is chosen here over others suggested in the literature for its comprehensiveness, its ability to integrate multiple dimensions, and its clarity. It includes seven areas of impact: health and wellbeing, culture, recreation and tourism, employment and education, crime, economic development (macro level), and financial.

The specific costs and benefits listed in the following table go beyond those in the original SERC framework to include other costs and benefits identified in the literature reviewed by GPI Atlantic. These additional costs and benefits have been incorporated into the seven-part SERC framework here as have the four levels of analysis in columns 3-6. In sum, the following table and framework is *adapted* from SERC but *expands* the SERC framework as described.

Level of Analysis		Individual and Family	Community	Region	Provincial
Areas of Impact	<b>Indicators of Costs and Benefits</b>				
<b>Health &amp; wellbeing</b>	Gambling prevalence statistics, e.g. percentage of population gambling, number of problem gamblers, etc.	√	√	√	√
	Standard socio-demographic data & other gambler characteristics: age, sex, region of residence, education, work status, income, number of household members, head of household, marital status, cultural identification, type of games played	√	√		
	Physical health: (issues related to gambling) Individual health, premature mortality, life expectancy	√	√		
	Mental health: (issues related to gambling) Cognitive and sensory stimulation (positive or negative) Stress (reduction or increase) Depression Anxiety Suicide	√	√		

	Pain and suffering incurred by gambler's family	√	√			
	Increased substance abuse (alcohol, drugs, tobacco)	√	√			
	Social health and wellbeing: Social interaction or isolation Relationship breakdown Family problems Effects on children Child abuse Divorce	√	√			
	Effects on community groups	√	√			
	Social cohesion	√	√	√	√	
	Motivations for gambling	√	√			
	Quality of life	√	√	√	√	
	Time use (paid and unpaid work, quality time, amount of time spent gambling)	√	√			
	Costs of health treatment			√	√	
	Costs of problem gambler treatment services and numbers in treatment			√	√	
	Public health and community support services for problem gamblers			√	√	
	Welfare program costs			√	√	
	<b>Environmental Wellbeing</b>	Air quality, noise, land, soil contamination, environmental sustainability			√	√
	<b>Culture</b>	Public attitudes, beliefs, values toward gambling (how these affect costs and benefits)	√	√	√	√
Impacts on specific demographic and cultural groups, e.g. Women, youth, seniors, First Nations peoples			√			
Gaming provision of acceptable social facilities		√	√			
Funds for community groups and charities			√	√	√	
<b>Recreation &amp; Tourism</b>	Entertainment benefits	√	√			
	Additional recreational options	√	√			
	Costs diverted from other forms of entertainment or other activities			√	√	
	Effect on tourism			√	√	
	Amount of tourist gambling			√	√	
	New money brought into area from tourism			√	√	



	Spillover effects from tourist gambling on facilities such as accommodation, dining, and shopping establishments			√	√
<b>Employment</b>	Increased jobs in gambling industry			√	√
	Number of employees in gambling industry and types of jobs, e.g. full/part time, salary, qualifications, staff turnover			√	√
	Industry policies, union participation, affirmative action programs			√	√
	Number of employees previously unemployed			√	√
	Increased jobs in service provider industries			√	√
	Indirect spin-off employment in sectors such as hotels, restaurants			√	√
	Reduced unemployment levels			√	√
	Work productivity losses (including unpaid work)			√	√
	Absenteeism	√			
	Job loss & job change	√			
	Employee search and retraining costs			√	
	Business profits and losses			√	√
	Non-gaming venues experiencing a loss of activity			√	√
	Redirection of expenditures out of local area, leading to job loss			√	√
	Increased taxation revenue providing government with additional opportunities for expenditure on public goods like education, health, environmental protection and related areas				√
	Loss of taxation revenue; e.g. from failed businesses, from sales tax, from money that would have been spent elsewhere in lieu of gambling				√
	Government unemployment and welfare costs			√	√
	<b>Education</b>	Lost time from study	√		
Academic performance		√			
Educational attainment		√	√		
Time and money spent on gambling by adolescents		√	√		
Implications for future human capital				√	√

<b>Legal, justice, and crime</b>	Levels and types of criminal activity attributable to gambling; e.g. street crime, fraud, embezzlement, money laundering, theft, burglary, loan sharking, drug dealing, white collar crime, passing counterfeit currency	√	√	√	√
	Number of people who committed gambling related crime	√			
	Value of money and goods obtained illegally			√	√
	Law enforcement personnel costs			√	√
	Incarceration costs			√	√
	Gambling-related crime regulations and prevention programs			√	√
	Court costs			√	√
	Domestic and other violence	√	√	√	√
	Illegal gambling and organized crime			√	√
	Benefits of regulation (legal vs. illegal gambling)			√	√
	Loss to business from gambling-related crime			√	√
	Lawsuit costs			√	√
	Effects of corruption			√	√
	Costs of intangible impacts: pain and suffering of crime victims	√	√		
	Higher insurance rates	√	√	√	√
	Costs of Increased security measures	√	√	√	√
	<b>Economic development</b>	Increase or decrease in economic activity; e.g. gambling supply and support services			√
Diversion of local monies from other enterprises				√	√
New markets				√	√
Impact on local industries, e.g. business closures or new development				√	√
Efficiency of tax instrument				√	√
Regressive nature of tax				√	√
Income distribution				√	√
Disadvantaged areas: number of gaming machines compared with more wealthy areas, amount of social problems associated with gambling				√	√
Business losses from bad debts and bankruptcy of customers who experience gambling losses			√	√	

	Property values			√	√
	Pawnshop activity			√	√
	Reduction in savings rates due to gambling			√	√
	Long-term infrastructure replacement			√	√
	City image and infrastructure indicators: Natural setting, safe, clean streets, supportive of our neighbourhoods, cultural diversity, social responsibility, relaxed, healthy lifestyle, architectural landscape, pedestrian patterns, traffic, heritage and cultural issues			√	√
	Town planning requirements			√	√
	<b>Financial</b>				
Gaming expenditures (losses)	√				
Percentage of income spent on gambling	√				
Increased debt	√				
Unpaid debt	√				
Bankruptcy					
Government gambling revenue: Increase or loss of revenue to the province from gaming, sales and payroll tax, % of total government revenue, distribution of revenue				√	
Detailed industry operating data			√		
Annual gambling growth rates				√	
Gaming regulation costs				√	
Percentage of gambling revenue to government from problem gamblers	√			√	
Costs of advertising, marketing, promotions, public education, research, data collection				√	
Lobby expenses			√		
Percentage of the total net profit from gaming that goes to charities		√	√	√	
Gambling-related refinancing, loans, mortgage closures			√		

## APPENDIX 2

FULL LITERATURE REVIEW IS INCLUDED AS A  
SEPARATE DOCUMENT (212 PAGES) AVAILABLE  
AT [WWW.GPIATLANTIC.ORG](http://WWW.GPIATLANTIC.ORG)

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## ENDNOTES

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<sup>1</sup> Jason J. Azmier, Robin Kelley, and Peter Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* (Canada West Foundation, 2001 [Accessed April 2004]); available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=0A568C150AF0694587256BD5006219D4>.

<sup>2</sup> National Gambling Impact and Policy Commission (U.S.), *The National Gambling Impact Study Commission : Final Report* (National Gambling Impact and Policy Commission, 1999 [Accessed April 2004]); available from <http://govinfo.library.unt.edu/ngisc/reports/fullrpt.html>.

<sup>3</sup> W. N. Thompson, R. Gazel, and D. Rickman, *The Social Costs of Gambling in Wisconsin* (Wisconsin Policy Research Institute Report, 9(6), 1-44, 1996 [Accessed April 2004]); available from <http://www.wpri.org/Reports/Volume9/Vol9no6.pdf>.

<sup>4</sup> Douglas M. Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* 19, no. 2 (2003).

<sup>5</sup> H. J. Wynne and M. Anielski, *The Whistler Symposium Report* (Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]); available from [http://www.ccsa.ca/docs/whistler\\_final.doc](http://www.ccsa.ca/docs/whistler_final.doc).

<sup>6</sup> The full literature review is available on the GPI Atlantic website at [www.gpiatlantic.org](http://www.gpiatlantic.org)

<sup>7</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* (Nova Scotia Office of Health Promotion, 2004 [Accessed September 2004]); available from [www.gov.ns.ca/ohp/repPub/2003Gambling\\_Prevalence\\_Study\\_Report.pdf](http://www.gov.ns.ca/ohp/repPub/2003Gambling_Prevalence_Study_Report.pdf).

<sup>8</sup> Productivity Commission, *Australia's Gambling Industries* (Commonwealth of Australia, 1999 [Accessed April 2004]); available from <http://www.pc.gov.au/inquiry/gambling/finalreport/>.

<sup>9</sup> William R. Eadington, "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* 19, no. 2 (2003), Douglas M. Walker, *A Simple Model to Explain and Illustrate the Definition of "Social Cost"* (International Symposium on the Economic and Social Impact of Gambling (1st : 2000, 23 - 27 September : Whistler, BC). Canadian Centre on Substance Abuse, 2000 [Accessed April 2004]); available from <http://www.ccsa.ca/pdf/ccsa-009988-2000.pdf>.

<sup>10</sup> W.R. Eadington, "The Economies of Casino Gambling," *Journal of Economic Perspectives* 13, no. 3 (1999). p. 188.

<sup>11</sup> Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed]). p. 18.

<sup>12</sup> Ibid.([Accessed]).

<sup>13</sup> Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." p. 153

<sup>14</sup> With support from Canadian organizations in British Columbia, Alberta, Manitoba, Saskatchewan, Quebec, and Ontario

<sup>15</sup> Wynne and Anielski, *The Whistler Symposium Report* ([Accessed]).

<sup>16</sup> Ibid.([Accessed April 2004]).

<sup>17</sup> Ibid.([Accessed]). p. 22.

<sup>18</sup> David Korn, Roger Gibbins, and Jason Azmier, "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, no. 2 (2003).

<sup>19</sup> Ibid.p. 15.

- <sup>20</sup> Harold J. Wynne and Howard J. Shaffer, "The Socioeconomic Impact of Gambling: The Whistler Symposium," *Journal of Gambling Studies* 19, no. 2 (2003), p.112.
- <sup>21</sup> Ibid.
- <sup>22</sup> Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* (Gambling Research Panel. Victorian Casino and Gaming Authority [Australia], 2001 [Accessed April 2004]); available from <http://www.grp.vic.gov.au/CA256D9600166477/page/Research+Reports-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research?OpenDocument&1=25-Research+Reports~&2=0-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research~&3=~>.
- <sup>23</sup> G. J. Smith and H. J. Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* (Alberta Gaming Research Institute, 2004 [Accessed]); available from [http://www.abgaminginstitute.ualberta.ca/documents/research/VLT\\_Gambling\\_Alberta.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/VLT_Gambling_Alberta.pdf).
- <sup>24</sup> Robert W. II Wildman and Serge Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* (Ontario Problem Gambling Research Centre, 2002 [Accessed April 2004]); available from <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.
- <sup>25</sup> David Collins and Helen Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* Summer, 19, no. 2 (2003). p.128
- <sup>26</sup> Helen Masterman-Smith, Samalinda Martin, and Jan McMillen, *Social and Economic Impacts of Gambling in New Zealand* (Australian Institute for Gambling Research (AIGR), 2001 [Accessed April 2004]); available from [http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/\\$file/Social&EconomicImpacts.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/$file/Social&EconomicImpacts.pdf). p. 14.
- <sup>27</sup> Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- <sup>28</sup> Eric Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* (Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]); available from [http://www.emcdda.eu.int/.../policy\\_law/expenditure/International%20guidelines%202001%20edition-4.doc?search](http://www.emcdda.eu.int/.../policy_law/expenditure/International%20guidelines%202001%20edition-4.doc?search).
- <sup>29</sup> K. Pernanen et al., *Attributable Fractions for Alcohol and Illicit Drugs in Relation to Crime in Canada: Conceptualization, Methods and Internal Consistency of Estimates* (Bulletin on Narcotics, LII (1 & 2), United Nations Office on Drugs and Crime, 2000 [Accessed April 2004]); available from [http://www.unodc.org/unodc/en/bulletin/bulletin\\_2000\\_01\\_01\\_1\\_page006.html](http://www.unodc.org/unodc/en/bulletin/bulletin_2000_01_01_1_page006.html).
- <sup>30</sup> Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed]). p.54.
- <sup>31</sup> D. R. Gerstein, J Hoffmann, and C Larison, *Gambling Impact and Behavior Study* (National Opinion Research Center. The University of Chicago, 1999 [Accessed April 2004]); available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.
- <sup>32</sup> Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- <sup>33</sup> Eadington, "The Economies of Casino Gambling."
- <sup>34</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- <sup>35</sup> G. J. Smith, H. J. Wynne, and T. F. Hartnagel, *Examining Police Records to Assess Gambling Impacts: A Study of Gambling-Related Crime in the City of Edmonton* (Alberta Gaming Research Institute, 2003 [Accessed April 2004]); available from [http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling\\_and\\_crime.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling_and_crime.pdf).
- <sup>36</sup> R. Brown, "Pathological Gambling and Associated Patterns of Crime: Comparison with Alcohol and Other Drug Addictions," *Journal of Gambling Behavior* 333 (1987).



- <sup>37</sup> Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed]).
- <sup>38</sup> Wynne and Anielski, *The Whistler Symposium Report* ([Accessed]).
- <sup>39</sup> Ronald Colman, *Costing Policy Change: A Case Study in Applying the GPI Cost of Crime Methodology to a Hypothetical Policy Shift from Legalized Cannabis Use to Prohibition of Cannabis as a Prosecutable Offence* (GPI Atlantic, n.d. [Accessed April 2004]); available from <http://www.gpiatlantic.org>.
- <sup>40</sup> Solicitor-General of Canada, "Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims," (Ottawa: Solicitor-General of Canada, 1985).
- <sup>41</sup> Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- <sup>42</sup> Ronald Colman and Colin Dodds, *The Cost of Crime in Nova Scotia* (GPI Atlantic, 1999 [Accessed April 2004]); available from <http://www.gpiatlantic.org/publications/socialcapital.shtml#crime>.
- <sup>43</sup> Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>44</sup> Ibid.
- <sup>45</sup> Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000.", Walker, *A Simple Model to Explain and Illustrate the Definition of "Social Cost"* ([Accessed]).
- <sup>46</sup> Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>47</sup> Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>48</sup> Eadington, "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>49</sup> Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>50</sup> W. N. Thompson, "Theft Is a Social Cost: Bigger Than We May Have Thought," *Report on Problem Gambling* 1, no. 44 (2000)., cited in: Wildman, R. W. I., & S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Institute. Available: <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.
- <sup>51</sup> Earl L. Grinols, *Gambling in America: Costs and Benefits* (Cambridge: Cambridge University Press, 2004).
- <sup>52</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- <sup>53</sup> Len Henriksson, "Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto: Canadian Tax Foundation.," no. 4 (2001). p. 3.
- <sup>54</sup> Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- <sup>55</sup> Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed]).
- <sup>56</sup> Grinols, *Gambling in America: Costs and Benefits*.
- <sup>57</sup> E. Grinols and J. D. Omorov, "Development or Dreamfield Delusions: Assessing Casino Gambling's Costs and Benefit," *Journal of Law and Commerce* 16 (1996).
- <sup>58</sup> Masterman-Smith, Martin, and McMillen, *Social and Economic Impacts of Gambling in New Zealand* ([Accessed]).

- <sup>59</sup> François Vaillancourt and Alexandre Roy, *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* (Toronto, Ontario: Canadian Tax Foundation, 2000).
- <sup>60</sup> T. J. Rephann et al., "Casino Gambling as an Economic Development Strategy," *Tourism Economics* 3, no. 2 (1997).
- <sup>61</sup> Walker, "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>62</sup> United States General Accounting Office (GAO), *Impact of Gambling: Economic Effects More Measurable Than Social Effects* (United States General Accounting Office, 2000 [Accessed April 2004]); available from <http://www.gao.gov/archive/2000/gg00078.pdf>.
- <sup>63</sup> D. Walker and H. Barnett, "The Social Costs of Gambling: An Economic Perspective," *Journal of Gambling Studies* 15, no. 3 (1999). p.203
- <sup>64</sup> Henriksson, "Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto: Canadian Tax Foundation.."
- <sup>65</sup> Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>66</sup> Masterman-Smith, Martin, and McMillen, *Social and Economic Impacts of Gambling in New Zealand* ([Accessed].p. 67-68.
- <sup>67</sup> Ibid.([Accessed].p. 29.
- <sup>68</sup> National Gambling Impact and Policy Commission (U.S.), *The National Gambling Impact Study Commission : Final Report* ([Accessed).
- <sup>69</sup> Single et al., *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition* ([Accessed).
- <sup>70</sup> Walker and Barnett, "The Social Costs of Gambling: An Economic Perspective."
- <sup>71</sup> Ibid.
- <sup>72</sup> E. L. Grinols, "Business Profitability Vs. Social Profitability: Evaluating the Social Contribution of Industries with Externalities, the Case of the Casino Industry," *Managerial & Decision Economics* 22, no. 1-3 (2001).
- <sup>73</sup> Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- <sup>74</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed).
- <sup>75</sup> Thompson, Gazel, and Rickman, *The Social Costs of Gambling in Wisconsin* ([Accessed).
- <sup>76</sup> C. T. Clotfelter, *Do Lotteries Hurt the Poor? Well, Yes and No* (Duke University, 2000 [Accessed April 2004]); available from <http://www.pubpol.duke.edu/people/faculty/clotfelter/lottsum.pdf>.
- <sup>77</sup> Ibid.([Accessed).
- <sup>78</sup> Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- <sup>79</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed).
- <sup>80</sup> Clotfelter, *Do Lotteries Hurt the Poor? Well, Yes and No* ([Accessed).
- <sup>81</sup> Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- <sup>82</sup> Nova Scotia Alcohol and Gaming Authority, *Annual Report for the Fiscal Year Ending March 31, 2003* (Nova Scotia Alcohol and Gaming Authority, 2003 [Accessed April 2004]); available from <http://www.gov.ns.ca/aga/AnnualReport/Section%2066%202003.pdf>.
- <sup>83</sup> Azmier, Kelley, and Todosichuk, *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling* ([Accessed).
- <sup>84</sup> H. J. Shaffer and D. A. Korn, "Gambling and Related Mental Disorders: A Public Health Analysis," *Annual Review of Public Health* 23 (2002).

- <sup>85</sup> L. E. Henriksson, *Government, Gambling and Healthy Populations* (Workshop on Addiction and Population Health, 1999 [Accessed April 2004]); available from [http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government\\_gambling-e/henriksson.htm](http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government_gambling-e/henriksson.htm).
- <sup>86</sup> Cited in Colman, Ronald, *The Cost of Chronic Disease in Nova Scotia*, GPI Atlantic, Halifax, October, 2002.
- <sup>87</sup> Wynne and Anielski, *The Whistler Symposium Report* ([Accessed].), p.21
- <sup>88</sup> Ibid.([Accessed].), p.27
- <sup>89</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- <sup>90</sup> Benjamin P Sobel, "Bingo Vs. Physical Intervention in Stimulating Short-Term Cognition in Alzheimer's Disease Patients," *American Journal of Alzheimer's Disease and Other Dementias* 16, no. 2 (2001).
- <sup>91</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- <sup>92</sup> Eadington, "The Economies of Casino Gambling."
- <sup>93</sup> Committee on the Social and Economic Impact of Pathological Gambling National Research Council, *Pathological Gambling: A Critical Review* (Washington, D.C.: National Academy Press, 1999).
- <sup>94</sup> Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* ([Accessed]).
- <sup>95</sup> Wynne and Shaffer, "The Socioeconomic Impact of Gambling: The Whistler Symposium."
- <sup>96</sup> Collins and Lapsley, "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>97</sup> Wynne and Anielski, *The Whistler Symposium Report* ([Accessed].), p.20, 26, 27
- <sup>98</sup> Personal correspondence with Nova Scotia Alcohol and Gaming Authority and the Canadian Centre on Substance Abuse, April 2004.
- <sup>99</sup> Karen Hayward and Ronald Colman, *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper* (Population and Public Health Branch, Atlantic Region, Health Canada, 2003 [Accessed April 2004]); available from [http://www.hc-sc.gc.ca/hppb/regions/atlantic/pdf/Tides\\_Inequity\\_and\\_Chronic\\_Disease.pdf](http://www.hc-sc.gc.ca/hppb/regions/atlantic/pdf/Tides_Inequity_and_Chronic_Disease.pdf).
- <sup>100</sup> Masterman-Smith, Martin, and McMillen, *Social and Economic Impacts of Gambling in New Zealand* ([Accessed]).
- <sup>101</sup> Namrata Raylu and Tian P. S. Oei, "Pathological Gambling : A Comprehensive Review," *Clinical Psychology Review* 22, no. 7 (2002).
- <sup>102</sup> Shaffer and Korn, "Gambling and Related Mental Disorders: A Public Health Analysis." p. 180.
- <sup>103</sup> Phillippe Cyrenne, "An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba," (Winnipeg: University of Winnipeg, Department of Economics, 1995), KPMG Management Consultants, "A Critical Review of "an Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba", " in *Assessment of the Benefits and Costs of the Manitoba Lotteries Corporation*, ed. Mike Ross and Philippe Cyrenne (KPMG Management Consultants, 1995), National Opinion Research Center (NORC), *Gambling Impact and Behavior Study* (National Opinion Research Center at the University of Chicago, 1999 [Accessed]); available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>, Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- <sup>104</sup> Vaillancourt and Roy, *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* p. 41.
- <sup>105</sup> L. E. Henriksson, "Gambling in Canada: Some Insights for Cost-Benefit Analysis," *Managerial & Decision Economics* 22, no. 1-3 (2001).

- <sup>106</sup> G. J. Smith and H. J. Wynne, *A Review of the Gambling Literature in the Economic and Policy Domains* (Alberta Gaming Research Institute, 2000 [Accessed April 2004]); available from <http://www.abgaminginstitute.ualberta.ca/documents/reviews/economic.pdf>.
- <sup>107</sup> S. S. Martins et al., "Pathological Gambling in Women: A Review," *Revista do Hospital das Clínicas* 57, no. 5 (2002).
- <sup>108</sup> Kiedrowski & Associates Inc., *Native Gaming and Gambling in Canada* (Indian Northern Affairs Canada, 2001 [Accessed April 2004]); available from <https://dspace.ucalgary.ca/retrieve/699/Final+Native+Gaming5.pdf>.
- <sup>109</sup> Robin Kelley, *First Nations Gambling Policy in Canada* (Canada West Foundation, 2001 [Accessed April 2004]); available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=AA6EA396C07B7EA087256BD5005F936D>. p. 6.
- <sup>110</sup> MPM Gaming Research, "Towards a Convenience Model of Gaming and Its Social Effects in Nova Scotia, Annual Gaming Report, Appendix F," (Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1998).
- <sup>111</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]).
- <sup>112</sup> M. W. Abbott and R. A. Volberg, *Gambling and Problem Gambling in the Community: An International Overview and Critique* (Department of Internal Affairs [New Zealand], 1999 [Accessed April 2004]); available from [http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/\\$file/report1.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/$file/report1.pdf).
- <sup>113</sup> Ibid.([Accessed]).
- <sup>114</sup> K. Marshall, "The Gambling Industry: Raising the Stakes," *Perspectives on Labour and Income, Statistics Canada Catalogue number 75-001-XPE* Winter (1999).
- <sup>115</sup> Focal Research Consultants Ltd., *Nova Scotia Video Lottery Players' Survey, 1997/98* (Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services, 1998 [Accessed April 2004]); available from <http://www.gov.ns.ca/health/downloads/highlites.pdf>.
- <sup>116</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- <sup>117</sup> Smith and Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* ([Accessed]).
- <sup>118</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- <sup>119</sup> Katherine Marshall and Harold Wynne, "Fighting the Odds," *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE* 16, no. 1 (2003).
- <sup>120</sup> S. Chevalier and D. Allard, *Lotteries, Slot Machines & Health: Survey on Gambling in Montréal [Summary Report]* (Montreal-Centre Regional Health and Social Services Board, 2001 [Accessed April 2004]); available from [http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1\\_eng.pdf](http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1_eng.pdf).
- <sup>121</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- <sup>122</sup> Ibid.([Accessed]).
- <sup>123</sup> Grinols, *Gambling in America: Costs and Benefits*.
- <sup>124</sup> H. Lesieur, "Costs and Treatment of Pathological Gambling," *The Annals. American Academy of Political and Social Sciences (AAPSS)* 556, no. March (1998).
- <sup>125</sup> MPM Gaming Research, "Final Report. Convenience Gaming and Social Impacts in Nova Scotia," (Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1999).
- <sup>126</sup> Ibid.
- <sup>127</sup> Ibid.
- <sup>128</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- <sup>129</sup> N. Dow Schull, *Escape Mechanism: Women, Caretaking, and Compulsive Machine Gambling. Working Paper No. 41* (Center for Working Families, University of California, 2002 [Accessed April 2004]); available from [http://www.bc.edu/bc\\_org/avp/wfnetwork/berkeley/papers/41.pdf](http://www.bc.edu/bc_org/avp/wfnetwork/berkeley/papers/41.pdf).
- <sup>130</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- <sup>131</sup> Ibid.([Accessed]).



- <sup>132</sup> J. L. Derevensky and R. Gupta, *Adolescents with Gambling Problems: A Synopsis of Our Current Knowledge* (eGambling, issue 10, 2004 [Accessed April 2004]); available from <http://www.camh.net/egambling/archive/pdf/EJGI-Issue10/ejgi-issue10-derevensky-gupta.pdf>.
- <sup>133</sup> Christiane Poulin, "Problem Gambling among Adolescent Students in the Atlantic Provinces of Canada," *Journal of Gambling Studies* 16, no. 1 (2000).
- <sup>134</sup> Christiane Poulin, *Nova Scotia Student Drug Use Survey 2002: Technical Report* (Halifax: Dalhousie University, Community Health and Epidemiology, 2002 [Accessed April 2004]); available from [http://www.gov.ns.ca/health/downloads/2002\\_NSDrugTechnical.pdf](http://www.gov.ns.ca/health/downloads/2002_NSDrugTechnical.pdf).
- <sup>135</sup> J.L. Derevensky and R. Gupta, "Prevalence Estimates of Adolescent Gambling: A Comparison of the SOGS-Ra, DSM-IV-J, and the GA 20 Questions," *Journal of Gambling Studies* 16, no. 2/3 (2000).
- <sup>136</sup> D.F. Jacobs et al., "Children of Problem Gamblers," *Journal of Gambling Behaviour* 5 (1989).
- <sup>137</sup> B. Munro, *Seniors Who Gamble: A Summary Review of the Literature* (Alberta Gaming Research Institute, 2003 [Accessed April 2004]); available from [http://www.abgaminginstitute.ualberta.ca/documents/research/Munro\\_Seniors.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/Munro_Seniors.pdf).
- <sup>138</sup> T. Schellinck et al., *2002 Seniors Survey – Prevalence of Substance Use and Gambling among New Brunswick Adults Aged 55+* (New Brunswick Department of Health and Wellness, 2002 [Accessed April 2004]); available from <http://www.gnb.ca/0378/pdf/SeniorsFinalReport2002ENG.pdf>.
- <sup>139</sup> Harold J. Wynne, *Gambling and Problem Gambling in Saskatchewan. Final Report* (Saskatchewan Health, 2002 [Accessed April 2004]); available from [http://www.health.gov.sk.ca/ps\\_fin\\_rep\\_prev\\_of\\_prob\\_gam.html](http://www.health.gov.sk.ca/ps_fin_rep_prev_of_prob_gam.html).
- <sup>140</sup> Shaffer and Korn, "Gambling and Related Mental Disorders: A Public Health Analysis."
- <sup>141</sup> Wynne, *Gambling and Problem Gambling in Saskatchewan. Final Report* ([Accessed]).
- <sup>142</sup> Citizens' Committee on Destination Gaming and D. Bourgeois (Chairperson), *The Potential Economic, Social, and Image Impacts of a Casino in Moncton* (Moncton [New Brunswick] City Council, 2001 [Accessed April 2004]); available from <http://www.moncton.org/search/english/CITYHALL/citydepartments/casinofinalreport.pdf>.
- <sup>143</sup> Productivity Commission, *Australia's Gambling Industries* ([Accessed]).
- <sup>144</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- <sup>145</sup> Wynne, *Gambling and Problem Gambling in Saskatchewan. Final Report* ([Accessed]).
- <sup>146</sup> Marc N. Potenza et al., "Gambling: An Addictive Behavior with Health and Primary Care Implications," *JGIM: Journal of General Internal Medicine* 17, no. 9 (2002).
- <sup>147</sup> H. Lesieur, "Compulsive Gambling," *Society* May/June (1992).
- <sup>148</sup> Lesieur, "Costs and Treatment of Pathological Gambling."
- <sup>149</sup> B. Spunt et al., "Pathological Gambling and Substance Misuse: A Review of the Literature," *Substance Use and Misuse* 33 (1998).
- <sup>150</sup> Focal Research Consultants Ltd., *Nova Scotia Video Lottery Players' Survey, 1997/98* ([Accessed]).
- <sup>151</sup> Gerstein, Hoffmann, and Larison, *Gambling Impact and Behavior Study* ([Accessed]. p. 57-58.
- <sup>152</sup> Focal Research Consultants, *2003 Nova Scotia Gambling Prevalence Study* ([Accessed]).
- <sup>153</sup> Ibid.([Accessed]).
- <sup>154</sup> Eadington, "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000."
- <sup>155</sup> KPMG, *Casino Market Assessment: Moncton, New Brunswick* (City of Moncton, 2002 [Accessed]); available from <http://www.moncton.org/search/english/CITYHALL/publications/finalcasinoreport.pdf>.
- <sup>156</sup> Ibid.([Accessed]).
- <sup>157</sup> Eric Single, "Estimating the Costs of Substance Abuse : Implications to the Estimation of the Costs and Benefits of Gambling. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000," *Journal of Gambling Studies* 19, no. 2 (2003).
- <sup>158</sup> David A. Korn and Howard J. Shaffer, "Gambling and the Health of the Public: Adopting a Public Health Perspective," *Journal of Gambling Studies* 15, no. 4 (1999).

- <sup>159</sup> KPMG, *Casino Market Assessment: Moncton, New Brunswick* ([Accessed]).
- <sup>160</sup> Nova Scotia Gaming Corporation, *What Makes NSGC a Leader* (Author, n.d. [Accessed April 2004]); available from <http://www.gamingcorp.ns.ca/responsible/makesleader.htm>.
- <sup>161</sup> Nova Scotia Department of Health, *Problem Gambler Services Website* ([Accessed April 2004]); available from <http://www.gov.ns.ca/heal/gambling/>.
- <sup>162</sup> Focal Research Consultants Ltd., *Video Lottery Responsible Gaming Feature Research* (Nova Scotia Gaming Corporation, 2002 [Accessed April 2004]); available from <http://www.gamingcorp.ns.ca/responsible/pbrgf.htm>.
- <sup>163</sup> Ibid.([Accessed]).
- <sup>164</sup> Smith and Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* ([Accessed]).
- <sup>165</sup> Nova Scotia Department of Health, "2000 Regular Video Lottery (VI) Players Follow up Survey," (Halifax, N.S.: Author, 2002).
- <sup>166</sup> M. Dickerson, "Exploring the Limits of 'Responsible Gambling': Harm Minimization or Consumer Protection?" (paper presented at the 12th Annual Conference of the National Association for Gambling Studies, Melbourne Australia, 2003).
- <sup>167</sup> Smith and Wynne, *VLT Gambling in Alberta: A Preliminary Analysis* ([Accessed]).
- <sup>168</sup> Nova Scotia Alcohol and Gaming Authority, *Nova Scotia Annual Gaming Report 1999-2000* (Nova Scotia Alcohol and Gaming Authority, 2000 [Accessed April 2004]); available from <http://www.gov.ns.ca/aga/AnnualReport/Gaming%202000%20Report.pdf>.
- <sup>169</sup> Jason J. Azmier, *Gambling in Canada 2001: An Overview* (Canada West Foundation, 2001 [Accessed April 2004]); available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=866FE244FF51B28087256BD5006193CF>.
- <sup>170</sup> Richard LaBrie and Howard J. Shaffer, *Toward a Science of Gambling Regulation: A Concept Statement* (AGA Responsible Gaming Lecture Series, Vol 2 (2). 2003 [Accessed]).
- <sup>171</sup> Jason J. Azmier, *Canadian Gambling Behaviour and Attitudes: Main Report* (Canada West Foundation, 2000 [Accessed April 2004]); available from <http://www.cwf.ca>.
- <sup>172</sup> Ibid.([Accessed]).p. 12 (emphasis added).
- <sup>173</sup> Nova Scotia Alcohol and Gaming Authority, "Annual Gaming Report. Volume I," (Halifax, N.S.: Alcohol and Gaming Authority, 1999).
- <sup>174</sup> Martins et al., "Pathological Gambling in Women: A Review."
- <sup>175</sup> R. Volberg, *Has There Been a "Feminization" of Gambling and Problem Gambling in the United States?* (eGambling, issue 8, 2003 [Accessed April 2004]); available from <http://www.camh.net/egambling/issue8/feature/index.html>.
- <sup>176</sup> Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* ([Accessed]). p. 4.2.
- <sup>177</sup> South Australian Centre for Economic Studies (SACES), *Measurement of Prevalence of Youth Problem Gambling in Australia: Report on Review of Literature* (Department of Family and Community Services [AU], 2003 December [Accessed April 2004]); available from [http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/\\$File/PrevalenceStudiesFinalReport.pdf](http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/$File/PrevalenceStudiesFinalReport.pdf). p. 1.
- <sup>178</sup> Derevensky and Gupta, *Adolescents with Gambling Problems: A Synopsis of Our Current Knowledge* ([Accessed]).
- <sup>179</sup> Problem Gambling Services Nova Scotia Department of Health and Department of Education and Culture, *Drawing the Line: A Resource for the Prevention of Problem Gambling* (Halifax: Province of Nova Scotia, 1997).
- <sup>180</sup> Poulin, *Nova Scotia Student Drug Use Survey 2002: Technical Report* ([Accessed]).
- <sup>181</sup> Wildman and Chevalier, *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects* ([Accessed]). p. 38.



<sup>182</sup> Social and Economic Research Centre (SERC) University of Queensland, *The Social and Economic Impacts of Gaming: A Framework for Research* ([Accessed]).

## REFERENCES

Abbott, M. W., and R. A. Volberg. *Gambling and Problem Gambling in the Community: An International Overview and Critique*. Department of Internal Affairs [New Zealand], 1999 [Accessed April 2004]. Available from [http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/\\$file/report1.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/$file/report1.pdf).

Azmier, Jason J. *Canadian Gambling Behaviour and Attitudes: Main Report*. Canada West Foundation, 2000 [Accessed April 2004]. Available from <http://www.cwf.ca>.

———. *Gambling in Canada 2001: An Overview*. Canada West Foundation, 2001 [Accessed April 2004]. Available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=866FE244FF51B28087256BD5006193CF>.

Azmier, Jason J., Robin Kelley, and Peter Todosichuk. *Triumph, Tragedy or Trade-Off?: Considering the Impact of Gambling*. Canada West Foundation, 2001 [Accessed April 2004]. Available from <http://www.cwf.ca/abcawef/doc.nsf/publications?ReadForm&id=0A568C150AF0694587256BD5006219D4>.

Brown, R. "Pathological Gambling and Associated Patterns of Crime: Comparison with Alcohol and Other Drug Addictions." *Journal of Gambling Behavior*, 333 (1987): 98-114.

Chevalier, S., and D. Allard. *Lotteries, Slot Machines & Health: Survey on Gambling in Montréal [Summary Report]*. Montreal-Centre Regional Health and Social Services Board, 2001 [Accessed April 2004]. Available from [http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1\\_eng.pdf](http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1_eng.pdf).

Citizens' Committee on Destination Gaming, and D. Bourgeois (Chairperson). *The Potential Economic, Social, and Image Impacts of a Casino in Moncton*. Moncton [New Brunswick] City Council, 2001 [Accessed April 2004]. Available from <http://www.moncton.org/search/english/CITYHALL/citydepartments/casinofinalreport.pdf>.

Clotfelter, C. T. *Do Lotteries Hurt the Poor? Well, Yes and No*. Duke University, 2000 [Accessed April 2004]. Available from <http://www.pubpol.duke.edu/people/faculty/clotfelter/lottsum.pdf>.

Collins, David, and Helen Lapsley. "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 123-48.

———. "The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, Summer, 19, no. 2 (2003): 123-48.

Colman, Ronald. *Costing Policy Change: A Case Study in Applying the GPI Cost of Crime Methodology to a Hypothetical Policy Shift from Legalized Cannabis Use to Prohibition of Cannabis as a Prosecutable Offence*. GPI Atlantic, n.d. [Accessed April 2004]. Available from <http://www.gpiatlantic.org>.

Colman, Ronald, and Colin Dodds. *The Cost of Crime in Nova Scotia*. GPI Atlantic, 1999 [Accessed April 2004]. Available from <http://www.gpiatlantic.org/publications/socialcapital.shtml#crime>.

Committee on the Social and Economic Impact of Pathological Gambling National Research Council. *Pathological Gambling: A Critical Review*. Washington, D.C.: National Academy Press, 1999.

Cyrenne, Phillipe. "An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba." Winnipeg: University of Winnipeg, Department of Economics, 1995.

Derevensky, J. L., and R. Gupta. *Adolescents with Gambling Problems: A Synopsis of Our Current Knowledge*. eGambling, issue 10, 2004 [Accessed April 2004]. Available from <http://www.camh.net/egambling/archive/pdf/EJGI-Issue10/ejgi-issue10-derevensky-gupta.pdf>.

Derevensky, J.L., and R. Gupta. "Prevalence Estimates of Adolescent Gambling: A Comparison of the SOGS-Ra, DSM-IV-J, and the GA 20 Questions." *Journal of Gambling Studies*, 16, no. 2/3 (2000): 227–51.

Dickerson, M. "Exploring the Limits of 'Responsible Gambling': Harm Minimization or Consumer Protection?" Paper presented at the 12th Annual Conference of the National Association for Gambling Studies, Melbourne Australia 2003.

Dow Schull, N. *Escape Mechanism: Women, Caretaking, and Compulsive Machine Gambling. Working Paper No. 41*. Center for Working Families, University of California, 2002 [Accessed April 2004]. Available from [http://www.bc.edu/bc\\_org/avp/wfnetwork/berkeley/papers/41.pdf](http://www.bc.edu/bc_org/avp/wfnetwork/berkeley/papers/41.pdf).

Eadington, W.R. "The Economies of Casino Gambling." *Journal of Economic Perspectives*, 13, no. 3 (1999): 173-92.

Eadington, William R. "Measuring Costs from Permitted Gaming : Concepts and Categories in Evaluating Gambling's Consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 185-213.

Focal Research Consultants. *2003 Nova Scotia Gambling Prevalence Study*. Nova Scotia Office of Health Promotion, 2004 [Accessed September 2004]. Available from [www.gov.ns.ca/ohp/repPub/2003Gambling\\_Prevalence\\_Study\\_Report.pdf](http://www.gov.ns.ca/ohp/repPub/2003Gambling_Prevalence_Study_Report.pdf).

Focal Research Consultants Ltd. *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services, 1998 [Accessed April 2004]. Available from <http://www.gov.ns.ca/health/downloads/highlites.pdf>.

———. *Video Lottery Responsible Gaming Feature Research*. Nova Scotia Gaming Corporation, 2002 [Accessed April 2004]. Available from <http://www.gamingcorp.ns.ca/responsible/pbrgf.htm>.

Gerstein, D. R., J Hoffmann, and C Larison. *Gambling Impact and Behavior Study*. National Opinion Research Center. The University of Chicago, 1999 [Accessed April 2004]. Available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

Grinols, E. L. "Business Profitability Vs. Social Profitability: Evaluating the Social Contribution of Industries with Externalities, the Case of the Casino Industry." *Managerial & Decision Economics*, 22, no. 1-3 (2001): 143– 62.

Grinols, E., and J. D. Omorov. "Development or Dreamfield Delusions: Assessing Casino Gambling's Costs and Benefit." *Journal of Law and Commerce*, 16 (1996): 49-87.

Grinols, Earl L. *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press, 2004.

Hayward, Karen, and Ronald Colman. *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper*. Population and Public Health Branch, Atlantic Region, Health Canada, 2003 [Accessed April 2004]. Available from [http://www.hc-sc.gc.ca/hppb/regions/atlantc/pdf/Tides\\_Inequity\\_and\\_Chronic\\_Disease.pdf](http://www.hc-sc.gc.ca/hppb/regions/atlantc/pdf/Tides_Inequity_and_Chronic_Disease.pdf).

Henriksson, L. E. "Gambling in Canada: Some Insights for Cost-Benefit Analysis." *Managerial & Decision Economics*, 22, no. 1-3 (2001): 113-23.

———. *Government, Gambling and Healthy Populations*. Workshop on Addiction and Population Health, 1999 [Accessed April 2004]. Available from [http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government\\_gambling-e/henriksson.htm](http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government_gambling-e/henriksson.htm).

Henriksson, Len. "Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto: Canadian Tax Foundation." no. 4 (2001).

Jacobs, D.F., A.R. Marston, R.D. Singer, K. Widaman, T. Little, and J. Veizades. "Children of Problem Gamblers." *Journal of Gambling Behaviour*, 5 (1989): 261-68.

Kelley, Robin. *First Nations Gambling Policy in Canada*. Canada West Foundation, 2001 [Accessed April 2004]. Available from <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=AA6EA396C07B7EA087256BD5005F936D>.

Kiedrowski & Associates Inc. *Native Gaming and Gambling in Canada*. Indian Northern Affairs Canada, 2001 [Accessed April 2004]. Available from <https://dspace.ucalgary.ca/retrieve/699/Final+Native+Gaming5.pdf>.

Korn, David A., and Howard J. Shaffer. "Gambling and the Health of the Public: Adopting a Public Health Perspective." *Journal of Gambling Studies*, 15, no. 4 (1999): 289-365.

Korn, David, Roger Gibbins, and Jason Azmier. "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, no. 2 (2003): 235-56.

KPMG. *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton, 2002. [Accessed April 2004] Available from <http://www.moncton.org/search/english/CITYHALL/publications/finalcasinoreport.pdf>.

KPMG Management Consultants. "A Critical Review of "an Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba"." In *Assessment of the Benefits and Costs of the Manitoba Lotteries Corporation*, edited by Mike Ross and Philippe Cyrenne: KPMG Management Consultants, 1995.

LaBrie, Richard, and Howard J. Shaffer. *Toward a Science of Gambling Regulation: A Concept Statement*. AGA Responsible Gaming Lecture Series, Vol 2 (2). 2003.

Lesieur, H. "Compulsive Gambling." *Society*, May/June (1992): 43-50.

———. "Costs and Treatment of Pathological Gambling." *The Annals. American Academy of Political and Social Sciences (AAPSS)*, 556, no. March (1998): 153-59.

Marshall, K. "The Gambling Industry: Raising the Stakes." *Perspectives on Labour and Income, Statistics Canada Catalogue number 75-001-XPE*, Winter (1999).

Marshall, Katherine, and Harold Wynne. "Fighting the Odds." *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE*, 16, no. 1 (2003).

Martins, S. S., D. S. Lobo, H. Tavares, and I. V. Genti. "Pathological Gambling in Women: A Review." *Revista do Hospital das Clínicas*, 57, no. 5 (2002): 235-42.

Masterman-Smith, Helen, Samalinda Martin, and Jan McMillen. *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR), 2001 [Accessed April 2004]. Available from [http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/\\$file/Social&EconomicImpacts.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/$file/Social&EconomicImpacts.pdf).

MPM Gaming Research. "Final Report. Convenience Gaming and Social Impacts in Nova Scotia." Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1999.

———. "Towards a Convenience Model of Gaming and Its Social Effects in Nova Scotia, Annual Gaming Report, Appendix F." Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority, 1998.

Munro, B. *Seniors Who Gamble: A Summary Review of the Literature*. Alberta Gaming Research Institute, 2003 [Accessed April 2004]. Available from [http://www.abgaminginstitute.ualberta.ca/documents/research/Munro\\_Seniors.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/Munro_Seniors.pdf).

National Gambling Impact and Policy Commission (U.S.). *The National Gambling Impact Study Commission: Final Report*. National Gambling Impact and Policy Commission, 1999 [Accessed April 2004]. Available from <http://govinfo.library.unt.edu/ngisc/reports/fullrpt.html>.

National Opinion Research Center (NORC). *Gambling Impact and Behavior Study*. National Opinion Research Center at the University of Chicago, 1999. Available from <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

Nova Scotia Alcohol and Gaming Authority. "Annual Gaming Report. Volume I." Halifax, N.S.: Alcohol and Gaming Authority, 1999.

———. *Annual Report for the Fiscal Year Ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority, 2003 [Accessed April 2004]. Available from <http://www.gov.ns.ca/aga/AnnualReport/Section%2066%202003.pdf>.

———. *Nova Scotia Annual Gaming Report 1999-2000*. Nova Scotia Alcohol and Gaming Authority, 2000 [Accessed April 2004]. Available from <http://www.gov.ns.ca/aga/AnnualReport/Gaming%202000%20Report.pdf>.

Nova Scotia Department of Health. "2000 Regular Video Lottery (VI) Players Follow up Survey." Halifax, N.S.: Author, 2002.

———. *Problem Gambler Services Website*. [Accessed April 2004]. Available from <http://www.gov.ns.ca/heal/gambling/>.

Nova Scotia Gaming Corporation. *What Makes NSGC a Leader*. Author, n.d. [Accessed April 2004]. Available from <http://www.gamingcorp.ns.ca/responsible/makesleader.htm>.

Pernanen, K., S. Brochu, M.-M Cousineau, L.-G Cournoyer, and Fu Sun. *Attributable Fractions for Alcohol and Illicit Drugs in Relation to Crime in Canada: Conceptualization, Methods and Internal Consistency of Estimates*. Bulletin on Narcotics, LII (1 & 2), United Nations Office on Drugs and Crime, 2000 [Accessed April 2004]. Available from [http://www.unodc.org/unodc/en/bulletin/bulletin\\_2000\\_01\\_01\\_1\\_page006.html](http://www.unodc.org/unodc/en/bulletin/bulletin_2000_01_01_1_page006.html).

Potenza, Marc N., David A. Fiellin, George R. Heninger, Bruce J. Rounsaville, and Carolyn M. Mazure. "Gambling: An Addictive Behavior with Health and Primary Care Implications." *JGIM: Journal of General Internal Medicine*, 17, no. 9 (2002): 721-32.

Poulin, Christiane. *Nova Scotia Student Drug Use Survey 2002: Technical Report*. Halifax: Dalhousie University, Community Health and Epidemiology, 2002 [Accessed April 2004]. Available from [http://www.gov.ns.ca/health/downloads/2002\\_NSDrugTechnical.pdf](http://www.gov.ns.ca/health/downloads/2002_NSDrugTechnical.pdf).

———. "Problem Gambling among Adolescent Students in the Atlantic Provinces of Canada." *Journal of Gambling Studies*, 16, no. 1 (2000): 53-78.

Problem Gambling Services Nova Scotia Department of Health, and Department of Education and Culture. *Drawing the Line: A Resource for the Prevention of Problem Gambling*. Halifax: Province of Nova Scotia, 1997.

Productivity Commission. *Australia's Gambling Industries*. Commonwealth of Australia, 1999 [Accessed April 2004]. Available from <http://www.pc.gov.au/inquiry/gambling/finalreport/>.

Raylu, Namrata, and Tian P. S. Oei. "Pathological Gambling : A Comprehensive Review." *Clinical Psychology Review*, 22, no. 7 (2002): 1009-61.



Rephann, T. J., M. Dalton, A. Stair, and A. Isserman. "Casino Gambling as an Economic Development Strategy." *Tourism Economics*, 3, no. 2 (1997): 161-84.

Schellinck, T., T. Schrans, G. Walsh, and J. Grace. *2002 Seniors Survey – Prevalence of Substance Use and Gambling among New Brunswick Adults Aged 55+*. New Brunswick Department of Health and Wellness, 2002 [Accessed April 2004]. Available from <http://www.gnb.ca/0378/pdf/SeniorsFinalReport2002ENG.pdf>.

Shaffer, H. J., and D. A. Korn. "Gambling and Related Mental Disorders: A Public Health Analysis." *Annual Review of Public Health*, 23 (2002): 171-212, [cited April 2004]. Available: <http://www.hms.harvard.edu/doi/html/reprints/shafferkornarph.pdf>.

Single, Eric. "Estimating the Costs of Substance Abuse : Implications to the Estimation of the Costs and Benefits of Gambling. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 215-33.

Single, Eric, David Collins, Brian Easton, Henrick Harwood, Helen Lapsley, Pierre Kopp, and Ernesto Wilson. *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition*. Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]. Available from [http://www.emcdda.eu.int/.../policy\\_law/expenditure/International%20guidelines%202001%20edition-4.doc?search](http://www.emcdda.eu.int/.../policy_law/expenditure/International%20guidelines%202001%20edition-4.doc?search).

Smith, G. J., and H. J. Wynne. *A Review of the Gambling Literature in the Economic and Policy Domains*. Alberta Gaming Research Institute, 2000 [Accessed April 2004]. Available from <http://www.abgaminginstitute.ualberta.ca/documents/reviews/economic.pdf>.

———. *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute, 2004 [Accessed April 2004]. Available from [http://www.abgaminginstitute.ualberta.ca/documents/research/VLT\\_Gambling\\_Alberta.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/VLT_Gambling_Alberta.pdf).

Smith, G. J., H. J. Wynne, and T. F. Hartnagel. *Examining Police Records to Assess Gambling Impacts: A Study of Gambling-Related Crime in the City of Edmonton*. Alberta Gaming Research Institute, 2003 [Accessed April 2004]. Available from [http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling\\_and\\_crime.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling_and_crime.pdf).

Sobel, Benjamin P. "Bingo Vs. Physical Intervention in Stimulating Short-Term Cognition in Alzheimer's Disease Patients." *American Journal of Alzheimer's Disease and Other Dementias*, 16, no. 2 (2001): 115-20.

Social and Economic Research Centre (SERC) University of Queensland. *The Social and Economic Impacts of Gaming: A Framework for Research*. Gambling Research Panel. Victorian Casino and Gaming Authority [Australia], 2001 [Accessed April 2004]. Available from <http://www.grp.vic.gov.au/CA256D9600166477/page/Research+Reports-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research?OpenDocument&1=25-Research+Reports~&2=0-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research~&3=~>.

Solicitor-General of Canada. "Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims." Ottawa: Solicitor-General of Canada, 1985.

South Australian Centre for Economic Studies (SACES). *Measurement of Prevalence of Youth Problem Gambling in Australia: Report on Review of Literature*. Department of Family and Community Services [AU], 2003 December [Accessed April 2004]. Available from [http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/\\$File/PrevalenceStudiesFinalReport.pdf](http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/$File/PrevalenceStudiesFinalReport.pdf).

Spunt, B., I Dupont, H. Lesieur, H.J. Liberty, and D. Hunt. "Pathological Gambling and Substance Misuse: A Review of the Literature." *Substance Use and Misuse*, 33 (1998): 2535-60.

Thompson, W. N. "Theft Is a Social Cost: Bigger Than We May Have Thought." *Report on Problem Gambling*, 1, no. 44 (2000): 46.

Thompson, W. N., R. Gazel, and D. Rickman. *The Social Costs of Gambling in Wisconsin*. Wisconsin Policy Research Institute Report, 9(6), 1-44, 1996 [Accessed April 2004]. Available from <http://www.wpri.org/Reports/Volume9/Vol9no6.pdf>.

United States General Accounting Office (GAO). *Impact of Gambling: Economic Effects More Measurable Than Social Effects*. United States General Accounting Office, 2000 [Accessed April 2004]. Available from <http://www.gao.gov/archive/2000/gg00078.pdf>.

Vaillancourt, François, and Alexandre Roy. *Gambling and Governments in Canada, 1969-1998 : How Much? Who Plays? What Payoff?* Toronto, Ontario: Canadian Tax Foundation, 2000.

Volberg, R. *Has There Been a "Feminization" of Gambling and Problem Gambling in the United States?* eGambling, issue 8, 2003 [Accessed April 2004]. Available from <http://www.camh.net/egambling/issue8/feature/index.html>.

Walker, D., and H. Barnett. "The Social Costs of Gambling: An Economic Perspective." *Journal of Gambling Studies*, 15, no. 3 (1999): 181-212.

Walker, Douglas M. "Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000." *Journal of Gambling Studies*, 19, no. 2 (2003): 149-84.

———. *A Simple Model to Explain and Illustrate the Definition of "Social Cost"*. International Symposium on the Economic and Social Impact of Gambling (1st : 2000, 23 - 27 September : Whistler, BC). Canadian Centre on Substance Abuse, 2000 [Accessed April 2004]. Available from <http://www.ccsa.ca/pdf/ccsa-009988-2000.pdf>.

Wildman, Robert W. II, and Serge Chevalier. *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre, 2002 [Accessed April 2004]. Available from <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.

Wynne, H. J., and M. Anielski. *The Whistler Symposium Report*. Canadian Centre on Substance Abuse, 2001 [Accessed April 2004]. Available from [http://www.ccsa.ca/docs/whistler\\_final.doc](http://www.ccsa.ca/docs/whistler_final.doc).

Wynne, Harold J. *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health, 2002 [Accessed April 2004]. Available from [http://www.health.gov.sk.ca/ps\\_fin\\_rep\\_prev\\_of\\_prob\\_gam.html](http://www.health.gov.sk.ca/ps_fin_rep_prev_of_prob_gam.html).

Wynne, Harold J., and Howard J. Shaffer. "The Socioeconomic Impact of Gambling: The Whistler Symposium." *Journal of Gambling Studies*, 19, no. 2 (2003): 111-21.

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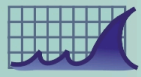
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**GPI** *Atlantic*

Genuine Progress Index for Atlantic Canada / Indice de progrès véritable - Atlantique

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PART I  
INTRODUCTION

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## 1.1 Introduction

The advent of legalized gambling and the increasing reliance of governments on gambling revenues in the last decade have fostered a rapid rise in gambling activity worldwide. In Canada, gambling is now a powerful economic force in Canadian society.<sup>1</sup> Canadian net gaming revenue, or the total money wagered less winnings, from casinos, non-charity lotteries, and video lottery terminals (VLTs) increased from \$2.7 billion in 1992 to over \$11.3 billion in 2002, with \$6.0 billion of this being profit.<sup>2</sup> In 2002, 27% of the net revenue came from lotteries, 34% from casinos, 23% from VLTs, and 17% from slot machines not in casinos.<sup>3</sup> Statistics Canada data also shows a rise in employment in the Canadian gambling industry from 12,000 jobs in 1992 to 42,000 in 2002.<sup>4</sup>

According to Statistics Canada's 2003 data release from the Canadian Community Health Survey Cycle 1.2 (CCHS 1.2), 24.2% of the adult population of Canada were non-gamblers, 71% were non-problem gamblers, and 5% were problem gamblers or at-risk for problem gambling. Considering only this last category, 2.8% of all Canadian adults were low risk,<sup>5</sup> 1.5% were moderate risk,<sup>6</sup> and 0.5% were problem gamblers.<sup>7</sup>

New data from the CCHS 1.2 show that, in 2002, 78% of the adult population (total 756,000) in Nova Scotia participated in at least one gambling activity. Of those gamblers, 67% participated in government lotteries, 41% in instant win lotteries, 19% in casinos, 12% in slot machines and VLTs, 11% in bingo, and 22% in other forms of gambling.<sup>8</sup>

In Nova Scotia, 94.3% of gamblers, rather than of the total adult population as cited in the reference for Canada above, have no problem with gambling. However 5.7% of gamblers can be classified as at-risk and problem gamblers. This breaks down to 3.3% at low-risk, 1.4<sup>E</sup> % at moderate risk, and 1.1<sup>E</sup>% considered problem gamblers.<sup>9</sup>

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<sup>1</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>2</sup> Marshall, K. (2003). Fact-sheet on gambling. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, March*.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

<sup>5</sup> Scored between 1 and 2 on the Problem Gambling Severity Index (PSGI) which is part of the Canadian Problem Gambling Index (CPGI)

<sup>6</sup> Scored between 3 and 7 on the PSGI

<sup>7</sup> Scored between 8 and 27 on the PSGI; Marshall, K. and H. Wynne. (2003). *Fighting the odds. Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, 16(1)*.

<sup>8</sup> Ibid.

<sup>9</sup> Ibid. The <sup>E</sup> designation is used by Statistics Canada to indicate that the coefficient of variation is between 16.6% and 33.3%, and that the percentages must therefore be interpreted with caution due to small sample size, wide margin of error, and low confidence level.

Nova Scotia has two casinos—one in Halifax and one in Sydney. As of May 2004, there were 615 VLTs on Mi'kmaq reserves and 3,234 VLT machines off reserves.<sup>10</sup> Nova Scotia's gaming revenue rose from \$125 million in 1992<sup>11</sup> to \$495 million in 2002/03.<sup>12</sup> The Nova Scotia Gaming Corporation (NSGC) transferred \$191 million to the province in 2002-2003, compared to \$178 million in 2001-02.<sup>13</sup>

In 2002, per capita spending on gambling in Nova Scotia was \$595 compared with \$577 for Canada as a whole and \$781 for Alberta. British Columbia, Ontario, and the other three Atlantic provinces spent less than Nova Scotia per household.<sup>14</sup> Households, however, typically underreport their spending on gambling. When compared with lottery corporation figures, the household figures are often from 33% to 50% less.<sup>15</sup>

Opinions regarding whether gambling provides net benefits or net costs to society are polarized. Governments that rely on the extra revenue received generally provide financial arguments in favour of legalized gambling and point to the dangers of criminal activity that is likely to accompany illegal gambling.<sup>16</sup> Critics and those negatively affected by gambling, generally denounce the activity as causing harm to society.<sup>17</sup> Researchers frequently criticize studies for having clearly biased views.<sup>18</sup>

Wynne and Shaffer summarize the benefits and costs of gaming most frequently cited in the literature in a recent paper. The major benefits include:

- Revenues for the public good, including health care, education, social services, and community infrastructure;
- Capital projects that include parks, recreation facilities, museums, and cultural arts centers;
- Job creation;
- Economic development;
- Opportunities for indigenous peoples;

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<sup>10</sup> Flinn, B. (2004, May 5). "Province promises new policy on gambling". *The Daily News*, pp. 3.

<sup>11</sup> Marshall, K. (2003). Fact-sheet on gambling. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, March*.

<sup>12</sup> Nova Scotia Gaming Corporation. (2003). *Annual Report 2002-2003*. Nova Scotia Gaming Corporation.

<sup>13</sup> Ibid.

<sup>14</sup> KPMG Management Consultants. (2003). *Canadian Gaming Industry Highlights*. KPMG Management Consultants.

<sup>15</sup> Marshall, K. (2003). Fact-sheet on gambling. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, March*.

<sup>16</sup> National Gambling Impact and Policy Commission (U.S.). (1999). *The National Gambling Impact Study Commission : Final report*. National Gambling Impact and Policy Commission.

<sup>17</sup> 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.

<sup>18</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

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- The entertainment value that gambling affords to the many players; and
  - “Legal” gambling formats keep “illegal” gambling in abeyance, thus reducing crime that can be associated with unsanctioned, illegal gambling alternatives.<sup>19</sup>

Critics, by contrast, point to the costs of gambling to society, most of which are associated with the consequences of problem gambling. The most frequently cited costs include:

- the rise in the number of people with severe gambling problems;
- the havoc that problem gamblers wreak on themselves, their families, and the community at large;
- lost productivity at work;
- increased crime, notably fraud, theft, domestic violence, suicide, counterfeiting, and money laundering;
- the possible cannibalistic effects that large casinos, bingo halls, and electronic gambling in bars and lounges have on local small business revenues and employees; and
- increased health care, social service, policing, and other public service costs that governments must bear to deal with the negative fallout from legalized gambling.<sup>20</sup>

Grinols and Omorov, who often stress the costs of gambling, also point out the unproductive profit seeking behaviour of gamblers who hope to increase their economic wellbeing, in an atmosphere where the odds are not in their favour and where, in fact, they almost always lose in the long run.<sup>21</sup> Australian economist Anne Hawke cites a Morgan Research study that says 59% of gamblers rate the 'dream of winning' as the main reason for their gambling activities. She concludes, "In other words, purchasing entry into a gambling activity is tantamount to purchasing a dream."<sup>22</sup>

Gaming research that looks at the social and economic impacts of gambling is very uneven. There are many more studies, for example, researching the connection of gambling to crime than there are studies examining the workplace impacts of gambling. Problem/pathological gambling and its harmful consequences have received a great deal of attention, while studies of beneficial aspects, like the impacts of gambling revenues that are used for the public good, are rare. In fact, in their 2002 comprehensive literature review, Wildman and Chevalier<sup>23</sup> found only one article dedicated solely to the beneficial impacts of gambling on individuals. This study showed bingo to be therapeutic to Alzheimer's patients.<sup>24</sup>

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<sup>19</sup> Wynne, H. J. and H. J. Shaffer. (2003). The Socioeconomic Impact of Gambling: The Whistler Symposium. *Journal of Gambling Studies*, 19(2), 111-121., p.112.

<sup>20</sup> Ibid.

<sup>21</sup> Grinols, E. and J. D. Omorov. (1996). Development or Dreamfield Delusions: Assessing casino gambling's costs and benefit. *Journal of Law and Commerce*, 16, 49-87.

<sup>22</sup> Hawke, A. (2000). *Measuring the impact of gambling: An economist's view*. Hawke Institute, University of South Australia.

<sup>23</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>24</sup> Sobel, B. P. (2001). Bingo vs. physical intervention in stimulating short-term cognition in Alzheimer's disease patients. *American Journal of Alzheimer's Disease and Other Dementias*, 16(2), 115-120.

Wildman and Chevalier also found no studies that dealt specifically with potentially beneficial impacts of gambling on the gambler's proximal environment, defined as spouse, children, family, friends, and life at work, at school, or in the local community.<sup>25</sup> Wildman and Chevalier found numerous reports dealing with beneficial impacts of gaming to society at large, such as increased employment, income, and tax revenues. However, they found no reliable studies quantifying these impacts.

Studies are frequently criticized for having faulty methodology such as small sample sizes that lack generalisability, cross-sectional rather than longitudinal research designs, and focus on single social impact measures that are not linked to clustered effects. Investigators acknowledge, however, that gambling research is relatively new and has been hampered by lack of data, empirical evidence, and research consensus concerning indicators and methodology.<sup>26</sup>

Although there are many studies that investigate particular aspects of gambling, there are very few comprehensive cost-benefit analyses. In 1999, Vaillancourt and Roy, who produced the first such study for Canada, identified only four— a 1999 national study from the United States, one from Australia also published in 1999, and two studies from Manitoba published in 1995.<sup>27</sup> They criticize the two studies from Manitoba as being weak since they "rely on assumptions and outside information in order to estimate key numbers." The U.S. national study, while massive, does not include intangible costs and could come to no definite conclusion about the amount of costs.<sup>28</sup> The Australian national study will be looked at in some detail in Part IV of this review. Researchers are passionate and emphatic about the need to develop, improve, and refine cost-benefit studies in Canada in order to gain a reliable understanding of the relationship between costs and benefits.<sup>29</sup>

## 1.2 Purpose of the literature review

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<sup>25</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>26</sup> 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].

<sup>27</sup> Cyrenne, P. (1995). *An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba*. Winnipeg: University of Winnipeg, Department of Economics;KPMG Management Consultants. (1995). A Critical Review of 'An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba'. In Ross and Cyrenne (Eds.), *Assessment of the benefits and costs of the Manitoba Lotteries Corporation*: KPMG Management Consultants;National Opinion Research Center (NORC). (1999). *Gambling impact and behavior study*. National Opinion Research Center at the University of Chicago;Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>28</sup> Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation. p. 41.

<sup>29</sup> Henriksson, L. E. (2001). Gambling in Canada: some insights for cost-benefit analysis. *Managerial & Decision Economics*, 22(1-3), 113-123.

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As a society, in order to understand the broad effects of gambling and to minimize its potentially harmful effects, we need an unbiased, clear accounting of both its costs and benefits within a social and economic context that is multidisciplinary and holistic.<sup>30</sup> The purpose of this literature review is to provide background information that can inform a future analysis of the costs and benefits of gambling in Nova Scotia.

A review of Halifax newspaper articles from 1992 to 1997 points to the often heated and emotional quality of public discourse on gambling in Nova Scotia.<sup>31</sup> A full cost-benefit analysis will provide an opportunity to ground that debate in evidence, and thus to inform deeply held positions with new facts about the costs of gambling to society and about the cost-effectiveness of interventions designed to deal with problem gambling. The proposed study should provide information on the full medical, social, economic, and productivity costs of problem gambling in Nova Scotia. At the same time, a full cost-benefit analysis should clearly identify advantages to society, including generation of tax revenues that can be used for the public good, and prevention of organized crime. The study would track physical trends, including proportions of different population segments engaged in different types of gambling, and the proportion of all gamblers who are problem gamblers, and, based on the physical data, the study should then estimate both direct and indirect costs. Direct costs include taxpayer-funded investments in problem gambling prevention and treatment, while indirect costs include productivity losses to the economy and intangible social costs. The study would also weigh this information against gambling revenues and other benefits.

Such an impartial analysis therefore has the potential to allow both sides of the debate to move from “win or lose” propositions to informed discussion about how to manage gambling effectively and cost-effectively. Knowledge about where the costs to society of gambling are and how serious they are will help policy makers assess the most cost-effective ways to address existing problems, and the benefits we can expect from such investments. This information is critical to minimizing the negative effects of gambling.

One of the key obstacles for such a study is the lack of consensus in the research community on the most effective methodology and indicators. The objective of this literature review is to point to these methodological challenges and to provide background information that can help identify a comprehensive set of indicators for analyzing the costs and benefits of gambling in Nova Scotia. The focus is on practical applications. It is not an exhaustive overview of gaming research. Rather, it looks at specific areas of impact and concentrates on methodologies used in previous studies. Several major studies are reviewed in detail in Part IV.

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<sup>30</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

<sup>31</sup> McMullan, J. L. and J. Mullen (2001). What Makes Gambling News? *Journal of Gambling Studies*, 17(4), 321-352.



### 1.3 Genuine Progress Index Atlantic<sup>32</sup>

GPI Atlantic is a non-profit independent research group that is developing an index of progress and wellbeing based on a wide range of social, economic, and environmental indicators – the Genuine Progress Index. GPI Atlantic is a national leader in developing indicators of wellbeing and in employing full-cost accounting methodologies. The GPI approach is to elucidate the full range of benefits and costs – social, economic and environmental – associated with particular policy choices. Because many of these benefits and costs are currently hidden in standard accounting mechanisms, the GPI methods can provide more accurate and comprehensive assessments of policy choices than methods currently in use. We have produced some 50 reports and papers, including studies for every province in Canada, using these methods. For example, GPI Atlantic has done studies on the costs of crime, tobacco, obesity, physical inactivity, and chronic disease in Nova Scotia that examine the cost effectiveness of alternative interventions and reveal, for example, what Nova Scotians would save annually if they smoked less, had healthy weights, and exercised regularly. These studies have assisted the Nova Scotia government and other agencies in planning health promotion activities and have since been replicated for other provinces.

GPI Atlantic is now proposing a major study on the costs and benefits of gaming in Nova Scotia. This full cost-benefit analysis would include the direct costs of gambling to society as well as its impact on our human capital. The study would consider both direct and indirect factors, such as losses in productivity due to problem gambling, associated health and justice problems, and benefits gained by keeping gaming out of the hands of organized crime. It is important to note that the purpose of the study is not to develop a “for” or “against” position on gaming in Nova Scotia. It is to provide an unbiased, full cost-benefit analysis that will enable the Nova Scotia government and public to make well-founded decisions on the management of gaming in the province.

The things we measure and count—quite literally—tell us what we value as a society. If we do not count non-monetary and non-material assets like population health and the value of voluntary work, for example, we effectively discount and devalue them. And what we don't measure and value in our central accounting mechanism will be effectively sidelined in the policy arena. Despite claims of objectivity, all studies take a particular view, or have a bias or normative base. Choice of methodology reflects this view. The important point is to ensure the transparency of whatever view under lies the approach and to make the underlying values explicit rather than implicit.<sup>33</sup>

A view will inform which indicators are included and what value is given to intangible factors. For example, using economic growth measures to assess how "well off" we are as a society excludes vital social and environmental indicators and sends highly misleading signals to policy

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<sup>32</sup> See: <http://www.gpiatlantic.org>

<sup>33</sup> Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212.



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makers. GDP (Gross Domestic Product)-based growth measures make no distinction between economic activity that improves wellbeing and that which signals a decline in quality of life. For example, crime can contribute to economic growth because it stimulates spending on prisons, police, courts, burglar alarms, and security systems. Similarly pollution, sickness, natural disasters, accidents, and natural resource depletion all make the economy grow. In short, economic growth measures and standard economic accounting mechanisms are incapable of signalling whether society is better off or worse off as the result of a particular policy action.

This is the challenge that the Genuine Progress Index (GPI) attempts to address.<sup>34</sup> The GPI consists of 22 social, economic, and environmental components, and attempts to provide a more accurate and comprehensive measure of wellbeing than current measures based on the current income accounting methods of the GDP. To this end the GPI values natural capital and social assets that are ignored in standard accounting systems, where, at best, they are regarded as “externalities.” It assesses the value of non-market assets, and it applies “full-cost accounting” mechanisms to specific policy applications.

There are three fundamental principles of “full cost accounting” that not only provide greater accuracy in assessing benefits and costs, but also encourage greater efficiency by preventing the displacement of costs to the public arena. These principles are that:

- 1) External costs are internalized.
- 2) Non-market as well as market assets and transactions are specifically valued.
- 3) Fixed costs are translated into variable ones related to actual usage.

In addition, the GPI uses a capital approach to accounting, that assesses the value of long-term investments in social, human, and natural capital and that counts their depletion or degradation as depreciation, just as in assessments of manufactured capital. These extended capital accounting procedures, now also recommended by Statistics Canada, see health and education as human capital, and natural resources as natural capital – subject to depreciation and requiring re-investment just like other forms of capital. In the same way as any capital must be maintained and enhanced if it is to be productive, so we must strengthen human capital through investments in education, population health, and the capacity of citizens to contribute to our quality of life. Gambling in general, and gambling addiction in particular, clearly have impacts on human capital. The GPI attempts to apply these capital accounting principles both at the macro-level, as measures of wellbeing for a nation, region, province, or community, and also at the micro-level in relation to specific policies.

In summary, this explains the general approach that is used in the GPI methodology. Further details and more information are contained in a 106-page document on the methodologies, framework, and approach of the GPI that is available on the GPI Atlantic web site.<sup>35</sup> In its simplest form, it can be said that the GPI approach is to elucidate the full range of benefits and costs – social, economic and environmental – associated with particular policy choices. Because

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<sup>34</sup> Colman, R. (1998). *Measuring Sustainable Development: The Nova Scotia Genuine Progress Index: Framework, Indicators and Methodologies*. Genuine Progress Index Atlantic (GPI Atlantic).

<sup>35</sup> *Ibid.*, Available: <http://www.gpiatlantic.org>.

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many of these benefits and costs are currently hidden in standard accounting mechanisms, the GPI results can provide more accurate and comprehensive assessments of policy choices than methods currently in use. This literature review is the first step toward a proposed full cost-benefit analysis that will include the direct costs of gambling to Nova Scotia society as well as its impact on human capital. We hope that when the full study is completed, it can contribute towards developing a model useful to other jurisdictions across Canada for their own research.

## 1.4 Organization of literature review

The remainder of this literature review is divided into three sections. The first reviews contentious methodological issues important in gambling cost-benefit analyses. It relies on the excellent work being done through the Canadian Centre on Substance Abuse to establish guidelines and consensus for impact studies. The second section reviews studies of social and economic impacts of gambling and the gaming industry. For this we have adapted a framework produced by the Australian research organization, the Social and Economic Research Centre (SERC).<sup>36</sup> This framework gives attention to the multiple dimensions in which gaming impacts occur in Nova Scotia and elsewhere, and the nature of the impacts at the levels of individual and families, communities, regions, and the province. Finally, we present a more detailed description of the methodologies used in several important case studies.

As mentioned, we are particularly concerned with the methodology used in previous studies to document direct and indirect costs and benefits. As well, we are concerned with indicators, measurement, relative risk factors, and odds ratios that may have been used in each area and at each level of analysis.

## 1.5 Methodology used

The following methodology was used in this literature review:

- A computer search of the on-line databases Econ Lit, Sociological Abstracts, Social Science Abstracts, and Medline was conducted for the years 2000-2004. Sources for earlier years have been collected in previous literature reviews and in organizational databases, which are also reviewed in this analysis (see below).
- General Internet (Google) and NovaNet (Dalhousie University, Mount Saint Vincent's University, and St. Mary's University) searches were conducted.

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<sup>36</sup> 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].

- A computer search of databases and websites from gambling research organizations and other relevant organizations was conducted. These included, in part:

Addiction Research Foundation  
Addictions Foundation of Manitoba  
Alberta Alcohol and Drug Abuse Commission—Problem Gambling Research  
Alberta Gaming and Research Institute  
American Gaming Association  
Atlantic Lottery Corporation  
Australian Institute for Gambling Research  
Australia's Gambling Industries  
Canada West Foundation  
Canadian Centre on Substance Abuse  
Canadian Council on Social Development  
Canadian Foundation on Compulsive Gambling  
Canadian National Centre for Gambling Studies, University of Alberta  
Centre for Gambling Studies, New Zealand  
Criminal Intelligence Service Canada  
European Association for the Study of Gambling  
Gambling: An Attempt at an Integration (Wynne)  
Gemini Research  
Health Canada  
Institute for Problem Gambling (Rhode Island)  
Institute for Research on Pathological Gambling and Related Disorders, Harvard Medical School  
Institute for the Study of Gambling and Commercial Gaming  
International Centre for Youth Gambling, McGill University  
Interuniversity Consortium for Political and Social Research  
National Academy of Sciences, National Research Council, Washington D.C.  
National Center for Responsible Gaming  
National Council on Problem Gambling, Washington, D.C.  
Nova Scotia Alcohol and Gaming Authority  
Nova Scotia Department of Health, Nova Scotia Gaming Foundation  
Nova Scotia Department of Health, Problem Gambling Services  
Nova Scotia Gaming Corporation  
Ontario Problem Gambling Research Centre  
Problem Gambling Research Group, University of Windsor  
Responsible Gambling Council  
Statistics Canada  
United States Gambling Research Institute

- Major literature reviews on various aspects of gambling have been produced through 2002 mainly by the Alberta Gaming and Research Institute and the Ontario Problem Gambling Research Centre. Important ones that were consulted for this study include:

Bowal, P. (2000). *A review of the gambling literature in the public policy domain: Government and legal policy documents*. Alberta Gaming Research Institute. Available: [http://www.abgaminginstitute.ualberta.ca/documents/reviews/govenment\\_legal\\_policy.pdf](http://www.abgaminginstitute.ualberta.ca/documents/reviews/govenment_legal_policy.pdf).

el-Guebaly, N., & D. Hodgins. (2000). *Pathological Gambling: The biopsychological variables and their management Interim Report*. Alberta Gaming Research Institute. Available: <http://www.abgaminginstitute.ualberta.ca/documents/reviews/biopsychological.pdf>.

McGowan, V., J. Droessler, G. Nixon, & M. Grimshaw. (2000). *Recent research in the socio-cultural domain of gaming and gambling: An annotated bibliography and critical overview*. Alberta Gaming Research Institute. Available: [http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural\\_mcgowan.pdf](http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural_mcgowan.pdf)

Smith, G. J., & H. J. Wynne. (2000). *A review of the gambling literature in the economic and policy domains*. Alberta Gaming Research Institute. Available: <http://www.abgaminginstitute.ualberta.ca/documents/reviews/economic.pdf>.

Van Brunschot, E. G., & L.-A. Keown. (2000). *Gambling in context: The socio-cultural domain: Literature overview and annotated bibliography*. Alberta Gaming Research Institute. Available: [http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural\\_gibbs.pdf](http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural_gibbs.pdf).

Wildman, R. W. I., & S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre. Available: <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.

- Over 600 references were collected and entered into an EndNote Library database. References from a number of key sources were checked. Important key sources were reports produced by the Whistler Symposium,<sup>37</sup> the Australian Productivity Commission report,<sup>38</sup> and annual reports from the Nova Scotia Alcohol and Gaming Authority, the Nova Scotia Gaming Foundation, and the Nova Scotia Gaming Corporation.

## 1.6 Definitions

*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.<sup>39</sup>

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<sup>37</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

<sup>38</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>39</sup> Korn, D. A. and H. Skinner. (2000). *Gambling expansion in Canada: An emerging public health issue*. Canadian Public Health Association Position Paper.

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*Gaming* - A term used most often by the gaming industry since, presumably, it does not carry the same stigma as 'gambling' often does. It includes all legal forms of gambling regulated by government and is intended to invoke entertainment and recreation.<sup>40</sup> "Gaming" is often used interchangeably with gambling in the literature.

*Wealth* – Rather than referring only to strictly monetary wealth, we include in this category the health, education, spirituality, food/shelter/clothing, clean environment, and other non-monetary factors that contribute to the wellbeing and quality of life of individuals, families, and communities.

*Benefits and costs* - Based on the above definition of wealth, "benefits" to society increase wellbeing and quality of life and "costs" decrease wellbeing and quality of life. Some indicators are non-controversial. For example, it is accepted that good health is beneficial. However, other indicators are more contentious. Which indicators to use in an expanded cost-benefit study of gaming will be decided at a later date, depending on data availability, the advice of experts, GPI accounting methods, and the results of this literature review.

Unless otherwise indicated, the terms "cost-benefit analysis (CBA)" and "analysis of costs and benefits" are used synonymously, as they are in the literature. Brian Easton, a New Zealand economist and member of the Prime Minister's Growth and Innovation Advisory Board, points out the rigorous, technical meaning of CBA in the economic paradigm but expands this to include elements from other disciplines.<sup>41</sup> He states that even if the costs and benefits were equal and netted out to zero, there would still be interest in individual costs and benefits and their incidence. (Although he expands the strict meaning of CBA, he argues that the best way of applying broader cost-benefit analysis is still to use the underlying framework of conventional CBA.) According to Easton, the main point is that "a cost-benefit analysis, be it a CBA or an analysis of costs and benefits, is a systematic way of thinking about the entirety of the issue. The value of building one up is more than the numbers that come out at the end. For it forces us to...move towards an understanding and perhaps policy directions, from a holistic perspective."<sup>42</sup>

*Problem Gambling* - Gambling represents a continuum from non-gamblers to regular gamblers who have no problems controlling their activities to those "at risk for problem gambling" to severe "pathological gamblers." Gamblers represent a multi-faceted group. In 1996 the Canadian Centre on Substance Abuse National Working Group on Addiction Policy produced its first policy discussion paper on problem gambling. This paper incorporated the concept of a continuum of gambling behaviour and defined problem gambling as:

"a progressive disorder characterized by a continuous or periodic loss of control over gambling; a preoccupation with gambling and with obtaining money with which to

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<sup>40</sup> Smith, G. J. and H. J. Wynne. (2002). *Measuring Gambling and Problem Gambling in Alberta Using the Canadian Problem Gambling Index*. Alberta Gaming Research Institute.

<sup>41</sup> Easton, B. (2003). *The Analysis of Costs and Benefits of Gambling*. Brian Easton.

<sup>42</sup> Ibid.

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gamble; irrational thinking; and a continuation of the behavior despite adverse consequences."<sup>43</sup>

The National Council on Problem Gambling uses the following definition:

"Problem gambling is gambling behavior which causes disruptions in any major area of life: psychological, physical, social or vocational. The term "Problem Gambling" includes, but is not limited to, the condition known as "Pathological", or "Compulsive" Gambling, a progressive addiction characterized by increasing preoccupation with gambling, a need to bet more money more frequently, restlessness or irritability when attempting to stop, "chasing" losses, and loss of control manifested by continuation of the gambling behavior in spite of mounting, serious, negative consequences."<sup>44</sup>

Collins and Lapsley defined problem gambling as "that part of gambling activity which, since it causes problems in such areas as crime, health, interpersonal relationships and financial affairs, involves the imposition of social costs."<sup>45</sup>

The terms problem gambler and pathological gambler are often used interchangeably in the literature. Problem gamblers are those whose behaviour causes personal, financial, family, and employment problems for themselves and others. Pathological gamblers exhibit addictive behaviour or loss of control over gambling behaviour that has serious consequences. These consequences may include loss of employment, bankruptcy, divorce, serious health problems, criminal behaviour, etc.

In this review we include pathological gamblers within the rubric of problem gamblers unless a distinction between the two is made.

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<sup>43</sup> Topp, J., E. Sawka, R. Room, C. Poulin, E. Single and H. Thompson. (1998). *Policy discussion paper on problem gambling*. Canadian Centre on Substance Abuse.

<sup>44</sup> National Council on Problem Gambling. (2004). *What is problem gambling*. National Council on Problem Gambling.

<sup>45</sup> Collins, D. and H. Lapsley. (2003a). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 123-148., p.128.





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PART II  
METHODOLOGICAL ISSUES

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## 2.1 State of gambling research

Studies designed to estimate the costs and benefits of gambling use a wide range of methodologies that have produced a correspondingly wide range of estimates and a great deal of controversy.<sup>46</sup> Many of the studies have conceptual, empirical, or data problems that are contentious and unresolved. Many studies are considered "seriously flawed" by researchers.<sup>47</sup> Conceptual difficulties are prominent and empirical evidence is limited. In fact, researchers have noted that "existing estimates are of limited usefulness and require further interpretation."<sup>48</sup>

The National Research Council in the United States categorized economic impact studies into three groups. The first group, "gross impact studies," focusses on only one aspect of an economic effect and these studies therefore do not provide a balanced perspective. Typically, these studies provide a simple accounting of aggregate effects of gaming such as gambling revenues, taxes collected, and jobs created. The second group consists of descriptive studies that simply identify benefits and costs associated with gambling without identifying their value. The third type attempts to provide a balanced analysis of costs and benefits, but these studies are hampered by numerous methodological problems.<sup>49</sup>

In a 2003 paper, Harold Wynne of the University of Alberta commented on the quality of gambling research:

- there is a paucity of research into the socioeconomic impact of gambling expansion;
- much of the research that has been done is not scientifically rigorous, and in some instances, it is outright biased towards a particular perspective; and
- there is little agreement as to conceptual or analytical frameworks and methodologies that are best suited to guide cost-benefit analyses of gambling policy decisions.<sup>50</sup>

As well, empirical evidence is limited and data are often unavailable, not appropriate, or buried deep in governmental department budgets in areas such as health, judicial and penal systems, and social welfare.<sup>51</sup>

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<sup>46</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>47</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213; Walker, D. M. (2000). *A Simple Model to Explain and Illustrate the Definition of "Social Cost"*. International Symposium on the Economic and Social Impact of Gambling (1st : 2000, 23 - 27 September : Whistler, BC). Canadian Centre on Substance Abuse.

<sup>48</sup> Eadington, W. R. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives*, 13(3), 173-192. p. 188.

<sup>49</sup> Committee on the Social and Economic Impact of Pathological Gambling National Research Council. (1999). *Pathological Gambling: A Critical Review*. Washington, D.C.: National Academy Press.

<sup>50</sup> Wynne, H. J. and H. J. Shaffer. (2003). The Socioeconomic Impact of Gambling: The Whistler Symposium. *Journal of Gambling Studies*, 19(2), 111-121.

<sup>51</sup> Collins, D. and H. Lapsley. (2003b). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies, Summer*, 19(2), 123-148.

To address these difficulties, the Canadian Centre on Substance Abuse (CCSA)<sup>52</sup> held an important international symposium in Whistler, B.C., September 24-27, 2000.<sup>53</sup> This First International Symposium on the Economic and Social Impact on Gambling brought approximately 60 researchers, policy makers, and other experts together to establish a methodology for estimating the social and economic impact of gambling that would be comparable internationally. The methodology would include a process, analytical framework, and guidelines to integrate various perspectives and values on this issue. Five papers were commissioned to provide background information to the symposium. These papers, which subsequently were published in a 2003 special issue of *Journal of Gambling Studies*<sup>54</sup>, and a report on the Symposium,<sup>55</sup> provide a comprehensive review of the major methodological issues and will be looked at in more detail below.

The Whistler Symposium revealed that there is still little consensus on major issues, including:

- the most salient philosophical perspective, or conceptual framework, that should underpin research into the social and economic impacts of gambling;
- definitions of “private costs” versus “social costs” attributable to gambling;
- what costs and benefits should be counted in socio-economic impact analyses; and
- the best methods for measuring gambling benefits and costs.”<sup>56</sup>

It identified a comprehensive list of recommendations and major methodological issues that need resolving. These included the following:

- The distributional effects of transfers and 'pecuniary' costs should be looked at in the context of a "holistic total wealth (wellbeing) impact and monetary total cost-benefit analysis of gambling.”<sup>57</sup>
- Intangible and qualitative impacts of gambling should be considered despite difficulties of measurement.

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<sup>52</sup> With support from Canadian organizations in British Columbia, Alberta, Manitoba, Saskatchewan, Quebec, and Ontario

<sup>53</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

<sup>54</sup> Collins, D. and H. Lapsley. (2003a). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 123-148; Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213; 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; Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233; Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

<sup>55</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

<sup>56</sup> Ibid.

<sup>57</sup> Ibid., p.19

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- The difficulty of identifying causality of drivers and impact outcomes was noted.
  - The importance of identifying attribution factors was recognized.
  - The limitations of sparse literature and research were noted.
  - There is a need for transparency of data, funding, and methods.
  - There is a need to recognize the importance of qualitative measurements.
  - Measurements of quality of life issues are important.
  - Problem gambling should be considered in the context of concurrent disorders.
  - High-risk populations should be examined.
  - Gambling behaviours not considered as problems should be considered.
  - Problem gambling impacts should be separated from regular gambling impacts.
  - There is a need to examine an impact framework using socio-economic, age-sex profiles, population health, and social determinants of health to determine distribution of impacts, including assessment of prevalence.
  - Indicators need to be repeatable, comparable at the provincial and national levels, and show rates of change (i.e. trends) from a baseline.
  - There is a need to assess gambling by type of gambling and by the different types and structures of cost and benefit impacts, avoiding simplified aggregation that can conceal these differences.<sup>58</sup>

The Symposium participants were not able to resolve these complex issues in the few days available to them. They established an international steering committee to continue the work on developing methodological guidelines, identifying data needs, and deriving attribution fractions (see below) that eventually could be used to produce balanced cost-benefit analyses of gambling. This project is expected to have preliminary results by 2006.<sup>59</sup>

## 2.2 Analytical framework

One of the debates in the gambling research literature concerns which analytical framework is most useful in analyzing costs and benefits. Economist Douglas Walker has criticized economic studies undertaken by non-economists, e.g. sociologists, psychologists, political scientists, lawyers, and even environmental planners, landscape architects, and regional planners. Recognizing that researchers in a variety of disciplines should address problem gambling, he states, however, that "these individuals often give "economic" arguments in favour or against legalized casino gambling, even though their formal training is in some other field. The result is that they often confuse the issues... We should be cognizant of when we step outside our areas of expertise."<sup>60</sup> On the other hand, it has been argued that analysis of gambling costs and benefits is too important to be left to economists, who often have too narrow a view.

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<sup>58</sup> Ibid., p.20, 26, 27

<sup>59</sup> Personal correspondence with Nova Scotia Alcohol and Gaming Authority and the Canadian Centre on Substance Abuse, April 2004.

<sup>60</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184. p. 153, 153.

Many of the participants of the Whistler Symposium agreed that a holistic-impact-accounting having multiple analytical options should be used rather than remaining with a more narrowly defined perspective. For example, methods are needed to expand the traditional focus on money-related impacts to include the many qualitative impacts of gambling.<sup>61</sup>

The Whistler Symposium identified six analytical frameworks from various disciplines that could inform a final framework. These were:

- financial analysis and accounting used in business;
- neoclassical economic analysis and theory. e.g. cost-benefit analysis (CBA);
- national income accounting, e.g. macro economic analysis, such as the gross domestic product (GDP) accounting;
- welfare economics, e.g. cost-effectiveness and cost-utility analysis as well as new sustainable wellbeing measurement systems like the GPI accounting system;
- social impact analysis; and
- public health impact analysis.

The Symposium report explicitly recognized the GPI model, which incorporates the public health approach, as:

"A holistic impact tool for assessing the full range of physical, qualitative and monetary costs and benefits on the wellbeing of individuals, households, communities, the economy, and the environment. ... GPI accounting could in principle provide a comprehensive impact analysis tool that embraces virtually all existing methodological impact analysis tools, including those posited."<sup>62</sup>

A report from New Zealand also recommended the GPI approach and the work of the Whistler Symposium:

"One of the more compelling components of the Whistler framework is the utilization of a Genuine Progress Indicator (GPI) instead of GDP statistics. These sustainable wellbeing accounting systems are being researched and developed in Canada, the United States, Australia and elsewhere. The proposed gambling impact model would measure the costs and benefits of gambling in physical, qualitative and monetary terms. Qualitative socio-cultural measures are aimed at including 'quality of life' indicators in addition to the usual economic formulations. Similar constructs also underpin the United Nations' regular Human Development Report. ...

In sum, we recommend that a multi-disciplinary and multi-method research framework as is being developed from the Whistler Symposium is the most valuable approach to adopt for gambling impact assessment. Essentially, a framework of this type captures the complexity of the issues at hand by including a diverse range of analytical techniques. By

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<sup>61</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

<sup>62</sup> Ibid. p. 22.

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juxtaposing studies that investigate gambling impacts from a variety of standpoints and dimensions, and by triangulated cross-checking of data, a more holistic and more accurate understanding of the overall effects of gambling can emerge."<sup>63</sup>

The Korn, Gibbins, and Azmier paper presented to the Whistler Symposium discusses the potential of the public health perspective to provide a broad lens for analyzing costs and benefits and for understanding the impact of gambling on society.<sup>64</sup> This framework goes beyond the view of gambling as problem behaviour to place gambling in its broader social and economic context. The public health approach also has the potential for identifying multiple strategies for action, prevention, and intervention. The public health perspective emphasizes social factors that have a role in determining health. These factors include income and income distribution, social support networks, education, employment and working conditions, gender, and other related social and economic issues. The authors summarize this perspective, listing the benefits of framing gambling as a public health issue:

"A public health approach emphasizes the prevention of gambling-related problems and harm reduction to decrease the adverse consequences of gambling behavior. It addresses not only the risk of problems for the gambler but also the quality of life of families and communities affected by gambling. It takes into consideration the multiple biological, behavioral, socioeconomic, cultural, and policy determinants influencing gambling and health. A public health approach encourages a life-cycle approach to measuring social and economic impacts, one that recognizes significant changes in the social context within which gambling takes place. It embodies public health values that reflect concern for the impact of gambling expansion on vulnerable, marginalized and at risk population groups. Finally, a public health framework recognizes that there are both costs and benefits associated with gambling."<sup>65</sup>

The working framework developed from the Symposium is detailed in Part IV of this review.

### **2.3 Determining costs: counterfactual scenario**

A basic premise in economic cost-benefit analysis worth reviewing briefly is that, in order to determine costs of a particular course of action, one must compare the action with the situation that would most likely be present in its absence.<sup>66</sup> This alternative description, called the

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<sup>63</sup> 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. 59.

<sup>64</sup> 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.

<sup>65</sup> Ibid. p. 15.

<sup>66</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.



*counterfactual scenario*,<sup>67</sup> is necessary to clarify in order to determine *opportunity costs*. In the neoclassical economic approach, all relevant costs are opportunity costs. Opportunity costs are those resources that would have been used for some other purpose, depending on the counterfactual scenario. For instance, a counterfactual scenario might be a scenario in which there was no legalized gambling or in which there were no casino or no problem gamblers. In the counterfactual scenario of having no problem gamblers, there would be no need to spend money for prevention or treatment, so the money presently spent in that way could be spent differently. But the opportunity to do so is lost when there are problem gamblers and, therefore, there is an opportunity cost.

There are important conceptual questions that must be asked: For example, in the case of a problem gambler, what would have occurred had the casino not been there for temptation? Was it the casino—or a much deeper psychological trait or problem—that led to the behavior? If this casino did not exist, are there other casinos a few minutes or a few hours away from the gambler's work or residence that may have also tempted him? Are there illegal gaming outlets?<sup>68</sup> In the absence of the available casino, might the problem gambler's behaviour have taken a different course towards another form of addiction that carries its own costs? In other words, to what extent can the costs associated with gambling be attributed to gaming outlets, and to what extent are they a function of underlying addictive traits that would have found other means of expression and manifested in other behaviours?

## 2.4 Real and pecuniary costs (transfers)

Confusion between real and pecuniary costs is considered to be one of the major errors in social cost estimates.<sup>69</sup> In the language of economics, social costs are *externalities*. A distinction is made in the literature between *technological externalities* and *pecuniary externalities*. Eadington explains the difference:

“Technological externalities occur where one’s ability to produce (products or utility) is hampered by an action, insofar as it takes more inputs to generate the same level of output (products or utility); versus pecuniary externalities, where changes in prices or

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<sup>67</sup> Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233.

<sup>68</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>69</sup> Collins, D. and H. Lapsley. (2003b). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, Summer, 19(2), 123-148.

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wages lead to a change in individual wealth, but not societal wealth. Net social costs can only occur as a result of technological externalities, not pecuniary externalities.”<sup>70</sup>

Collins states that real costs are those that reduce a society's total welfare because they represent a withdrawal of resources that could have other potential uses (opportunity costs). Pecuniary costs are transfers from one person to another or a redistribution of income—what is one person's loss is another's gain – so there is no net cost to society as a whole. Collins gives four examples:

- If a gambler steals in order to gamble, the value of the stolen good is a transfer. However, real costs include those incurred by police investigation, the judicial and penal systems, insurance administration, time and effort for the original owner to replace the stolen object, and the owner's trauma.
- The revenue governments raise from taxes is pecuniary (since they don't create new resources) except when that profit comes from outside (e.g. from tourists) or would have been spent outside the jurisdiction (e.g. at a casino in another province).
- Corruption is pecuniary if it involves a redistribution of income, and a real cost if it involves a deterioration in efficiency.
- If an employee loses his/her job, can't be replaced, and there is an ensuing loss of production, that is a real cost. If the employee can be replaced, or if he/she collects unemployment compensation, the costs are considered pecuniary or transfers, and not private or social costs. As well, counting both the loss of production and the welfare cost would involve double counting of one cost.<sup>71</sup>

Collins concludes that only real costs should be included in cost-benefit studies. If looking at the distribution of income, however, pecuniary effects become relevant because what is being looked at is the *incidence* of costs and benefits, or who bears the costs. Walker states that "bailout costs" (from family members,) bad debts, and government welfare costs are all transfers of wealth, even though they benefit the gambler (whether or not he or she is a pathological gambler), and cause others to lose money.<sup>72</sup>

Whether to include some indicators in impact studies depends on the approach. For example, the classical economic approach does not include "transfers" such as theft and social welfare payments in a cost-benefit analysis, since no money (or goods) is increased or decreased on a macro, social level. A sociological view, however, includes transfers such as theft and bankruptcy as costs to individuals and emphasizes the importance of intangible psychic costs. Welfare payments to persons unable to work because of gambling problems, considered a

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<sup>70</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>71</sup> Collins, D. and H. Lapsley. (2003a). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 123-148.

<sup>72</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

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transfer rather than a real cost to the economy in a neoclassical economic or "cost-of-illness" approach, *would* be included in a budgetary impact study focussing on the impacts to government revenue.<sup>73</sup>

According to Walker, another critical point to understand is that government expenditures may or may not be transfers or social costs, depending on whether or not society benefits by an increase in societal wealth or not. Health care costs in Canada, where there is national insurance, are clearly social costs, according to Collins. Costs that the government may incur that are discretionary, such as the amount of money expended to educate the public about the potential problems of gambling, would not be considered social costs, since these are not inevitable consequences of gambling.

## 2.5 Private (individual or internal) and social (external) costs

Private costs, in the economic paradigm, are individual costs that don't impact society as a whole. For example, the money the gambler spends is a private cost. A social cost affects the aggregate society. This seemingly simple observation in fact leads to considerable complications in applied cost-benefit analysis. Just as there are always interconnections and multiple causes of effects, so the boundaries between personal and social costs are often fuzzy. Total costs (and benefits) include both private or individual and social costs. However there is little agreement among researchers concerning what to include in each category.

The paper presented by Collins and Lapsley at the Whistler Symposium surveys theoretical economic issues involved in estimating the social costs and benefits of gambling. Their discussion involves the nature of private and social costs and benefits, the distinction between real and pecuniary costs, and the incidence and sources of benefits and costs. They point out that the basic criterion used in the economic literature for private costs is that purchasers of goods and services, in this case gamblers, must be 1) fully informed; 2) rational; and 3) must be required to bear the *total* costs of their gambling. All three must be satisfied if the cost is private. He gives an example of a person who buys a car that is generically faulty, but that fault had not been revealed to the public. The purchaser had no way to take this fact into account in her decision to buy the car. If the rational purchaser had known, she would have paid a lesser price or not bought the car. However, she did not have full knowledge. If she were rational and bore the full cost of the higher price, this would be classified as a private cost. If one of those three criteria is missing, according to Collins and Lapsley, the cost would be social. The issue for the researcher is that, if the problem gambler is not considered rational, then costs that are usually considered private might be considered to be social costs.

One of the difficult issues is what constitutes *rationality*. On the one hand, empirical testing appears to indicate that the theory of rational addiction can explain addictive behaviour. Walker argues that the decision to gamble is rational before it leads to addiction. Furthermore, "the adverse consequences experienced by a person as a result of his own rational actions cannot be

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<sup>73</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

considered a social cost, [and] the reduced quality of life experienced by a gambler who becomes addicted cannot be considered a social cost."<sup>74</sup> On the other hand, Collins asks "might it not be stretching a point to assert that potential addicts make rational and fully informed decisions about the risks of potentially addictive activities?"<sup>75</sup> Single et al. add that:

“It is, considering the medical literature on the nature and sources of addiction, extremely difficult to believe that addicts make rational consumption decisions. It is even harder to believe that potential addicts have access to, and the ability to evaluate, all the relevant medical and epidemiological information in advance of becoming addicted, particularly when so many addicts are young or became addicted when they were young.”<sup>76</sup>

The massive Australian study of the gambling industry included elements of private or internal costs in their calculations since the authors had "serious reservations about the extent to which problem gamblers are aware of the true costs and benefits of gambling." Lack of knowledge of risks is widespread and there remains a question about whether or not the gambler's actions are voluntary.<sup>77</sup>

Walker in his paper to the Whistler Symposium reinforces the fact that the gambling literature is lacking in an appropriate standardized definition of social cost and in a methodology for measuring these costs.<sup>78</sup> Arguing that economic methodology is better than the other methodologies currently available, he briefly explains this methodology and presents a simple economic model in the context of a *production possibilities frontier* and *indifference curve model*. His paper is an elaboration of his 1999 report that attempts to find a standard definition of social costs.<sup>79</sup>

Walker defines social cost in the welfare economics paradigm as a decrease in the aggregate real wealth of society compared to what it otherwise would have been. He illustrates this definition using a model of production and consumption. The underlying assumption of this model is that "more is always better."<sup>80</sup> 'More' is preferred, he argues, because it offers higher satisfaction and

<sup>74</sup> Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212., p.194.

<sup>75</sup> Collins, D. and H. Lapsley. (2003a). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 123-148., p.129.

<sup>76</sup> 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.

<sup>77</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>78</sup> Walker, D. M. (2000). *A Simple Model to Explain and Illustrate the Definition of "Social Cost"*. International Symposium on the Economic and Social Impact of Gambling (1st : 2000, 23 - 27 September : Whistler, BC). Canadian Centre on Substance Abuse; Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

<sup>79</sup> Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212.

<sup>80</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184., p. 157, 158.

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higher utility than 'less.' "Psychic costs," or decreases in happiness, are considered legitimate social costs. Walker, however, argues, that it is a question of debate whether "this type of psychic cost should be under consideration for policy intervention. After all, people are affected daily by countless psychic costs and benefits."<sup>81</sup>

Social costs are those incurred involuntarily by others including those costs the gambler didn't rationally take into account when starting to gamble. In other words, if the gambler thinks that his costs are less than they are, the difference is the social cost. The reason is that since the gambler hasn't adjusted his behaviour to reflect the higher costs, these costs are "unaccounted for."<sup>82</sup>

A social cost occurs if an action makes some worse off, but no one better off. Eadington states that, in this case:

“A measurement of the social cost would be the amount of income transfer it would take to compensate those who were damaged so that they could be made “whole,” i.e. as well off as they were before the action took place. Continuing in this vein, if some members of society are made better off by an action and others are made worse off, and if those made better off in the aggregate could financially compensate those who lost (in terms of compensation demanded to be made “whole”), then it is an improvement in social welfare even if no compensation is actually made from the winners to the losers.”<sup>83</sup>

Collins points out, however, that this is essentially the same as the previous definition. He states that social costs exist if the gambler stops work to gamble, loses the family money, and causes them to need social welfare benefits. As well, social costs exist if the gambler is not fully informed about the risks of gambling or its expected rate of return. He states, however, that this is debated in the literature. This argument asserts that family costs are private ones since the gambler takes these costs into consideration when deciding to gamble. How this issue is handled theoretically and conceptually affects how family abuse costs are handled practically in cost-benefit analyses. In the economic paradigm, family abuse costs are considered private and, therefore, not included in a cost-benefit analysis. Single, on the other hand, asks: "How can we ignore the costs of substance abuse upon other people who have had no part in the initial decision and who may find the effects intolerable (for example, resulting in marriage break-ups)? The size of abuse cost estimates will depend very significantly on whether family costs are treated as social costs."<sup>84</sup>

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<sup>81</sup> Ibid., p.164.

<sup>82</sup> Collins, D. and H. Lapsley. (2003a). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 123-148.

<sup>83</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>84</sup> 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.



Walker and Barnett point to lobbying as a social cost that researchers rarely consider. This "rent seeking behavior" or lobbying involves efforts to influence government policy—efforts that could have been used to produce goods and services. They note that these total rent seeking expenditures could be very large. This is also the case if opponents of legalized gambling use resources to prevent gambling. Using resources in this way – either by proponents or opponents of gambling – is considered wasteful for society as a whole.<sup>85</sup>

In conclusion, Walker offers a simple rule for identifying and measuring the effects of pathological gambling:

“First, for the items that are legitimately considered to be social costs, i.e., if they decrease the aggregate wealth in society, then we should attempt to measure their value. For all of the other negative effects of pathological gambling that do not decrease aggregate wealth, or that do so in a way that cannot be adequately measured (e.g., psychic costs), then we should only identify these effects and suggest ways to decrease their severity. But we should not attempt to arrive at dollar figures for these effects since the estimates are likely to be unreliable.”<sup>86</sup>

## 2.6 Tangible and intangible costs/benefits

Tangible effects are direct or indirect effects that are relatively easy to quantify. These effects can either be costs or benefits—negative or positive. Beneficial direct effects add to the society's resources. For example, if casinos create new jobs, this is a direct effect. Even here, however, there are challenges in deciding which new jobs should be included in cost-benefit analyses. New jobs created from the unemployment rolls are generally considered to create net social benefits. But jobs that are transferred from other industries are generally excluded from cost-benefit analyses. Data may not be available to assess the percentage of new jobs in the gaming industry created from the unemployment rolls. In its recent Solid Waste-Resource study, GPI Atlantic only counted a small percentage of new recycling jobs as net social benefits in its cost-benefit analysis – a proportion corresponding to the unemployment rate.

Indirect effects are often called "spillover" or ripple effects. They are the secondary effects that spill over into the community because of the casino, such as services provided to the casino by other industrial sectors. Another spillover benefit might be casino employees who spend their paychecks in the community and may help create new business.<sup>87</sup> As a rule of thumb, it is generally accepted that at least one additional spin-off job is created for every new direct job in an industry.

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<sup>85</sup> Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212.

<sup>86</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184., p.180-181.

<sup>87</sup> Committee on the Social and Economic Impact of Pathological Gambling National Research Council. (1999). *Pathological Gambling: A Critical Review*. Washington, D.C.: National Academy Press.



Intangible effects are those that cannot be easily quantified in monetary terms. Emotional pain and suffering, quality of life, wellbeing, and environmental issues are a few of the intangible effects that are involved in gambling outcomes. Economic analyses usually do not include intangible effects. The current opinion among researchers is that intangible effects are crucial elements of cost-benefit analyses and must be included.<sup>88</sup>

In 1999, the Australian Productivity Commission (PC) produced a very important study of the Australian gambling industries. (See Part IV for a detailed report.) Costs in the Australian study are classified as tangible or intangible, internal, external, and transfers. The PC report elaborates the methodology used and has been valuable as a guideline for other cost-benefit analyses.<sup>89</sup> Eadington notes that over 90% of costs from this study come from intangible internal costs.<sup>90</sup> The highest categories cover adverse emotional impacts on the problem gambler's family and estimates for gamblers' depression.

Intangible emotional costs include pain, suffering, and quality of life impacts on individuals, families, neighbourhoods, and society that may be far greater than simple economic production losses due to the victim's inability to perform paid work.<sup>91</sup> Just as insurance companies provide monetary compensation for the loss of limbs, so courts grant awards designed to compensate victims for suffering beyond mere production losses. In the words of the Solicitor-General of Canada:

“Many of the most important costs of crime – the psychological and emotional suffering of victims, the fear and insecurity of those who believe they are at risk, the pain and often anger of the families of victims, the loss of freedom and potential productive labour that incarceration means for the criminal who is caught – cannot be measured in dollars. But these largely unmeasurable costs must be a significant part of any cost-benefit equation.”<sup>92</sup>

Nevertheless, a ground-breaking study by Brandon Welsh and Irvin Waller at the University of Ottawa's Department of Criminology has attempted to assign monetary values by examining court awards.<sup>93</sup> Paul Brantingham and Stephen Easton have also applied Welsh and

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<sup>88</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

<sup>89</sup> Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation.

<sup>90</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>91</sup> Colman, R. (n.d.). *Costing Policy Change: A Case Study In Applying The GPI Cost Of Crime Methodology To A Hypothetical Policy Shift from Legalized Cannabis Use to Prohibition of Cannabis as a Prosecutable Offence*. GPI Atlantic.

<sup>92</sup> Solicitor-General of Canada. (1985). *Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims*. Ottawa: Solicitor-General of Canada.

<sup>93</sup> Welsh, B. and I. Waller. (1995 April). *Crime and its Prevention: Costs and Benefits*. Ottawa: University of Ottawa Department of Criminology.

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Waller's results in their assessment of Canadian crime costs.<sup>94</sup> These intangible costs due to suffering are also recognized in the National Crime Prevention Council's own estimates of crime costs in Canada.<sup>95</sup>

Single et al. introduce the caveat that, if intangible costs are used, the results cannot readily be compared with the GDP or other conventional economic markers, since the basis of measurement is not the same.<sup>96</sup> Australia found the estimated aggregate cost of problem gambling to be between A\$1.8 billion and A\$5.6 billion per year. But after Eadington adjusted for transfer payments, he found the annual cost to be less than A\$100 million per year.<sup>97</sup>

## 2.7 Causality, attribution, and comorbidity

The Whistler Symposium identified empirical research to establish direct causal links between gambling and specified outcomes to be the most important type of research needed. Correlations, which indicate the relative likelihood of interdependence between variables, do not necessarily indicate a direct causal connection.<sup>98</sup>

Valid impact analysis necessitates developing "attribution fractions" that link gambling as a cause of positive or negative outcomes. These fractions establish what proportion of the phenomenon being studied, e.g. lost work time or marital breakdown, can be attributed directly to gambling and what proportion can be associated indirectly with gambling but are caused by another source such as alcohol. The question is to what extent negative consequences of gambling are co-variates that are only some of a wider range of other contributory causes.<sup>99</sup> Without gambling attribution factors that connect problems directly to gambling, the Symposium concluded that "it is not possible to produce meaningful estimates of costs and benefits."<sup>100</sup>

Establishing causality is a major difficulty when deciding what costs might be attributable to problem gambling. For any outcome there are likely to be multiple causes. For example, gambling problems are often accompanied by stress, depression, and alcohol or drug abuse. In their 1998 review of the literature, Crockford and el-Guebaly found a large proportion—between

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<sup>94</sup> Brantingham, P. and S. Easton. (1996). *The Crime Bill: Who Pays and How Much?* Fraser Forum. Vancouver: The Fraser Institute.

<sup>95</sup> National Crime Prevention Council. (1996). *Money Well Spent: Investing in Preventing Crime*. Ottawa: National Crime Prevention Council.

<sup>96</sup> 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.

<sup>97</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>98</sup> Australian Institute for Gambling Research. (2000). *The Impact of the Expansion of Gaming on the Tourism, Entertainment and Leisure Industries*. Victorian Casino and Gaming Authority.

<sup>99</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>100</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse., p.27

25% and 63%—of pathological gamblers also have had (or have) a substance disorder as well. In addition, 9% to 16% of substance abusers are "probable" pathological gamblers.<sup>101</sup> 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 instruments, and lack of adequate descriptions of demographic variables such as age and ethnicity, and other potentially confounding variables like severity of the gambling problem.

The main questions challenging researchers in this area are whether the gambling problem or the accompanying morbidities and substance abuse problems came first, and whether gambling is the primary or secondary disorder. In other words, did gambling lead to depression, for example, or did depression lead to gambling? Or can we identify a portion or fraction of the gambling activity that led to depression? In a literature search ranging from 1966 to February 1996, Crockford and el-Guebaly found only one study of gambling effects that they thought might be a good representation of the true co-morbidity rate with depression, since it was similar to the rate of depressive disorders found in substance abusers. This was a 1987 study by Taber et al. that looked at recovering problem gamblers—those who no longer were gambling and who had seen improvement in their family and workplace relations. Results showed that 18% continued to be significantly depressed.<sup>102</sup>

Whatever portion of a particular outcome that cannot be directly attributed to gambling also cannot be considered a cost of gambling. If alcohol is the primary cause of the outcome under consideration (e.g. suicide), then the cost associated with that outcome must be attributed to substance abuse rather than to problem gambling. Rather than dismissing the cost because gambling might be a secondary rather than primary factor, a portion of the outcome that may properly be attributed to gambling needs to be estimated, ideally for different ages and by gender.<sup>103</sup> This estimation usually relies on attribution fractions derived from large-scale population based empirical studies that have established reliable estimates. Many of these studies are based on surveys or interviews.<sup>104</sup> In the case of gambling, this work has not been done with any degree of reliability or consistency. Thus, we need to review how studies in other areas (like smoking and alcohol abuse) have handled this problem. As one guideline, Single et al. recommend that "if an already severely mentally ill individual develops a substance abuse disorder, the additional care that such an individual requires should be attributable to substance abuse. However the expected care for the mental disorder apart from the substance abuse problem would not be attributable."<sup>105</sup> This would seem to imply the same for gambling

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<sup>101</sup> Crockford, D. N. and N. el-Guebaly. (1998). Psychiatric co-morbidity in pathological gambling: A critical review. *Canadian Journal of Psychiatry*, 43, 43-50.

<sup>102</sup> Taber, J., R. McCormick and L. Ramirez. (1987). The prevalence and impact of major life stressors among pathological gamblers. *The International Journal of the Addictions*, 22, 71-79.

<sup>103</sup> 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.

<sup>104</sup> Pernanen, K., S. Brochu, M.-M. Cousineau, L.-G. Cournoyer and F. Sun. (2000). *Attributable fractions for alcohol and illicit drugs in relation to crime in Canada: conceptualization, methods and internal consistency of estimates*. Bulletin on Narcotics, LII (1 & 2), United Nations Office on Drugs and Crime.

<sup>105</sup> 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. p.54.

disorders—if a substance abuser or depressed person subsequently becomes a gambler, only the cost of the *additional* care required should be attributed to problem gambling.

Following the Whistler Symposium, the steering committee established by the Symposium commissioned a literature review to explore the issue of causality in gambling and to discuss issues relevant to estimating the costs of gambling impacts. Wildman and Chevalier subsequently produced *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*, which is a literature review oriented to the economic concept of negative externalities. Negative externalities are adverse consequences of gambling behaviour to persons other than the gambler.<sup>106</sup> Negative externalities are identified as one of two main economic issues in the study of the social problems associated with gambling. (The other is associated with the progressivity or regressivity of taxes.) The review discusses the criteria for the determination of externalities caused by gambling problems. It presents a model for classifying the impacts of gambling and offers suggestions toward estimating the societal costs of gambling.

In determining causality, Wildman and Chevalier use the operational definition proposed by Rothman in his classic epidemiology text, *Modern Epidemiology*.<sup>107</sup> Five dimensions are used to establish causality. All five are not necessary to identify a causal effect. However, a 'sufficient number' must be present to establish causality. These dimensions are: strength of association (shared variance between two variables), consistency (observed repeatedly), temporality (gambling precedes effects), biologic gradient (the more cause, the more effect or probability of effect), and plausibility (or coherence). They point out that simple correlation does not ensure that the association is not due to confounding variables and so suggest using multivariate models to establish causality.<sup>108</sup>

Using these five dimensions, Wildman and Cavalier produced the chart that is reproduced below to estimate causality based on the literature examined. The shaded rows represent associations that are weak and therefore ruled out as possible causes. In general, the authors found almost no evidence of the directionality of the causality, i.e. the literature did not identify whether gambling came before the effect or not. The associations that are strong or fair mostly do not satisfy the causality criteria, since the research does not rule out confounders. Biological gradient (sometimes referred to as “dose-response” relationship) has rarely been addressed. And finally, in order to establish plausibility, or whether gambling is causing the problem, confounders must be controlled for and the intervening mechanisms understood. The authors conclude that "at this point in time, even though many conditions have been associated with gambling, none seems to fully reach the minimal requirements of causality."<sup>109</sup>

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<sup>106</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>107</sup> Rothman, K. J. (1986). *Modern Epidemiology*. Boston: Little, Brown, and Company.

<sup>108</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>109</sup> *Ibid.*, p.33

**Table 1. Estimates of causality of gambling as potential cause by criteria for associated morbidity, states, and situations**

	Association	Consistency	Temporality	Biological gradient	Plausibility
Socialization	?	Yes	None but	None	Yes
Entertainment	?	Yes	None but	None	Yes
Alcohol	Strong	Yes	Some	None	?
Drugs	Strong	Yes	Some	None	?
Tobacco	Strong	Yes	None	None	?
Antisocial personality	Fair	Yes	Yes	None	?
Mood disorder	Fair	Yes	None	None	?
Depression	Strong	Yes	None	?	?
Anxiety	Strong	Yes	None	?	?
Impulsivity	Fair	No	Yes	None	?
Sensation seeking	Fair	Yes	Yes	None	?
Suicide (ideations or attempts)	Strong	?	?	?	Yes
Financial problems	Strong	Yes	None or bi-directional	?	Yes
Domestic problems	Fair	?	None	?	Yes
Job/school related problems	Fair	?	None	?	Yes
Crime	Weak	No	Yes	None	?

Source: Wildman, R. W. I., & S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre, p.31

## 2.8 Comparisons with substance abuse cost studies

In his paper presented to the Whistler Symposium, Single describes guidelines recently developed by the Canadian Centre on Substance Abuse to estimate the social and economic costs of substance abuse.<sup>110</sup> There are both similarities and differences between the two fields. Research on both gambling and substance abuse is relatively new though the substance abuse field has a head start. In both cases there are no universally acceptable models and both share

<sup>110</sup> Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233.

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causality problems. Research estimates in both fields vary widely, not so much from using different economic models, but from differences in inputs and lack of robust attribution fractions.

Rates of death and hospitalization attributable to gambling are much lower than for substance abuse, which is often measured using a cost-of-illness methodology. This type of study does not include budgetary impacts on government. Gambling has been associated with health impacts. However, based on the available evidence, costs are likely to be less than for substance abuse.

Cost-of-illness (COI) studies of substance abuse, of course, are heavily dependent on health costs (treatment in general and psychiatric hospitals, co-morbidity costs, ambulance services, residential care, treatment agencies, ambulatory care (physician fees and other professional services), prescription drugs, and other health care costs (e.g., household help, rehabilitation equipment). The emphasis is on tangible, external costs.

COI studies also include losses associated with the workplace; administrative costs for transfer programs such as social welfare and workers' compensation; costs of prevention, research, training and averting behaviour; law enforcement costs; reduced property values in communities with drug problems; and indirect costs such as productivity losses due to absenteeism, premature death, and criminal behaviour. The calculation of productivity losses can also include more than lost income. Ideally, it should also assign value to the non-market services of the unemployed and retired, as well as to unpaid work contributions. Gambling impact studies need to look at many of the same issues, and can potentially use existing COI studies in areas like smoking and substance abuse as models.

Single, in 2003, identified the following three studies as being the most complete and recent reviews of the appropriate attribution fractions for alcohol, tobacco, and illicit drugs:<sup>111</sup>

- English, D.R., et al. (1995). *The Quantification of Drug Caused Morbidity and Mortality in Australia, 1992*. Canberra, AU: Commonwealth Department of Human Services and Health.
- Fox, K., J. Merrill, H. Chang, & J. Califano. (1995). Estimating the costs of substance abuse to the Medicaid hospital care program. *American Journal of Public Health*, 85(1), 48-54.
- Schultz, J., D. Rice, D. Parker, R. Goodman, G. Stroh, & N. Chalmers. (1991). Quantifying the disease impact of alcohol with ARDI software. *Public Health Reports*, 106(4), 443-450.

This information, he suggests, can be used to identify substance-related disorders, but the fractions need to be adjusted to reflect the prevalence of particular use in the area being studied. Whether these fractions have relevance to gambling problems remains unknown and requires investigation.

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<sup>111</sup> Ibid.



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## 2.9 Conclusion

In a cost-benefit analysis, what one counts as a private or a social cost seriously affects the outcome and is the source of contention among researchers. Criticism of a 2003 study of the cost of problem gambling in southern Nevada is typical of criticisms levelled at many studies. A 2003 study by Schwer and Thompson of the University of Nevada estimated that addicted gamblers in southern Nevada cost the community from \$300 million to \$470 million each year, or about \$8,000 per problem gambler.<sup>112</sup> Walker prepared a rebuttal calling the Schwer and Thompson work "seriously flawed."<sup>113</sup> His revisions to their estimates show the cost of problem gambling to be \$32.4 million to \$50.5 million per year, or about \$881 per problem gambler per year.

Walker's criticism involved the following methodological issues:

- The research was based on past studies that also had methodological problems.
- Cost estimates were based on arbitrary assumptions.
- Welfare payments, food stamps, theft, and bad debts were treated as costs to society rather than as transfers.
- Missed work and lost outputs were also treated as costs. Since third parties such as private companies internalize these, they are private and therefore not eligible to be considered as social costs.
- Adding private, internalized costs and transfers to social costs produces gross overestimates of social costs.
- Co-morbidity was ignored and all social costs were attributed to problem gambling, even though about 2/3 of problem gamblers have other addictions.

The point where researchers come together is in agreeing that whatever methodology and indicators are used, the calculations should be done in a way that is transparent and logically consistent.<sup>114</sup>

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<sup>112</sup> Schwer, R. K., W. N. Thompson and D. Nakamuro. (2003). *Beyond the Limits of Recreation: Social Costs of Gambling in Southern Nevada*. 2003 Annual Meeting of the Far West and American Popular Culture Association. Las Vegas, NV.

<sup>113</sup> Walker, D. M. (2003). *Review of Schwer, Thompson & Nakamuro "Beyond the Limits of Recreation: Social Costs of Gambling in Las Vegas"*. Nevada Resort Association.

<sup>114</sup> Walker, D. M. and A. H. Barnett. (1999). Response to McGowan's comment on "The social costs of gambling: An economic perspective". *Journal of Gambling Studies*, 15(3), 217-221.



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PART III  
SOCIAL AND ECONOMIC IMPACTS OF  
LEGALIZED GAMBLING

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### 3.1 Framework

The following section briefly reviews recent literature on the social and economic impacts of gambling. As mentioned previously, the intention is not an exhaustive review of the literature, which has been documented at least through 2002 in previous literature reviews. In particular, the Alberta Gaming Research Institute, the Ontario Problem Gambling Research Institute, and the Nova Scotia Alcohol and Gaming Authority have all provided excellent literature reviews on various aspects of gaming.<sup>115</sup> Rather, the criterion for the choice of material included here was its potential utility in informing a potential in-depth analysis of the costs and benefits of gaming in Nova Scotia.

The organization of this section is adapted from a framework for the evaluation of the impacts of gambling produced by the Australian organization, the Social and Economic Research Centre (SERC).<sup>116</sup> This framework was chosen, over others suggested by the literature, for its comprehensiveness, its ability to integrate multiple dimensions, and its clarity. The basic format includes seven areas of impact: health and wellbeing, culture, recreation and tourism, employment and education, crime, economic development (macro level), and financial. In reality, the areas overlap, are interdependent, and have multiple effects on each other. For instance, tourism affects the economy as does employment. Culture affects tourism. Health and wellbeing underlie all of the areas.

Each of the seven areas impact society on four separate levels of analysis: the individual and family (e.g. Joe Smith and his close friends and relatives), the community (e.g. youth, or Sydney, Nova Scotia), the region (e.g. eastern Cape Breton), and the province (e.g. Nova Scotia). These levels are conceptually distinct although they are also clearly interconnected and ultimately cannot be separated. Impacts in any area function like ripples in a pond after the stone is thrown. For example, if Joe is a problem gambler, his actions radiate out to affect his family, community, region, province, etc. If the region introduces more video lottery terminals (VLTs) into a community, this might have an impact on Joe's propensity to gamble, etc.

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<sup>115</sup> McGowan, V., J. Droessler, G. Nixon and M. Grimshaw. (2000). *Recent research in the socio-cultural domain of gaming and gambling: An annotated bibliography and critical overview*. Alberta Gaming Research Institute;MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority;Smith, G. J. and H. J. Wynne. (2000). *A review of the gambling literature in the economic and policy domains*. Alberta Gaming Research Institute;Van Brunschot, E. G. and L.-A. Keown. (2000). *Gambling in context: The socio-cultural domain: Literature overview and annotated bibliography*. Alberta Gaming Research Institute;Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>116</sup> 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].

The SERC framework combines these areas into a chart with 28 cells (see Table 1). The authors point out that, when completed, the framework will include a detailed assessment of the impact of gaming on each cell with particular emphasis on linkages both across the rows and down the columns. It is probable that the cells will differ in significance. A great deal of research may be available for some, while for others there may be very little research at all. Each cell can be expanded to include both costs and benefits, if relevant, as well as positive and negative impacts.

In addition, although there are overlapping effects, each type of gaming creates impacts distinct from other types and needs to be looked at separately through the framework lens. We have distinguished these as: lotteries, video lottery terminals (VLTs), bingo and charity gaming, and casinos. For example, larger portions of VLT players develop difficulties than those who purchase lottery tickets.<sup>117</sup> And lotteries might produce more jobs than bingo.<sup>118</sup>

**Table 2. Social and economic impacts of legalized gambling research framework**

Types of Gambling: lotteries; VLTs, charity bingo, casinos				
Level of Analysis	Individual; Families	Community	Region	Province
Area of Impact				
Health & wellbeing	Costs Benefits			
Culture				
Recreation & Tourism				
Employment & Education				
Legal; justice				
Economic development				
Financial				

<sup>117</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>118</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

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Adapted from: Social and Economic Research Centre (SERC) University of Queensland. *The Social and Economic Impacts of Gaming: A Framework for Research*. Gambling Research Panel. Victorian Casino and Gaming Authority [Australia], 2001

## 3.2 Framework Definitions

We have adapted the explanations used in the SERC report for both levels of analysis and areas of impact. These are as follows:

### 3.2.1 Levels of analysis

**Individual** – the person who engages in the gambling activity and who is directly affected by the benefits and costs. Most of the research at the individual level concerns problem gamblers and negative outcomes. Much of the data comes from focus groups or surveys of problem gamblers in treatment, which may not be generalizable, since those in treatment might represent extreme cases. Gamblers who seek treatment often have reached pathological levels of behaviour disorder.<sup>119</sup>

**"Families"** – include those in the individual's household as well as close friends and relatives who may be affected by the individual's gambling. As with the individual level, most of the research concerns problem gamblers and the impact they have on families. The challenge on both the individual and family levels is to decipher causality or the proportion of the difficulties gambling causes and that are associated with gambling. At this level, intangible impacts are extremely important. To date, very little work has been done to quantify these factors.<sup>120</sup>

**Communities** – include both a spatial and a social dimension, both of which share a 'community of interest.' The spatial dimension is a coherent geographic area, e.g. a neighbourhood, town, or city, whereas the social dimension includes social groups, e.g. clubs, interest groups, youth, seniors, ethnic minorities. The issues examined in this context are primarily social rather than economic, but these issues are clearly interdependent. There are very few studies, with the exception of some relating to adolescents, addressing cultural or community groups. Although similarities exist, drawing generalities from small community studies might be difficult since communities vary considerably in size, composition, age, interest, etc. Also, groups within spatial communities may experience different impacts, e.g. low-income groups have different experiences and outcomes than higher income groups.<sup>121</sup>

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<sup>119</sup> Volberg, R. A. (2004 Feb 1). *Fifteen years of problem gambling prevalence research: What do we know? Where do we go?* eGambling, issue 10.

<sup>120</sup> 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].

<sup>121</sup> Smith, G. J. and H. J. Wynne. (2000). *A review of the gambling literature in the economic and policy domains*. Alberta Gaming Research Institute.

**Regions** – are defined primarily by a larger geographic dimension than a community, that may or may not have a degree of local authority for the provision of private or government services but which is the base of a local economy. Regional impacts are often obscured in provincial aggregates. A major emphasis in looking at regional impacts is the assessment of micro economic aspects. In Nova Scotia, it might be helpful to examine the nine administrative health districts, or at least the six statistical health regions used by the Canadian Community Health Survey (CCHS).<sup>122</sup> There also may be differences in the impact of gaming in rural as opposed to urban venues.

**Province (or state)** – represents impacts at the level of the provincial or state government that involve areas such as raising revenue from taxes, fulfilling responsibility for support service provisions, regulation activities, and other macro-economic issues. In Canada, the provinces are responsible for the regulation of gambling activities with the exception of horse racing which is under the federal jurisdiction and will not be discussed in this review.

### 3.2.2 Areas of impact

**Health and wellbeing** - looks at the effects that gambling can have on physical, psychological, and social health and wellbeing of the individual and family. These impacts might include social interaction or isolation, stress reduction or increase, depression, anxiety, divorce, or suicide, for example. This area specifically examines the situation concerning the problem or pathological gambler and individual quality of life. Community, regional, and provincial levels of analysis include issues concerning the costs of health, treatment, and welfare and support services.

**Culture** - takes into consideration public attitudes, beliefs, and values toward gambling and how these affect costs and benefits. It also includes impacts on specific demographic and cultural groups such as women, youth, seniors, and First Nations people.

**Recreation and tourism** – recognizes the entertainment benefits received from gambling activities, possible costs involved in diverting revenue from other forms of entertainment, and the gambling industry's effect on tourism. A key economic question is whether gambling brings new money and people into the area or whether it redistributes the money available from local consumers.

**Employment and education** – includes the effects of gambling on work productivity, absenteeism, job loss, business profits and losses, revenue or costs to education, such as lost time from study, and increased employment in the gambling industry. There is little research on the impacts of gambling on employment. Costs to education are mostly addressed in the gambling literature on adolescents.

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<sup>122</sup> Hayward, K. and R. Colman. (2003). *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper*. Population and Public Health Branch, Atlantic Region, Health Canada.

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**Crime** - deals with impacts of gambling on crime and the criminal justice system, such as levels and types of criminal activity, the need for extra law enforcement personnel, rates of incarceration, and levels of domestic and other violence. As well, this area includes impacts of illegal gambling, including potential for organized crime, and the potential effects of "underground" gambling in a context where gambling is illegal.

**Economic development** – is a macro-level indicator that operates on both regional and provincial levels. It takes into account the overall increase or decrease in economic activity (e.g. gambling supply and support services), the shift in or development of new markets, and the impact on local industries.

**Financial** – On the individual level, this includes revenue spent on gambling, increased debt, and bankruptcy associated with gambling. On the provincial and regional levels, financial indicators take into account returns from increased tax revenues, costs or benefits the province incurs to promote gambling such as advertising and public education, and costs of lobbying, research, data collection, etc.

### 3.3 Gaming and Health and Wellbeing

*On the individual and family levels, this area looks at the effects that gambling can have on physical, mental, and social health and wellbeing. It specifically examines the situation concerning the problem or pathological gambler and individual quality of life. Community, regional, and provincial levels of analysis include issues concerning the costs of health, treatment, and welfare and support services.*

#### 3.3.1 Overview

The Australian SERC report, *The Social and Economic Impacts of Gaming: A framework for research*<sup>123</sup>, organizes possible positive and negative impacts and representative indicators within the framework. The lists that begin each section of this literature review are adapted from this report. They are meant to provide an overview of the issues involved and would be refined and expanded in the proposed cost-benefit report for Nova Scotia. In general, references are included within the body of the text.

#### *Individual and family level*

##### **Positive impacts**

- stress reduction and increased opportunities for social interaction

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<sup>123</sup> 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].

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- associated with the absence of problem gambling<sup>124</sup>

### **Indicators and sources**

- responses to self-report survey items and interview questions

### **Negative impacts**

- primarily a function of problem gambling (however defined)
- associated with feelings of social isolation and heightened levels of anxiety, depression, and, in extreme cases, suicide
- possible increased rates of substance abuse (e.g. alcohol, illegal drugs)
- poor physical health
- partners of problem gamblers often report symptoms of poor physical health and levels of emotional distress

### **Indicators and sources**

- standardized psychometric instruments to measure problem gambling (e.g. South Oaks Gambling Scale—SOGS, and the Canadian Problem Gambler Index—CPGI)
- problem gambling prevalence and incidence rates estimated from general population surveys

### **Community level**

#### **Positive impacts**

- additional recreation options provided to community members
- increased social value, e.g. certain groups, for example unaccompanied women, persons from different ethnic backgrounds and older citizens, see gaming venues such as bingo halls as safe surroundings that they will use where otherwise they would have stayed at home.
- funds directed for community benefits such as health services, or lotteries for special programs

#### **Indicators and sources**

- survey results of attitudes of wellbeing experienced by community members
- new and improved facilities and sponsorships that can be directly related to gaming
- government accountability detailing disbursements of gaming revenue

#### **Negative impacts**

- costs associated with problem gambling

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<sup>124</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.



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- increased calls on the services of community agencies for those experiencing difficulties related to gambling

#### **Indicators and sources**

- survey results
- details of demands on community agencies as a result of increased gaming activities (revenues, expenses, numbers of clients, etc.)

### ***Regional and Provincial levels***

#### **Positive impacts**

- increased revenue collected as a result of regulated gaming

#### **Indicators and sources**

- government accounts recording receipts related to gaming and disbursement records

#### **Negative impacts**

- cost of public health and community support services required to assist problem gamblers
- increased services for problem gamblers may diminish resources and reduce the opportunity to implement other projects

#### **Indicators and sources**

- level of payments directed to providing problem gambling support services; these costs are often underreported since health and community service budgets absorb some of the costs of problem gamblers who do not identify themselves as such.

### ***3.3.2 Concept of health***

The concept of health looked at here is broader than the traditional medical model of health. It encompasses the basic population health framework. In that framework, health, as defined by the World Health Organization, is conceptualized as physical, mental, and social wellbeing rather than as the absence of disease.<sup>125</sup> 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. 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

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<sup>125</sup> World Health Organization. (1947-2004). *WHO Definition of Health*.

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lifestyle choices.<sup>126</sup> Health Canada therefore regards health as the interdependence of social, economic, and environmental determinants. It states:

“[A] variety of factors affect health including gender, age, genetics, personal health practices, coping skills, social support, working conditions, the physical environment and early childhood experience. Perhaps the most powerful influence on health, however, is socioeconomic status, which is measured ... by income and education levels. Whether we look at how people rate their own health, premature mortality, psychological wellbeing or the incidence of chronic disease, socioeconomic status remains strongly related to health status.”<sup>127</sup>

Recently, Australian researchers have also adopted the view that problem gambling is a social and public health issue subject to the broader range of environmental, socio-cultural, political, and economic factors.<sup>128</sup> However, much of the literature, especially from the United States, is dominated by the medical disease paradigm that sees gambling problems in terms of individual pathology or mental disorders. This view locates the origin of physical and mental gambling problems primarily within the individual, interacting with environmental and biological factors.<sup>129</sup>

Korn, Gibbins, and Azmier, in their paper to the Whistler Symposium, *Framing public policy: towards a public health paradigm for gambling*, state that the study of gambling-related health problems is relatively new in the scientific health field.<sup>130</sup> They present a brief history of gambling's advent into this area. The medical syndrome "compulsive gambling" was first proposed in 1972 by psychiatrist Dr. Robert Custer who then brought gambling problems into the locus of health professionals. The next landmark was in 1980 when the American Psychiatric Association added "pathological gambling," classified as an impulse disorder, to its Diagnostic and Statistical Manual of Mental Disorders (DSM). Then, in the late 1980s, Lesieur and Blume developed the South Oaks Gambling Screen (SOGS) as a diagnostic tool suitable to be used in clinical settings. These two instruments are the main tools used to study problem and pathological gambling prevalence in the general population. More recently, the concept of impulse disorder has broadened to include the concept of "addiction" to gambling pathology.

Korn et al. note that, at the same time gambling was starting to be recognized as a health issue, the concepts of healthy public policy and the social determinants of health were introduced. The

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<sup>126</sup> Hayward, K. and R. Colman. (2003). *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper*. Population and Public Health Branch, Atlantic Region, Health Canada.

<sup>127</sup> Federal, P. a. T. A. C. o. P. H. (1999). *Toward a Healthy Future: Second Report on the Health of Canadians*. Health Canada, Statistics Canada, Canadian Institute for Health Information. p. 2.

<sup>128</sup> Masterman-Smith, H., S. Martin and J. McMillen. (2001). *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR).

<sup>129</sup> Raylu, N. and T. P. S. Oei. (2002). Pathological Gambling : A Comprehensive Review. *Clinical Psychology Review*, 22(7), 1009-1061.

<sup>130</sup> 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.

World Health Organization's Ottawa Charter, in 1986, recognized that all policies in every sector have an effect on health and can either promote the health of society or create conditions adverse to good health. Health was seen by organizations such as the WHO and Health Canada as a dynamic process affected by key determinants. These social, economic, and environmental determinants of health were identified as income and social status, social support networks, education, employment and working conditions, physical environment, biology and genetic endowment, personal health practices and coping skills, healthy child development, and, finally, health services.

The determinants of health cover the same areas of impacts that we are investigating in terms of gambling. Korn et al. explain that in 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."<sup>131</sup> As one Australian study suggests, "There seems to be no reason why more socio-cultural notions of 'community health' could not be applied. Indeed, many argue that an addictions approach to problem gambling has less relevance than socio-cultural definitions, particularly in multi-cultural societies."<sup>132</sup>

### 3.3.3 Terms

The terms problem gambler and pathological gambler are often used interchangeably in the literature. The term "problem gamblers" generally refers to those whose behaviour causes personal, financial, family, and employment problems for themselves and others. The term "pathological gamblers" generally refers to a more severe progression of a disease. Pathological gamblers exhibit addictive behaviour or loss of control over gambling behaviour that has serious consequences. These may include loss of employment, bankruptcy, divorce, serious health problems, criminal behaviour, etc. In this review, unless a distinction is made, we include pathological gamblers within the rubric of problem gamblers.

The terms represent patterns along a continuum from no risk, low risk, moderate risk, and problem gamblers to pathological gamblers.<sup>133</sup> As Wildman points out, the term problem gambler is a summary measure of a variety of negative consequences, rather than a measure of specific adverse consequences.<sup>134</sup> Another term, "compulsive gambling," is used mainly by laypersons such as Gamblers Anonymous (GA) members. Mainly clinicians use the term pathological. Raylu reports that some researchers prefer the term "problem" since it is more neutral than the medical and pejorative implications of "pathological." Raylu notes: "Currently, most researches have assumed that the term 'problem gambling' includes a wide range of

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<sup>131</sup> Ibid. p. 10.

<sup>132</sup> 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. 118.

<sup>133</sup> Volberg, R. A. (2004 Feb 1). *Fifteen years of problem gambling prevalence research: What do we know? Where do we go?* eGambling, issue 10.

<sup>134</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

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difficulties with gambling, not merely the most severe as often represented by the term [pathological.]”<sup>135</sup>

Korn et al. suggest that the research community adopt a single terminology. They say:

“The first step through this door is the determination of appropriate, conceptually sound terminology. The languages of constituencies shape the current analysis of gambling. To illustrate, critics tend to describe gambling in ethical and moralistic terms, using language such as “intemperate,” “frivolous” or “unproductive.” This terminology biases the discussion toward an emphasis on social costs. Treatment professions use terms such as “compulsive,” “addictive” and “disordered” gambling, terms that imply psychopathology and maladaptive behavior. Gambling proponents use the term “gaming” and position it as entertainment and recreation while focussing on job creation, revenue generation, and the economic benefits to local communities. Governments and most stakeholders in this discussion make reference to “responsible gambling.” This notion has moral connotations and can be ambiguous. Responsible gambling can imply either informed choice about gambling, advocacy of gambling, or subtly place the responsibility for gambling problems with the individuals who struggle against their impulses.”<sup>136</sup>

Korn et al. propose that the term "gambling problems" would:

“create a public health focus on gambling that emphasizes the spectrum of gambling behaviors, prevention and harm reduction. This phrase reflects all patterns of gambling behavior that compromise, disrupt or damage personal, family or vocational pursuits, and that lead to adverse consequences. Gambling problems may be mild, moderate or severe. In addition, the new public health concept of healthy and unhealthy gambling is incorporated, one that builds upon the WHO definition of health and complements the terminology of healthy people, families and communities.

“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 wellbeing. Conversely, unhealthy gambling refers to various levels of gambling problems.”<sup>137</sup>

### 3.3.4 Diagnosis of problem gamblers

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<sup>135</sup> Raylu, N. and T. P. S. Oei. (2002). Pathological Gambling : A Comprehensive Review. *Clinical Psychology Review*, 22(7), 1009-1061. p. 1010.

<sup>136</sup> 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. p. 11

<sup>137</sup> Ibid.

Problem gamblers are diagnosed using various instruments, the main ones being the South Oaks Gambling Screen (SOGS) and the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV),<sup>138</sup> from the American Psychiatric Association. In addition, a new Canadian Problem Gambling Index (CPGI), developed by the Canadian Centre on Substance Abuse, is now being used. This is a 31-item measure constructed for use in general population surveys. It includes more indicators of the social and environmental context of gambling and problem gambling than the SOGS and DSM-IV. Nine of the items are used to discover the prevalence of problem gambling and the results to date have been similar to those obtained from the DSM-IV. The rest of the items are gambling involvement indicators such as types of gambling activity, frequency of play, and spending on gambling.<sup>139</sup>

The SOGS, a 20-item questionnaire based on the DSM criteria, is used most often. Non-problem gamblers are those that score less than 3; problem gamblers score 3 or 4; and pathological gamblers score 5 or more. Critics of the SOGS suggest that it overestimates the rate of problem gambling in the general population and individuals, especially in youth and those from ethnic groups who may misunderstand the meaning of some questions, which, of course, could affect the score. Also, since the SOGS was developed for use in a clinical setting, it is not as useful for the general population.<sup>140</sup>

The DSM-IV identifies 10 diagnostic criteria. Problem gamblers must satisfy 3 or 4 of the criteria and pathological gamblers 5 or more. Also, the gambling behaviour cannot be diagnosed as a manic episode because this would imply gambling is a secondary rather than a primary problem. The criteria are as follows.

A. Persistent and recurrent maladaptive gambling behavior as indicated by five (or more) of the following. The gambler:

- (1) is preoccupied with gambling (e.g., preoccupied with reliving past gambling experiences, handicapping or planning the next venture, or thinking of ways to get money with which to gamble)
- (2) needs to gamble with increasing amounts of money in order to achieve the desired excitement
- (3) has repeated unsuccessful efforts to control, cut back, or stop gambling
- (4) is restless or irritable when attempting to cut down or stop gambling
- (5) gambles as a way of escaping from problems or of relieving a dysphoric mood (e.g., feelings of helplessness, guilt, anxiety, depression)
- (6) after losing money gambling, often returns another day to get even ("chasing" one's losses)
- (7) lies to family members, therapist, or others to conceal the extent of involvement with gambling

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<sup>138</sup> American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*. Arlington, Va.: American Psychiatric Association.

<sup>139</sup> Ferris, J. and H. Wynne. (2001). *The Canadian Problem Gambling Index: Final Report*. Canadian Centre on Substance Abuse.

<sup>140</sup> Ladouceur, R., C. Bouchard, N. Rhéaume, C. Jacques, F. Ferland, J. Leblond and M. Walker. (2000). Is the SOGS an Accurate Measure of Pathological Gambling Among Children, Adolescents and Adults? *Journal of Gambling Studies*, 16(1), 1-24.

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- (8) has committed illegal acts such as forgery, fraud, theft, or embezzlement to finance gambling
- (9) has jeopardized or lost a significant relationship, job, or educational or career opportunity because of gambling
- (10) relies on others to provide money to relieve a desperate financial situation caused by gambling

B. The gambling behavior is not better accounted for by a Manic Episode. (When an individual experiences a discrete period of persistent and pervasive manic [elated, irritable or euphoric] mood, this term may be applied.)

### 3.3.5 Prevalence of gambling problems

The prevalence of problem gamblers is one of the most important indicators in gambling research. The number of problem gamblers represents an indicator of the extent of the negative effects in the population.<sup>141</sup> Shaffer and Korn explain the concepts of epidemiology, the branch of medicine that deals with the study of the causes, distribution, and control of disease in populations, as it relates to gambling:

“An epidemiological review of gambling and gambling-related disorders revolves around the distribution and determinants of gambling and the factors that can influence its transition to disordered states. The distribution and onset of gambling and its associated disorders across population segments comprises the study of prevalence and incidence. Prevalence represents the number of people with a specific disorder at a point or period in time. Incidence represents the number of people who acquire the disorder during a point or period in time. As of fall 2001, there were more than 200 existing studies of prevalence related to gambling and its consequences but no true incidence studies. Further, there are few studies of the contextual determinants of gambling and disordered gambling. Most of the research on the causes of disordered gambling has focused on psychological factors at the expense of the social environment.”<sup>142</sup>

In a now-famous meta-analytic review of prevalence studies, including 35 Canadian estimates, Shaffer, Hall, and Vander Bilt estimated the lifetime prevalence in the general adult population for problem and pathological gamblers. The term "problem gamblers" here represents gamblers with subclinical levels of gambling problems who are at risk of severe problems and the term "pathological gamblers" represents the most severe category of disordered gambling. The combined prevalence of both problem and pathological gamblers was reported at 5.5% of the adult population. Past-year and lifetime prevalence rates of adult pathological gamblers were between 1.1% and 1.6%. The rate for problem gamblers (not including pathological gamblers)

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<sup>141</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>142</sup> Shaffer, H. J. and D. A. Korn. (2002). Gambling and Related Mental Disorders: A Public Health Analysis. *Annual Review of Public Health*, 23, 171-212, Available: <http://www.hms.harvard.edu/doi/html/reprints/shafferkoronarph.pdf>. p. 180.



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was between 2.8% and 3.8%. No significant differences were found between Canadian and United States rates.<sup>143</sup>

One of the debated issues in gambling research is whether or not increases in opportunities to gamble are associated with increases in the prevalence of problem gamblers.<sup>144</sup> Shaffer, Hall and Vander Bilt, in their 1997 meta-analysis of problem gambling prevalence surveys, concluded that there was a direct relationship between the availability of gambling opportunities and gambling problems in the general population.<sup>145</sup> Studies have also looked at effects of the distance of casinos from the gambler's residence. The National Gambling Impact Study Commission from the United States found that access to a casino within 50 miles was associated with more than double the rate of pathological gambling (2.1%) compared to access to casinos located further away, where only 0.9% pathological gamblers were found.<sup>146</sup>

A 1993 Omnifacts Research examination of the prevalence of gambling in Nova Scotia reported a combined problem and pathological gambling rate of 4.7%.<sup>147</sup> The 1996 Baseline Market Research prevalence study in Nova Scotia estimated combined problem and possible pathological gamblers among adults to be 5.5%.<sup>148</sup> According to the Alcohol and Gaming Authority Annual Report for 1998-1999, prevalence studies conducted in Nova Scotia estimate between 3% and 4% of the population experience moderate to severe problems with gambling. Specifically, 2.8% showed less severe gambling problems, and 1.1% probable pathological gambling problems, for a combined 3.9% total problem gambling rate.<sup>149</sup> A 2001 study of problem gambling in Prince Edward Island found the rate to be 3.1% of the adult population over 18, and noted that gambling and problem gambling patterns were similar to those in most other provinces. Multiple-regression analysis found more problem gamblers among VLT players.<sup>150</sup>

### *3.3.6 Impacts of gaming on physical and mental health*

#### **Positive impacts**

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<sup>143</sup> Shaffer, H., M. Hall and J. Vander Bilt. (1997). *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*. Harvard Medical School Division of Addictions.

<sup>144</sup> Volberg, R. A. (2004 Feb 1). *Fifteen years of problem gambling prevalence research: What do we know? Where do we go?* eGambling, issue 10.

<sup>145</sup> Shaffer, H., M. Hall and J. Vander Bilt. (1997). *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*. Harvard Medical School Division of Addictions.

<sup>146</sup> Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago.

<sup>147</sup> Omnifacts Research. (1993). *An examination of the prevalence of gambling in Nova Scotia. Report #93090*. Halifax: Nova Scotia Department of Health, Drug Dependency Services.

<sup>148</sup> Baseline Market Research Ltd. (1996). *Final report: 1996 prevalence study on problem gambling in Nova Scotia*. Problem Gambling Services, Nova Scotia Dept. of Health.

<sup>149</sup> Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

<sup>150</sup> Doiron, J. and R. Nicki. (1999). *The prevalence of problem gambling in Prince Edward Island*. Department of Health and Social Services, Prince Edward Island.



Positive impacts of gambling on individuals and families have been researched mainly through looking at motivations for gambling.<sup>151</sup> Positive motivations are generally reported as relief from loneliness or boredom, excitement, and entertainment. The economic paradigm sees this as "consumer surplus."<sup>152</sup> Stress reduction, improved social interaction, escape from routine, and the hope for financial gains have been suggested as benefits to the family.<sup>153</sup> In their 2002 literature review, Wildman and Chevalier<sup>154</sup> found only one article dedicated solely to beneficial impacts on individuals. This study evaluated the therapeutic effect of the game of bingo as cognitive stimulation, versus daily physical activity, on short-term memory, concentration, word retrieval, and word recognition. It found that bingo could be valuable to Alzheimer's patients.<sup>155</sup>

### **Negative impacts: Problem Gamblers**

A high percentage of the gambling literature focusses on the negative aspects of gambling as it impacts on problem gamblers and on the pain and suffering of their families.<sup>156</sup> Henriksson suggests that, although gambling behaviour has not been identified as a 'risk factor' for negative physical and mental health outcomes to the same extent as alcohol or drug use, it is reasonable to view gambling as a risk factor as well.<sup>157</sup>

The physical health impacts most associated with gambling problems are high blood pressure, ulcers, migraine headaches, backaches, intestinal problems, and serious heart problems resulting from chronic stress.<sup>158</sup> Other gambling-related physical problems studied include repetitive movement disorders, orthopaedic distress, and sexual dysfunction.<sup>159</sup>

Problem gamblers have an increased risk for mental health impacts such as dysthymia, major depression, anti-social personality disorder, phobias, or anxiety.<sup>160</sup> Problem gamblers also have

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<sup>151</sup> 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].

<sup>152</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>153</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>154</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>155</sup> Sobel, B. P. (2001). Bingo vs. physical intervention in stimulating short-term cognition in Alzheimer's disease patients. *American Journal of Alzheimer's Disease and Other Dementias*, 16(2), 115-120.

<sup>156</sup> Shaffer, H., M. Hall and J. Vander Bilt. (1997). *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*. Harvard Medical School Division of Addictions.

<sup>157</sup> Henriksson, L. E. (2001). Gambling in Canada: some insights for cost-benefit analysis. *Managerial & Decision Economics*, 22(1-3), 113-123.

<sup>158</sup> Wenger, L., B. McKechnie and J. Wiebe. (1999). *Fast Facts on Gambling*. The Awareness & Information Unit of The Addictions Foundation of Manitoba.

<sup>159</sup> Petry, N. (2000). Gambling problems in substance abusers are associated with in-creased sexual risk behaviors. *Addiction*, 95, 1089-1100.

<sup>160</sup> 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.

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an increased risk for alcohol, drug, and nicotine abuse.<sup>161</sup> Extreme cases of pathological gambling have resulted in suicides. Adolescents whose parents are problem gamblers report being more anxious, insecure, subject to mood disorders, and twice as likely to attempt suicide. They are also at risk for becoming problem gamblers as well.<sup>162</sup>

In a 2002 review of literature on the relationship between gambling behaviours and health, Potenza et al. examined relevant articles from 1966—2001. They found only 127 empirical studies that specifically related to health status, the majority being concerned with mental health.<sup>163</sup> In one report from Atlantic City, the Chief Medical Examiner examined 398 casino-related deaths from 1982 to 1986 and found an association between gambling and sudden cardiac deaths.<sup>164</sup> Hypertension and sustained stress are accepted risk factors for cardiac arrest and sudden cardiac death.<sup>165</sup> Physiological changes produced by sustained stress during gambling have been studied. These changes include increased heart rate, immune system changes, elevated adrenaline, and high blood pressure to mention a few.<sup>166</sup> These links, however, do not establish causal relationships, and Potenza et al. state "additional research is needed to better define the relationships between patterns of gambling and specific forms of health and illness."<sup>167</sup>

Wynne produced a comprehensive study of gambling and problem gambling in Saskatchewan that contains a wealth of statistical data in 2002.<sup>168</sup> A small part of the report examines the correlation between problem gambling and health status indicators. Table 2 below presents these correlations among four gambler sub-types: non-problem gamblers, low-risk, moderate-risk, and problem gamblers. Fourteen general and fourteen specific health status variables, plus four depression health status variables are examined.

The study found significant statistical differences between problem and non-problem gamblers in a few areas. For example, 39.1% of problem gamblers have emotional problems compared to 3.7% of non-problem gamblers; 34.8% of problem gamblers have problems with alcohol compared with 0.9% of non-problem gamblers; 13% of problem gamblers have learning disabilities compared with 1.1% of non-problem gamblers. However hearing difficulties were more pronounced among moderate-risk gamblers and non-gamblers, while problem gamblers did not report hearing problems.

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<sup>161</sup> 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.

<sup>162</sup> Henderson, E. and S. Russell. (1997). The Navajo gaming referendum: Reservations about casinos lead to popular rejection of legalized gambling. *Human Organization*, 56(3), 294-301.

<sup>163</sup> 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.

<sup>164</sup> Jason, D. R., M. Taff and L. Bogholi. (1990). Casino-related deaths in Atlantic City, New Jersey 1982-1986. *American Journal of Forensic Medical Pathology*, 11, 112-123.

<sup>165</sup> 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.

<sup>166</sup> Ibid.

<sup>167</sup> Ibid.

<sup>168</sup> Wynne, H. J. (2002). *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health.

None of the specific chronic physical health problems like heart disease, hypertension, or diabetes showed statistically significant differences among the four gambler sub-types, although small sample sizes for particular conditions impaired meaningful comparison. Though not reaching the level of statistical significance, 26.1% of problem gamblers reported long-term illness of some kind compared to 13.2% of non-problem gamblers.

For depression variables, 56.5% of the problem gamblers felt depressed for two weeks or more compared with 13.3% of those with no problems gambling. 43.5% of the problem gamblers also have had serious thoughts of suicide compared to 5.7% of non-problem gamblers. Both the depression and the thought of suicide results were statistically significant.

**Table 3. Health status by gambler sub-type in Saskatchewan**

Health Problems	Nonproblem gamblers		Low-risk gamblers		Moderate-risk gamblers		Problem gamblers	
	N	% ( )	(N	%	(N	%	(N	%
General Health Problems								
Long-term illness	174	13.2%	21	12.4%	8	9.3%	6	26.1%
Ongoing effects of an injury	136	10.3%	19	11.1%	10	11.6%	6	26.1%
Disability or handicap	79	6.0%	10	5.8%	4	4.7%	4	17.4%
Difficulty seeing	578	43.8%	73	42.7%	36	41.9%	9	39.1%
*Difficulty hearing	83	6.3%	17	9.9%	10	11.6%	0	0%
Difficulty walking or getting around	103	7.8%	13	7.6%	10	11.6%	4	17.4%
Difficulty using both hands or all fingers	52	3.9%	8	4.7%	3	3.5%	3	13.0%
Persistent pain and discomfort	203	15.4%	29	17.0%	17	19.8%	5	21.7%
Problems reading and writing	27	2.0%	6	3.5%	2	2.3%	2	8.7%
*Learning disability	15	1.1%	4	2.3%	0	0%	3	13.0%
*Emotional problem	49	3.7%	6	3.5%	6	7.0%	9	39.1%
*Psychological condition/emotional illness	34	2.6%	4	2.3%	5	5.8%	5	21.7%
*Problem with alcohol	12	0.9%	4	2.3%	5	5.8%	8	34.8%
*Problem with drugs	2	0.2%	3	1.8%	0	0%	3	13.0%
Specific Health Problems/Conditions								
None	1153	87.3%	155	90.6%	77	89.5%	19	82.6%
Heart problems	19	1.4%	1	0.6%	0	0%	0	0%
High blood pressure	25	1.9%	3	1.8%	2	2.3%	0	0%

Arthritis	24	1.8%	2	1.2%	0	0%	0	0%
Asthma / Lung trouble	12	0.9%	1	0.6%	1	1.2%	1	4.3%
Diabetic	13	1.0%	5	2.9%	0	0%	0	0%
Cancer, tumours or lymphoma	10	0.8%	0	0%	0	0%	1	4.3%
Thyroid problems	9	0.7%	1	0.6%	0	0%	0	0%
Hip, back or joint problems	4	0.3%	1	0.6%	2	2.3%	1	4.3%
Stomach or bowel problems	8	0.6%	0	0%	0	0%	0	0%
Neurological disorders	6	0.5%	1	0.6%	0	0%	0	0%
High cholesterol	7	0.5%	0	0%	2	2.3%	0	0%
Allergies or sinus problems	5	0.4%	0	0%	0	0%	0	0%
Other	19	1.4%	0	0%	2	2.3%	1	4.3%
Depression								
*Sad/blue/depressed for 2 weeks or more	175	13.3%	26	15.2%	15	17.4%	13	56.5%
Take medication during this time	52	29.7%	4	15.4%	4	26.7%	5	38.5%
*Seriously thought about suicide	74	5.6%	11	6.4%	12	14.0%	10	43.5%
Attempted suicide (of N above who have suicidal thoughts)	16	21.6%	3	27.3%	3	25.0%	3	30%

\* statistically significant

Source: Wynne, H. J. (2002). *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health. p. 69.

### 3.3.7 Comorbidity

As discussed previously in the section on causality, many problem gamblers experience other dependencies such as alcohol and drug comorbidities.<sup>169</sup> A 1998 review by Spunt et al. showed alcoholism and other substance use among pathological gamblers from two to three times higher than among the general population.<sup>170</sup>

Comorbidities include substance use disorders, mood disorders, anxiety disorders, personality disorders such as anti-social behaviours, attention deficit hyperactivity disorder, eating disorders, and dissociative disorders.<sup>171</sup> Crockford and el-Guebaly reviewed the empirical data on the psychiatric comorbidity seen in pathological gambling. Their research using community and clinical samples showed that between 25% and 63% of pathological gamblers also have had substance abuse comorbidity in their lifetime. Cunningham-Williams et al. found in a St. Louis

<sup>169</sup> 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.

<sup>170</sup> Spunt, B., I. Dupont, H. Lesieur, H. J. Liberty and D. Hunt. (1998). Pathological gambling and substance misuse: A review of the literature. *Substance Use and Misuse*, 33, 2535-2560.

<sup>171</sup> Crockford, D. N. and N. el-Guebaly. (1998). Psychiatric co-morbidity in pathological gambling: A critical review. *Canadian Journal of Psychiatry*, 43, 43-50.

survey that 44% of problem gamblers also met criteria for alcohol use disorders.<sup>172</sup> Studies also have pointed out non-clinical associations between alcohol use and gambling. The Nova Scotia Video Lottery Players Survey reported that 74% of regular VLT players drank alcohol while they were gambling.<sup>173</sup> Sherry Stewart et al. from Dalhousie University also found high rates of drinking and gambling in a 2002 study of regular gamblers.<sup>174</sup>

Toneatto studied the relationship between comorbidity patterns of legal, illicit, and prescribed psychoactive substance use in a sample of 200 Toronto problem gamblers in treatment.<sup>175</sup> The treatments consisted of four modalities: cognitive-behaviour therapy, brief motivational intervention, 12-step therapy, and solution-focused therapy. The sample was characterized by being almost 75% male, mostly middle aged (mean age – 41.3 years), single (51.8%), with some college education (30.3%), earning a middle income (mean income \$33,000), and mostly employed (61.9%).

The study showed extensive lifetime use of psychoactive substances among the gamblers. The highest use rates were reported for certain psychiatric medications (i.e. anti-depressants (62% for women vs. 22% for males). Toneatto notes that this pattern relating gender and use of psychiatric medications has been noticed in the general Canadian population. Citing a CCSA study on drug and alcohol use in Canada,<sup>176</sup> in 1997 more women reported using tranquilizers (5.3%), sedatives (5.4%), and anti-depressants (4.2%) in the past year than did men (3.4%, 3.7%, and 1.7% respectively).

Current alcohol problems were reported in 12.9% of the males and 9.1% of the females—not a significant difference. There were no gender differences in the lifetime rates of alcohol problems or treatment seeking for problem gambling. The report also found no significant gender effect either of alcohol use on gambling behaviour or of gambling on alcohol consumption. Increased gambling when drinking alcohol was reported in 21% of males and 10% of females. The percentages of those who increased drinking when gambling were 14.4% of males and 12% of females. The percentage that reported alcohol as a problem (ever) was 26% of males and 24% of females. Little drug use was reported at the time the participants were in treatment and none of the participants reported problems with current substance use.<sup>177</sup>

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<sup>172</sup> Cunningham-Williams, R., r. L. Cottle, W. Compton and E. Spitznagel. (1998). Taking chance: problem gamblers and mental health disorders—results from the St. Louis Epidemiological Catchment Area (ECA) study. *American Journal of Public Health*, 88, 1093–1096.

<sup>173</sup> Focal Research Consultants Ltd. (1998). *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services.

<sup>174</sup> Stewart, S., L. McWilliams, J. Blackburn and R. Klein. (2002). A laboratory-based investigation of relations among video lottery terminal (VLT) play, negative mood, and alcohol consumption in regular VLT players. *Addictive Behaviour*, 27, 819–835.

<sup>175</sup> Toneatto, T. (2000 March). *Relationship between gender and substance use among treatment-seeking gamblers*. eGambling, issue 1.

<sup>176</sup> McKenzie, D. (1997). *Canadian Profile: Alcohol, Tobacco & Other Drugs*. Ottawa: Canadian Centre on Substance Abuse.

<sup>177</sup> Toneatto, T. (2000 March). *Relationship between gender and substance use among treatment-seeking gamblers*. eGambling, issue 1.

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The Wynne Saskatchewan report<sup>178</sup> looked more closely at alcohol and drug use for the four gambler sub-types. Highlights of their findings include the following:

- Frequency of alcohol use: weekly or more alcohol consumption—problem gamblers, 60.8%; moderate-risk gamblers, 47.7%; low-risk gamblers, 35.1%; non-problem gamblers, 31.4%
- Amount of alcohol consumed: consumption of six or more drinks on one occasion—problem gamblers, 27.8%; moderate risk, 25%; low-risk gamblers, 16.7%; non-problem gamblers, 6%.
- Use of drugs on a weekly basis or more frequently: problem gamblers, 13.5%; moderate risk gamblers, 5.8%; low-risk gamblers 4.7%; and non-problem gamblers, 0.6%.

In sum, there was a clear gradient of alcohol and drug use with severity of problem gambling risk and behaviour.

### 3.3.8 Risk factors for gambling problems

Researchers have identified particular factors that increase risk for problem gambling. Research in 2002 on responsible gaming features for VLTs in Nova Scotia classified regular gamblers as those who gambled once a month or more. Although the authors state that the sample size was too small to detect statistically significant differences between regular and problem gamblers, they found evidence to support previous findings for problem gambling risk factors. Risk for problem gambling was more often associated with lower education levels and middle age adults (40-59 years). Regular VLT players who were younger, married or involved in a spousal relationship, and had a university education tended to show lower risk levels for problem gambling.<sup>179</sup> In Prince Edward Island, a 1999 study showed problem gamblers were mostly male, under 30, single, and substance abusers.<sup>180</sup>

Abbott and Volberg, two of the most prominent gambling researchers, identified the risk conditions most often found for problem gambling as:

- youth;
- gender (males are at higher risk);
- psychiatric co-morbidity;
- a history of anti-social behaviour;
- unemployment; and
- being of [aboriginal or ethnic decent]

More arguable risk conditions include:

- the availability of gambling outlets;

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<sup>178</sup> Wynne, H. J. (2002). *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health.

<sup>179</sup> Focal Research Consultants Ltd. (2002). *Video Lottery Responsible Gaming Feature Research*. Nova Scotia Gaming Corporation.

<sup>180</sup> Doiron, J. and R. Nicki. (1999). *The prevalence of problem gambling in Prince Edward Island*. Department of Health and Social Services, Prince Edward Island.



- a family history of problem gambling; and
- coming from a lower socio-economic background.<sup>181</sup>

### 3.3.9 Type of gambling activity

Problem gambling differs with the type of gambling activity. VLT players consistently show more problems with gambling than participants in other activities. Wildman references a 2001 Montreal study by Chevalier and Allard<sup>182</sup> that shows 21% of VLT and slot machine players are problem gamblers compared to 2% of the population for all games.<sup>183</sup> The Prince Edward Island study reported the degree to which various gambling activities were linked to problem gambling as measured by the SOGS and identified through multiple-regression analysis. VLT playing had the largest association with problem gambling "by far."<sup>184</sup>

Nova Scotia's Department of Health has produced a two-phase survey of video lottery players conducted by Focal Research Consultants Ltd. The first phase, the 1997/98 Nova Scotia Regular VL Players' Survey, was the first large-scale, random survey examining video lottery activity within the context of all adults in the population. This survey provides:

“extensive information as to the behaviours, motivations and characteristics of VL players, thereby making a significant contribution to the understanding of video lottery gambling. In addition, the study profiles VL gambling within the context of all adults in the province, thus establishing benchmark measures against which VL play in Nova Scotia can be subsequently monitored and tracked. Specifically, the study results can be directly applied in the design of Problem VL Gambling treatment strategies and harm reduction/minimization initiatives.”<sup>185</sup>

Results of this survey found that 5.7% of adults in Nova Scotia were involved in regular play of VLTs (i.e., play once a month or more). These adults accounted for approximately 25% of all those who play VLTs each year in the province and contributed approximately 96% of the annual provincial net revenue for VLT gambling. Problem VLT gamblers comprise 16% of all of those who play the machines on a regular basis, which represents approximately 0.92% of all adults in the province. Problem VLT gamblers contributed just over half of the net revenue for

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<sup>181</sup> Abbott, M. W. and R. A. Volberg. (1999). *Gambling and problem gambling in the community: An international overview and critique*. Department of Internal Affairs [New Zealand].

<sup>182</sup> Chevalier, S. and D. Allard. (2001). *Lotteries, slot machines & health: Survey on gambling in Montréal [Summary Report]*. Montreal-Centre Regional Health and Social Services Board.

<sup>183</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>184</sup> Doiron, J. and R. Nicki. (1999). *The prevalence of problem gambling in Prince Edward Island*. Department of Health and Social Services, Prince Edward Island.

<sup>185</sup> Focal Research Consultants Ltd. (1998). *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services. p. 2.

video lottery gambling. The report found that, at any given time, problem VLT gamblers will comprise almost half of all those sitting in front of a VLT in Nova Scotia.<sup>186</sup>

### 3.3.10 Suicide: thoughts, attempts, and completion

Suicide causes devastating suffering for the victim's family and others in the proximal environment. Some instances of suicide have been associated with gambling, but it is difficult to discover whether gambling per se led to the suicide or if other financial, legal, social, or physical problems were the primary cause.<sup>187</sup>

Blaszczynski and Farrell, in a detailed systematic evaluation of suicide intent, found that 40% of a sample of 85 problem gamblers in treatment had suicidal thoughts or intentions.<sup>188</sup> This compares with a Productivity Commission survey of 3,498 randomly selected people. Of those considered lifetime problem gamblers, 4.2% had seriously considered suicide.

According to a 1996 Canadian report from the National Council of Welfare, pathological gamblers attempt suicide at a much higher rate than the general population. The report cited a Gamblers Anonymous study that found 48% of pathological gamblers had considered suicide and 13% had attempted it.<sup>189</sup> Ladouceur et al., in a Quebec study of college students, found that 26.8% of pathological gamblers had attempted suicide compared with 7.2% of college students with no gambling problems.<sup>190</sup> Bland et al. found that 13.3% of lifetime pathological gamblers had attempted suicide in Edmonton.<sup>191</sup> Estimates for attempted suicide usually range from 17% to 24% of pathological gamblers.<sup>192</sup>

Studies estimating the number of completed suicides related to gambling are rare. Lesieur, president of the Institute for Problem Gambling and a recognized authority in the field of gambling addiction research, reported that pathological gamblers have a suicide rate five to ten times higher than the general population<sup>193</sup> and that their spouses have suicide attempt rates three times higher than the general population.<sup>194</sup> The Productivity Commission estimated that, in

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<sup>186</sup> Ibid.

<sup>187</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>188</sup> Blaszczynski, A. and E. Farrell. (1998). A case series of 44 completed gambling-related suicides. *Journal of Gambling Studies*, 14, 93-109.

<sup>189</sup> National Council of Welfare. (1996). *Gambling in Canada*. National Council of Welfare.

<sup>190</sup> 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.

<sup>191</sup> Bland, R., S. Neuman, H. Orn and R. Stebelsky. (1993). Epidemiology of pathological gambling in Edmonton. *Canadian Journal of Psychiatry*, 38, 108-112.

<sup>192</sup> 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.

<sup>193</sup> Lesieur, H. (1992). Compulsive gambling. *Society*, May/June, 43-50.

<sup>194</sup> Lesieur, H. (1998a). Costs and treatment of pathological gambling. *ANNALS, AAPSS*, 556,(March), 153-159.

1997, 1.7% of suicides in Australia were gambling related.<sup>195</sup> Medical examiners in Nova Scotia collect information on whether gambling was involved in suicide cases. Between 2000 and 2002, 6.3% of suicides, which represents 10 of 159 cases, were gambling related.<sup>196</sup> At a national conference in 2003, coroners across Canada agreed to record all cases in which gambling is cited as a factor in suicide, whether or not gambling is an obvious primary cause.<sup>197</sup> This initiative should eventually produce a highly useful database on the relationship between gambling and suicide in Canada.

Christian Marfels, economics professor at Dalhousie University, studied coroner reports in Las Vegas and reported weak, causal associations between gambling and suicide.<sup>198</sup> In Clark County, Nevada, the location of Las Vegas, there were 2,123 suicides between 1990 and 1999. This represented 22.91 suicides per 100,000 residents, which was twice the national average. Marfels looked at 213 case files or about 10% of the total suicides and found 7, or about three percent, that were gambling related. Of the 213 cases studied, 33% of the suicides were caused by psychiatric problems, 21% were caused by relationship problems, and 21% were caused by health problems. Marfels concluded that the true rate of gambling-related suicides was between 0.9% and 5.7% of all suicides or from 19 to 121 suicides over the 10-year period studied.

In order to determine that gambling caused a suicide, gambling must be shown to be the predominant factor. As Blaszczynski and Marfels point out, it is invalid simply to conclude that gambling was an instrumental cause of suicide on the basis that the deceased was known to have gambled, had accumulated debts, or was found on a gambling premise.<sup>199</sup> Blaszczynski and Marfels have presented a protocol using a rating scale to help determine causality in gambling-related suicides.<sup>200</sup> This includes conducting a detailed psychological autopsy involving socio-economic data and information from various informants to assess the emotional and psychological state of the victim that led to the death.

A report on the cost of suicide deaths in New Brunswick in 1996 was published by Health Canada in 2000.<sup>201</sup> This was the first study performed in a Canadian province of both direct and indirect costs of suicide. It provides a reference for new cost-of-suicide study comparisons. The study used an incidence-based human capital approach to estimate future productivity loss. Suicide was the leading cause of death among 25-29 year olds in New Brunswick. Most suicides occurred in the 35-49 age group for both men and women. 85.1% of suicide victims were male.

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<sup>195</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>196</sup> Responsible Gambling Council (Ontario). (2003 February 27). Suicides linked to gambling. *NewsScan*, 5(9).

<sup>197</sup> Responsible Gambling Council (Ontario). (2003 June 6). Coroners to record gambling suicide ties. *NewsScan*, 5(23).

<sup>198</sup> Marfels, C. (2001). Gambling and Resident Suicides: Evidence from the Las Vegas Market. *Gaming Law Review*, 5(1), 33-41.

<sup>199</sup> Blaszczynski, A. and C. Marfels. (2002). *Running Head: Determining gambling related suicides in psychological autopsies. A Protocol for Determining Gambling-related Suicides in Psychological Autopsy Studies*. presented at the Discovery 2002 Conference, Responsible Gambling Council, Niagara Falls, 21-24 April 2002.

<sup>200</sup> Ibid.

<sup>201</sup> Clayton, D. and A. Barceló. (2000). The Cost of Suicide Mortality in New Brunswick, 1996. *Chronic Diseases in Canada*, 20(3), Available online: [http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/cdic-mcc/20-22/e\\_e.html](http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/cdic-mcc/20-22/e_e.html).

In 1996, 94 suicide deaths were reported in New Brunswick. Total direct costs were calculated to be \$535,158.32 and indirect costs were calculated at \$79,353,354.56, or 99% of the total cost. The mean total cost per suicide death was therefore assessed at \$849,877.80. This is in the same general range as other studies identified in the report. These results can potentially be combined with data on gambling-related suicides in a cost-benefit analysis of gambling impacts on society.

The data sources and detailed methodology used are reported in the Health Canada study. Basically, for direct costs the study included ambulance, hospital, physician, and autopsy costs, as well as the costs of funeral/cremation services and police investigations. Indirect costs used potential years of life lost before age 75 and calculated lost future earnings for both labour force work and the value of unpaid labour, using a discount rate of 4%. Mean annual employment earnings by age and sex in New Brunswick were obtained from the 1996 Statistics Canada Labour Force Survey. The authors acknowledge that the study did not include the emotional and psychological pain and suffering experienced by friends and family of the victim, or the value and quality of the victim's life aside from productivity losses. In addition, they recommend that future studies should include lost productivity values for those grieving, and mental health services for friends and family. Since these costs were excluded, the New Brunswick results should be considered conservative.

The discount rate used to compute the present value of future earnings can make a considerable difference in lost productivity values. The discount rates used in these studies generally range from 4%-10%. Single et al. use a discount rate of 6% for the main estimate of lost productivity due to premature mortality in their study of the costs of substance abuse.<sup>202</sup> The researchers then conducted a sensitivity analysis of results using different discount rates, and found that the estimated value of the lifetime earnings of persons who die prematurely from substance abuse ranged from \$7.2 billion using a discount rate of 10% to \$12.3 billion using a rate of 4%. Thus, the choice of discount rate makes a considerable difference.

The conventional economic paradigm counts suicide costs only if the victim is employed and then not replaced by someone else who is employed.<sup>203</sup> Henriksson notes that, in this approach, suicide might, ironically, be counted as a gain to society, since that person will not consume more medical and hospital resources as he or she ages.<sup>204</sup>

### *3.3.11 Prevention and treatment of gambling problems*

Strategies to address problem gambling include those that target the problem gambler as well as general strategies that effectively restrain all gambling activities. As listed by Eadington, these restraints include: limitations on financial conveniences such as prohibitions against automatic

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<sup>202</sup> Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233.

<sup>203</sup> Henriksson, L. (2001). Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto: Canadian Tax Foundation. *eGambling*, May(4).

<sup>204</sup> Ibid.

teller machines in casinos; limitations on casino marketing tools and advertising; limitations on locations of venues; education of the general public; self-exclusion from casinos; and training programs for gaming employees.<sup>205</sup>

All Canadian provinces with casinos have voluntary self-exclusion programs that problem gamblers can sign, requesting that the casino exclude them for a specific period of time, usually from 6 to 18 months. During that time the gambler may request a review in order to be reinstated.<sup>206</sup> A number of provinces, including Nova Scotia, have developed public education and training programs and media campaigns to discourage problem gambling. And school-based gambling awareness programs have been initiated in some provinces including Nova Scotia, New Brunswick, and Manitoba.<sup>207</sup> In a major study on the costs and benefits of substance abuse, Single et al. discovered that the two provinces with the lowest per capita costs of substance abuse, Ontario and Alberta, were those that invested the most in prevention and research.<sup>208</sup>

All provinces fund treatment programs for problem gamblers. Most of these programs are administered within the mental health and addiction treatment sections of the provincial department of health.<sup>209</sup> Current treatment approaches include the treatment of the pathology in a traditional addictions treatment format that can be either on an outpatient or inpatient basis, hot lines or crisis lines that gamblers can call, and financial counselling.<sup>210</sup>

Nova Scotia is a recognized leader in the field of providing education and research for responsible gaming and problem gambling services for prevention and treatment. In 2002, the Nova Scotia Gaming Corporation sponsored the first province-wide Responsible Gaming Awareness Week (Oct 20-26, 2002) in Canada.<sup>211</sup> The Nova Scotia Department of Health and the Office of Health Promotion are responsible for problem gambling services as well as for the community and research services of the Nova Scotia Gaming Foundation. The province's Problem Gambling Services website states that the service "provides planning, funding, and administration within a public/private partnering model for projects and services for information, prevention, treatment and research in the area of problem gambling."<sup>212</sup> The Problem Gambling Hot Line provides counselling information and advice 24 hours per day 7 days a week—the

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<sup>205</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>206</sup> KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton.

<sup>207</sup> Ibid.

<sup>208</sup> Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233.

<sup>209</sup> Korn, D. A. and H. J. Shaffer. (1999). Gambling and the Health of the Public: Adopting a Public Health Perspective. *Journal of Gambling Studies*, 15(4), 289-365.

<sup>210</sup> KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton.

<sup>211</sup> Nova Scotia Gaming Corporation. (n.d.). *What Makes NSGC a Leader*. Author.

<sup>212</sup> Nova Scotia Department of Health. *Problem Gambler Services website*.



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same hours that the casinos are open. Approximately 80% of the calls received are from VLT problem gamblers.<sup>213</sup>

A New Brunswick research committee, the Citizen's Committee on Destination Gaming (CCDG), contacted various stakeholders in Nova Scotia in 2001 during a feasibility study for a casino in Moncton. The committee reported that service providers throughout the Halifax and Sydney region were experiencing increases in the number of requests for treatment, but it could not correlate the increase directly to existence of the casinos in those cities. Issues that the service providers told the committee they were dealing with included: prevalent alcohol and/or drug abuse among people seeking treatment for gambling problems; family breakdowns and mental health issues such as depression, psychiatric disorders, past histories of sexual and/or physical abuse, and low self-esteem among problem gamblers; increases in cases of suicide, financial crisis, family violence, and self-destructive behavior.<sup>214</sup>

In March 2002, the Nova Scotia Department of Health released results from the second phase of the VLT players survey, the 440-page *2000 Regular Video Lottery (VL) Players Follow Up Survey*.<sup>215</sup> The purpose of that study was "to compare the play behaviours, attitudes, lifestyles, characteristics, coping strategies and outcomes for Problem and Non-Problem VL Players who were able to stop or reduce regular video lottery play with those for whom VL gambling continues to be a problem."<sup>216</sup> The study found that many problem players are continually trying to stop VLT gambling. Many attempt to stop by themselves rather than face the stigma associated with formal treatment. Over half to three-quarters of all problem VLT gamblers sought assistance but most of that assistance was informal.

The Nova Scotia Government funds these prevention and treatment programs from gaming revenues. For example, Casino Nova Scotia contributes \$1 million annually to the Department of Health for problem gambling programs. VLT operators contribute one percent of their commissions to the Nova Scotia Gaming Foundation, administered by the Department of Health, and these contributions are matched by the Nova Scotia Gaming Corporation. A research officer on problem gambling with the Nova Scotia Department of Health, interviewed by the New Brunswick research committee cited above, reported that the cost of addiction services, based on the number of people treated and the budget spent, is \$3,000 per person per year.<sup>217</sup>

According to a Canada West Foundation report on 1999-2000 problem gambling treatment expenditures, Nova Scotia's total treatment expenditure as a percentage of the net gambling revenue was the second highest in Canada after Prince Edward Island. Nova Scotia spent

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<sup>213</sup> Focal Research Consultants Ltd. (2002). *Video Lottery Responsible Gaming Feature Research*. Nova Scotia Gaming Corporation.

<sup>214</sup> 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.

<sup>215</sup> Schrans, T., T. Schellinck and G. Walsh. (2001). *2000 Regular VL Players Follow up: A Comparative Analysis of Problem Development & Resolution*. Addiction Services, Nova Scotia Department of Health.

<sup>216</sup> Ibid. p. 4.

<sup>217</sup> 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.



\$1,700,000 or 0.96% of the net gaming revenues on treatments. This was an average of \$2.38 per adult—the highest expenditure in Canada per adult. Prince Edward Island spent 1.2% of its net gaming revenue, or \$150,000 or \$1.47 per adult, on problem gambling treatments. The Canadian average was \$1.21 spent per adult.<sup>218</sup>

In the economic model, costs associated with the treatment and prevention of problem gambling are considered discretionary rather than direct costs, since governments could choose not to incur them. Single et al. recommend classifying these expenditures as avoidable "policy costs" rather than unavoidable costs.<sup>219</sup> Presumably, some of this expense could be saved if the number of problem gamblers were reduced. Eadington suggests that treatment costs could be classified as losses of consumer surplus (benefit) rather than the avoidance of potential costs to problem gamblers.<sup>220</sup>

Various community groups such as Gamblers Anonymous also support treatment programs. For example, in 2003, the Halifax group, Women's Problem Gambling Recovery Program at the Marguerite Centre, received a \$3,000 grant from the Women's Inter-Church Council of Canada to develop a guide to address the causes and effects of gambling that can be shared with other community organizations.<sup>221</sup>

### 3.3.12 Family problems

The pain and suffering inflicted on the family and friends of problem gamblers is discussed often in the literature.<sup>222</sup> Researchers describe a range of negative health and social consequences resulting from gambling problems that affect these families.<sup>223</sup> Korn et al. suggest that "gambling-related family problems need to be positioned centrally as an important public health issue."<sup>224</sup> Gambling impacts on families are serious for all concerned including the children. Most of the information on this subject in the literature comes from surveys or reports from treatment and counselling programs.<sup>225</sup>

<sup>218</sup> Azmier, J. J. (2001). *Gambling in Canada 2001 : an overview*. Canada West Foundation.

<sup>219</sup> Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233.

<sup>220</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>221</sup> Women's Inter-Church Council of Canada. (2003 Summer, Fall). *WICC News. Grant recipients 2003*. Women's Inter-Church Council of Canada.

<sup>222</sup> National Gambling Impact and Policy Commission (U.S.). (1999). *The National Gambling Impact Study Commission : Final report*. National Gambling Impact and Policy Commission.

<sup>223</sup> National Council of Welfare. (1996). *Gambling in Canada*. National Council of Welfare.

<sup>224</sup> 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. p. 9

<sup>225</sup> Van Brunschot, E. G. and L.-A. Keown. (2000). *Gambling in context: The socio-cultural domain: Literature overview and annotated bibliography*. Alberta Gaming Research Institute.

The Australian Productivity Commission found that problem gamblers in counselling reported major negative effects on their relationships with partners (46.6%), children (20.7%), parents (21.6%), friends (15.4%), and colleagues (9.4%).<sup>226</sup> Some of the main difficulties experienced were not having enough time for family, the break-up of relationships, break-ups leading to divorce, losing contact with children, violent behaviour due to gambling and family arguments over money, over-commitment of time and money to gambling, deceptiveness, mood swings, domestic violence, leaving young children without adequate care arrangements, exposing children to poverty, abusive relationships hindering child development and education, family disintegration and loss of emotional security.<sup>227</sup>

Wynne's study of gambling and problem gambling in Saskatchewan examined the impact of problem gambling on the household. Specific and general impacts are presented in two separate tables in this study. Wynne found the most significant household impacts for problem gamblers to be: getting in serious arguments "frequently" or "almost always" (22.7%); being separated or divorced (17.4%); receiving social assistance "frequently" or "almost always" (13%); receiving food from the food bank "frequently" or "almost always" (8.6%); other household problems, including temperamental behaviour, suicide, and loss of respect (8.7%); not purchasing food or groceries "occasionally" "frequently", or "almost always" (26%); not paying medical, dental, or eye care bills "occasionally" or "almost always" (13%); not paying credit cards, bank loans, or other debts "occasionally" (8.7%); and not paying power, heat or water bills "frequently" or "almost always" (8.6%).<sup>228</sup>

Some researchers have found that problem gamblers negatively affect 10 to 17 people around them including family friends and employers.<sup>229</sup> A New Zealand study found that one in eight individuals in the country reported being negatively impacted by a problem gambler.<sup>230</sup> An Ontario study also found that a problem gambler negatively affects approximately one in eight individuals. The most common impact is financial, involving unpaid debts, the manipulation of others to lend money, and the theft of valuables. Approximately 15% of those affected have been physically abused. Most of the individuals affected by others' gambling do not seek help.<sup>231</sup>

The National Council of Welfare in Canada reports cases of child abuse and neglect attributable to gambling, including cases of children being locked in cars for extended periods of time while

<sup>226</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>227</sup> Masterman-Smith, H., S. Martin and J. McMillen. (2001). *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR).

<sup>228</sup> Wynne, H. J. (2002). *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health.

<sup>229</sup> Shaffer, H. J. and D. A. Korn. (2002). *Gambling and Related Mental Disorders: A Public Health Analysis. Annual Review of Public Health, 23*, 171-212, Available:

<http://www.hms.harvard.edu/doi/html/reprints/shafferkorarph.pdf>.

<sup>230</sup> Abbott, M. W. and R. A. Volberg. (1999). *Gambling and problem gambling in the community: An international overview and critique*. Department of Internal Affairs [New Zealand].

<sup>231</sup> Wiebe, J., E. Single and A. Falkowski-Ham. (2003). *Exploring the Evolution of Problem Gambling: A one year Follow-Up Study*. Responsible Gambling Council  
Canadian Centre on Substance Abuse  
Ontario Problem Gambling Research Centre.

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their parent gambled. One example was reported in Ontario when the Casino Tama had to announce over its loudspeaker that all parents who had left children alone in cars in the casino parking lot should leave. Apparently nearby residents reported that the parents just re-parked their cars on side streets, left the children there again, and returned to gamble.<sup>232</sup>

Jacobs conducted one of the first controlled studies of children of problem gamblers in four high schools, comparing them with children whose parents did not have a gambling problem. The findings show a strong link between the problem gambling of parents and children's dysfunctional behaviours. The results of this study found that:

- Children of problem gamblers used tobacco, alcohol and illicit drugs during the previous twelve months more often than did the control group, and they were more likely to over-eat.
- 75% of problem gamblers' children reported their first gambling experience before 11 years of age, compared to 34% of their classmates.
- Children of problem gamblers experienced almost twice the incidence of homes broken by separation, divorce, or death of a parent before they had reached the age of fifteen (37% compared to 20%).
- When compared to their classmates, children of problem gamblers were more likely to rate themselves as insecure, emotionally down, and "unhappy with life and myself." They also reported poorer school and work performance.
- Underscoring the combined family, health and personal adjustment problems faced by children whose parents gambled excessively was the finding that they acknowledged suicide attempts at twice the rate of their classmates (12% compared to 6%).<sup>233</sup>

The Minnesota Department of Human Services Gambling Program *Beyond the Odds Newsletter* discusses a publication by Brunstuen and Gabriel.<sup>234</sup> According to that report, *Pathological Gambling and Chemical Dependency: Similarities and Unique Characteristics*, three main factors distinguish families affected by pathological gambling and those affected by alcohol or other substance dependency. These are confusion, anger, and the need to move quickly to protect family assets. Gambling patterns are not always easy to detect. If a person is abusing alcohol, the physical effects are apparent, but this is not the case with gambling problems. Families may suspect something is wrong, but if the gambler is secretive, they might not realize the problem until a financial or legal disaster appears when a creditor calls. The result is often shock as well as fear and insecurity about the financial future.

The reaction of family members is frequently anger or rage when the extent of their financial loss is disclosed. The first priority, then, is to take quick steps to protect the remaining financial assets. With the stress of increasing debt, physical and emotional abuse, and inability to meet

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<sup>232</sup> National Council of Welfare. (1996). *Gambling in Canada*. National Council of Welfare.

<sup>233</sup> Jacobs, D. F., A. R. Marston, R. D. Singer, K. Widaman, T. Little and J. Veizades. (1989). Children of Problem Gamblers. *Journal of Gambling Behaviour*, 5, 261-268.

<sup>234</sup> Minnesota Department of Human Services Gambling Program. (1996 March). "What happens to families..." *Beyond the Odds Newsletter*.

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daily expenses, families of pathological gamblers can become critically desperate. Evidence indicates that family members of the pathological gambler are more likely to become violent than will the gambler.

### 3.4 Culture

*The culture domain takes into consideration public attitudes, beliefs, and values toward gambling and how these affect costs and benefits. It also includes impacts on specific demographic and cultural groups such as women, youth, seniors, and First Nations people.*

#### 3.4.1 Overview<sup>235</sup>

##### *Individual and family level*

###### **Positive impacts**

- Positive cultural impacts at the level of the individual and family have not been identified in the literature examined.

###### **Negative impacts**

- Individuals from particular cultural groups may be more susceptible to problem gambling.

###### **Indicators and sources**

- Public surveys
- Anecdotal responses as part of focus group discussions serve as the major indicator of negative impacts.
- Demographic data on ethnic origin are available as part of some counselling service databases
- The cultural impacts of gaming and the role of culture in moderating other gaming impacts (e.g. impacts on health and wellbeing) require further research and investigation.

##### *Community level*

###### **Positive impact**

- Gaming venues provide entertainment and social facilities that are accepted in the community.
- Specific groups such as the aged and women who find a social and safe environment are frequent users of particular gaming venues

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<sup>235</sup> Adapted from 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].

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- Community groups and charities use gambling receipts to fund specific projects for the community and public good

#### **Indicators and sources**

- Responses from target groups in quantitative studies.
- Data on cultural activity funded by gaming

#### **Negative impacts**

- Tension between negative and positive attitudes in groups that view gaming either as entertainment or as a moral problem

#### **Indicators and sources**

- General surveys and empirical studies

### ***Provincial level***

#### **Positive impacts**

- Research has not identified specific positive impacts in this area.

#### **Negative impacts**

- Community concern about the harm gambling is seen as generating
- Community concern about over reliance of government on gaming revenues to fund social infrastructure

#### **Indicators and sources**

- Results of perception surveys concerning government raising and using gaming revenues
- Advertising costs

### ***3.4.2 Public opinion***

Henriksson, noting the relevance of culture to population health, defines culture as values and beliefs in a community. He points out that the role of culture as a determinant of alcohol abuse has been researched, and he suggests that cultural attitudes towards gambling, as well, might be a determinant of health. Henriksson quotes a British Medical Journal article, which posits that "cultures influence the incidence of deviant behaviour (and hence, adverse health consequences) by the extent to which it is defined and institutionalized."<sup>236</sup> He further quotes from this article by G. Rose:

“I have always been profoundly impressed by observing the almost perfect correlations, when comparing different populations, between the average consumption of alcohol and

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<sup>236</sup> Henriksson, L. E. (1999). *Government, gambling and healthy populations*. Workshop on Addiction and Population Health. p.10.

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the prevalence of heavy drinking.... Both public and medical concern about health matters (and social problems) concentrates on the minority of people with special problems. The size of these sick groups, however, simply reflects society's characteristics of behaviour, that is to say, the public as a whole must accept responsibility for its sick deviants. The level of consumption by moderate drinkers determines the number of alcoholics, and so on."<sup>237</sup>

Similarly, Henriksson posits that the degree to which gambling is culturally accepted and institutionalized determines the definition and social attitudes towards problem gambling. That acceptance, institutionalization, and attitude towards problem gambling, in turn, may vary in different social and cultural groups.

Public opinion is an important factor in government's determination of gambling regulations. LaBrie and Shaffer hypothesize that of the many factors that influence the development of gambling-related policy, some of the most important factors are political ideologies, media coverage, and public opinion.<sup>238</sup>

The Canada West Foundation interviewed 2,202 Canadians from across the country in June 1999 to identify public perceptions and attitudes toward gambling issues. The sample included 402 residents from Atlantic Canada. The report that followed stated that the survey provides a benchmark on gambling behaviours and attitudes, and that the findings provide a context for the current debate and can be used to track future changes in gambling opinions and behaviour. The survey also looked at gambling patterns focussing on motivation to play, frequency, types of games played, and demographic differences among players. Generally, the survey found that most Canadians tolerate 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.<sup>239</sup>

Regional results presented specific patterns. Atlantic Canadians (AC), in particular, 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:

- 60% prefer more restrictions on gambling.
- AC were most opposed to VLT gambling, with 62% in favour 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

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<sup>237</sup> Rose, G. (1990). Reflections on the changing times. *British Medical Journal*, 301, 683-687.p. 686.

<sup>238</sup> LaBrie, R. and H. J. Shaffer. (2003). *Toward a Science of Gambling Regulation: A Concept Statement*. AGA Responsible Gaming Lecture Series, Vol 2 (2).

<sup>239</sup> Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation.



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perhaps more accurate to describe the Atlantic region as anti-VLT than as anti-gambling."<sup>240</sup>

- At 48%, AC are the least supportive of First Nations on-reserve gambling.
- AC were the least willing in Canada to support use of gaming 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 gaming.
- 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.

In general, the report reached four main conclusions:

- There is a dichotomy between public opinion and gambling policy with current regulations running counter to public attitudes.
- Nearly every issue has statistically significant regional variations. Atlantic Canada has the lowest level of gambling tolerance and Ontario has the highest.
- The gambling debate seems driven by a relatively small group with strong opinions, while Canada as a whole seems fairly tolerant. Knowing someone with a gambling problem or personally having a problem reduces the level of tolerance.
- Acceptance of gambling is linked to feelings that it is inevitable and important as a source of government revenue.

Nova Scotia produced an analysis of public attitudes toward gaming that is reported in the 1998-1999 Alcohol and Gaming Authority Annual Gaming Report.<sup>241</sup> 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; 49% reported knowing a person with a gambling problem; and 81% of these said that VLTs were the source of the problem.

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<sup>240</sup> Ibid.p. 12.

<sup>241</sup> Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

### 3.4.3 Advertising, media, and image

Henriksson points out that the role and subsequent regulation of advertising in the promotion of smoking and alcohol consumption is well known. He suggests that advertising could be a factor in causing problem gambling, especially among youth. Advertising standards for gaming are not mandated by government except in Quebec and Nova Scotia. He notes the boom in gaming advertising and uses as an example the fact that the British Columbia Lottery Corporation ranks among the highest-volume advertising accounts in that province. He also questions the targeting of gambling promotions towards youth, the poor, and other vulnerable groups at risk for problem gambling.<sup>242</sup>

Nova Scotia, however, has enacted several regulations that prohibit targeting gambling advertising to youths and prohibit advertising that promotes a successful lifestyle and implies personal success from gaming. Advertising for bingo and VLTs is regulated by government legislation. Other forms of gaming marketing and advertising are subject to the general terms of Advertising Standards Canada.<sup>243</sup>

A study to determine the extent to which media coverage can either shape public opinion or reflect it examined 234 gaming related articles in Nova Scotia's two largest daily newspapers, The Chronicle Herald and The Mail Star, between January 1992 and December 1997.<sup>244</sup> Five themes were identified as governance, corporate, law and order, moral, and medical. The stated central thesis of the study was "that the press coverage reflected in large measure, the promotional interests of corporate capital and the state, who in turn, set the agenda for news making."<sup>245</sup> Stories reporting the motives, actions, and consequences of government policies on gambling received 41% of the coverage. Corporate interests and stories reporting the benefits of gambling to the local economy represented 23%. Articles discussing regulation and enforcement issues comprised 20%. 10% were concerned with morality. Most of these were commentaries from religious groups, self-help groups, and anti-gambling advocates. Only 6% of articles treated potential problem gambling in any depth. There were only 14 news items in the sample of 234 articles studied that discussed the addictive qualities of gambling.

The study concluded that the news reports "reinforced the increasingly popular perception that the new "truth" of gambling was far less dangerous than law and order, medical, psychological, social service, religious, or self-help agents alleged. Overall, the prevailing construction of gambling was a collage of gambling benefits removed from social consequences."<sup>246</sup>

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<sup>242</sup> Henriksson, L. E. (1999). *Government, gambling and healthy populations*. Workshop on Addiction and Population Health.

<sup>243</sup> Nova Scotia Alcohol and Gaming Authority. (2000). *Nova Scotia Annual Gaming Report 1999-2000*. Nova Scotia Alcohol and Gaming Authority.

<sup>244</sup> McMullan, J. L. and J. Mullen (2001). What Makes Gambling News? *Journal of Gambling Studies*, 17(4), 321-352.

<sup>245</sup> Ibid.p. 323.

<sup>246</sup> Ibid.p.346.

The Citizens' Committee on Destination Gaming in Moncton, New Brunswick undertook a study in 2001 to determine the feasibility of sponsoring a casino in Moncton. As part of this study, they were asked to determine what effect a casino would have on the image of the city. They surveyed hoteliers close to the casinos in Halifax and Sydney, Nova Scotia to determine what impact the casinos there had on the image of those cities. The Halifax respondents reported a more positive image generated from the casino, while the Sydney stakeholders felt the casino in that area had a more negative image. The Sydney respondents felt that the casino had perpetuated the unhealthy lifestyle already dominant in the city rather than diversifying the city's recreational infrastructure, and that it did not produce an increase in hotel patrons. The Halifax respondents thought that the casino was an attractive facility located on the waterfront, and they stated:

“The casino had not affected the environmental sustainability of the city, the safety of residents on the adjacent streets, neighbourhood support and identity, the architectural landscape or the cultural diversity. In addition, [one] Halifax respondent felt that the casino helps the ‘conference’ decision because it is a ‘built-in’ entertainment that a conference can offer. It is an entertainment venue that has allowed us to have a ‘winter product’, or an evening showplace [...and] invests heavily in marketing and promoting the city.”<sup>247</sup>

#### 3.4.4 Cultural and charitable activity

One of the perceived positive aspects of gaming is the revenue transferred to cultural activities and charities for specific programs. Jeannotte studied gaming 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.<sup>248</sup> The report looks at the administration and allocation of gaming revenues in British Columbia, Alberta, Saskatchewan, and Ontario. It finds that only 1% to 3% of the revenues are used to fund cultural, charitable, and non-profit organizations. However, in three of the provinces (British Columbia excepted), this allocation has increased in the past three years. Jeannotte states that in most of the other provinces, gaming revenue becomes "part of provincial consolidated revenues, making it impossible to trace where they were allocated and to whom."<sup>249</sup> In Nova Scotia, she reports that "small payments (totalling \$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)."<sup>250</sup>

<sup>247</sup> 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.p. 36.

<sup>248</sup> Jeannotte, M. S. (2002). *Gambling on Culture in Canada: Gaming as a source of funding for culture, the arts and heritage*. Submitted to CIRCLE Round Table Rome, November 14-16, 2002. Department Of Canadian Heritage, Government of Canada.

<sup>249</sup> Ibid.p. 52.

<sup>250</sup> Ibid.p. 12.

As part of the Canada West Foundation's Gambling in Canada Project, Berdahl studied the impact of gaming on Canadian non-profit organizations by surveying gaming grant recipients.<sup>251</sup> Of the 400 organizations examined, which had received gaming grants, 28% said that the gaming grants were their major source of funding, 50% said gaming grants were in the top three sources of their funding, and 20% said they received over half of their funding from gaming revenue. Gaming funds, however, are seen to fluctuate erratically according to government decisions. Ethics issues concerned the impact of gambling upon the poor, rather than on issues of problem gambling. Gaming grants and charitable gaming data from all ten provinces are included in the report.

### 3.4.5 Women and gambling

Differences between men and women gamblers in the literature point to issues such as the motivation to gamble, the types of games played, the size of the wager, the time spent gambling, and the extent and patterns of problem gambling.<sup>252</sup> Shaffer, Hall, and Vander Bilt, in their benchmark gambling prevalence study, reported in 1997 that up to one-third of problem gamblers might be women.<sup>253</sup>

Martins et al.<sup>254</sup> cite a study of female problem gamblers by Strachan and Custer conducted in 1989 in Las Vegas, an area with a mature gambling population at the time.<sup>255</sup> In that study, Strachan and Custer identified the typical female gambler in Las Vegas as Caucasian (83%), aged 30-49 (76%), married (67%), with children (75%), with a high school education (74%), and a video poker player (90%). Problems related to gambling among women were suicide attempts (23%), alcoholism (10%), illicit drug addiction (23%), and licit drug addiction (15%). Martins et al. found that these 1989 statistics for women are closer to those reported in Canada today than those reported in the early 1990s, when female gambling was less prevalent.<sup>256</sup>

The Alberta Alcohol and Drug Abuse Commission conducted one of the first studies of Canadian female problem gamblers in 1994.<sup>257</sup> National Council of Welfare cited this study as

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<sup>251</sup> Berdahl, L. (1999). *The Impact of Gaming upon Non-Profits: A 1999 Survey of Gaming Grant Recipients (main report)*. Canada West Foundation.

<sup>252</sup> Ohtsuka, K., E. Bruton and L. Deluca. (1997). Sex differences in pathological gambling using gaming machines. *Psychological Reports*, 80, 1051-1057.

<sup>253</sup> Shaffer, H., M. Hall and J. Vander Bilt. (1997). *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*. Harvard Medical School Division of Addictions.

<sup>254</sup> Martins, S., D. Lobo, H. Tavares and I. V. Genti. (2002). Pathological gambling in women: a review. *Revista do Hospital das Clínicas*, 57(5), 235-242.

<sup>255</sup> Strachan, M. and R. Custer. (1993). Female compulsive gamblers in Las Vegas. In Eadington and Cornelius (Eds.), *Gambling Behaviour and Problem Gambling* (pp. 235-238). Reno, Nevada: Institute for the Study of Gambling and Commercial Gaming.

<sup>256</sup> Toneatto, T., R. Boughton and D. Borsoi. (2002). *A Comparison of Male and Female Pathological Gamblers in Ontario*. Centre for Addiction and Mental Health.

<sup>257</sup> Alberta Alcohol and Drug Abuse Commission. (1994). *Female Problem Gamblers in Alberta: A Secondary Analysis of the Gambling and Problem Gambling in Alberta Study*. Edmonton: Alberta Alcohol and Drug Abuse Commission.

"groundbreaking."<sup>258</sup> At the time, female problem gamblers preferred bingo and tended to be under the age of 25, single, without a high school education, and three times more likely to be unemployed. In the ten years since that study, the situation seems to have changed.<sup>259</sup>

The Centre for Addiction and Mental Health in Toronto produced a report in 2002, *Voices of women who gamble in Ontario: A survey of women's gambling, barriers to treatment and treatment service needs*, based on a survey of 365 Canadian women gamblers. Seventy-four percent were classified as problem gamblers. The average age of the women in the sample was 45, 56% were employed, 50% were single, 34% had a high school education, 26% had a junior college education, and 9% had a University or professional degree. The games they preferred were slots and bingo. 64% reported gambling-related debt, with the average debt being \$6,883.<sup>260</sup> The study confirms recent literature comparing genders in a number of areas. Male problem gamblers outnumber women in the 24-35 age group; the numbers are equal in the 35-44 age group; and women problem gamblers greatly outnumber men in the 45-64 age group, a disparity that evens out again after age 65. Women problem gamblers often follow a trajectory that moves from being "escape gamblers" to more heavy gamblers to compulsive gamblers within three to four years.<sup>261</sup>

Martins et al. reviewed clinical and epidemiological characteristics of female gamblers as compared to male gamblers. They examined ten years of studies on sociodemographics, course and progression, psychiatric comorbidities, genetics, personality, and epidemiological aspects of female gamblers. Common characteristics were found in male and female gamblers, but the authors noted that male and female gamblers might also exhibit important differences.<sup>262</sup> General trends identified included the following:

- Most problem gambler studies have been done with male subjects despite the fact that at least one-third of problem gamblers are women.
- Most of the studies of female problem gamblers have been performed in clinical populations. This may not be representative of female gamblers since the majority of female problem gamblers do not seek help in treatment programs and in help groups such as Gamblers Anonymous.
- Recently, there has been an increase in the number of women with gambling problems, which is similar to trends seen in alcohol and drug addiction.

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<sup>258</sup> National Council of Welfare. (1996). *Gambling in Canada*. National Council of Welfare.

<sup>259</sup> Volberg, R. (2003). *Has there been a "feminization" of gambling and problem gambling in the United States?* eGambling, issue 8.

<sup>260</sup> Boughton, R. and J. M. Brewster. (2002). *Voices of women who gamble in Ontario: A survey of women's gambling, barriers to treatment and treatment service needs*. Toronto: Ontario Ministry of Health and Long Term Care.

<sup>261</sup> Dow Schull, N. (2002). *Escape mechanism: Women, caretaking, and compulsive machine gambling*. Working Paper No. 41. Center for Working Families, University of California.

<sup>262</sup> Martins, S., D. Lobo, H. Tavares and I. V. Genti. (2002). Pathological gambling in women: a review. *Revista do Hospital das Clínicas*, 57(5), 235-242.



- Most symptoms of problem gambling are the same for both genders but they may share different causality factors. For example, women gamble more frequently as a means of escape from problems and to reduce depression than do men.
- Problems appear later in women than in men, but women reach treatment at the same age as men.
- The time for intervention between the onset of gambling and the development of problem gambling and need for treatment is reduced in women.
- Socio-demographic characteristics show no significant differences.
- Male gamblers have high lifetime comorbidity with affective disorders (21% to 60%), and with drug addiction (25% to 65%). Research has found that these comorbidities also occur in women.

Martins et al. note that the progression from social gambler to problem gambler is faster in women than in men. This accelerated development in women also has been described in studies of alcoholism and has been labelled the "telescoping effect" or T.E. The T.E. effect in female problem gamblers occurs at two points. The first is in the interval between gambling intensification and the first sign of gambling-related problems. The second occurs between the first problems and the time treatment is sought.<sup>263</sup>

A 2002 report from the Centre for Addiction and Mental Health in Toronto systematically studied gender differences in a sample of 148 females and 112 males recruited from the community. It looked at psychiatric, psychological, social, and gambling-related variables. Although it found no critical differences in psychosocial variables between the men and women, the data did confirm other studies concerning patterns among women problem gamblers. Women have a later onset of gambling, a shorter duration between when they started gambling and the onset of problem gambling, prefer to gamble within a social context, focus on games not requiring skill such as bingo and VLTs, tend to wager smaller amounts, and use gambling as a means of coping with depression.<sup>264</sup>

Volberg examined data from a sample of four states in the United States to identify the "feminization" of gambling and problem gambling patterns. Feminization, she explains, refers to the fact that more women than in the past are participating in gambling, developing problems, and seeking help. This phenomenon was found to be linked mainly to the increased availability of VLTs. The prevalence rates for men and women were found to be almost identical in places where VLTs operate in venues frequented by women. Volberg also cautions that, given the preference women have for VLT gaming, the prevalence of women problem gamblers is likely to rise with the increased availability of these machines. She also sees Internet gambling as a special risk for women since it can be done in the comfort of home.<sup>265</sup>

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<sup>263</sup> Ibid.

<sup>264</sup> Toneatto, T., R. Boughton and D. Borsoi. (2002). *A Comparison of Male and Female Pathological Gamblers in Ontario*. Centre for Addiction and Mental Health.

<sup>265</sup> Volberg, R. (2003). *Has there been a "feminization" of gambling and problem gambling in the United States?* eGambling, issue 8.



Smith and Wynne, in their recent study of VLT gambling in Alberta, report that women's gambling has increased with the increased availability of VLTs, but note that prevalence studies show no gender difference in problem gambling rates.<sup>266</sup> Citing Breen and Zimmerman,<sup>267</sup> they note that VLT gamblers, whether male or female, move to problem gambling at a much higher rate than gamblers who prefer other gaming venues. The Women and Gambling Research Project in Australia, a consumers' rights council concerned with the rights of low income consumers, also found that women preferred VLTs as a means of escape from their ordinary lives. However, the study found that this often led to a cycle of shame, guilt, and depression, and then to more serious financial and family problems.<sup>268</sup>

Recent research has focused on motivations for women's gambling. In a qualitative study of women problem gamblers, Dow Schull suggests that VLTs are used as an escape from work and family demands. She argues that the desire for escape "is symptomatic of unresolved anxieties and tensions surrounding the place of care in our discursively individualistic society," and that this argument is an alternative "to a neoliberal understanding of excessive gambling as poor exercise of 'free choice' and a related biomedical understanding of excessive gambling as a genetically based pathology."<sup>269</sup>

In another study of women experiencing problems with VLTs, the Australian group, Women's Health in the North, has a similar perspective. The study authors suggest:

“Many women are engaged in a process of actively seeking a state of balance with respect to the competing time demands of responding to expectations arising from gendered roles and the wish to have the opportunity to pursue self-focused pursuits. This may be experienced by some women as having to balance ‘too much’ in the way of demands and by others as having to adjust to ‘too little’ in the way of interests when the demands of their gendered roles as either caregivers or wives/partners in relationships recede. The application of this perspective on women’s health and wellbeing underscores the need for an emphasis on meanings and personal and social incentives in the exploration of both women’s relationship to gambling, and of their subsequent experience of problem gambling in an EGM [electronic gaming machine] context.”<sup>270</sup>

Toneatto et al. suggest that men and women on average may relate to money differently. Citing Martin and Kircaldy,<sup>271</sup> they state "men attach more value and importance to money as symbolic

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<sup>266</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>267</sup> Breen, R. and M. Zimmerman. (2002). Rapid onset of pathological gambling in machine gamblers. *Journal of Gambling Studies*, 18(1), 31-43.

<sup>268</sup> Brown, S. and L. Coventry. (1997). *Queen of Hearts: The Needs of Women with Gambling Problems*. Melbourne: Financial and Consumers Rights Council.

<sup>269</sup> Dow Schull, N. (2002). *Escape mechanism: Women, caretaking, and compulsive machine gambling*. Working Paper No. 41. Center for Working Families, University of California.

<sup>270</sup> Women's Health in the North. (2000). *Playing for time: Exploring the impacts of gambling on women*. Problem Gambling Victoria. p. x.

<sup>271</sup> Martin, T. and B. D. Kirkcaldy. (1998). Gender differences on the EPQ-R and attitudes to work. *Personality and Individual Differences*, 24(1), 1-5.

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of importance, prestige, acceptance, recognition, and power, consistent with the desire for dominance that may characterize male psychology to a greater degree than for women. Thus the meaning women assign money (and money gambled) may differ."<sup>272</sup>

Researchers also note that, considering the rising prevalence of women with gambling problems, "it is critical that the relationship between public policy, social impacts and gender be given priority on academic and government research agendas."<sup>273</sup>

### 3.4.6 Adolescents

Adolescent problem gambling is a growing social and public health issue that has been studied frequently.<sup>274</sup> The literature, in part, looks at prevalence and age, at motivating factors to gamble, the influence of parental gambling, the accessibility of gambling products, comorbidity with alcohol and drug use, types of gaming preferred, and the impacts on truancy and theft. Possible positive impacts of gaming on adolescents have not been researched or identified in the available literature.<sup>275</sup>

In a 2003 literature review of adolescent problem gambling, the South Australian Centre for Economic Studies (SACES) voiced their concern that, given the preference of youth for VLT gaming, technological developments could create further risk:

“Technological developments such as the internet and the mobile telephony (and also, sophisticated video games) provide new or potentially new distribution channels for gambling participation by young people, who it is recognized are more ‘technologically savvy and astute’ than their parents. Sports bars and ‘events based wagering’ are increasingly targeted at young people as a distinct market segment. Sportsbetting is said to be favoured by many young people. Digital television is likely to expand opportunities for wagering and events based gambling in the future.”<sup>276</sup>

In Canada, the International Centre for Youth Gambling Problems and High-Risk Behaviours (YGI) at McGill University was established in 2001 to research youth gambling problems

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<sup>272</sup> Toneatto, T., R. Boughton and D. Borsoi. (2002). *A Comparison of Male and Female Pathological Gamblers in Ontario*. Centre for Addiction and Mental Health. p.5.

<sup>273</sup> 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]. p. 4.2.

<sup>274</sup> Derevensky, J. L. and R. Gupta. (2004). *Adolescents with gambling problems: A synopsis of our current knowledge*. eGambling, issue 10.

<sup>275</sup> 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].

<sup>276</sup> South Australian Centre for Economic Studies (SACES). (2003 December). *Measurement of Prevalence of Youth Problem Gambling In Australia: Report on Review of Literature*. Department of Family and Community Services [AU]. p. 1.

especially involving multiple high-risk adolescent behaviours.<sup>277</sup> A 2004 review of the literature by Derevensky and Gupta of the YGI acknowledged the serious psychological, sociological, and economic implications of these high-risk behaviours.<sup>278</sup> Their review assessed the current knowledge of adolescent gambling problems and reported that the current empirical research indicates the following:

- Gambling is more popular amongst young males than females, and more males than females exhibit pathological gambling behaviours.
- Prevalence rates of problem gambling among adolescents are higher than those reported by adults.
- Among adolescents there is a rapid movement from social gambler to problem gambler. Adolescent problem gamblers report initiating gambling at an early age (approximately 10 years of age) as compared with peers who report gambling but have few gambling related problems.
- Probable pathological gamblers are greater risk-takers in general and on gambling tasks in particular.
- Research data and clinical testimony suggest that adolescent pathological gamblers have lower self-esteem compared to other adolescents.
- Adolescent problem gamblers report greater depressive symptomatology compared to both non-gambling adolescents and those described as social gamblers.
- Adolescent problem gamblers score higher on dissociative scales.
- Adolescents between the ages of 14 and 17 with serious gambling problems remain at a heightened risk for suicide ideation and suicide attempts.
- A high proportion of youth with gambling problems report having a learning disability as well as poor family connectedness and low perceived social support.
- Personality traits reveal that adolescent pathological gamblers are more excitable, extroverted, anxious, tend to have difficulty conforming to societal norms, and experience difficulties with self-discipline. Adolescents with severe gambling problems also exhibit higher scores on measures of state and trait anxiety and are more impulsive.
- For adolescents with severe gambling problems, quality long-lasting friendships and relationships are often lost and replaced by gambling associates.
- Adolescent problem gamblers remain at increased risk for the development of multiple addictions.
- Like adults, children and adolescents often have a positive attitude toward gambling. These individuals fail to understand completely the risks or odds associated with gambling.
- Only a small percentage of young individuals scoring in the pathological gambling range on multiple screening instruments perceive themselves as having a gambling problem. This is one of the reasons for their not seeking professional help.<sup>279</sup>

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<sup>277</sup> International Centre for Youth Gambling Problems and High-Risk Behaviors (YGI). (2004). *YGI Website*. McGill University.

<sup>278</sup> Derevensky, J. L. and R. Gupta. (2004). *Adolescents with gambling problems: A synopsis of our current knowledge*. eGambling, issue 10.

<sup>279</sup> Ibid.

- An early 1993 report on the prevalence of gambling in Nova Scotia found that adolescent gamblers (13-17 years of age) were 9.6 times more likely than adult gamblers to have borrowed money and not paid it back as a result of gambling.<sup>280</sup>

Christiane Poulin from Dalhousie University undertook the largest representative sample of adolescents in Canada to determine the prevalence of gambling among adolescent students in the Atlantic provinces of Canada. In 1998, 13,549 grade 7,9,10, and 12 students in the public school systems of the four Atlantic provinces completed a self-reported anonymous questionnaire that included the South Oaks Gambling Screen—Revised for Adolescents (SOGS-RA). The survey found that, using broad definitions, 8.2% of the students could be considered at-risk and an additional 6.4% could be considered problem gamblers (SOGS-RA score of 4+). Using narrower definitions, 3.8% at-risk and 2.2% problem gamblers (SOGS-RA score 2+ and daily or weekly gambling) were found among Atlantic Canadian high school students.<sup>281</sup>

In Nova Scotia, the sample size was 3,755. Of those in the narrow range, 4.1% were at-risk and 2.7% were problem gamblers. In the broad range, 8.7% were at-risk and 6.6% were problem gamblers. Male problem gambler rates were three times those of females, even though the sample was divided equally. Scratch tabs were the most popular form of gambling activity, presumably because they are the most easily accessible. Other lottery use was 32.9%. VLT use was limited by the legal age of use being 19. Despite this legal restriction, however, 14.8% of students reported VLT use, and 29.9% of those reporting having used a fake I.D. for VLT play.<sup>282</sup>

In collaboration with all of the Atlantic provinces, Poulin conducted a more recent survey in 2002 as part of the standardized Nova Scotia Student Drug Use Survey. In addition to information about substance use, the survey included questions about gambling and about the problems and risks associated with these activities. The Nova Scotia estimates were based on a randomly selected sample of 4,247 students in grades 7, 9, 10, and 12. The results for gambling were similar to those found in 1998 in terms of prevalence, narrow-range proportions of at-risk (3% in 2002) and problem gamblers (2% in 2002), type of gambling used most often, and gender rates of at-risk and problem gamblers. In both surveys, at-risk and problem gambling were not associated with grade. The proportion of students who reported having participated in one or more gambling activity decreased from 75% of the students in 1998 to about 62% of the students in 2002.<sup>283</sup>

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<sup>280</sup> Omnifacts Research. (1993). *An examination of the prevalence of gambling in Nova Scotia. Report #93090*. Halifax: Nova Scotia Department of Health, Drug Dependency Services.

<sup>281</sup> Poulin, C. (2000). Problem Gambling Among Adolescent Students in the Atlantic Provinces of Canada. *Journal of Gambling Studies*, 16(1), 53-78.

<sup>282</sup> Ibid.

<sup>283</sup> Poulin, C. (2002). *Nova Scotia Student Drug Use Survey 2002: Technical Report*. Halifax: Dalhousie University, Community Health and Epidemiology.

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### 3.4.7 Seniors

Themes in the gambling literature related to seniors mainly focus on demographics, factors that influence gambling behaviour, the consequences of gambling behaviour, and marketing strategies that target seniors.<sup>284</sup> Over half of the literature focusses on the estimated 1% to 3% of seniors who have problems with gambling. These studies concentrate on risky behaviours of vulnerable seniors.<sup>285</sup> Munro cites a University of Manitoba doctoral dissertation titled, *Gambling Behavior and Factors Associated with Problem Gambling among Older Adults*, but time and resources did not allow that dissertation to be examined for this present literature review.<sup>286</sup> Munro references an Addictions Foundation of Manitoba telephone survey of 5,000 adults over the age of 60. The demographic information found that gamblers tended to be younger seniors, have higher incomes, have completed high school, were married, and were more likely to smoke and drink alcohol. Problem gamblers constituted 1.6% of the sample, and probable pathological gamblers 1.2%.<sup>287</sup>

Gambling among seniors has not been identified as a major problem. However, because of the growing senior population, this is expected to change.<sup>288</sup> General demographic data from Statistics Canada predict that the senior population is expected to grow rapidly during the next several decades as the "Baby Boomers," those born between 1946 and 1965, begin turning 65. Because women generally live longer than men, the older senior population is largely female. In 1998, women made up 70% of all persons aged 85 and older and 60% of those aged 75 to 84, compared with 54% of people aged 65 to 74. Between 1980 and 1996, the age-standardized death rate among people aged 65 and over fell by 12%.<sup>289</sup>

Gambling by seniors has often been described as beneficial. Potenza et al. comment that it has been seen as "a form of adult play behavior, not only providing fun, excitement, and entertainment, but also possibly enhancing memory, problem solving ability, mathematical proficiency, concentration, and coordination."<sup>290</sup> Seniors in general participate in gaming activities mainly as a recreational, social activity, since many of those retired have both the leisure time and the disposable income to gamble.<sup>291</sup> A telephone survey of 800 Alberta seniors was conducted in 2000. Most of the senior respondents were between the ages of 64 and 74 and were either married or widowed. The survey found that seniors mostly preferred buying lottery tickets and bingo, although some engaged in casino activity. Almost one third of the seniors had

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<sup>284</sup> Munro, B. (2003). *Seniors who gamble: A summary review of the literature*. Alberta Gaming Research Institute.

<sup>285</sup> Ibid.

<sup>286</sup> Wiebe, J. (2002). *Gambling Behavior and Factors Associated with Problem Gambling Among Older Adults*. Dissertation: University of Manitoba: Department of Community Health Sciences.

<sup>287</sup> Munro, B. (2003). *Seniors who gamble: A summary review of the literature*. Alberta Gaming Research Institute.

<sup>288</sup> Ibid.

<sup>289</sup> Statistics Canada Housing Family and Social Statistics Division. (1999). *A Portrait of Seniors in Canada. Third Edition*. Ottawa, Ontario: Publications Division, Statistics Canada.

<sup>290</sup> 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.

<sup>291</sup> Munro, B. (2003). *Seniors who gamble: A summary review of the literature*. Alberta Gaming Research Institute.



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a household income of less than \$20,000 per year, and another third had incomes between \$20,000 and \$39,000 per year. Low-income women mostly preferred bingo, while men preferred card games. About 40% of those who bought lottery tickets and played bingo did so weekly.<sup>292</sup>

A study of seniors who play bingo, *High Quality Aging or Gambling with Health? The Lifestyles of Elders Who Play Bingo*, examined the impacts that bingo has on the health and lifestyles of the elderly. Cousins et al. studied seniors in Alberta and found that 16% of seniors over the age of 65 see bingo as an important recreational activity in their lives. Bingo players were generally older, female, less healthy, of lower income, less active, and less educated. For senior bingo players, affordability and the opportunity to socialize in a safe venue out of the home were important factors for participation. Respondents felt that there were few other community recreation activities available to them.<sup>293</sup>

The New Brunswick Department of Health and Wellness conducted a telephone survey in 2002 on the prevalence of substance use and gambling by 1,000 adults over the age of 55 living in private households. The report states that the results "provide benchmark measures for future tracking and monitoring and can be used for comparison with prevalence rates in other provincial, national and international jurisdictions." Within the past 12 months, 74.3% of respondents had participated in a gambling activity and 49.2% participated on a regular monthly basis. Over 97% of the senior population had no risk of problem gambling.

Basic demographic characteristics that predicted gambling use and risk for problems were age and gender. Males in general and younger seniors aged 55 to 64 appear to have more problems gambling than do women and older seniors. Age was significantly associated with 8 of the 14 outcomes, including past year drinking, current smoking, trial of cannabis, prescription drug use for anxiety and/or depression, as well as gambling in the past year. Approximately 43% of the seniors participated in lottery draws, with the largest proportion being from northern New Brunswick, an economically depressed area. Scratch tickets were used by 13% of respondents, and bingo was played by 8%. Only 3% scored at any level of risk, with less than 1% of the sample associated with high risk gambling. The study suggested that these rates are lower than for New Brunswick adults in general due to low levels of VLT gaming by seniors and due to the fact that VLT gaming is associated with 90% of the gambling problems in the province.<sup>294</sup>

The Gambling Awareness Seniors Population (GASP) Committee, formed in 2000 within the Capital District Health Authority in Halifax, is the first group in Nova Scotia to explore problem gambling among seniors. Funded by the Nova Scotia Gaming Foundation, GASP conducted 13 focus groups with 108 participants and gathered 1,314 survey responses. The final GASP report

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<sup>292</sup> Hirsch, P. (2000). *Seniors and Gambling: Exploring the Issues. Summary Report*. AADAC: Alberta Alcohol and Drug Abuse Commission.

<sup>293</sup> Cousins, S. O., C. Witcher and J. Moodie. (2002). *High Quality Aging or Gambling with Health? The Lifestyles of Elders Who Play Bingo*. Alberta Gaming Research Institute.

<sup>294</sup> Schellinck, T., T. Schrans, G. Walsh and J. Grace. (2002). *2002 Seniors Survey – Prevalence of Substance Use and Gambling Among New Brunswick Adults Aged 55+*. New Brunswick Department of Health and Wellness.



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found that problem gambling does exist among Halifax seniors and that seniors are at risk of being exploited by problem gamblers in their families.<sup>295</sup>

### 3.4.8 Aboriginal people (First Nations, Métis, and Inuit)

Aboriginal peoples are a diverse group comprising many nations each having a different culture, language, history, and environment. Aboriginal bands have varying levels of wealth or poverty and different relationships with gambling. In Canada there are 610 bands comprising 52 Nations or cultural groups and more than 52 languages.<sup>296</sup> In Nova Scotia there are 13 bands.<sup>297</sup> The 2001 Statistics Canada census shows the Aboriginal population of Nova Scotia to be 17,010, or 1.8% of the population.<sup>298</sup>

First Nations gaming on reserves is discussed in the literature both as a positive means of increasing economic independence and creating employment and also as a risk factor for increasing the likelihood of problem gambling among First Nations people. Anders suggests that casino revenues can improve the quality of Native American community services, education, and health care. However, he notes that gambling can also undermine the integrity of Native American culture and lead to fragmentation within the bands.<sup>299</sup>

A Canada West Foundation report included questions about reserve gaming and found that there is a good deal of support for it among the general population. 52% of Canadians in general support on-reserve gambling. In Nova Scotia, 48% of the population agrees that government should license gaming on reserves. Only 45% of Canadians, however, agreed that gaming is good for economic development among Aboriginal peoples.<sup>300</sup>

Most of the literature on the social and economic impacts of gambling on First Nations peoples comes from the United States. There are very few studies on the impacts of gaming on First Nations communities in Canada.<sup>301</sup> Two economic impact studies—one from Thompson, Gazel and Rickman, *The Economic Impact of Native American Gaming in Wisconsin*,<sup>302</sup> and another more recent study from Evans and Topoleski, *The Social and Economic Impact of Native American Casinos*,<sup>303</sup> both found the economic impact of gaming on reservations to be positive.

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<sup>295</sup> Nova Scotia Gaming Foundation. (2002). *Annual Report 2002*. Nova Scotia Gaming Foundation.

<sup>296</sup> Education Network of Ontario. (2004). *Ontario Social Studies Curriculum Content: The First Nations Communities- Reserves*. Education Network of Ontario.

<sup>297</sup> Nova Scotia Office of Aboriginal Affairs. (2004). *Office of Aboriginal Affairs*. Nova Scotia Office of Aboriginal Affairs.

<sup>298</sup> Statistics Canada. (2003). *2001 Census. Profile - Nova Scotia*. Statistics Canada.

<sup>299</sup> Anders, G. C. (1996). The Indian Gaming Regulatory Act and Native American Development. *International Policy Review*, 6(1), 84-90.

<sup>300</sup> Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation.

<sup>301</sup> Kiedrowski & Associates Inc. (2001). *Native Gaming and Gambling in Canada*. Indian Northern Affairs Canada.

<sup>302</sup> Thompson, W., R. C. Gazel and D. Rickman. (1995). *The Economic Impact of Native American Gaming in Wisconsin*. The Wisconsin Policy Research Institute.

<sup>303</sup> Evans, W. N. and J. H. Topoleski. (2002). *The Social and Economic Impact of Native American Casinos*. Department of Economics, University of Maryland.

Thompson et al. felt that the most important benefit for tribal gaming was the level of independence that the revenue allowed the tribal governments. However, both studies warned of the possible social costs associated with problem gambling.

Gambling prevalence studies in both Canada and the United States often find significant gambling problems among the Aboriginal population.<sup>304</sup> Wardman et al. reviewed the literature on problem and pathological gambling in North American Aboriginal populations in a 2001 issue of the *Journal of Gambling Studies*. Out of 11 studies reviewed, two were from Alberta, one was from Ontario, and the rest were from the United States. The review found that Aboriginal populations were 2 to 5 times more likely to be problem gamblers and from 4 to 16 times more likely to be pathological gamblers than the general population.<sup>305</sup> Two of the key findings of Wynne's study of gambling in Saskatchewan were that: 1) 34.7% of Aboriginal gamblers were at-risk for developing a gambling problem, a much higher rate than for gamblers in other ethnic groups, and 2) 12% of the aboriginal population were experiencing serious gambling problems.<sup>306</sup>

One of the first studies to examine problem gambling among native populations was a study from the United States that looked at pathological gambling in persons being treated for alcoholism. This study found that an alarming 41% of the Native Americans being treated for alcoholism had problems with gambling, compared with 21.3% of the Caucasians, and that 22% of the Native Americans compared with 7.3% of non-Natives had reached the level of pathological gambling.<sup>307</sup> Volberg and Silver studied gambling among North Dakota Native Americans in 1993 and found that the lifetime prevalence rate of problem and compulsive gaming was 14.5%, compared to a rate of 3.5% in non-Native populations.<sup>308</sup> Volberg and Abbott in 1997 also examined problem gambling among indigenous populations in New Zealand and North Dakota, and found rates of problem gambling in both of those cultures to be higher than among the Caucasian population.<sup>309</sup>

The Nechi Training and Health Promotions Institute in Edmonton have sponsored several studies in Canada by Hewitt and Hewitt, Auger, and Hodgson. In 1994, Hewitt studied 145 Native Albertans identified as problem gamblers. The report mainly describes the social and demographic characteristics of the problem gamblers, including alcohol and drug use. Bingo, VLTs, horse racing, and card games were the preferred gaming activities. Examining 1,000 Aboriginal adolescents in Alberta both on and off reserve in 1995, Hewitt and Auger found that

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<sup>304</sup> Shaffer, H. J. and D. A. Korn. (2002). Gambling and Related Mental Disorders: A Public Health Analysis. *Annual Review of Public Health*, 23, 171-212, Available: <http://www.hms.harvard.edu/doi/html/reprints/shafferkornarph.pdf>.

<sup>305</sup> Wardman, D., N. el-Guebaly and D. Hodgins. (2001). Problem and Pathological Gambling in North American Aboriginal Populations: A Review of the Empirical Literature. *Journal of Gambling Studies*, 17(2).

<sup>306</sup> Wynne, H. J. (2002). *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health.

<sup>307</sup> Elia, J. and D.F.Jacobs. (1993). The Incidence of Pathological Gambling among Native Americans Treated for Alcohol Dependence. *The International Journal of Addiction*, 28(7), 659—666.

<sup>308</sup> Volberg, R. A. and E. Silver. (1993). *Gambling and Problem Gambling among Native Americans in North Dakota*. Albany, N.Y.: Gemini Research.

<sup>309</sup> Volberg, R. A. and M. W. Abbott. (1997). Gambling and problem gambling among indigenous peoples. *Substance Use & Misuse*, 32(11), 1525-1538.

of the 89% of students, who had gambled in the past year, 28% could be classified as problem gamblers and 21% were at-risk for problem gambling.<sup>310</sup> Over 80% of the students who were considered problem gamblers contributed to cultural events in their communities, played sports, and participated in other activities such as art and music. However, over 70% of them were living with the grief of having had family or friends die in the past year or two, 10% from suicide, and 22% from accidents.<sup>311</sup>

The third study from the Nechi Training and Health Promotions Institute by Hewitt examined problem gambling among First Nations people living on two reserves in Ontario. He found that gambling problems are widespread and create serious financial and emotional burdens for individuals, their families, and their communities.<sup>312</sup> More recently, Nechi sponsored a prevalence study among Aboriginal adults in Alberta that looked at cultural and social factors related to problem gambling. Among the 500 who were interviewed and who had gambled within the past year, using the SOGS, 63% were non-problem gamblers, 17% were current probable pathological gamblers, 8% were problem gamblers, and 12% were non-gamblers. Only a third of the probable pathological gamblers had sought treatment.<sup>313</sup>

A Canada West Foundation report on First Nations gambling policy in Canada points out that studies on problem gamblers have been criticized for not looking at the larger population health picture. It states:

“Studies that conclude Aboriginal Peoples tend to have above average levels of problem gambling have been criticized for failing to disentangle race and ethnicity from issues of poverty and low socio-demographic status. It has been pointed out that these factors may indeed be a large reason why many American Indians and other indigenous peoples have a tendency to display higher than average levels of problem gambling. Risk factors such as low income, low education, high rates of unemployment and substance abuse have been associated as being precursors to gambling addiction. If these factors do make people more predisposed to becoming problem gamblers, First Nations communities in Canada likely will be at greater risk, as many of their communities experience high rates of substance abuse and have lower than average levels of income and education.”<sup>314</sup>

In Canada, commercial gaming is not considered to be an "Aboriginal right" since no court has determined it to be an integral part of the culture of any First Nation prior to contact with the Europeans. Therefore any First Nation gaming within Canada needs provincial approval. The Nova Scotia government, beginning in 1995, signed a series of gaming agreements with 10 of

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<sup>310</sup> Hewitt, D., D. Auger and M. Hodgson. (1995). *Firewatch, An Adolescent Gambling Prevalence Study*. Edmonton: Nechi Training, Research and Health Promotion Institute.

<sup>311</sup> Ibid.

<sup>312</sup> Hewitt, D. (1995). *Spirit of Bingoland: A Study of Problem Gambling among Ontario Native People*. Edmonton: Nechi Training, Research and Health Promotion Institute.

<sup>313</sup> Auger, D. and D. Hewitt. (2000). *Dream chaser: Alberta Aboriginal adult gambling prevalence study*. Edmonton: Nechi Training, Research & Health Promotions.

<sup>314</sup> Kelley, R. (2001). *First Nations Gambling Policy in Canada*. Canada West Foundation. p. 6.

the 13 Mi'kmaq bands in the province aimed at raising revenue that would assist economic development within the communities. First Nations reserves can operate bingo, ticket lotteries, and VLTs that are owned by the Atlantic Lottery Commission.<sup>315</sup>

The Nova Scotia Office of Aboriginal Affairs publication, *Review of First Nation Gaming Commissions, Sources and Uses of Funds Analysis*, reviews agreements between the province and First Nations communities.<sup>316</sup> The agreements with Nova Scotia allow First Nations to issue their own licenses for charitable gaming events.<sup>317</sup> Video lottery terminals (VLTs) are allowed on reserves, and an administration fee of \$56 per week per machine is paid to the ALC. First Nations bands receive a 50% share of the Sydney Casino profits on an annual basis. The rest of the revenues raised through the gaming agreements are retained within the First Nations communities and not taxed. The First Nations Gaming Commissions determine the distribution of revenues between retailers and the Commission, and this varies by band.<sup>318</sup>

According to the agreements, VLTs on reserves are not subject to any moratoriums or bans imposed on other VLT establishments in Nova Scotia. If VLTs were not available off reserve in Nova Scotia, they could be increased on reserves. Under the current agreement, reserves can increase the number of their machines to 806.<sup>319</sup> There are presently 615 VLTs on reserves.<sup>320</sup> The Office of Aboriginal Affairs report also includes a summary of VLT information, including the locations and owners where the VLTs are located, the number of VLTs at each location, how the VLT revenue is shared and who pays the Atlantic Lottery Commission (ALC), a summary of net VLT revenues collected and Sydney Casino profits received, and a summary of uses of funds. In year 1999-2000, the total band share of the revenue from VLTs (net administration fee) was \$15,554,858.94. The 1997-1998 share was \$10,646,892.60. The band profit from the Sydney Casino in 1999 was \$1,512,696.00, up from \$703,796.50 in 1997.<sup>321</sup>

There are reports of revenues from gaming being channelled back into the communities in the form of funds for housing, health care, and other social programs. A 2000 Halifax newspaper story reported that \$12 million dollars in profit from VLTs on the Millbrook reservation were used to build new homes and infrastructure, and to establish health and education funds.<sup>322</sup> A May 2004 Halifax newspaper quotes Chief Lawrence Paul of the Millbrook First Nation, which has more than 110 machines between Cole Harbour and its Power Centre near Truro. Chief Paul

<sup>315</sup> Kiedrowski & Associates Inc. (2001). *Native Gaming and Gambling in Canada*. Indian Northern Affairs Canada.

<sup>316</sup> Nova Scotia Office of Aboriginal Affairs. (2004). *Office of Aboriginal Affairs*. Nova Scotia Office of Aboriginal Affairs.

<sup>317</sup> Lipton, M. D. (2003a, September 17, 2003). *First Nations Gaming in Canada*. Paper presented at the Global Gaming Exposition, Las Vegas, Nevada.

<sup>318</sup> Thornton, G. (2000). *Review of First Nation Gaming Commissions, Sources and Uses of Funds Analysis*. Province of Nova Scotia Office of Aboriginal Affairs.

<sup>319</sup> Policy Research Unit. (1995). *The Social Impact of Gaming in New Zealand. A report prepared for the 1995 Review of Gaming. Review of Gaming Series No 3*. Christchurch: Department of Internal Affairs.

<sup>320</sup> Flinn, B. (2004, May 5). "Province promises new policy on gambling". *The Daily News*, pp. 3.

<sup>321</sup> Thornton, G. (2000). *Review of First Nation Gaming Commissions, Sources and Uses of Funds Analysis*. Province of Nova Scotia Office of Aboriginal Affairs.

<sup>322</sup> Proctor, S. (2000, March 5). VLTs Pad Millbrook Accounts: \$12 Million in Profits Helps Band Build Future. *The Sunday Herald*, pp. A1.

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said that most of the gamblers at both locations are non-Native. Last year, revenues from gaming paid each Millbrook resident \$2,500 in cash--\$3,150,000 total. It also financed upgrades to schools and the Power Centre and charitable donations in the Truro area. Chief Paul said, "We're quite happy with our VLTs. They are improving the standard of living for our people."<sup>323</sup>

### **3.5 Recreation and Tourism**

*The recreation and tourism domain recognizes the entertainment benefits received from gambling activities, possible costs involved with diverting revenue from other forms of entertainment, and the gambling industry's effect on tourism. A key economic question is whether gambling brings new money and people into the area or whether it redistributes the money available from local consumers.*

#### *3.5.1 Overview*<sup>324</sup>

##### ***Individual and family level***

###### **Positive impacts**

- Gaming activities provide consumers with a source of entertainment
- Provides those who would normally stay at home with a safe and social environment. This appears especially so in the case of the unemployed, women, the retired, and elderly.

###### **Indicators and Sources**

- Indirect evidence based on inferences from gaming participation rates, although this is debated in the literature
- Self-report responses to survey items using general population samples
- Anecdotal responses as part of focus group discussions.

###### **Negative impacts**

- Research has not identified negative recreational impacts at the individual and family level.

##### ***Community level***

###### **Positive impacts**

- Availability of a new form of legitimate recreation.

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<sup>323</sup> Flinn, B. (2004, May 5). "Province promises new policy on gambling". *The Daily News*, pp. 3.

<sup>324</sup> Adapted from 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].

- Sponsorship of sporting and cultural events and provision of recreational sporting facilities for community use.
- Casino generation of tourism and home intra-provincial visits.

#### **Indicators and Sources**

- Surveys of community groups
- Provincial data on allocation of revenue to community groups
- Tourism statistics

#### **Negative impacts**

- Gaming as a recreation may crowd out traditional forms of entertainment such as live theatre. Sectors of the entertainment industry may be adversely affected.
- Recreational and sporting facilities associated with non-gaming venues may experience revenue losses due to an inability to compete with gaming venues.
- VLTs are unlikely to encourage tourism.

#### **Indicators and Sources**

- Surveys of community groups
- Provincial data on allocation of revenue to community groups
- Tourism statistics

### ***Regional level***

#### **Positive impacts**

- Potential flow of tourists into a region to use gaming venues.
- Spillover effects on facilities such as accommodation, dining, and shopping establishments.
- Increase in employment

#### **Indicators and Sources**

- Tourism statistics - increased visits from tourists
- Increased tourism-related employment
- Increased facilities available for entertainment, and other consumption related activities.

#### **Negative impacts**

- Expenditure leakage from towns without well-developed gambling related facilities.
- Towns which experience increased gaming-related tourism may also experience increased public infrastructure costs

#### **Indicators and Sources**

- Experiences of non-gaming venues
- Decline in recreation opportunities in regions without gaming venues
- Surveys of gamblers regarding choices of gaming locations.



### *Provincial level*

#### **Positive impacts**

- Casinos as a provincial initiative may be an important tourist destination as well as a major venue for residents seeking recreation
- Significant revenue generator. Any increase in tourism is likely to have spillover effects to accommodation providers and other suppliers.
- Ability to provide needed services and grants to community groups

#### **Indicators and Sources**

- Tourism data on variables such as international visitor numbers and details of their spending
- Details of expenditure for recreation and tourism related projects.

#### **Negative impacts**

- Availability of casinos has the potential to distract visitors from tourist attractions in non-metropolitan regions.

#### **Indicators and Sources**

- Time series data on visitor numbers to various attractions
- Visitor surveys as to choices of attraction.

### *3.5.2 Recreation*

Recreation, entertainment, and socialization are the most commonly mentioned benefits of gaming to the individual and society. The benefit to rational individuals, a private benefit, is called "consumer surplus", which is the "difference between what consumers would be willing to pay for a good or service and the market price that they are actually required to pay. This is based on the assumption that rational consumers will undertake an activity only if the private benefits received at least equal the private costs of that activity, so that there is almost certainly a positive net benefit in the form of consumer surplus."<sup>325</sup> In cost-benefit analysis, however, consumer surplus tends to be discounted based on the strength of the community's "moral criticism." In fact, "entertainment value" for non-problem gamblers has rarely been investigated.<sup>326</sup> One Alberta study asked non-gamblers and gamblers from low and moderate risk to problem gamblers what their favourite leisure activity was. Gamblers across all sub-types most often said "sports/exercise" and "camping/fishing/hunting/boating." Problem and moderate

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<sup>325</sup> Collins, D. and H. Lapsley. (2003b). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies, Summer, 19(2)*, 123-148. p.128

<sup>326</sup> Eadington, W. R. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives, 13(3)*, 173-192.

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risk gamblers were much more likely than non-problem or low-risk gamblers to answer this question by saying "gambling" or "nothing."<sup>327</sup>

### 3.5.3 Tourism

Gambling activities, and especially casinos, are often praised as having the ability to draw tourists and new revenue into a region. However, if sufficient revenue is not drawn from outside the community, gambling activities might cause a drain on surrounding businesses and only serve to transfer local revenue from one business sector to another or to government in the form of taxation.<sup>328</sup> Henriksson suggests that while casinos may get some of their revenue from tourists, in a cost-benefit analysis, only the incremental effects should be considered. This is the extent to which tourist dollars spent on gambling would not have been spent elsewhere in the community.<sup>329</sup>

The only form of gaming that has the potential to attract tourists is the casino, but, as Eadington points out, the success of using casinos as a tourist strategy has been mixed. The casinos that have most successfully attracted tourists are the ones located near major population centers in the United States or at provincial and state borders. He states that:

“In both Montreal and Halifax, the intent was to provide an additional amenity to stimulate tourism, but the effect was to create casinos primarily frequented by local citizens.... In general, most customers of urban casinos have not been tourists. Many new casino jurisdictions... provide 'casinos of convenience' which cater predominantly to residents of the area where the casinos are located. In such cases, there has been little net economic stimulation to the area, though the casinos themselves have been substantial revenue generators. The same pattern is observable with casinos in most other countries that have recently authorized casinos.”<sup>330</sup>

A study from the Australian Institute for Gambling Research titled *The Impact of the Expansion of Gaming on the Tourism, Entertainment, and Leisure Industries* discussed key questions related to tourism and the leisure industries that need to be addressed in any study on the impact of gaming on tourism. 1) [provincial] aggregate level data can conceal localized impacts; 2) are there alternative entertainment and leisure choices for expenditure and time-use that could yield the equivalent benefits of [VLTs] or is the high expenditure on VLTs the most efficient use of resources for all stakeholders? and 3) how does gaming affect the image of the area?

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<sup>327</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>328</sup> Australian Institute for Gambling Research. (2000). *The Impact of the Expansion of Gaming on the Tourism, Entertainment and Leisure Industries*. Victorian Casino and Gaming Authority.

<sup>329</sup> Henriksson, L. E. (2001). Gambling in Canada: some insights for cost-benefit analysis. *Managerial & Decision Economics*, 22(1-3), 113-123.

<sup>330</sup> Eadington, W. R. (1998). *The spread of casinos and their role in tourism development*. Presented at the 1998 National Public Policy Education Conference, held September 21-23, 1998 in Clackamas, Oregon. p. 7, 8.

In their examination of the gaming industry, the AIGR felt that some of the qualities that made Melbourne and Victoria unique had been lost, but that the cause was more the electronic gaming machines (VLTs) than the casino complex. They argued that the expansion of homogenous gaming venues would mean the loss of "authentic" Melbourne, and would not benefit the image of the city. Melbourne would lose its attractiveness to tourists.<sup>331</sup>

The Nova Scotia Alcohol and Gaming Authority's 1999 report, *Convenience Gaming and Social Impacts in Nova Scotia*, developed a conceptual framework for understanding the social effects of gambling. It suggested that the most suitable framework to use in Nova Scotia is that of a convenience model. Their report states:

“The convenience model of gambling emphasizes locals rather than tourists as consumers and stresses that gambling is no longer an occasional activity or holiday experience. It has become a significant urban and rural leisure activity in its own right. The economic and social effects of the spread of convenience gambling are likely, therefore, to be different from those found in resort based destinations such as Las Vegas or Atlantic City. Convenience gambling may primarily reshuffle spending from other goods and services to the gambling industry, rather than stimulate growth. Because of the limited population base, there is pressure in a convenience gambling jurisdiction to try to broaden participation in gambling and increase the level of spending of the gambling public. Social effects which are hidden or exported out of tourist gambling economies will be more visible and enduring in communities shaped by the recent development of convenience gambling.”<sup>332</sup>

The 2003 Nova Scotia Department of Tourism Annual Report shows that 2.14 million tourists came to Nova Scotia in 2003. Of those, 75% came by road and 54% of the total visitors were from Atlantic Canada. Of the remainder, 30% were from elsewhere in Canada, 13% were from the United States, and 3% were from other countries.<sup>333</sup>

In order to discover whether tourism is positively increased in an area because of gaming opportunities, entrance and exit data from tourist surveys are useful. Corporate Research Associates for the Department of Tourism and Culture collected data between May 15 and October 31, 2000. The 2000 Nova Scotia Visitor Exit Survey<sup>334</sup> showed that the main reason 41% of the visitors had for coming to Nova Scotia was to visit friends or relatives. Those coming for recreation or general pleasure represented 29%. Air travellers, who represented 17% of the visitors, tended to come for business (8%).

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<sup>331</sup> Australian Institute for Gambling Research. (2000). *The Impact of the Expansion of Gaming on the Tourism, Entertainment and Leisure Industries*. Victorian Casino and Gaming Authority.

<sup>332</sup> Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

<sup>333</sup> Nova Scotia Department of Tourism Culture and Heritage. (2004). *2003 Nova Scotia Tourism Year in Review*. Nova Scotia Department of Tourism Culture and Heritage.

<sup>334</sup> Corporate Research Associates Inc. (2001). *2000 Nova Scotia Visitor Exit Survey. Final report*. Nova Scotia Department of Tourism & Culture.

Overall, 17% of the visitors to Nova Scotia had gone to a casino at least once. 16% of Atlantic Canadian visitors, 19% of visitors from other areas in Canada, and 17% of the international visitors went to a casino at least once. When asked what they most liked about their trip to the province, only 1% mentioned the casino. An additional 2% said they liked the casino "some." The visitors were also asked how many times they participated in a casino activity. The results were: 0 times-79%, 1 time-14%, 2 times-2%, 3 times-1%, 4 times-1%, and don't know or didn't answer-4%. The nine tourist and recreational activities that had the highest participation rates did not include gaming activities.<sup>335</sup>

## 3.6 Employment and Education

### 3.6.1 Overview of potential employment-related impacts<sup>336</sup>

#### *Individual and family level*

##### **Positive impacts**

- Possibility for increased employment (generally explored at the regional or provincial level)

##### **Negative impacts**

- Costs associated with problem gambling, related to time away from the workplace and reduced job performance
- Specifically lost time from work and/or study, reduced job performance (i.e. quality and/or speed of work), job changes, and loss of employment

##### **Indicators and Sources**

- Based on data derived from self-reported survey items and interview questions, included in population surveys and intake interviews for clinical populations (e.g. problem gamblers) in counselling programs.

#### *Regional level*

##### **Positive impacts**

- Direct employment in the construction phase for new venues and refurbishment of upgraded venues
- Direct employment in the gaming industry

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<sup>335</sup> These areas were general sightseeing-51%, visiting friends and relatives-55%, leisure walking/hiking-55%, shopping (e.g. crafts, antiques)-51%, visiting craft shops/studios-45%, visiting a national/provincial historic sight-36%, nature observation-34%, beach exploring/beachcombing-31%, visiting museums-28%

<sup>336</sup> Adapted from: 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].

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- Employment in firms that service the industry including gaming providers
  - Indirect "spin-off" employment on other sectors such as restaurants, hotels, etc.

#### **Indicators and Sources**

- Positions created and their type
- Skills base of new employees
- Employment impact (direct and indirect)
- Changes in these indicators over time

#### **Negative impacts**

- Non-gaming venues experiencing a loss of activity
- Jobs going to residents outside a region
- Redirection of expenditures away from local businesses, leading to job loss
- Low paying, part time work, usually for younger females, is often the main employment offered.

#### **Indicators and Sources**

- Types of jobs lost
- Impact on unemployment level at regional and provincial levels

#### ***Provincial level***

#### **Positive impacts**

- Gaming possibly leads to overall growth in employment
- Potential to reduce the level of unemployment
- Increased taxation revenue providing government with additional opportunities for expenditure on public goods like education, health, and related areas

#### **Indicators and Sources**

- Employment statistics for gaming and gaming-related industries
- Results of studies on gaming impacts concentrating on employment changes

#### **Negative impacts**

- Increased levels of unemployment may occur in retail and entertainment because of the redirection of expenditures to gaming establishments

#### **Indicators and Sources**

- The same indicators as for positive impacts
- Macro-level economic data

### ***3.6.2 Employment***

Gambling is thought to have positive impacts through creation of direct jobs in the gaming industry, increased employment in gambling-related services, and indirect jobs created elsewhere in the local economy as a result of gaming. Almost all of the direct jobs are products of casinos and government regulatory authorities. Indirect jobs are calculated using ratios called "employment multipliers." For example, this could be stated as one direct job creates two indirect jobs. The multiplier effect in that case would be 2. The New Brunswick casino study reported the following rules of thumb on multiplier effects:

"In the economic community there are some rules of thumb on multiplier effects. Small cities or groups of rural communities are not likely to have multipliers exceeding 1.5, medium-size to large cities would have multipliers not exceeding 2.0, and very large cities or provincial multipliers would typically not exceed 2.5.... Economic spin-offs are affected by how much revenue generated by the casino comes from outside the local economy and how much is local money that is simply redistributed within the local economy."<sup>337</sup>

Negative impacts of new gaming venues may see job losses in surrounding businesses, often called the "cannibalization effect."<sup>338</sup> Some of the increased revenues from gaming are considered to be a transfer of employment from other sectors to the gaming industry. Most of the employment revenue from gaming is from lotteries, VLTs, and slot machine based gaming. However, evidence to date indicates that few new jobs are actually created from these activities on a net basis, after job transfers from other business sectors are considered.<sup>339</sup>

When looking at the gaming industry's record of increased employment, it is also important to take into consideration the type of jobs, whether full or part time, and the demographics of employees. Statistics Canada data show that, compared with workers in non-gambling industries, workers in gambling industries were more likely to be women (46% men versus 56% women) who were under 35 (38% men versus 53% women), paid by the hour (62% men versus 81% women), and paid less (\$17 men versus \$14 women).<sup>340</sup>

The gambling industry employs people directly, and industries associated with gambling such as restaurants, hotels, etc. might also see increased employment because of demand from gambling patrons. However, as Vaillancourt and Roy point out in their cost-benefit analysis of gambling in Canada,<sup>341</sup> this does not necessarily mean that new jobs are created. 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

<sup>337</sup> 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. p. 28.

<sup>338</sup> United States General Accounting Office (GAO). (2000). *Impact of Gambling: Economic Effects More Measurable Than Social Effects*. United States General Accounting Office.

<sup>339</sup> Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation.

<sup>340</sup> Marshall, K. (2003). Fact-sheet on gambling. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, March*.

<sup>341</sup> 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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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 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 zero.

Vaillancourt and Roy only used estimates for tourist spending in casinos since tourist spending on lotteries and VLTs is very low. For Nova Scotia, they estimated that 15% of gambling revenue can be attributed to out-of-province tourists and that these visitors account for 0.4% of spending on other goods or services related to gambling. These figures vary widely between provinces. The study assumed no import-substitution effect. To derive the estimated government revenues from gambling-related expenditures, the researchers multiplied the associated expenditures by 40%, the share of taxes in GDP.

Calculating the indirect loss of jobs and expenditures created by diverting revenue from other industries to gaming is difficult to calculate since these effects are often not localized or visible. When these costs are calculated, they often show little effect.<sup>342</sup> Garrett explored the local employment effect of rural casinos in six midwestern counties of the U.S. using various employment data.<sup>343</sup> One analysis used monthly household employment data to measure the effect of casinos on resident employment. A second analysis used annual payroll employment data to examine employment changes in specific industries. Household employment represents the number of people employed in a given area and payroll data register the number of jobs in the area. These two methods are not comparable since the two employment measures are different.

For the first analysis, trends were assessed by comparing employment changes before and after casino introductions to the area. Trends in employment changes for several years before the casino's opening were used to forecast employment changes from the date of the casino opening to the end of the sample period. The forecasts represent the level of employment that would have existed without the casino. The difference between the actual and forecasted employment shows the estimated effect of the casino on employment. For the second analysis, Garrett used payroll employment data to compare employment in construction, manufacturing, retail trade, services, and finance before and after casino introduction. It was shown that an influx of new business or a decrease in employment in the same sectors might indicate the influence of the casino. The analysis revealed that, in three of four cases, rural counties that introduced casinos experienced increases in household and payroll employment. If the casino was a major or predominant industry, the employment effects were greater than in areas where the casino employment constituted a small portion of total employment.

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<sup>342</sup> Henriksson, L. E. and R. G. Lipsey. (1998). *Should Provinces Expand Gambling?* Coalition for Education and Research into Gambling Expansion (CERGE).

<sup>343</sup> Garrett, T. A. (2004). *Casino Gaming and Local Employment Trends*. The Federal Reserve Bank of St. Louis Review 86(1).

### 3.6.3 Productivity losses from gambling problems

Persons who have gambling problems are often characterized as being preoccupied with gambling and may incur productivity losses from absenteeism and loss of productivity on the job.<sup>344</sup> These costs are difficult to estimate without control statistics, since employees in general miss some work, are late, use work time for personal purposes, and are not efficient while at work.<sup>345</sup> In other words, it is essential to assess the degree to which problem gamblers have higher productivity losses than other workers, and the degree to which those losses are attributable to problem gambling. The debate in the literature is whether productivity loss is a private transfer that should not be included in estimates of costs or whether these losses should be considered as social costs. Job and employee search costs and retraining costs are often overlooked in the literature on productivity losses and indirect economic costs.

In the neoclassical economic approach, falling worker productivity and absenteeism do not produce social costs since there is no cost to outside parties. The employer can fire and replace the employee, reduce his wages, or do nothing and bear the cost. In all these cases, there is no necessary decrease in the output to society. Walker argues that there is no fundamental difference between taking a break from work to play slot machines and taking a break to eat lunch or taking a vacation.<sup>346</sup> However, other studies do include productivity losses as a cost of problem gambling, as higher employer costs will likely be passed on to the consumer in the form of higher prices.

Azmier and Kelly state that lost productivity means that businesses cannot operate at maximum efficiency and that this represents a cost to society. However, they say that the loss of income is a private cost to the gambler if he or she loses the job. They argue that if the employer is able to find a suitable replacement, the lost income cannot be considered as a social cost. They note that severance, hiring and training costs incurred by the employer, however, should be included as social costs in an economic analysis of gambling impacts.<sup>347</sup>

Ladouceur et al. studied the work performance of gamblers in Gamblers Anonymous (GA) groups.<sup>348</sup> Problem gamblers usually do not seek treatment until their lives are out of control, so gamblers in this group often represent extreme cases and therefore are not representative of all

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<sup>344</sup> National Gambling Impact and Policy Commission (U.S.). (1999). *The National Gambling Impact Study Commission : Final report*. National Gambling Impact and Policy Commission.

<sup>345</sup> 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].

<sup>346</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

<sup>347</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>348</sup> 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.

problem gamblers. The authors found that 66% of the GA group had missed work to gamble, that half of those had left work more than five times per month to gamble, and that 14% had missed whole days to gamble. Over half (59%) of the employees said they felt distracted and irritable while at work and found that thinking about gambling interfered with their ability to concentrate.

In another study, Ladouceur calculated the reduction of labour income from work lost due to gambling in Quebec. This was based on 50% of pathological gamblers with an average wage of \$15 per hour, missing 5 hours of work per month in late time.<sup>349</sup> The cost of lost time to employers was \$5 million per year. The same study estimated that 36% of pathological gamblers lose their jobs because of gambling-related problems.

In a review of costs in pathological gambling literature, Lesieur found that between 69% and 76% had missed work to gamble, and between 21% and 36% had lost their jobs due to gambling problems.<sup>350</sup> In a highly criticized U.S. study of gambling costs in Wisconsin, which included lost income as a social cost,<sup>351</sup> Thompson, Gazel, and Rickman<sup>352</sup> estimated that pathological gamblers miss 7.4 hours of work per month. The cost of work loss in Wisconsin was calculated at US\$1,328 loss of labour income per pathological gambler. Grinols and Mustard averaged productivity losses and lost time from six studies of individual U.S. states along with the estimate from the National Opinion Research Center (NORC) study of the U.S. as a whole. Five of these studies estimated lost time, one estimated both lost time and lost productivity, and one of the studies did not calculate either. The resulting average annual cost for lost work time per pathological gambler was \$2,913, and for lost productivity was \$1,082.<sup>353</sup>

The U.S. study that was included in the average in the above example only estimated an annual cost of \$320 for lost time per pathological gambler.<sup>354</sup> This study was the NORC report to the National Gambling Impact Study Commission in the United States. The basic strategy of this study was to compare costs and rates of work loss of problem and pathological gamblers with expected costs and rates of work loss of non-gamblers or low-risk gamblers. Costs, in general, were only calculated if there was a statistically significant difference between the two rates. No figure was calculated for lost productivity, since the authors found no evidence that problem gamblers actually earned less than non-gamblers. Also, the rates of work loss for pathological gamblers and non-gamblers who had less than a full year of employment were not included since these rates were the same.

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<sup>349</sup> Ladouceur, R. (1996). The Prevalence of Pathological Gambling in Canada. *Journal of Gambling Studies*, 12(Summer), 129-142.

<sup>350</sup> Lesieur, H. (1998b). Costs and treatment of pathological gambling. *The Annals. American Academy of Political and Social Sciences (AAPSS)*, 556(March), 153-159.

<sup>351</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

<sup>352</sup> 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.

<sup>353</sup> Grinols, E. L. (2001). Business profitability vs. social profitability: Evaluating the social contribution of industries with externalities, the case of the casino industry. *Managerial & Decision Economics*, 22(1-3), 143-162.

<sup>354</sup> Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago.

The NORC study did, however, calculate retraining costs to employers based on elevated rates of job loss for problem gamblers. Pathological gamblers had a job loss rate of 13.8% versus the expected rate of 5.8% for non-gamblers. Therefore, pathological gamblers had a rate of job loss more than double that of non-gamblers. Based on the estimate that employers incur hiring and training costs equal to 10% of the annual salary of each employee retrained, an employee earning \$18 per hour, or \$40,000 per year, would cost an employer an average of \$4,000. The NORC study estimated the excess cost of retraining per pathological gambler at 8% of \$4,000 or \$320.

The NORC study also calculated "odds ratios" for a number of consequences of pathological gambling. The example given was that the job loss of pathological gamblers who had been employed during the prior year was 13.8%, compared to a rate of 4% for low risk gamblers and a rate of 5.8% for non-gamblers. The odds ratio for job loss for pathological gamblers compared to low-risk factors from the logistical regression analysis was found to be 2.62. This means that the odds of pathological gamblers losing their jobs was 2.62 times greater than for low-risk gamblers after adjusting for other characteristics such as having alcohol and drug problems.<sup>355</sup>

Vaillancourt and Roy calculated the amount of tax revenue lost by the Canadian government from pathological gamblers who missed work, on the assumption that these workers were not replaced. They used a 40% tax rate, and assumed 10 hours per month missed work (not paid for) at \$18 per hour average wage.<sup>356</sup> Results indicated that government tax revenue losses due to gambling-related income losses were \$864 per pathological gambler in 1995. They state that Canadian government gambling taxes do not distort labour choices, are not levied on essential goods or services, and therefore are not associated with the efficiency issues of other taxes. However, the taxes are costly to collect and are regressive.

Single et al. suggest that the valuation of lost production as a result of gambling by the employed should be the loss of wages attributable to gambling problems, plus the associated loss of unpaid output plus the value of life or the quality of life. For the unemployed or people out of the workforce, the net cost is the loss of unpaid output plus the value of life.<sup>357</sup> Estimates of the value of unpaid work calculate the amount needed to replace the activity purchased from an outside source. Types of activities here include childcare, domestic activities, purchasing of goods and services, and volunteer and community work. The value of each of these activities is calculated by the cost of hiring a replacement, adjusting for pension and benefit contributions.

Compensation for unemployment is sometimes considered as a social cost, as the cost is borne by taxpayers. The general consensus among economists, however, is that this represents an

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<sup>355</sup> Ibid.

<sup>356</sup> Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation.

<sup>357</sup> 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.

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income transfer from the employed to the unemployed, and therefore should not be counted as a social cost.<sup>358</sup>

### 3.6.4 Halifax and Sydney, Nova Scotia casinos

The Citizens' Committee on Destination Gaming, which studied the potential economic and social costs of introducing a casino in Moncton, New Brunswick, studied the Halifax and Sydney, Nova Scotia, casinos. Most of the statistics in the New Brunswick report are from 1999 and will need to be updated in any new cost-benefit analysis for Nova Scotia.<sup>359</sup> For example, according to the Alcohol and Gaming Authority annual report for the fiscal year ending March 31, 2003, the Halifax casino now employs 921 persons and the Sydney casino employs 265 persons – more than cited in the New Brunswick report.<sup>360</sup> The following information is all from the New Brunswick study:

#### Direct jobs

- The Sydney casino employs approximately 250 employees. Approximately 200 (80 %) of the 250 positions are full time, while approximately 50 (20 %) are part-time and casual positions. The Halifax casino employs approximately 800 employees. Approximately 500 (63 %) of these positions are full-time, 180 (22 %) are part-time, and 120 (15 %) are casual and seasonal positions.
- The casinos are not unionized.
- There are on-going internal training sessions within the casinos. An employee can train to learn more games and with each game learned the employee can increase his or her pay.
- For most jobs, Casino Nova Scotia requires a grade 12 education. Employees working as dealers and cashiers also are required to pass a math test prior to hiring.
- On average, employees receive approximately 40 to 80 hours of training in preparation for working in the casinos.
- Average wages range from \$7.00 an hour plus gratuities (tips) to \$ 9.50 plus gratuities. Gratuities can be a substantial addition to the hourly rate.
- The casinos compete with local call centres for employees. A compensation committee reviews the wages the casinos pay with the goal of continuing to attract suitable employees.
- The average administrative/management salary in the casinos is in the \$ 38,000 – \$ 42,000 range.
- Typically, 90 % of the jobs created by a casino are line employees, with the remaining 10 % being supervisors, managers, and executives. The types of jobs are card dealers, food

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<sup>358</sup> Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212.

<sup>359</sup> 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.p. 27-33.

<sup>360</sup> Nova Scotia Alcohol and Gaming Authority. (2003). *Annual Report for the fiscal year ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority.



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and beverage staff, finance and administration staff, security, entertainment, maintenance and warehouse, and retail staff.

- Typical education levels are the following: approximately 20 % require no high school diploma, 50 % require high school diploma, 20 % require college/technical degrees, and 10 % require university degrees.
- The majority of jobs at a casino are service sector jobs that have been defined, in some studies, as low-skill, low-paying service opportunities.

### **Indirect jobs**

- Initial construction: The Halifax facility was constructed for \$98 million and contains a 135,000 square foot gaming floor plus 10,000 square feet of meeting space, a 170-seat entertainment lounge, and a 100-seat outdoor amphitheatre.
- Economic spin-offs - indirect jobs and complementary benefits – were found to have been positive in Halifax, but not in Sydney, although the scope of spin-off depends on many factors.
- The Sydney Chamber of Commerce reported that Sydney's casino experience has not been positive. The casino's clientele is primarily comprised of local senior women. The import of dollars into the local economy has not occurred. The food and entertainment facilities in the casino are cross-subsidizing their operations, pricing below cost to create traffic, and thereby creating hardship among competing venues.
- The Halifax Chamber of Commerce is very pleased with the Halifax casino. The Chamber reports that the casino operator has integrated very well into the downtown business community, but more importantly has drawn additional tourists via conventions and cruise ships. The restaurant industry is particularly happy with the casino's spin-offs.

Based on interviews between July and August 1998 to determine the effects of the Halifax and Sydney casinos on their host communities, the Nova Scotia Alcohol and Gaming Authority received the following feedback from Downtown Halifax and Sydney businesses. Participants in the survey included owners/managers/directors of retail establishments, restaurants and bars, hotels, and business associations.

- All of the Downtown Halifax business representatives interviewed had been operating prior to the Sheraton Casino opening. Many of the establishments had been conducting business for twenty years or more. Only one of the retail operations interviewed reported an increase in sales since the opening of the casino. One retailer noted a decrease in patrons and sales.
- Almost all of the restaurants and bars closest to the casino reported an increase in patrons, and a few ran promotions in conjunction with the Sheraton Casino. Most of these establishments, however, noted that the increase was relatively modest.
- Some of the businesses with VLTs located on their premises felt they were competing with the casino for gambling revenues.
- A few Halifax hotels reported an increase in visitors as a result of the casino's presence in the downtown area.



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- All of the business respondents indicated that tourism, conventions, community events, and the weather, rather than the casino, were the greatest factors affecting the business environment in downtown Halifax.
  - Most of the downtown Sydney businesses had been operating prior to the Sheraton casino opening. Retail operations generally reported a decline in sales since the casino opened; however, they noted that this was part of a trend resulting from an eroding economy, and not necessarily attributable to the presence of the casino.
  - Restaurants and bars expressed differing opinions regarding the casino. Some felt that the casino restaurant presented “unfair competition,” while others appreciated the healthy competition. It was believed that the casino contributed to a drop in patronage in bars and restaurants, but that changes to their service standards could help level the market.
  - The majority of Sydney hotels reported that the casino was not a draw for their guests, and did not influence visitor counts.
  - Entertainment businesses (bowling, theatres, etc.) identified increased competition for entertainment dollars, but not necessarily emanating from gambling. Sydney businesses identified several other factors that were negatively affecting the business environment, including a decaying industrial base and sluggish economy, unemployment, changing government policies and programs, and out-migration of skilled residents. There were mixed reactions when respondents were asked to rate gambling against these factors. Most respondents rated gambling (primarily identified as the casino) lower than other factors affecting the economy; however, many others stated that gambling was a significant adverse factor for their businesses, particularly because it drew upon the local population.
  - The expectations in Sydney (and Halifax) were that tourist traffic would represent 25% of the visitors to the two casinos. While exact statistics are not available the prevailing feeling at present is that this potential has not been met. The New Brunswick report noted that the geographical location of the two casinos likely limits their catchment area radius.

Efforts by the New Brunswick Citizens’ Committee to determine the extent that the casinos may have increased the number of business failures in Halifax and Sydney did not yield a great deal of statistics. The communities do not track this information specifically enough to determine which community bankruptcies could be directly linked to the introduction of a casino or to problem gambling. Also, without previous knowledge of the financial stability of the businesses that did close after the introduction of a casino, it would be difficult to prove whether the casino was a contributing reason for a business closure or whether the company’s financial position was so tenuous that it would have gone bankrupt regardless.

### *3.6.5 Education*

The social and economic impacts of gaming on educational processes and institutions have rarely been addressed. Any reference to education is to be found in the literature on adolescent gambling. In a recent study of pathological adolescent gamblers, Derevensky and Gupta found

that 27% report skipping school more than five times to gamble in the past year.<sup>361</sup> Gupta and Derevensky have also reported poor academic performance by pathological adolescent gamblers.<sup>362</sup>

The Alcohol and Gaming Authority report, *Convenience Gaming and Social Impacts in Nova Scotia*,<sup>363</sup> suggests that, in studying educational impacts, it is important to look at how use of time and money for gambling affects academic achievement and commitment, and also to examine the implications of gambling for future career possibilities. The report hypothesizes that VLTs will have the most negative effect on education, while bingo and lotteries will have either a positive or neutral effect.

Another theme in this area is concerned with strategies to educate youth and prevent gambling problems.<sup>364</sup> Many school systems, including the Nova Scotia system, have gambling educational programs in place. The Drug Dependency, Problem Gambling Services, of the Nova Scotia Department of Health, in consultation with the Nova Scotia Department of Education and Culture, produced a two-volume resource manual to prevent problem gambling among junior and high school students. The document, *Drawing the Line: A Resource for the Prevention of Problem Gambling*, presents gambling from the perspectives of career and life management, mathematics, and economics. The goal, in part, is to increase awareness of the dividing line between social and problem gambling.<sup>365</sup>

### 3.7 Crime

*In this area, impacts are concerned with crime and the criminal justice system, including the potential for increased criminal activity attributable to gambling, the need for extra law enforcement personnel, use of "loan sharks", incarceration costs, and domestic and other violence. As well, this area of study includes impacts of illegal gambling and the potential effects of "underground" gambling in a context where gambling is illegal.*

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<sup>361</sup> Derevensky, J. L. and R. Gupta. (2000). Prevalence estimates of adolescent gambling: A comparison of the SOGS-RA, DSM-IV-J, and the GA 20 Questions. *Journal of Gambling Studies*, 16(2/3), 227–251.

<sup>362</sup> Gupta, R. and J. L. Derevensky. (1998). An empirical examination of Jacobs' General Theory of Addictions: Do adolescent gamblers fit the theory? *Journal of Gambling Studies*, 14, 17–49.

<sup>363</sup> MPM Gaming Research. (1998). *Towards a Convenience Model of Gaming and its Social Effects in Nova Scotia, Annual Gaming Report, Appendix F*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>364</sup> Derevensky, J. L. and R. Gupta. (2004). *Adolescents with gambling problems: A synopsis of our current knowledge*. eGambling, issue 10.

<sup>365</sup> Problem Gambling Services Nova Scotia Department of Health and Department of Education and Culture. (1997). *Drawing the Line: A Resource for the Prevention of Problem Gambling*. Halifax: Province of Nova Scotia.

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### 3.7.1 Overview<sup>366</sup>

#### *Individual and family level*

##### **Positive impacts**

- No positive crime/justice impacts of gaming on individuals and families have been considered in the literature.

##### **Negative impacts**

- Criminal activities associated with problem gambling include fraudulently writing cheques, borrowing money without permission, theft, and embezzlement.

##### **Indicators and sources**

- General population surveys
- Prison samples
- Problem gamblers seeking treatment – self-reports
- Police and court statistics on gambling-related crime

#### *Community level*

##### **Positive impacts**

- Regulated gaming 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.

##### **Indicators and Sources**

- Reduction in illegal gambling as shown by a decline in court proceedings for this crime

##### **Negative impacts**

- Community concerns that increased gaming opportunities would lead to increased levels of crime.
- The penetration of organized crime is a negative impact commonly identified.

##### **Indicators and sources**

- Classes of indicators include petty crime in gaming venues, street crime in the vicinity of venues, money laundering, and control by organized crime. Police-reported statistics, victimization surveys, and gaming authority reports are potential data sources for these indicators.

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<sup>366</sup> Adapted from 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].

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### *Regional level*

#### **Positive impacts**

- At present, research has not identified any positive regional impacts relevant to legal/justice issues.

#### **Negative impacts**

- Possible negative impacts include losses to business (including venues) from gaming-related crime, particularly fraud or theft. Money laundering and loan sharking are potential negative impacts at casinos.

#### **Indicators and sources**

- Crime statistics that identify gaming-related crime by region

### *Provincial level*

#### **Positive impacts**

- Reduced policing and court costs associated with illegal gambling may occur if the participants choose to switch to legalized gaming.

#### **Indicators and sources**

- Detailed crime and court statistics

#### **Negative impacts**

- Any additional gambling-related crime will increase police and court costs.

#### **Indicators and sources**

- Detailed crime and court statistics
- Gambling is not always recorded or in fact revealed as the motivator for crime. As well, small problem gambling-related crimes are often not reported to the police.

### *3.7.2 Criminal activities*

The potential for increased crime is often associated with gambling activities. In particular, gambling-related crime occurs 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 continued gambling and related debts; gaming venues can be locations for criminal acts such as theft and money laundering; and organized crime impacts the gaming industry mainly through loan sharking, money laundering, and counterfeiting.<sup>367</sup>

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<sup>367</sup> Ibid.

How much crime is directly related to gambling is difficult to determine. Research indicates that most police files are incomplete, and of limited utility in assessing the relationship of criminal activity with gambling. They reflect crimes reported rather than actual crimes, and many of the crimes are not solved. There are also multiple law enforcement agencies, each with separate record-keeping systems, which deal with gambling-related crimes.<sup>368</sup> In addition, many crimes, especially those related to family disputes, go unreported, and crimes that are reported are not necessarily identified in police reports as being gambling-related.<sup>369</sup>

Smith and Wynne concluded, in a 1999 study of the association of crime and gambling in western Canada, that it was "virtually impossible" to assess the extent of crime that is gambling-related.<sup>370</sup> They gave three reasons for this conclusion: "(1) official police records seldom specify a gambling connection even though it may factor into the incident; (2) monitoring and controlling illegal gambling is a low priority for municipal police forces; and (3) in some instances, gambling-related economic crimes are not reported to police agencies but are handled internally by bank, corporation, or gambling industry security personnel."<sup>371</sup> Despite the lack of records, the municipal police services and the RMCP gave the authors anecdotal information that gambling-related crime such as fraud, embezzlement, forgery, and counterfeiting was increasing.

Smith and Wynne also report that empirical evidence does not confirm that an increase in crime due to legalized gambling has occurred to any great extent in Canada. In fact, they point to arguments that suggest that legalization of gaming might actually have decreased crime.<sup>372</sup> The Productivity Commission in Australia indicated that the crime rate in casinos was no more than in other venues that draw similar size crowds, and it reported that it had not identified an increase in organized crime. The major identified increase in crime has been attributable to crime committed by problem gamblers needing to finance their gambling activities.<sup>373</sup>

Available evidence leaves no doubt that there is an *association* between problem gambling and criminal activity such as burglaries, robberies, loan sharking, drug dealing, and money laundering. However, whether or not gambling *causes* crime is controversial.<sup>374</sup> Margolis, in his report *Casinos and Crime: An Analysis of the Evidence*, 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.<sup>375</sup> Grinols, on the other hand,

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<sup>368</sup> 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.

<sup>369</sup> Blaszczynski, A. and D. Silove. (1996). Pathological gambling: Forensic issues. *Australian and New Zealand Journal of Psychiatry*, 30(358-369).

<sup>370</sup> Smith, G. and H. Wynne (1999). *Gambling and Crime in Western Canada: Exploring Myth and Reality (summary report)*. Canada West Foundation.

<sup>371</sup> Ibid.p. 94.

<sup>372</sup> Ibid.

<sup>373</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>374</sup> Eadington, W. R. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives*, 13(3), 173-192.

<sup>375</sup> Margolis, J. (1997). *Casinos and Crime: An Analysis of the Evidence*. Washington, D.C.: American Gaming Association.

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states emphatically that there is considerable evidence that casino gambling causes significant increases in crime, especially by problem gamblers.<sup>376</sup>

The relationship between legal gambling and community crime rates, as Smith, Wynne, and Hartnagel suggest, is complex and dependant on the socio-economic context of the community.<sup>377</sup> They ask a series of questions to determine this context:

- Is the community economically depressed?
- Is it a tourist destination?
- Is there a history of legal gambling in the community?
- What, if any, security precautions have been taken to prevent gambling-related crime?
- And, how accurate and extensive are law enforcement agencies' gambling-related crime data sets?

In 2003, Smith, Wynne, and Hartnagel completed one of the most comprehensive studies of gambling-related crime in Canada.<sup>378</sup> They expanded Smith and Wynne's 1999 study<sup>379</sup> by looking at all aspects of gambling related crime in Edmonton, Alberta. Their research examined both the extent of gambling-related crime and the types of criminal activity associated with gambling and with gaming venues. They searched gambling-related crimes investigated by the Edmonton Police Service (EPS) and the Alberta Gaming and Licensing Commission (AGLC) for the period from January 2001 through July 2002.

Although they could not conclude that gambling causes crime, they point out that gambling and crime are connected in at least three main ways:

- 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.
- 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.
- The existence of popular forms of illegal gambling such as Internet wagering, bookmaking, and common gaming houses constitute criminal activity.<sup>380</sup>

Files were selected from the EPS statistical data collection “violation/incident type code”

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<sup>376</sup> Grinols, E. L. (2000). Casino gambling causes crime. *Policy Forum. Institute of Government and Public Affairs*, 3(2).

<sup>377</sup> 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.

<sup>378</sup> Ibid.

<sup>379</sup> Smith, G. and H. Wynne (1999). *Gambling and Crime in Western Canada: Exploring Myth and Reality (summary report)*. Canada West Foundation.

<sup>380</sup> 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.p. 96.



categories that seemed most likely to contain gambling-related crime occurrences. In some categories, if the number of cases was small, 100% of the cases were examined. In categories that had large numbers of cases, a 20% sample was taken. Out of 11,198 total files in the selected categories from EPS 2001, 338 (or 3%) were identified as being gambling-related. Passing counterfeit currency, which accounted for 39% of the occurrences, was the most prevalent crime. The second most prevalent gambling-related crime category was related to family disputes. The researchers sampled 20% of the EPS files in that category, extrapolated the number of gambling-related incidents related to family violence in the 20% sample to the total number of files, and found that 80 cases, or 1.5% of the reported domestic violence incidents, were gambling-related. They reviewed the 20% of the 3,097 files in the fraud category, which included cheque and credit card fraud, forged lottery tickets, pawning stolen property, and obtaining money or services under false pretences, and found 46 cases, or 1.5% of reported fraud cases, to be gambling-related. They pointed out that these numbers were likely low, since files rarely contained information about the perpetrator or how the proceeds of the crime were used. In addition few of the cases were ever solved. A 20% sample of the robbery files was examined and 9 gambling-related cases were found, four of which involved firearms. Of the extrapolated estimate to the 700 available robbery files for 2001, a projected 25 (3.6%) were gambling-related and of the 153 robbery-firearm files, a projected 20 (13%) were gambling-related.

The 2002 files revealed 119 gambling-related occurrences between January and July. Of these, 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.

The study also estimated the amount and type of crime occurring at Edmonton's major gambling venues. For bingo, the sample included occurrences investigated by EPS for various types of offences that took place at least once in an Edmonton bingo hall in 2001-2002. For example, out of a total of 3,069 cases of assault investigated by the EPS during the time period examined, one of the incidents happened at a bingo hall. Therefore the 3,069 cases were included in the total sample of 127,181 incidents investigated. 97 (.0008%) offences out of the 127,181 incidents investigated occurred in 5 bingo halls. Theft from cars, general complaints, counterfeiting, and public mischief were the main complaints. The occurrences in the 5 bingo halls were extrapolated to include all 17 bingo halls in Edmonton. This resulted in an estimate that 329 incidents (.0026% of 127,181 incidents) occurred in bingo halls. The majority of these cases were misdemeanours and the authors assumed that these types of cases were underreported.

In the case of casinos, 142,340 criminal incidents investigated by the EPS were included in the sample. Again, these incidents represented the total number of cases investigated by the EPS of types of crime that had occurred at least once in one of Edmonton's three casinos. (The fourth casino was omitted since it is located in a mall and crimes occurring there could not be separated from crimes occurring in the mall in general.) 251 crimes were investigated at casinos, which represent approximately .0018% of the 142,340 incidents. Of the recorded 251 cases of casino crime investigated by the EPS, 20%, or 50 cases, involved counterfeiting, which was the most frequently recorded crime in casinos. Theft from an auto under \$5,000 was the second most common crime investigated at casino, followed by general complaints and public nuisances.

These figures are very low and Smith and Wynne explain that many of the criminal incidents at casinos are handled internally by the casino security personnel rather than by the EPS. Also, money laundering and loan sharking, both of which the casino security personnel report occurring at casinos, were not listed. 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.

### 3.7.3 Problem gamblers

Illegal acts to pay for gambling activities or gambling debts are committed by problem gamblers and constitute the major social and economic impact of gambling problems.<sup>381</sup> A 1999 GPI Atlantic study on the cost of crime in Nova Scotia reported that poorly educated, unemployed, young, single males are the most likely socio-demographic group to commit crimes.<sup>382</sup> This demographic is the same for problem gamblers.<sup>383</sup>

Much of the information on crimes committed by problem gamblers comes from people in counselling or other forms of treatment, advocacy groups such as Gamblers Anonymous, or prison inmates. Volberg notes that individuals who are incarcerated or seeking treatment are not necessarily representative of problem gamblers in the general population.<sup>384</sup> According to an Australian study, the proportion of problem gamblers who commit crimes ranges from 11% to 66% depending on whether the sample is from the general population, gamblers in treatment, or Gamblers Anonymous members. For example, 11% of problem gamblers in the general population commit crimes compared with the 66% of problem gamblers in Gamblers Anonymous who commit crimes.<sup>385</sup>

Grinols cites a study of gamblers in treatment that found 62% had committed illegal acts to finance their gambling, and another study of 400 gamblers in Gamblers Anonymous that found 57% admitted stealing. On average, they stole US\$135,000 each or \$30 million total.<sup>386</sup> A sample of Quebec members of Gamblers Anonymous found 68% of the members reported having participated in criminal activities. These offences were broken down as follows: 10% of those who had committed crimes falsified documents or forged signatures, 23% embezzled, 33% passed bad checks, 18% filed false income tax returns or neglected to pay income tax, and 3% made false statements to insurance companies.<sup>387</sup> A report from Manitoba found one in six, or

<sup>381</sup> Volberg, R. A., D. R. Gerstein, E. M. Christiansen and J. Baldrige. (2001). Assessing Self-Reported Expenditures on Gambling. *Managerial & Decision Economics*, 22(1-3), 77–96.

<sup>382</sup> Colman, R. and C. Dodds. (1999). *The Cost of Crime in Nova Scotia*. GPI Atlantic.

<sup>383</sup> Volberg, R. A. (2004 Feb 1). *Fifteen years of problem gambling prevalence research: What do we know? Where do we go?* eGambling, issue 10.

<sup>384</sup> Ibid.

<sup>385</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>386</sup> Grinols, E. L. (2000). Casino gambling causes crime. *Policy Forum. Institute of Government and Public Affairs*, 3(2).

<sup>387</sup> 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.

17%, of problem gamblers steal to finance gambling.<sup>388</sup> The National Opinion Research Center's (NORC) final report found that 21.4% of pathological gamblers and 10.4% of problem gamblers in the U.S. had been incarcerated. This compared with 7.8% of at risk gamblers and 0.4% of non-gamblers.<sup>389</sup>

### 3.7.4 Organized crime

Organized crime is defined broadly as:

“economically motivated illicit activity undertaken by any group, association or other body consisting of two or more individuals, whether formally or informally organized, where the negative impact of said activity could be considered significant from an economic, social, violence generation, health and safety and/or environmental perspective.”<sup>390</sup>

Traditional organized crime includes activities of "the mob", motorcycle gangs, ethnic gangs, and street gangs. Organized crime includes a wide range of activities that may have greater or lesser impacts, such as illicit drugs, environmental crime, selected contraband, economic crime, migrant trafficking, counterfeit products, motor vehicle theft, and money laundering.<sup>391</sup> Other activities involve prostitution, extortion, bookmaking, loan sharking, and illegal gambling.<sup>392</sup>

According to the *Annual Report on Organized Crime in Canada 2002* from the Criminal Intelligence Service Canada (CISC), traditional organized crime groups are involved in a wide range of illegal gambling-related activities, including extortion, loan sharking, money laundering, and illegal gaming activities that include traditional backroom gaming, sports betting involving the Internet, and illegal lottery gaming terminals.<sup>393</sup> The 2000 annual report from CISC states that illegal gaming is one of organized crime's most popular sources of income, and proceeds are used to finance drug trafficking and enterprise crime offences.<sup>394</sup>

Businesses that handle large amounts of cash, such as the gaming industry, are vulnerable to activities of money laundering which is "any act or attempted act to conceal or disguise the identity of illegally obtained proceeds so that they appear to have originated from legitimate

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<sup>388</sup> Patton, D., D. Brown, J. Dhaliwal, C. Pankratz and B. Broszeit. (2002). *Gambling involvement and problem gambling in Manitoba*. Addictions Foundation of Manitoba.

<sup>389</sup> Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago.

<sup>390</sup> Porteous, S. D. (1998). *Organized Crime Impact Study*. Public Works and Government Services of Canada.

<sup>391</sup> Ibid.

<sup>392</sup> KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton.

<sup>393</sup> Criminal Intelligence Service Canada. (2002). *Annual Report on Organized Crime in Canada 2002*. Criminal Intelligence Service Canada.

<sup>394</sup> Criminal Intelligence Service Canada. (2000). *Annual Report on Organized Crime in Canada 2000*. Criminal Intelligence Service Canada.

sources."<sup>395</sup> All illegal proceeds from organized crime must be laundered in order for illegal enterprises to continue their activities. A Canadian government report on the impacts of organized crime uses a "rule of thumb" from the International Monetary Fund, which estimates that, on average, the amount of money laundered in a country amounts to approximately 2% of the country's GDP.<sup>396</sup>

Police reports indicate that the major increase expected in organized crime after the legalization of gaming has not occurred, possibly because of the stringent regulations that casinos have adopted, as well as cooperation between regulators, the police, and casino operators.<sup>397</sup>

### 3.7.5 *Illegal gambling*

When gambling is prohibited or sharply limited and there is still a demand, possibilities for illegal, underground activities and increased crime exist.<sup>398</sup> Smith and Wynne found that illegal gambling is extensive in the four largest cities in western Canada – Vancouver, Calgary, Edmonton, and Winnipeg. They found illegal gambling less prevalent in medium-sized cities and only a minor problem in rural areas.<sup>399</sup> The CISC reported in 2000 that video gaming and lottery machines are the largest illicit sources of gambling. The annual report states that:

“The machines can earn up to \$2000 per machine per week, making this an extremely lucrative business. The cost of the machines ranges between \$2500 and \$5000 and is quickly paid off. Organized crime groups including the Hells Angels, Asian-based organized crime, traditional organized crime [Italian based], and East European-based groups are all involved in the illegal operation of these machines. The Atlantic provinces seem to be viewed by certain organized crime groups involved in illegal gaming as a relatively safe haven and possibly an area of future operation.”<sup>400</sup>

The Problem Gambling Service at the Nova Scotia Department of Health reports that illegal high stakes card games and non-sanctioned video machines are representative of illegal activities operating in the province.<sup>401</sup> The *Nova Scotia Video Lottery Players' Survey, 1997/98* indicates that, before the legalization of VLT machines in 1991, the “Grey Market” for the illegal 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

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<sup>395</sup> Porteous, S. D. (1998). *Organized Crime Impact Study*. Public Works and Government Services of Canada. p. 17.

<sup>396</sup> Ibid.

<sup>397</sup> KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton.

<sup>398</sup> Eadington, W. R. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives*, 13(3), 173-192.

<sup>399</sup> Smith, G. and H. Wynne (1999). *Gambling and Crime in Western Canada: Exploring Myth and Reality (summary report)*. Canada West Foundation.

<sup>400</sup> Criminal Intelligence Service Canada. (2000). *Annual Report on Organized Crime in Canada 2000*. Criminal Intelligence Service Canada.

<sup>401</sup> Problem Gambling Services. (n.d.). *What is gambling?* Nova Scotia Department of Health.

drive the problems associated with VLT gambling underground.<sup>402</sup> The RCMP's Provincial Illegal Gaming Unit investigates illegal gaming activities. In 1998, the unit investigated 61 complaints about grey machines, seized 12 machines, and successfully prosecuted 8 cases.<sup>403</sup>

### 3.7.6 Internet gambling

Internet gaming is relatively new but growing quickly. It is not legal in Canada, but the difficulties of monitoring, regulating, and constraining its use are formidable. The potential for social and economic costs, especially from the activities of minors and problem gamblers, is very large.<sup>404</sup> Most online casinos are located offshore. The first online casino, Internet Casinos, Inc. (ICI), for example, operates out of the Turks and Caicos Islands. This virtual casino employs only 17 people and cost US\$1.5 million to develop, in contrast to the US\$300 million it might take to build a resort casino, which employs thousands.<sup>405</sup> A 1999 survey by the Canada West Foundation found that less than 0.5% of gamblers had gambled online. In 2001, a separate study found that the proportion of Canadian gamblers who have gambled online had jumped dramatically to 85%.<sup>406</sup>

Internet gambling can take place on any electronic device that offers Internet access anywhere on the globe, including wireless cell phones. In a recent report, gaming analysts estimate that in 2003 revenues from Internet gambling industry-wide will be between \$4.2 billion and \$5 billion, or approximately 4.3% of the total \$116 billion in business-to-consumer global e-commerce.<sup>407</sup>

In March 2004, according to a report in *The Wall St. Journal*, the World Trade Organisation ruled that American laws restricting gambling on the Internet violate global trade pacts. This sets the stage for offshore web-based gambling companies to operate freely in the United States.<sup>408</sup> This has implications for Canada as well. In April 2004, *Cnews* reported that the Atlantic Lottery Corporation (ALC) is considering Internet gambling.<sup>409</sup> An online club that already has 24,000 Atlantic Canadian members will be used to set up one of Canada's first legal Internet gambling sites if the Corporation's board of directors approves the idea. The system will be legal since it will not sell outside provincial borders. ALC argues that this system will be strictly controlled and will reduce the amount of money flowing to foreign operators. Derevensky of McGill

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<sup>402</sup> Focal Research Consultants Ltd. (1998). *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services.

<sup>403</sup> Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

<sup>404</sup> Lipton, M. D., Q.C. (2002). *Internet Gaming: A Look at Online Gambling in Canada*. The International Masters of Gaming Law.

<sup>405</sup> Ibid.

<sup>406</sup> Ibid.

<sup>407</sup> United States General Accounting Office (GAO). (2002). *Report to Congressional Requesters. Internet Gambling: An Overview of the Issues*. United States General Accounting Office.

<sup>408</sup> Miller, S. (2004 March 26). WTO overrules US on internet gambling. *Wall St Journal*.

<sup>409</sup> Tutton, M. (2004, April 11). *Atlantic lottery considering internet gambling: CEO*. CNET - Tech News.



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University, however, worries that this new form of gambling will be extremely attractive to children and adolescents, and will be very hard to monitor.<sup>410</sup>

According to the United States National Gambling Impact and Policy Commission (NGIPC)<sup>411</sup>, there are over 2,000 Internet gaming sites. However, this number has certainly grown since 1999. Sports betting is especially popular. The NGIPC lists four other important characteristics of Internet gaming in addition to its rapid growth.

It is easily abused since it can be used anonymously and privately and the information provided is impossible to verify. Youth are able to use a parent's credit cards and give false ages. Because of the instant feedback and ease of access, Internet games may increase gambling problems.

It is very difficult to regulate this activity, so the potential for criminal activity is heightened. Computer hackers and gambling operators can manipulate games to their benefit, and encourage gamblers through e-mail solicitations.<sup>412</sup>

### *3.7.7 Lawsuits and political scandal*

Individual citizens in Quebec, Ontario, and Nova Scotia have filed lawsuits against the provincial government seeking monetary compensation for harm caused by exposure to VLTs.<sup>413</sup> Further research is needed to determine the results of these lawsuits and to assess whether these actions are becoming a trend.

Citing Hutchinson,<sup>414</sup> Smith, Wynne, and Hartnagel give an example of a gambling-related scandal from Nova Scotia:

“Political indiscretions such as patronage, conflict of interest, and undue influence are often associated with gambling transgressions; such was the case in Nova Scotia where the provincial government was co-opted by the Sheraton Casinos Nova Scotia Corporation. After receiving favourable terms to build and operate casinos in Sydney and Halifax, Sheraton reneged on the contract when their revenue expectations were unmet. Political damage occurred when the government chose to grant Sheraton uncalled-for and expensive concessions. While criminal charges were never laid, “the controversy involved allegations of impropriety, perjury, government interference and secret back-room dealing.” The fallout from the dubious Sheraton—Nova Scotia government alliance cost provincial taxpayers millions of dollars and compromised the government’s

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<sup>410</sup> Ibid.

<sup>411</sup> National Gambling Impact and Policy Commission (U.S.). (1999). *The National Gambling Impact Study Commission : Final report*. National Gambling Impact and Policy Commission.

<sup>412</sup> Ibid.

<sup>413</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>414</sup> Hutchinson, B. (1999). *Betting the House: Winners, Losers and the Politics of Canada’s Gambling Obsession*. Toronto: Viking.



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integrity. The reigning Liberal party was soundly defeated in the ensuing election, in part, because of lingering furor over the “Casinogate” affair.”<sup>415</sup>

### 3.7.8 Nova Scotia

According to evidence currently available, the casinos in Nova Scotia do not appear to have increased crime rates in the communities in which they are located, nor produced a significant increase in public services such as police, ambulance and transportation.<sup>416</sup> The Citizens’ Committee on Destination Gaming in New Brunswick reported that the Halifax Police Department initially set up a Special Gambling Unit to deal with potential increased criminal activity from the casino operations. The committee report states:

“During the first ten months calls for service increased by 54 %, but most of this was due to proactive policing within the area of the casino. After a two-year evaluation period the Unit was disbanded as the expected increase in criminal activity in the vicinity failed to materialize. The costs of setting up the Unit were eliminated when the unit was disbanded. No other additional financial issues have arisen. The issues reported in the area of the casino, such as complaints of public intoxication, parking issues, some fraud and theft complaints are presently handled using existing police services staff.

“The Cape Breton Regional Police Service, which polices the former Sydney and its adjacent areas, reports no indication that policing costs have increased due to the advent of the casino in the area. It assumed policing authority for the municipality on the same day the casino opened, however additional manpower dedicated to casino patrol was not necessary. They also report excellent co-operation with Casino Nova Scotia in-house security, that the security staff have been an asset to the Police Service, and that they usually look after on-site problems that do not impact policing costs. They also report that, overall, policing service issues have not been affected by the casino.”<sup>417</sup>

However, gambling-related fraud appears to have increased. KPMG reported a personal communication with a Halifax regional police superintendent who indicated that the Halifax and Sydney police departments have investigated many major fraud cases directly related to gambling at the local casinos.<sup>418</sup>

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<sup>415</sup> 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. p.16.

<sup>416</sup> 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.

<sup>417</sup> Ibid.p. 24.

<sup>418</sup> KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton.

In addition to the activities of the regular police services, the Nova Scotia Alcohol and Gaming Authority employs compliance officers, and the casinos employ independent, external police services to identify cheating and illegal activities.<sup>419</sup>

### 3.7.9 Measurement issues

Vaillancourt and Roy note that, in a cost-benefit analysis of legalized gambling impacts, the proper costs to use in this area are the additional private and public costs that are incurred after a move from illegal gambling to legalized gambling. This is because legalization should reduce illegal gambling and the resources needed to control it. However, legalization might produce an increase the number of problem gamblers as well as in the crimes these problem gamblers might commit to get money for gambling.<sup>420</sup>

In terms of causality, there is some indication that pathological gambling leads to crime.<sup>421</sup> Eadington uses an example that illustrates one of the difficulties in establishing causality. If there is increased incidence of DWI (driving while intoxicated) arrests in the vicinity of the casino, is this the evidence of gambling-induced drunkenness or of an increased police presence? Has DWI incidence actually increased or are more people being apprehended? Wildman and Chevalier find a weak association between gambling and crime and state, "there is just not enough evidence to consider crime as an effect of gambling."<sup>422</sup> Smith, et al. cite an argument by Brown espousing that there is a causal connection.<sup>423</sup> Brown's argument is that crime is not likely to cause gambling, and that when individuals stop problem gambling activity, they inevitably stop engaging in criminal activity as well.<sup>424</sup>

Grinols, Mustard, and Dilley also find a definite connection between casinos and crime. They reviewed crime rates for violent and property crimes in every county in the United States between 1977 and 1996. They compared counties with and without casinos, and conducted a pre- and post-casino analysis of crime rates. They found that counties with casinos had an 8% higher crime rate than those without, and that the increase in crime incidence generally began about three years after the casino's introduction and increased over time.<sup>425</sup>

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<sup>419</sup> 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.

<sup>420</sup> Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation.

<sup>421</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>422</sup> Ibid.p. 30.

<sup>423</sup> 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.

<sup>424</sup> Brown, R. (1987). Pathological gambling and associated patterns of crime: Comparison with alcohol and other drug addictions. *Journal of Gambling Behavior*, 333, 98-114.

<sup>425</sup> Grinols, E. L., D. B. Mustard and C. H. Dilley. (1999). *Casinos and Crime*. Report prepared for the U.S. National Gambling Impact Study Commission, Washington, D.C.

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. 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.”<sup>426</sup>

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.<sup>427</sup> Grinols explains that the real resources stolen could be treated as social costs to the victimized public.<sup>428</sup>

Estimating the costs of intangible impacts such as the pain and suffering of crime victims is even more difficult than estimating direct crime costs. To estimate these costs, the GPI Atlantic report on the cost of crime in Nova Scotia<sup>429</sup> uses estimates from a University of Ottawa criminology study that examined court awards to crime victims, and from a Fraser Institute study that derived economic estimates for “shattered lives” due to crime. The awards were for suffering, disabilities, and disamenities. The GPI Atlantic report states 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.”

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.<sup>430</sup>

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<sup>426</sup> 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.

<sup>427</sup> 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 Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Institute. Available: <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.

<sup>428</sup> Grinols, E. L. (2004). *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press.

<sup>429</sup> Colman, R. and C. Dodds. (1999). *The Cost of Crime in Nova Scotia*. GPI Atlantic.

<sup>430</sup> Henriksson, L. E. and R. G. Lipsey. (1998). *Should Provinces Expand Gambling?* Coalition for Education and Research into Gambling Expansion (CERGE).

## 3.8 Economic Development and Wellbeing

*This is a macro-level indicator that impacts on regional and provincial levels. It takes into account the overall increase or decrease in economic activity (e.g. gambling supply and support services), the shift in or development of new markets, and the impact on local industries.*

### 3.8.1 Overview<sup>431</sup>

This area does not consider the individual and family level or the community level of analysis. Some areas that might be included in this section, such as employment and tourism, have been discussed separately, but they will be referred to again here to emphasize the multiple interconnections involved with the study of costs and benefits of gaming.

#### *Regional level*

##### **Positive impacts**

- Growth in employment in retail sales and construction activity are seen as positive impacts.
- Businesses that service the gaming industry, such as cleaners or food providers, will likely see increased activity.
- Regions that host firms that produce gaming equipment will also benefit.

##### **Indicators and sources**

- Expenditure on gaming related construction that is carried out by local firms
- Increased activity by firms that service gaming venues (for example providers of cleaning services)

##### **Negative impacts**

- Increased gambling expenditures might adversely affect the retail industry by diverting local monies from other enterprises.
- A targeting of low income and socially disadvantaged communities by gambling businesses, as indicated by the high proportion of gaming machines in these areas, suggests a potential for disadvantaged communities to suffer more adverse social problems from exposure to gambling.
- Regions that lack gaming venues might suffer adverse impacts if residents gamble elsewhere, and thereby spend their money outside the region. There may be lost local expenditures on entertainment and retail purchases through shopping while visiting gaming venues.

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<sup>431</sup> Adapted from: 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].

### **Indicators and sources**

- Regional data on business closures
- Surveys of industry participants
- Density of VLTs relative to social disadvantage

### **Data availability, measurement issues, and approaches**

- There is a lack of data examining both the positive and negative regional impacts of gaming. Conclusions about the nature and extent of impacts often have to be indirectly inferred from aggregate data, surveys or qualitative studies.

### *Provincial level*

#### **Positive impacts**

- Increased revenue that accrues to the province, which provides an opportunity for additional government spending or for the reduction of other taxes.
- Increased employment and other economic activity may also increase revenues for both provincial and federal governments, for example in higher sales tax and payroll tax collections.

#### **Indicators and sources**

- Measures of provincial revenue
- Statistics on gambling related collections
- Labour force figures.

#### **Negative impacts**

- Costs to regulate the gaming industry. While many of these costs will be funded from the revenue collected from the industry, their magnitude needs to be considered.

#### **Data availability, measurement issues and approaches**

- Gross data are readily available. However, detailed and skilled analysis is necessary to ensure that an understanding of the inter-relationships between trends and the isolation of causes in observed correlations is achieved.

### *3.8.2 Economics-based approaches to determining economic development*

One of the most contentious areas in the literature is whether or not gambling, and casinos in particular, promote economic development. Promises are job creation, enticement for tourists, waterfront revitalization, and investment stimulation.<sup>432</sup> However, studies which have documented the economic gains and stimulated growth from casinos have been highly criticized.<sup>433</sup> As Eadington points out, "The methodology to distinguish fully between absolute

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<sup>432</sup> Special issue on gambling. (1995). *Economic Development Review*, 13(4).

<sup>433</sup> Grinols, E. L. (1995). Gambling as economic policy: Enumerating why losses exceed

measures of economic impacts and incremental impacts—in comparison to what would have taken place in the absence of casino authorization—is still in need of considerable refinement."<sup>434</sup> Those casinos that are able to bring in tourists or others from outside the area are the ones that are more successful in increasing local economic benefits.<sup>435</sup>

In the literature, economics-based approaches to determining the economic development effects of gambling most often use the traditional methodology of cost-benefit analysis or economic impact analysis. Azmier explains that, although both of these methodologies calculate net benefits, the approaches are different. The cost-benefit analysis is interested in the economic efficiency of gambling activity, but the economic impact analysis is more concerned with the compounding impact or "spillover" effects that gambling has on the rest of the economy. This is called the "multiplier effect." Azmier argues that both of these approaches do not give a broad picture of actual effects. He argues that the failure of the economic impact approach is that it does not include real private and social costs and therefore tends to inflate the benefits. He criticizes the cost-benefit approach for using easily challenged assumptions that have limited utility because they are not generalizable to other regions. These assumptions are nevertheless necessary to quantify intangible effects. Neither of these approaches, he concludes, provides the extended analysis of gambling on public health that is needed to inform policy makers.<sup>436</sup>

From an economic perspective, the main questions that researchers argue need to be considered when looking at the impact of gaming on economic development and on the overall social and economic wellbeing of regions and provinces include:

- Are expenditures diverted from other commodities?
- Is there a shift of resources from one region to another?
- Does the introduction of gambling lead to an increase in aggregate consumption (at the expense of aggregate saving?) which might provide short-term benefits but incur long-term costs?
- Is there a net increase in new money being introduced into the economy, e.g. from tourism?<sup>437</sup>

### 3.8.3 Nova Scotia government gaming regulation

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gains. *Illinois Business Review*, 52(1), 6-12; 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.

<sup>434</sup> Eadington, W. R. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives*, 13(3), 173-192. p.187.

<sup>435</sup> Eadington, W. R. (1998). *Contributions of Casino Style Gambling to Local Economies*. Presented at the 1998 National Public Policy Education Conference, held September 21-23, 1998 in Clackamas, Oregon.

<sup>436</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>437</sup> Masterman-Smith, H., S. Martin and J. McMillen. (2001). *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR).



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In Nova Scotia, the Alcohol and Gaming Authority (AGA), administered by the Minister of the Department of Environment and Labour, is responsible for regulating the conduct of casinos, bingo, lotteries and other licensed gaming, and for protecting public interest. It studies and reports on public reactions to gaming; on social, economic, health, justice, and environmental impacts of gaming; and on compatibility of provincial regulations with gaming laws and activities in other jurisdictions.<sup>438</sup>

The Nova Scotia Department of Health website offers the following additional regulation information:

"The Nova Scotia Gaming Corporation was established in 1995 under the Gaming Control Act to '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.' The Corporation works in concert with the Atlantic Lottery Corporation Inc. and with Metropolitan Entertainment Group (MEG) (Sheraton Casinos Nova Scotia), operator of the province's two casinos in Halifax and Sydney. The province retains a 20% "win tax" on both casinos along with 65% of the Halifax casino net profits and 100% of the Sydney casino net profits [after expenses]. In addition the operator pays an annual registration fee of \$100,000 to the Nova Scotia Gaming Corporation. The Corporation enters into separate agreements with First Nations for the operation of gambling venues within their respective jurisdictions.

"The Atlantic Lottery Corporation (ALC) was incorporated in 1976 to conduct and manage lotteries in Atlantic Canada. The Nova Scotia Gaming Corporation holds one of four shares in ALC along with each of the other three Atlantic provinces. The Lottery Corporation operates lotteries and video lottery terminals in Nova Scotia for which it earns operating expenses while profits are distributed to the province according to the operating agreement. Retailers retain a commission on sales."<sup>439</sup>

The Nova Scotia Gaming Foundation, administered by the Minister of Health is responsible for Problem Gambling Services and funds research and community projects that address problem gambling and its consequences.

### *3.8.4 Government revenue*

Governments report gambling proceeds in three main ways. The "gross wager" is the amount of money spent on gambling before any prizes or winnings are paid out. "Gross profits" are revenues retained after winnings are paid but before expenses are deducted. "Net revenue" is the

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<sup>438</sup> Nova Scotia Alcohol and Gaming Authority. (2003). *Annual Report for the fiscal year ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority.

<sup>439</sup> Nova Scotia Department of Health. (2004). *Who operates gambling in Nova Scotia?* Nova Scotia Department of Health.

amount kept by the government after expenses and winnings are deducted.<sup>440</sup> Net revenue is also referred to as "gross revenue" by some economists so it is important to understand how particular researchers are using the terms.<sup>441</sup>

In Canada, the average provincial net revenue from gambling is approximately 3.41% of government revenue from all sources. This revenue, a combined total of \$5.5 billion in 1999-2000, is only marginally lower than the \$5.9 billion that provincial governments net from the combined sales of alcohol and tobacco.<sup>442</sup> Nova Scotia relies on gaming revenue proportionately more than do other provinces. In 1999-2000, the provincial net revenue from gambling was 5.08% for Nova Scotia, 4.68% for Saskatchewan, 4.58% for Alberta, and 4.41% for Newfoundland and Labrador. Prince Edward Island and British Columbia take in the smallest proportion of their revenue from gaming at 2.19% and 2.5% respectively.<sup>443</sup>

The Atlantic Lottery Corporation administers VLTs in the provinces. About 500 licensed establishments operate 3,234 VLTs in Nova Scotia. As of July 1, 2004, the commission rate kept by the licensed establishments was reduced from 25% to 20% on all revenues above \$400,000.<sup>444</sup> The Atlantic Lottery Commission's sales of lottery tickets and VLT receipts reached over \$1 billion in 2002-2003. The ALC 2002-2003 annual report lists financial highlights.<sup>445</sup> Nova Scotia had \$211,935,000 in gross lottery ticket sales and spent \$113,968,000 for prizes. Net VLT receipts amounted to \$182,104,000. After expenses, the total net profit for Nova Scotia was \$163,068,000 - \$5,066,000 higher than in 2001-2002. VLTs produced \$117,827,000 (or 72.3%) of the net profit. The provincial net profit per capita in Nova Scotia for lottery tickets and VLTs was \$233, compared with \$197 in New Brunswick, \$271 in Newfoundland and Labrador, and \$169 in Prince Edward Island.<sup>446</sup>

The Nova Scotia Alcohol and Gaming Authority<sup>447</sup> reports in its latest (on-line) annual report that the fiscal year of 2001/2002 showed an increase in gaming with a total wager for VLTs, casinos, ALC lotteries, bingo, and charitable lotteries of \$1.24 billion. This marked a 10% increase from the total wager of \$1.12 billion in 2000/2001.

The total wager by type of gaming activity in Nova Scotia in 2002 was: VLTs - \$575,750,000; casinos - \$356,005,000; ALC lotteries - \$204,421,000; bingo - \$87,254,000; and charitable lotteries - \$12,719,000.

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<sup>440</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>441</sup> Henriksson, L. E. and R. G. Lipsey. (1998). *Should Provinces Expand Gambling?* Coalition for Education and Research into Gambling Expansion (CERGE).

<sup>442</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>443</sup> Ibid.

<sup>444</sup> McLaughlin, P. (2004). Province ups its share of VLT revenue. *The Daily News*, pp. 8.

<sup>445</sup> Atlantic Lottery Corporation (ALC). (2003). *Giving Back to Atlantic Canadians. 02-03 Annual Report*. Atlantic Lottery Corporation.

<sup>446</sup> Ibid.

<sup>447</sup> Nova Scotia Alcohol and Gaming Authority. (2002). *Nova Scotia Annual Gaming Report 2001-2002*. Nova Scotia Alcohol and Gaming Authority.

Of the total wager, \$843,700,000 went to gaming participants in the form of prizes, an increase of 12.4% from the prize payout of \$750,400,000 in 2000/2001. Prizes in 2001/2002 represented 68.3% of the total wager, an increase from 66.8% in 2000/2001. Revenue to the province was \$184,500,000, representing 14.9% of the total wager, a 2.7% dollar increase from \$179,700,000 in 2000/2001.

As well as receiving money directly from wagers, governments also receive revenue from lottery and bingo licenses and fees, and from casino fees. For the year ending March 2003, the AGA received revenue of \$1,228,920 from lottery/bingo licenses and fees and \$689,469 from casino fees.<sup>448</sup>

A large percentage of the gross profits from gambling is used to pay commissions to retailers, expenses of management firms, and operational costs of provincial regulatory agencies. Operating expenses increased 8.5% from 2000/2001, to a total of \$133,800,000, representing 10.8% of the total wager. As well, governments provide charitable organizations with revenue. Revenue received by charities from gaming activities in 2001/2002 was \$25,300,000, a 5.1% increase from \$24,100,000 in 2000/2001. Revenue to commercial entities in 2001/2002 was \$48,800,000, up 5% from \$46,500,000 in 2000/2001.

In economic analyses, revenue statistics are often translated into contributions to GDP. For example, a Manitoba study found that the 1990 entertainment industry revenue statistics compared to increased GDP were: \$1 million spent on gambling increased the GDP by \$783,000; \$1 million spent on movies increased the GDP by \$423,000; on restaurants by \$997,000; and on theatre, sports, and recreation services by \$798,000. Money spent on gambling therefore increased GDP proportionately more than the same amount of money spent on movies, but less than money spent on theatre, sports, and recreation, and much less than money spent in restaurants.<sup>449</sup>

Government revenues are considered transfers from individuals to the government and then back to individuals. Therefore, in an economic cost-benefit analysis, these revenues are not counted as an economic benefit unless the money comes from outside the area.

### *3.8.5 Incremental revenue*

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<sup>448</sup> Nova Scotia Alcohol and Gaming Authority. (2003). *Annual Report for the fiscal year ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority.

<sup>449</sup> KPMG Management Consultants. (1995). A Critical Review of 'An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba'. In Ross and Cyrenne (Eds.), *Assessment of the benefits and costs of the Manitoba Lotteries Corporation*: KPMG Management Consultants.

Henriksson and Lipsey define incremental revenue as the net *addition* to provincial revenue, or the net new revenue, earned by the government from gambling.<sup>450</sup> They discuss a hypothetical situation in which a new casino is introduced to a region. They explain that gambling revenue received by the government is generally reported as total revenue minus operating and management costs. They refer to the result as "gross revenue." However, this gross revenue is not an accurate account of government revenue since the new casino takes in money that the government had previously been receiving from other sources, which must be accounted for. For example, if the new casino reduces the amount of revenue received from existing gaming venues, the amount of money that is lost by the government from those gaming venues must be deducted from the gross revenue generated by the new casino, since no new money is generated. This is because the government receives the same amount of revenue from the new casino that it lost from the existing gaming venue. Second, if the additional money spent gambling in the new casino had been spent on other goods and services in the area, sales taxes would have been paid on those expenditures. Since the government would have received that money without gambling, this lost tax money should be deducted from the gross gambling revenues.

Henriksson and Lipsey demonstrate a three-step method for calculating estimates of incremental net revenue.<sup>451</sup> First, they trace the revenues from gaming to three sources: 1.) revenue diverted from other gaming within the province by the introduction of new gaming, called "gambling diversion" or GD; 2.) revenue diverted by gaming from other spending in the province, called "spending diversion" or SD; and 3.) new spending, NS, created by gaming.

Second they determine whether the revenue from each of the three sources comes from locals or from tourists. And third, they estimate incremental revenue, or net new revenue. They add that only money coming from new spending in the province actually adds to the economy. The rest of the expenditure on gaming is diverted from other locally produced goods and services which would likely have produced at least as much employment and revenue.

Henriksson and Lipsey also contend:

"[F]or the economy as a whole, we conclude that while some new revenues and jobs are created, these are largely offset by the loss of jobs and revenue in other sectors... Most of the jobs created in gambling only substitute one for one (at best) for the jobs destroyed when expenditure switches from other activities. Some of the "new" gambling-related jobs will be taken from other parts of the existing gambling sector."<sup>452</sup>

To calculate GD, revenue diverted from other gambling within the province by the expansion of gaming, they use a rate of 25% of the gross gambling revenue (calculated as the revenue to government after deductions for operating and management expenses) generated by locals, and 10% of the gross gambling revenue generated by tourists, as reasonable and low amounts for the revenue diverted from other gambling venues. There is no incremental revenue from these

<sup>450</sup> Henriksson, L. E. and R. G. Lipsey. (1998). *Should Provinces Expand Gambling?* Coalition for Education and Research into Gambling Expansion (CERGE). p.5.

<sup>451</sup> Ibid.

<sup>452</sup> Ibid. p. 2, 8.

sources. For example, in the hypothetical situation, 75% of the gross gambling revenue comes from locals and 25% of the gross gambling revenue comes from tourists. If the gross gambling revenue is \$100, \$75 would come from locals and \$25 would come from tourists. Of the \$75 coming from locals, 25% of this revenue, or \$18.25 would be the GD from locals. Of the \$25 coming from tourists, 10% of this revenue, or \$2.50 would be the GD from tourists. The total, \$20.75, is not new revenue since it is diverted from other gaming venues. It, therefore, cannot be incremental revenue.

To calculate the lost tax from the SD, the funds diverted from other spending by the casino that would have generated sales and income taxes, it is necessary to know the amount of PST (provincial sales tax) and PIT (provincial income tax) generated by each dollar of local spending. In the case of British Columbia, the example province, the provincial sales tax is 7% of a purchase price. The PIT generated by each dollar of local spending is calculated by estimating the total PIT revenue as a percentage of the total provincial taxable income, which is 6% of taxable income. The combined 13% is then deducted from the revenue that was diverted from other spending to get the contribution to incremental revenue from the SD, which is 87% of each dollar in gross revenue diverted to gaming from other sources. Henriksson and Lipsey suggested that, as a general rule, 55% of the gross gambling revenue coming from locals is from funds diverted from other spending by locals, and 40% of the gross gambling revenue coming from tourists is from funds diverted from other spending by tourists. For example, if the gross gambling revenue is \$100 as in the example above, 55% of the \$75 of gross revenue from locals is \$41.25, and 40% of the \$25 of gross revenue from tourists is \$10. The total, \$51.25, is the amount of spending that would have generated the 13% tax if it had been spent on goods or services rather than gaming. After this 13%, or \$6.66, is deducted from \$51.25, the remainder of \$44.59 is considered incremental revenue.

Each dollar of gross revenue from new spending generates a dollar, or 100%, of incremental revenue. For new spending by tourists and locals, Henriksson and Lipsey estimate that 50% of the money that tourists spend on gaming is new revenue. As stated above, the other 50% of the money that tourists spend on gaming is not counted as new spending. It is assumed that 40% of the money tourist spend would have been spent elsewhere without the gaming opportunity, and this 40% is included in the SD calculation. The remaining 10% of the money that tourists spend is assumed to be diverted from other gaming venues and, therefore, this 10% can not be counted as incremental revenue. For example, 50% of the \$25 in gross gambling revenue generated by tourists (from the above example) is \$12.50, which is considered new spending, and 100% of this \$12.50 is added to the incremental revenue.

The new spending category also includes money locals would have saved, or spent outside of the area under investigation, in lieu of local gaming. Henriksson and Lipsey estimate that this “new” money spent by locals within the region, and diverted either from savings or from spending in other regions, accounts for 20% of the local gambling revenue from locals, but the authors do consider this estimate to be high. Each dollar of gross revenue from this local source also generates a dollar of incremental revenue. For example, 20% of the \$75 of gross gambling revenue generated by locals (from the above example) is \$15, which is counted as incremental

revenue. The total incremental revenue from new spending by tourists and locals in the example of \$100 of gross gambling revenue is \$12.50 from tourists plus \$15.00 from locals, or \$27.50.

In the same example, the net incremental revenue that government receives from \$100 of gross revenue is \$0 from the GD, \$44.59 from the SD, and \$27.50 from the NS, or \$72.09. Therefore, in this example, the net incremental revenue is actually 72% of the gross government revenue. Henriksson and Lipsey argue that this is a reasonable estimate of the net government revenue resulting from gambling expansion. They conclude:

"The calculations also explain why misleadingly rosy figures can often be presented, even after the fact. They reflect direct revenues and neglect the losses as tax revenues fall elsewhere. Only a careful study of the overall changes in revenues provides useful evidence about incremental revenues. Our rough calculations suggest that, as a maximum, only about \$0.70 of each \$1.00 of gross revenue is genuine incremental revenue. Since operating and management expenses have already been deducted to get gross revenue, no more than about 50 cents of each dollar lost by gamblers ends up as incremental revenue for the government."<sup>453</sup>

### 3.8.6 Multiplier effects

Determining the economic development effects of gambling requires looking at the net economic impacts of casinos, since they are major generators of jobs, government revenue, additional revenue from complementary businesses such as hotels and restaurants, and tourism promotion. On the other hand, it has been reported that casinos have also been correlated with job losses and the displacement of some businesses in cases where expenditures have been diverted from other entertainment venues. Other forms of gambling do not provide the same net business and employment effects for a region as do casinos, so casinos are the main focus for analysis of economic development impacts.<sup>454</sup>

The concept of the multiplier effect is that money spent on gambling will also create more business in other industries within the region. When calculating these effects, however, it is important that a distinction again be made between new money—incremental effects—and money that is redistributed. As noted above, redistributed dollars are those that would have been spent locally on other goods and services in lieu of gambling, and these dollars would also have created multiplier effects. Azmier notes that costs also "spill over" and need to be calculated. In particular, hotels and retail businesses have expenses as well as potentially increased (or decreased) revenue.<sup>455</sup> A general guideline for multiplier effects proposed by Rephann et al. is

<sup>453</sup> Ibid. p. 8.

<sup>454</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>455</sup> Ibid.



that when less than half of the gamblers are tourists or from outside the area, the net result is a redistribution of money rather than an economic expansion.<sup>456</sup>

Azmier states that the use of a multiplier in a cost-benefit analysis can be a valuable tool, but using it incorrectly can lead to results that are misleading. He concludes:

The multiplier value selected often depends both on the amount of money to be spent on a study and the time to be spent on it. The process to calculate a multiplier can be very time consuming and expensive, as it requires a vast amount of data to calculate. Consequently, often the value of an economic multiplier is arbitrarily chosen and then applied to a study to measure the additional economic benefits to a region from an economic activity. Estimation of economic benefits and costs by this method will be imprecise at best. The value of a multiplier will tend to vary from region to region, and will depend on a multitude of independent factors such as the size of the region, savings, consumption rates, income, and employment levels. Without taking each of these factors into consideration within a cost-benefit study, the result most likely will contain a variety of shortcomings.<sup>457</sup>

### 3.8.7 Opportunity costs or substitution effects

Opportunity costs are "the value of what resources could have produced had they been used in the best alternative way."<sup>458</sup> This is also referred to as the "substitution effect." Marfels of Dalhousie University is critical of the substitution effect argument. In discussing the effects of VLT gaming on casino profits (or vice versa depending on which was introduced first), he states:

"This kind of thinking is just the wrong blend of moral-ethical beliefs, greed, and economic reality. The claim that one dollar spent in a casino is one dollar less for spending on other forms of entertainment is simply not substantiated by fact. Likewise, the extension of the substitution effect of casino gaming to other forms of commercial gaming in general, and to VLT gaming in particular in the sense of cannibalisation of gaming revenues, is misguided...there is not empirical evidence to support this claim."<sup>459</sup>

Marfels argues that the substitution effect assumes that consumer budgets are fixed over time and that new industries cut into the existing economic pie. However, empirical evidence shows that the pie has grown. Growing disposable incomes have allowed consumers to increase their

<sup>456</sup> Rephann, T. J., M. Dalton, A. Stair and A. Isserman. (1997). Casino Gambling as an Economic Development Strategy. *Tourism Economics*, 3(2), 161-184.

<sup>457</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation. p. 23.

<sup>458</sup> Westphal, J. R. and L. J. Johnson. (2001). *Innovation in the Cost-Benefit Analysis of Legalized Gambling: Estimating Opportunity Costs for Gambling Disorders*. Paper presented at "Innovation 2001" Conference hosted by the Canadian Foundation on Compulsive Gambling, Toronto, Ontario, April 22- 25, 2001.

<sup>459</sup> Marfels, C. (1997). Casino Gaming and VLT Gaming: Substitution Effect or Supplementation Effect? *Gaming Law Review*, 1(3), 333-340, Available: <http://is.dal.ca/~cmarfels/substitution.html>.

discretionary income, which is often used for non-necessities such as leisure and recreation. Using information from the Statistics Canada National Income and Expenditure Accounts, Annual Estimates 1981—1992, he reports that, from 1981 to 1992, real personal expenditures (1986 dollars) on recreation, entertainment, education and cultural services increased from 9.7% to 11% of real disposable income, whereas expenditures on food and non-alcoholic beverages fell from 12.8% to 11.2% of real disposable income.

Taking a different approach, Westphal determines opportunity costs for problem gambling using time as a proxy for the social consequences of gambling disorders.<sup>460</sup> Time use is based on the difference in time spent gambling by regular and problem gamblers and the value of that time based on income level. In order to calculate the opportunity cost of gambling, Westphal first determines baseline factors of amount of time gambled by problem gamblers in high and low income brackets minus the time spent by recreational gamblers. He then multiplies the additional number of hours gambled per month by the problem gambler by the hourly wage based on the median annual income bracket to estimate the excess cost of the time spent gambling per month by problem gamblers. The result is a proxy for the social opportunity cost—the extra amount of money spent by the problem gamblers that could have been spent in alternative, and arguably more productive, ways.

### 3.8.8 Industry cannibalisation

As previously stated, urban casinos, where the majority of patrons are drawn from the local area, as opposed to destination resort casinos, have not generated great economic stimulus in their areas. Generally, economic activity is drawn from other sectors of the economy and is not creating new economic activity.<sup>461</sup> When a gaming establishment is introduced it may have an adverse effect on other neighbouring businesses, causing sales to fall. This is called "industry cannibalisation" in the literature. Walker points out, that from an economic perspective, this is not a social cost. It often is the case that new businesses offer products or services that consumers prefer. He says, "The significant issue is not whether some firms are replaced by others, but whether the introduction of the new product increases total societal wealth."<sup>462</sup>

The SERC report quotes findings from the Productivity Commission in Australia:

“While gambling may not have caused a reduction in actual retail expenditure in Victoria during or immediately after its introduction, the Commission does not believe that this result can be generalized to suggest that an expansion in gambling comes at no cost to other retail activity. All products and services compete for a share of the consumer’s

<sup>460</sup> Westphal, J. R. and L. J. Johnson. (2001). *Innovation in the Cost-Benefit Analysis of Legalized Gambling: Estimating Opportunity Costs for Gambling Disorders*. Paper presented at “Innovation 2001” Conference hosted by the Canadian Foundation on Compulsive Gambling, Toronto, Ontario, April 22- 25, 2001.

<sup>461</sup> Eadington, W. R. (1995). Economic development and the introduction of casinos: Myths and Realities. *Economic Development Review*, 13(4), 51-54. p.53.

<sup>462</sup> Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212. p.203

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budget. Unless there is a permanent shift in the savings rate, the growth in expenditure on one product or service generally must be at the expense of expenditure on others, whether it be in the form of an actual decline in retail spending or a slower growth in retail spending than would otherwise have happened. Only if the increase in gambling caused a significant and sustained increase in economic growth, sufficient to offset the switch in market share away from other retail spending, would other retail sectors be better off. The Commission sees no reason to believe that this would be the case.”<sup>463</sup>

Eadington explains that economists classify a failed business as a "pecuniary externality"—a transfer that reflects the typical market functioning. However, in the case of businesses affected by government-owned gaming, or gaming in which the government has a financial stake, the business is not subject to normal market functioning since it is not permitted to offer gambling services and therefore is not able to compete with the monopolistic gaming establishment. Therefore, government, rather than the market alone, might be responsible, in part, for the business failures.<sup>464</sup>

Walker criticises arguments that the economic benefits of casinos are dependent on new money being brought into the local economy from tourism and that gambling may produce a "leakage" of money out of the local economy.<sup>465</sup> He gives several illustrations to show the fallacy of what he considers mercantilist views—that money coming into the system from outside the region is beneficial and money flowing out of the local economy is harmful. This view, he argues along with Marfels, implies that the world is static, that the economic pie is constant in size, and that all transactions are zero-sum. Walker argues that counting money leaving the region (e.g. to buy gaming machines) as a loss is a misunderstanding of basic economic concepts, since purchases of goods and services and the resulting trade result in benefits for society. Basically, he argues, money going out of the region will bring money in and vice versa.

### 3.8.9 Savings hypothesis

One issue mentioned by the SERC report<sup>466</sup> is the "savings hypothesis." This is illustrated by a report from Victoria, Australia, that showed the growth in expenditure on retail spending on goods and services between 1990 and 1996 was less than that the growth in expenditure on gambling activities during the same period, and, at the State level, this appears to have been

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<sup>463</sup> 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]. p. 10.31.

<sup>464</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

<sup>465</sup> Walker, D. M. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

<sup>466</sup> 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].

funded through a reduction in individual savings. At the national level, however, there was little evidence to suggest that retail industries were adversely affected. This points to the need to look at gambling's impact on both the macro and micro-local levels, since macro level outcomes may not reflect micro market outcomes.

SERC concludes by noting that the outcome of the impact of a decrease in savings should not be ignored because, at some point, perhaps after the gambling activity has matured, there will either be an effort by individuals to build up their savings, thereby causing a reduction in gambling and/or retail expenditures, or the individual's capital will decrease. Both scenarios can impact economic development and wellbeing.

### *3.8.10 Employment effects of gambling expansion*

Increased employment is often seen as a benefit of the gaming industry, although this is debated in the literature.<sup>467</sup> The issue of employment has been discussed earlier in this review. Basically, the question is whether the jobs created are mainly diverted from other job possibilities or from existing jobs or whether the employment is new – that is, whether it reduces unemployment.<sup>468</sup> Henriksson and Lipsey state that it is difficult to determine the jobs destroyed or diverted, since they are diffused over a wide area and are not as visible as the direct jobs generated by gaming. They conclude that: "Only careful studies of overall employment trends, not just those in gambling, have any chance of uncovering the true full effect—and, by and large, such studies typically find little effect."<sup>469</sup>

The Productivity Commission in Australia takes the view that the gambling industry does not affect the unemployment rate in the long term.<sup>470</sup> It suggests:

"While there is considerable debate over the causes of systematic levels of unemployment, there is little evidence that unemployment rates are significantly affected by policies assisting particular industries. In its report on Telecommunications Equipment, Systems and Services, the Industry Commission noted:

'Empirical studies of unemployment among different countries suggest that industry policy does not have a large roll to play in ameliorating the problem [unemployment] Factors such as employment programs, industrial relations laws and institutions, and the social security and tax system are much more important long run determinants.'<sup>471</sup>

"Similarly, Chris Murphy, in work presented by the Australian Hotels Association, said:

<sup>467</sup> Grinols, E. L. (2004). *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press.

<sup>468</sup> Grinols, E. and J. D. Omorov. (1996). Development or Dreamfield Delusions: Assessing casino gambling's costs and benefit. *Journal of Law and Commerce*, 16, 49-87.

<sup>469</sup> Henriksson, L. E. and R. G. Lipsey. (1998). *Should Provinces Expand Gambling?* Coalition for Education and Research into Gambling Expansion (CERGE).

<sup>470</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>471</sup> Industry Commission. (1998). *Telecommunications Equipment, Systems and Services, Report no. 61*. AusInfo, Canberra: Industry Commission. p. 93.

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'In the long-term, the unemployment rate depends on labour market policy rather than industry policy. That is, in the long-term, industry policy affects the industry pattern of employment not the total level. Thus the PC [Productivity Commission] is correct in arguing that the gambling industry, like any other industry, does not affect the unemployment rate in the long term.'

"This is not to say that there cannot be some regional effects from development projects. The existence of high rates of unemployment, which can persist for long periods of time at the regional level, together with other rigidities in markets that limit the ability for price signals to reflect the availability of such under-utilized resources, means that there may be gains from some regional development policies. For the economy as a whole, the effect is more questionable."<sup>472</sup>

### 3.8.11 Tax revenue

Government revenue from gambling, according to some researchers, is an implicit tax.<sup>473</sup> Net government revenue, the remainder of revenue after winnings and expenses, has the same effect that a direct tax on expenditures would have. In one example, Clotfelter explains that if the net government revenue were 33 cents on the dollar, this would represent the equivalent of a 50% excise tax on the 67 cents used to operate and reap profits from the gaming, which is much higher than the excise taxes on alcohol and tobacco products.<sup>474</sup> The gambling tax revenue is one that gamblers pay, whereas both gamblers and non-gamblers theoretically benefit from government spending that revenue —if social costs are not considered. Azmier points out it is important to realize that gross profits from gambling actually are net losses for the gambling adults in the region, but that this also includes the amount of per adult tax savings that gambling provides, and that government does not have to collect through other means. Presumably, if government were to maintain the same level of expenditures, it would have to raise this amount in another way if there were no gambling. In other words gambling losses are effectively subsidising non-gamblers by reducing their tax burden.<sup>475</sup>

Henriksson argues "the dubious wisdom of regarding gambling expansion as an economic messiah for governments." He continues:

“Although the tax proceeds arising from a large-scale expansion may have been as high as C\$200 million in the case of British Columbia, this amount pales in comparison to what is derived from other provincial revenue sources. Again, using some fairly simple assumptions, [we] found that raising the provincial sales tax by a tiny fraction of a

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<sup>472</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia. p. 5.27.

<sup>473</sup> Clotfelter, C. T. (2000). *Do Lotteries Hurt the Poor? Well, Yes and No*. Duke University.

<sup>474</sup> Ibid.

<sup>475</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.



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percentage point would have generated the same amount. Very modest reductions in government spending constitute another alternative."<sup>476</sup>

However, Vaillancourt and Roy, in their study for the Canadian Tax Foundation, find that taxes in Canada, on average, would have to be raised by 10% to replace provincial government revenues from gambling.<sup>477</sup>

Another issue that is important to consider in a cost-benefit analysis is whether or not the level of revenue the government receives from gaming is sustainable in the long run. A familiar caveat is that this level of revenue may not continue if gambling growth falls. Without other means to replace it, the tax base could erode if the gaming industry falters. The Australian Productivity Commission comments that: "In no other group of industries today do policies appear to be driven so strongly by revenue needs so much that it is commonly observed that the states have become addicted to gambling."<sup>478</sup>

According to Wildman and Chevalier, one of the main issues in looking at the associations between gambling and social problems is whether or not the implicit taxes are progressive or regressive.<sup>479</sup> Regressive taxes are those that take a greater proportional share from the poor than from the wealthy. Wildman and Chevalier note that economists reached a consensus as early as the mid-1970's, that gambling taxes were "overwhelmingly regressive" and were twice as regressive as the much criticized sales tax. Many studies have found that people in low-income brackets spend roughly the same amount of money each year on lottery purchases as those in middle and upper-income brackets. However, the percentage of their income spent on lotteries is higher than those who are more affluent. Clotfelter notes that this conclusion was found in every case he examined.<sup>480</sup> He stresses that this observation is drawn entirely from empirical studies of actual spending patterns.

Clotfelter also finds, "By placing a high implicit tax on lottery purchases, a state in effect makes its revenue structure more regressive than it would be if the implicit tax on lotteries were in line with other tax rates."<sup>481</sup> Clotfelter also finds that, through heavy marketing of lottery products targeted at low-income persons, states compound the burden on lower-income persons and increase the social costs of problem gamblers.<sup>482</sup>

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<sup>476</sup> Henriksson, L. E. (2001). Gambling in Canada: some insights for cost-benefit analysis. *Managerial & Decision Economics*, 22(1-3), 113-123. p. 116.

<sup>477</sup> Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation.

<sup>478</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia. p. 12.7

<sup>479</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>480</sup> Clotfelter, C. T. (2000). *Do Lotteries Hurt the Poor? Well, Yes and No*. Duke University.

<sup>481</sup> Ibid.

<sup>482</sup> Ibid.



Azmier remarks that most economic impact studies do not consider the source of the revenue.<sup>483</sup> However, 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.

### 3.8.12 Impacts to disadvantaged regions

Casinos have been introduced into depressed regions in an effort to increase employment and economic development. However, casinos that have been located in economically depressed areas have not been as successful as those located in more prosperous communities that have a larger economic base to draw from. The New Brunswick Citizens' Committee on Destination Gaming was concerned that the negative social impacts of gambling seem to be accentuated in economically depressed communities. The Committee argued that if economically depressed communities have a higher proportion of less educated and less wealthy inhabitants, there will be more social costs created by the gaming opportunities. The Committee also pointed out that the economic context must be taken into consideration when looking at the overall effects of gambling. For example, factors affecting the Sydney economy, in addition to the casino effects, were an industrial base that was shifting and in decay; the out-migration of skilled residents, especially youth; unemployment; and a sluggish economy. The Committee noted that the addition of the casino into the present business environment has not increased economic development to any great extent, nor can it be blamed for all of the social and economic difficulties in the region.<sup>484</sup>

The Australian Productivity Commission (PC) report observed that, although in general economic benefits are stronger in the immediate vicinity of the gambling facilities, social costs are diffused throughout a broader geographic region.<sup>485</sup> The report was concerned to see a differential impact on disadvantaged regions. For example, they found more electronic gaming machines in these regions. Data showed there to be an inverse relationship between income levels and the density of gaming machines in Victoria. The PC also saw a possible concentration of problem gamblers because of the increased access. It warned that the concentration of gaming machines in disadvantaged areas could deepen existing disadvantages and discourage investment in the region. The PC also concluded that there was a potential for disadvantaged communities to suffer greater economic and social costs because of their exposure to gambling. On the other hand, Smith and Wynne found that more VLT machines and problem gamblers were located in higher income areas of Alberta. These areas, however, were resource-based, and had a high population of employed, single, young males and very little diversion activities other than licensed establishments with VLTs.<sup>486</sup>

<sup>483</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>484</sup> 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.

<sup>485</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>486</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

### 3.8.13 Income distribution

Governments are concerned to ensure that benefits from gaming are enjoyed by the population at large and that any harm is minimized.<sup>487</sup> However, the costs and benefits of gambling are not shared equally among the population and those who are harmed are generally different population groups than those who benefit.<sup>488</sup> This unequal distribution of costs and benefits may be concealed in standard cost-benefit analyses that reveal only net social benefits and costs. Researchers have shown that, for many reasons, there is a strong correlation between the way that income is distributed in a region and the average health status of that region.<sup>489</sup> Higher-income people have lower levels of mortality and morbidity than those with lower incomes. Hayward and Colman, in a recent report for Health Canada, found that to be the case in Atlantic Canada.<sup>490</sup> Researchers also speculate that gambling may impact the way income is distributed in a region and thereby affect population health.<sup>491</sup> Large prizes only affect a few and, as noted above, lower-income people are effectively taxed regressively through implicit government taxes on gambling. In general, as we have seen, low-income groups also spend a higher proportion of their income on gambling than do higher income people. These factors may widen both income and health gaps within the population. Single comments:

“A major impact of gambling may be not so much in its direct impacts on the overall level of goods and services that an economy produces, but rather on the manner in which wealth is distributed. One might well argue that impacts of gambling on the distribution of wealth are normative issues beyond the concern of economic analysis. Nonetheless, compared to their utility for substance abuse, cost estimation studies may be less useful in addressing the full array of economic consequences of gambling because a major impact of gambling concerns its impact on the distribution of wealth rather than just the level of wealth.”<sup>492</sup>

Henriksson suggests, "To the extent that persons of lower SES [socio-economic status] demonstrate a greater propensity to divert their resources and savings towards gambling, the

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<sup>487</sup> Nova Scotia Alcohol and Gaming Authority. (2003). *Annual Report for the fiscal year ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority.

<sup>488</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>489</sup> Henriksson, L. E. (1999). *Government, gambling and healthy populations*. Workshop on Addiction and Population Health.

<sup>490</sup> Hayward, K. and R. Colman. (2003). *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper*. Population and Public Health Branch, Atlantic Region, Health Canada.

<sup>491</sup> Henriksson, L. E. (1999). *Government, gambling and healthy populations*. Workshop on Addiction and Population Health.

<sup>492</sup> Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233. p. 13.

effect on population health may be adverse."<sup>493</sup> When large differences in wealth exist between the rich and the poor, social cohesion is reduced and a lower quality of life for both rich and poor may occur. This is evident when crime rates increase in both lower and higher-income neighbourhoods as a result of growing economic and social disparities and high levels of deprivation.<sup>494</sup> Wildman and Chevalier also find that: "Gambling increases differences in wealth between the rich and poor, a factor which could be linked to increased crime and lower quality of life for both gamblers and non-gamblers."<sup>495</sup> Shaffer and Korn as well, note a possible connection between the wellbeing of the population, income distribution, and gambling:

“Gambling holds potential direct and oblique benefits for both the individual and the community. For example, population health research has examined the relationship between health status and socioeconomic variables including income and employment. A particular focus of this work is the variance and inequities in health status indicators among subgroups within the general population. Population health studies demonstrate that economic wellbeing in general and income in particular are key determinants of health and the quality of life of individuals, families, and communities. Wealth and its generation or loss is correlated with the health status of various demographic segments. In the future, analyses of the linkage between economic and social policy to health can provide a vehicle to analyze and understand the questions and controversies central to the study of gambling and health.”<sup>496</sup>

Shaffer and Korn also point out that poverty is associated with financial risk-taking, perhaps because people living in poverty see gambling as a possible way to change their lives—more so than do the wealthy. For that reason, too, the poor are at an increased risk for gambling problems. Evidence indicates that low-income groups experience gambling-related problems at rates that are higher than those with higher socio-economic status.<sup>497</sup>

Eadington explains that economists generally don't address the issue of income inequality since this is considered a transfer requiring a *normative* analysis. "Economists are able to say more GDP is a better overall situation than less GDP, but they are unable to say, except as a value judgment, if one income distribution among its citizens is better or worse than another at the same level of GDP."<sup>498</sup> Vaillancourt and Roy observe that economics is concerned with the welfare or wellbeing of society as a whole. "Given this concern, what matters are changes in aggregate real wealth but not changes in the distribution of this wealth; a policy that makes one

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<sup>493</sup> Henriksson, L. E. (1999). *Government, gambling and healthy populations*. Workshop on Addiction and Population Health. p. 7.

<sup>494</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>495</sup> Ibid.

<sup>496</sup> Shaffer, H. J. and D. A. Korn. (2002). Gambling and Related Mental Disorders: A Public Health Analysis. *Annual Review of Public Health*, 23, 171-212, Available:

<http://www.hms.harvard.edu/doa/html/reprints/shafferkoronarph.pdf>.

<sup>497</sup> Ibid.

<sup>498</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213. P. 211.

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subset of society better off and another worse off by an equal amount does not generate any costs to society as a whole."<sup>499</sup>

The GPI, needless to say, has a very different perspective, regarding growing income and wealth disparities as potentially destructive of social cohesion and therefore of aggregate social wellbeing, and also potentially costly to the health and justice systems. The GPI approach also recognizes that Eadington's implicit equation of increased GDP with wellbeing *is* in fact normative, and the GPI makes its own values (including equity) explicit and transparent.

The Whistler Symposium report also finds that gambling involves a redistribution of income and expenditures in society. Traditional economic cost-benefit analysis does not consider distribution effects since they cancel each other out and do not represent a gain or loss to society from a macro-economic perspective. The report states that the "unique challenge is to differentiate between the redistribution effects and true costs...this dimension will need to be elevated in gambling research studies."<sup>500</sup> Again, the GPI recognizes that a growing income gap can produce "true costs" in higher health and justice expenditures. To its credit, the Whistler Symposium does recognize the "need to assess the redistribution effects of gambling in terms of money flows (government revenues, charitable donations, etc.), resources (e.g. labour), and time-use impacts of gambling."<sup>501</sup>

A 1999 study of Nova Scotia's gaming industry examined the relationships between consumer income and expenditure patterns and gambling using Statistic's Canada's 1996 Family Expenditure Survey, and 1997 Survey of Household Spending.<sup>502</sup> The study found that income was not a predictor of the amount spent on gambling in Nova Scotia, but that lower-income groups spent more on gambling as a percentage of income than other income groups. Gambling households in Nova Scotia in the lowest-income group spent 1.9% of their income on gambling, while those in the highest-income group spent 0.3%. The report also found that gambling tax is more regressive in Nova Scotia than in Canada as a whole. Also in Nova Scotia, 35% of households with incomes less than \$20,000 are in the "high" gambling group which consists of the 25% of households who spend the highest share of their incomes gambling. The lowest 25% of households who spend the lowest share of their incomes on gambling include only 15% of households from the lowest-income group. The report also found that individuals with less than nine years of education have a higher gambling expenditure than those with a post-secondary education; that gambling does not affect spending on necessities such as food and shelter, or on other forms of recreation; and that it negatively affects household savings and charitable spending.

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<sup>499</sup> Vaillancourt, F. and A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation. p. 39-40.

<sup>500</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse., p.21

<sup>501</sup> Ibid., p.27

<sup>502</sup> MPM Gaming Research. (1999a). *Convenience Gambling in Nova Scotia: A Study of Consumer Income and Expenditure Patterns*. Halifax: Nova Scotia Alcohol and Gaming Authority.

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### 3.9 Financial Costs

*On the individual level, financial costs include revenue spent on gambling, and increased debt and bankruptcy attributable to gambling. On the community, provincial, and regional levels, this domain takes into account returns from increased tax revenues, costs or benefits the province incurs and receives through the promotion of gambling, such as advertising and public education, costs of lobbying, research, data collection, etc.*

#### 3.9.1 Overview<sup>503</sup>

At the individual level, financial costs are a micro-level indicator. Information was given in the previous section on household spending. As well, financial impacts at the provincial and regional levels are dealt with in the sections on employment, tourism, and economic development. At the provincial and regional levels, therefore, this domain can be seen as an aggregation or summary of data in those earlier sections, and is not dealt with separately here. Therefore, after a short review, this section will concentrate on the individual level and on the financial costs incurred by gamblers with financial problems.

#### **Positive impacts**

- Possible short-term financial gain as the result of an individual's gaming activities

#### **Indicators and sources**

- Official statistics on consumer profits and losses from gaming
- Self-reports of consumer profits and losses from gaming

#### **Negative Impacts**

- Extent to which gambling expenditure represents a large or small share of total income, with ratios of gambling expenditure to income being very high among problem gambling households relative to those of recreational gamblers
- Increased debt attributable to gambling
- Bankruptcy attributable to gambling

#### **Indicators and sources**

- Estimates of average weekly, monthly, and/or annual gaming expenditure (i.e. losses)
- Ratio of net gaming expenditure to household income (i.e. affordability)
- Level of gaming related debt
- Indirect evidence based on inferences from self-reports of borrowing money to finance gaming

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<sup>503</sup> Adapted from: 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].

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### ***Community level***

- No reliable work on financial costs has been undertaken relevant to communities.

### ***Regional level***

#### **Positive impacts**

- At present, research has not identified positive impacts

#### **Negative impacts**

- Businesses could experience losses from bad debts and bankruptcy of customers who experience severe gaming losses.

#### **Data availability, measurement issues and approaches**

- Bankruptcy statistics that identify causes are required for these indicators.

### ***3.9.2 Household spending on gambling***

As reported in a 2003 study from Statistics Canada, the 1999 Survey of Household Spending showed that 79% of Nova Scotia households spent some money on at least one gaming activity, and the average annual gaming expenditure for participating households was \$580. Annual per capita expenditure of adults 18 years of age and older, averaged among the whole populace, was \$430 in Nova Scotia. This compares with 76% of Canadian households gambling on at least one activity and spending \$499 per year per participating households with an annual per capita expenditure of \$370 per adult, averaged over the whole populace.<sup>504</sup>

In Nova Scotia, gaming participation per spending household by type of activity was as follows:

- 64% (compared with 67% for Canada) spent an annual average of \$249 on government lotteries;
- 48% (compared with 32% for Canada) spent an average of \$50 on other lotteries and raffles;
- 22% (compared with 20% for Canada) spent \$567 annually at casinos and on slot machines and VLTs; and
- 15% (compared with 10% for Canada) spent \$958 on bingo. Only Prince Edward Island gamblers spent more on bingo with 19% of PEI gaming households spending an average of \$1,177 each annually.<sup>505</sup>

A second 2003 Statistics Canada study reports Nova Scotia gaming participation, as a percentage of the entire adult population aged 15 and over, from the 2002 CCHS (Cycle 1.2):

- 78% participated in at least one gaming activity (compared with 76% for Canada);

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<sup>504</sup> Marshall, K. (2003). Fact-sheet on gambling. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, March.*

<sup>505</sup> Ibid.



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- 67% bought lottery tickets (compared with 65% for Canada);
  - 41% bought instant win tickets (compared with 36% for Canada);
  - 19% gambled at casinos (compared with 22% for Canada);
  - 11% played bingo (compared with 8% for Canada); and
  - 12% used VLTs (compared with 6% for Canada).<sup>506</sup>

The CCHS separated casino, VLT, and instant win tickets where the Survey of Household Spending did not. Percentages from the CCHS 1.2 are reported for individuals aged 15 and over, while those from the Survey of Household Spending are reported for households.

### 3.9.3 Gamblers with financial problems

For most gamblers, money spent on gambling is considered a discretionary entertainment embezzlement.<sup>507</sup> A 2002 study of gambling in Saskatchewan found that 26% of problem gamblers reported not purchasing needed food or groceries, 13% reported not paying medical, dental, or eye care bills, 8.7% reported not paying credit cards, bank loans, or other debts, and 8.6% reported not paying power, heat, or water bills.<sup>508</sup>

Statistics Canada reported in 2003 that, according to the CCHS 1.2, 62% of gamblers with financial problems were likely to spend more than \$1,000 per year gambling, compared with 43% of moderate-risk gamblers, 21% of low-risk gamblers, and 4% of non-problem gamblers. Overall, 6% of all gamblers spent over \$1,000 a year gambling, which is the same percentage reported by one-person households in the Survey of Household Spending. In that survey, the median gambling expenditure of those who spent more than \$1,000 a year on gambling was \$2,280 for men and \$1,900 for women in 2001.<sup>509</sup> Expenditure which does not negatively affect the family finances. However, excessive spending by the problem gambler has severe consequences, especially for the gambler's family, when bills do not get paid, utilities are cut off, and money for necessities such as food is cut short. Problem gamblers report getting money through selling personal items including homes, borrowing with the intention of repaying the loan and not being able to do so, using loan sharks, and, in extreme cases, resorting to theft or

The Statistic Canada report on the CCHS 1.2 showed that 62% of problem gamblers, compared with 3% of non-problem gamblers, said that they always or most of the time spent more money gambling than they intended. Also, 85% of problem gamblers reported that they sometimes or most of the time bet more than they could afford to lose, compared with 47% of moderate-risk and 14% of low-risk gamblers. Among problem gamblers, 53% said their gambling habits sometimes caused financial problems, 17% reported that they always or almost always did, and

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<sup>506</sup> Marshall, K. and H. Wynne. (2003 Dec). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, 16(1)*.

<sup>507</sup> National Council of Welfare. (1996). *Gambling in Canada*. National Council of Welfare.

<sup>508</sup> Wynne, H. J. (2002). *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health.

<sup>509</sup> Marshall, K. and H. Wynne. (2003 Dec). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, 16(1)*.

39% of problem gamblers reported that they sometimes borrowed money or sold things in order to continue gambling.<sup>510</sup>

Considering that they constitute a relatively small proportion of all gamblers, problem gamblers account for a remarkably high percentage of total gambling expenditures. The Productivity Commission in Australia found that problem gamblers accounted for 33% of total gambling expenditures with the highest percentage of that coming from gaming machine play. Over 76% of problem gamblers spent over a fifth of their household income on gambling, and 40.4% spent over 50%. In addition, the mean ratio of net gambling expenditure to household income (which signifies affordability) was estimated at 22.1% for problem gamblers and 1.2% for non-problem gamblers.<sup>511</sup>

### 3.9.4 Unpaid debts and bankruptcy

Empirical studies consistently find that problem gamblers have high rates of debt and declare bankruptcy at much higher rates than lower-risk gamblers and non-problem gamblers. Studies of gamblers in Gamblers Anonymous and treatment programs show the highest rates of financial difficulties. Problem gamblers in Gamblers Anonymous in Canada were reported by Ladouceur to have had debts at bankruptcy averaging from \$75,000 to \$150,000.<sup>512</sup> Thompson, Gazel and Rickman reported that in the Wisconsin treatment population, gambling-related current debt (as opposed to lifetime borrowing) was \$39,000.<sup>513</sup> A study from Lesieur and Anderson found the current debt rate in the Illinois treatment population to be \$114,000.<sup>514</sup>

In the U.S. studies cited above, between 18% and 28% of males under treatment for problem gambling and 8% of females in treatment had declared bankruptcy. Grinols found that consistently 20% of problem gamblers have filed for bankruptcy as a result of gambling losses.<sup>515</sup> The NORC 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.<sup>516</sup>

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<sup>510</sup> Ibid.

<sup>511</sup> Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>512</sup> Ladouceur, R. (1996). The Prevalence of Pathological Gambling in Canada. *Journal of Gambling Studies*, 12(Summer), 129-142.

<sup>513</sup> 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.

<sup>514</sup> 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.

<sup>515</sup> Grinols, E. L. (2001). Business profitability vs. social profitability: Evaluating the social contribution of industries with externalities, the case of the casino industry. *Managerial & Decision Economics*, 22(1-3), 143– 162.

<sup>516</sup> Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago.

A 2004 study from the United States looked at individual and business bankruptcy rates from 1990 through 1999 for the 250 U.S. counties that have casinos.<sup>517</sup> The study compared each of these counties with counties without casinos that had similar household incomes, population, and population densities. Regression analysis indicated that counties with casinos experienced a cumulative growth rate in individual bankruptcies that was more than double the growth rate of bankruptcies in corresponding non-casino counties. Between 1990 and 1999, total personal U.S. bankruptcies grew by 67.8% from 771,210 to 1,294,134. However, the cumulative rate of change in business bankruptcy rates in the casino counties was, on average, 35.4 percent lower than the comparable rate for the non-casino counties. Total U.S. business bankruptcies declined from 63,365 in 1990 to 37,183 in 1999. The report concluded that it could not assign the cause of the increase in personal bankruptcies or the decline in business bankruptcies to gambling without a more in-depth analysis, since other economic factors were changing at the same time.

In 1997-1998, the Nova Scotia Alcohol and Gaming Authority interviewed bankruptcy trustees and found that the majority of them 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. Some of the trustees, however, estimated that between 5% and 10% of all personal bankruptcy cases could be attributed to gambling problems.<sup>518</sup>

Gamblers often do not identify gambling as a cause of bankruptcy, since this could affect their bankruptcy status. In the case of gambling-related bankruptcy, powers of suspending the bankruptcy or attaching conditions to the discharge are affected by the designation of gambling as a cause. The Canadian Bankruptcy and Insolvency Act states that this exemption is the case when (173e) "the bankrupt has brought on, or contributed to, the bankruptcy by rash and hazardous speculations, by unjustifiable extravagance in living, by gambling or by culpable neglect of the bankrupt's business affairs."<sup>519</sup> Conditions for discharge include the following: (175.1) "A statutory disqualification on account of bankruptcy ceases when the bankrupt obtains from the court his discharge with a certificate to the effect that the bankruptcy was caused by misfortune without any misconduct on his part."<sup>520</sup>

### 3.9.5 Measurement issues

In a traditional economic analysis unpaid debts and bankruptcies, although damaging to the creditors, are considered transfers from the creditor to the debtor and are not considered as social costs in the aggregate. However, money spent to recover the bad debt or process the bankruptcy

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<sup>517</sup> Goss, E. and E. Morse. (2004). *The Impact of Casino Gambling on Bankruptcy Rates: A County Level Analysis*. Creighton University.

<sup>518</sup> 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.

<sup>519</sup> Department of Justice Canada. (2004). *Bankruptcy and Insolvency Act: Part VI Bankrupts*. Department of Justice Canada.

<sup>520</sup> Ibid.

is considered a social cost since that money could have had an alternative use.<sup>521</sup> Bankruptcies incur lawsuits and other legal costs such as court time and resources, bill collector fees, and harassment costs.<sup>522</sup> Other researchers agree with this methodology, but point out that bad debts and bankruptcies should still be measured and tracked in order to inform gambling policy.<sup>523</sup> Welfare payments incurred by gamblers also are considered transfers. However, as Wildman and Chevalier explain, in a budgetary impact study focussing on government revenue, such welfare payments would be included.<sup>524</sup>

Arguing against the conventional economic logic, Thompson, Gazel, and Rickman consider that unrecoverable debts of problem gamblers in bankruptcy court proceedings should be considered as social costs. In their study of the social costs of gambling in Wisconsin, they assumed that 50% of the gambler's debts would not be repaid and therefore should be considered a social cost. They actually found 50% a low estimate, since evidence indicates that many problem gamblers actually pay little of their debts.<sup>525</sup>

Goss recommends that indicators to look at in this area, in addition to unpaid debts and bankruptcy, include gaming expenditures (losses), the ratio of net gaming expenditures to income, the debt created by gambling, and the amount of money borrowed to gamble based on indirect evidence from surveys.<sup>526</sup> The question of causality remains a problem, since the link between financial problems and gambling is bi-directional. Gambling can cause financial difficulties but money problems can lead to increased gambling as the gambler "chases losses."<sup>527</sup>

The introduction of new gambling facilities, especially casinos, might require a municipality to incur increased costs for resources or infrastructure. The area around a casino, for example, might need wider roads, more police, new traffic signals, etc. Eadington points out that this is analogous to what is needed for any new development such as a shopping mall or sports stadium that create *negative externalities* the local government must bear.<sup>528</sup>

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<sup>521</sup> Walker, D. and H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212.

<sup>522</sup> Grinols, E. L. (2001). Business profitability vs. social profitability: Evaluating the social contribution of industries with externalities, the case of the casino industry. *Managerial & Decision Economics*, 22(1-3), 143– 162.

<sup>523</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.

<sup>524</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>525</sup> 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.

<sup>526</sup> Goss, E. and E. Morse. (2004). *The Impact of Casino Gambling on Bankruptcy Rates: A County Level Analysis*. Creighton University.

<sup>527</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>528</sup> Eadington, W. R. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

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The United States NORC report estimates the costs of negative consequences of gambling, whether bankruptcy, job loss, health problems, etc., by first determining the "expected" rates among non-problem gamblers, determining the rate experienced by problem gamblers, and then determining whether the difference is larger than might be expected due to chance or confounding demographic and socio-economic variables. It then attributes the excess rates for problem gamblers to gambling. It is this difference between the expected rates for non-problem gamblers and the problem gambling rates that is important in determining gambling impacts, rather than the amount of debt of problem gamblers per se.<sup>529</sup>

### 3.10 Types of Gaming Activities

#### 3.10.1 Introduction

Different types of gaming activities have different social and economic impacts, and need to be treated separately in a cost-benefit analysis. Although each of these different gaming activities has been dealt with throughout this review, this section adds more specific and local information. Stating that there is no clear understanding in the literature of how each type of game contributes to the benefits and costs of gambling, Wildman and Chevalier recommend that differentiation by types of gambling activities should be included in research designs, and that research data and conclusions on gambling impacts should be presented by type of game.<sup>530</sup>

The Canada West Foundation survey on gambling behaviour and attitudes showed that Canadians play lotteries mostly for winning money, play casino games mostly for entertainment, play VLTs mostly the thrill of winning, and play bingo mostly to socialize.<sup>531</sup>

#### 3.10.2 Video Lottery Terminals (VLTs)

Governments have accepted Video Lottery Terminals (VLTs) for their entertainment and relaxation values as well as for their potential to increase government revenue. Christian Marfels, economics professor at Dalhousie University, praises the entertainment quality of VLTs. He states:

“VLT play offers great entertainment at low cost. VLTs can be found in neighbourhood bars and restaurants. They are easily accessible, and play is unintimidating and straightforward. Most important, VLT play is casual play in a casual atmosphere. People go to bars and beverage rooms after work to have a beer, meet friends and, maybe, play a

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<sup>529</sup> Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago.

<sup>530</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre.

<sup>531</sup> Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation.



bit. Thus, play may not be the primary reason to visit the establishment. VLTs fit perfectly into an environment of having a drink, talking to friends, and just feeling comfortable. This scenario makes for regular visits. VLT players may have, and usually will have, a favourite terminal, and they come at specific times. VLT players also look for lengthy play time, just for the sake of play and relaxation.”<sup>532</sup>

VLTs, however, are the gaming activity most associated with problem gambling.<sup>533</sup> According to a recent newspaper report, on Monday, May 3, 2004, a man "stormed" into an establishment in Halifax with an axe and began smashing VLT machines. That day, between 10:30 a.m. and 6:00 p.m., he had gambled and lost his entire income tax rebate. The incident made front page headlines and underlines the pain and suffering associated with problem gambling. Interviewed after his arrest for causing mischief over \$5,000 and possession of a weapon for dangerous purposes, he broke down and sobbed as he described his 13-year gambling addiction as "hell" for himself and his family. Over the years he had tried everything, including professional help to stop, but nothing had worked.<sup>534</sup>

Statistics Canada recently reported that one in four of those playing VLTs were at risk for problem gambling, or already were problem gamblers.<sup>535</sup> This same study showed that 12% of the adult population over 15 in Nova Scotia participated in VLT gaming not in casinos. A new and very thorough analysis of VLT gambling in Alberta by Smith and Wynne cites studies from Nova Scotia, Manitoba, and Australia that found VLT players to be at a higher risk for developing gambling problems than gamblers who preferred other formats.<sup>536</sup> The 1997 Nova Scotia survey reported that 16% of those who played VLTs were problem players, and that these represented 1% of the adult population. In Nova Scotia, these problem gamblers accounted for 53% of VLT income, or \$808.88 per month per problem gambler. This compares with VLT spending of \$228.50 per month per frequent (playing four or more times per month) player, and \$53.49 per month per infrequent (playing less than four times per month) player.<sup>537</sup>

Smith and Wynne found that, although only 13.4% of adult Albertans play VLTs on an annual basis, it is the most lucrative form of gaming in Alberta, accounting for 50% of the gaming profits. The researchers tracked 59 Alberta regions and found considerable differences in the regions in the number of VLT machines and the amount of revenue per machine generated within each region. To explain the differential rates, Smith and Wynne examined Statistics Canada demographic indicators for 15 of the communities—the top ten revenue generators plus

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<sup>532</sup> Marfels, C. (1997). Casino Gaming and VLT Gaming: Substitution Effect or Supplementation Effect? *Gaming Law Review*, 1(3), 333-340, Available: <http://is.dal.ca/~cmarfels/substitution.html>. p. 334.

<sup>533</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>534</sup> Cuthbertson, C. (2004, May 5). 'Years of losses, of pain'. *The Daily News*, pp. 3.

<sup>535</sup> Marshall, K. and H. Wynne. (2003 Dec). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE*, 16(1).

<sup>536</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>537</sup> Focal Research Consultants Ltd. (1998). *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services.



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5 other communities ranking medium to low in revenues per VLT. The demographic factors looked at were gender distribution, age, marital status, educational attainment, annual income, and unemployment rates.

The demographic indicators that showed differences in the regions in terms of average expenditures per VLT showed the higher expenditure regions had a higher percentage of males to females, a lower percentage of adults in the 55 and older age range, lower unemployment rates, and higher average annual incomes. Although they couldn't say for certain why VLT expenditures were higher in these regions, the authors speculate that it might be because the high VLT expenditure regions all have an oil and natural gas based economy in common. These regions have a well paid, predominantly younger male workforce living in towns where recreational and entertainment options are limited mainly to bars and lounges that feature VLT gambling.<sup>538</sup>

In 2002, the Nova Scotia Gaming Corporation released a study on the effectiveness of Responsible Gaming Features (RGFs) on VLTs.<sup>539</sup> The study showed that problem gamblers have different behaviours than do non-problem gamblers. Problem gamblers lose track of time and money spent, chase losses, spend more time playing, and play more often. The Alberta report describes VLTs as being faster paced than other forms of gambling and allowing more money to be waged per session. They are located in bars and licensed restaurants, making them very accessible, and particularly accessible to people who have been drinking alcohol. The design, with its bright colors, flashing lights, and pleasant sounds, helps put the gambler into a psychologically detached, dissociative state, according to the Alberta study. As well, there is little skill required to play, and it is easy to learn.

Nova Scotia has been a leader worldwide in promoting responsible gaming. The province has capped the number of VLT machines off-reserve at 3,234 (at last count there were also 615 VLTs on Mi'kmaq reserves<sup>540</sup>); has restricted them to licensed establishments that exclude youth playing; allotted funds for problem gambling treatment; and offers a training program to VLT retailers in responsible gaming. All of the VLTs in the province now support four Responsible Gaming Features designed to help problem gamblers reduce the amount of time and money spent while playing, without affecting non-problem playing.<sup>541</sup> The Nova Scotia Gaming Corporation was the first gaming jurisdiction in North America to introduce such features on its VLTs. These machines have a permanent clock, pop-up reminders of play duration, wagers shown as cash rather than credits, and a cash-out after a prescribed time limit.

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<sup>538</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>539</sup> Focal Research Consultants Ltd. (2002). *Video Lottery Responsible Gaming Feature Research*. Nova Scotia Gaming Corporation.

<sup>540</sup> Flinn, B. (2004, May 5). "Province promises new policy on gambling". *The Daily News*, pp. 3.

<sup>541</sup> Nova Scotia Department of Health. (2002). *2000 Regular Video Lottery (VL) Players Follow Up Survey*. Halifax, N.S.: Author.

Smith and Wynne, however, cite a study by Dickerson<sup>542</sup> who questions whether any harm reduction strategy used with VLTs can be effective, since the nature of VLT continuous play encourages loss of control even among non-problem gamblers, and any attempt to reduce the features that impair control would reduce the entertainment value of the machines.<sup>543</sup>

In 2002, the Nova Scotia Department of Health released a VLT player survey<sup>544</sup> that followed up players from the 1997 survey.<sup>545</sup> The study compared problem and non-problem gamblers who were able to stop or reduce regular (defined as play once a month or more) VLT play. It looked at play behaviours, attitudes, lifestyles and characteristics of players, coping strategies, and outcomes for all players. Approximately 52% of the problem gamblers reported trying to stop continuously but being unable to do so. Many of these felt a stigma in seeking professional help and attempted to resolve their problems themselves or informally with friends and family. The report suggested that work is needed to reduce this stigma and to increase awareness of gambling problems associated with VLTs.

Azmier, who analyzed the national gambling attitudes survey conducted by the Canada West Foundation, noted a gap between government policies around VLTs and public opinion. The survey found that only 8.4% of Canadians had played a VLT the previous year, although VLTs were available within 50 kms of home for 63% of Canadians. However, VLTs are not available in British Columbia and Ontario. The highest rate of VLT play during the previous year was 18.4% in the Prairie region. Over 70% of Canadians agreed with restricting VLTs to dedicated gambling venues such as casinos and racetracks. The Atlantic region was most opposed to VLT gambling, with 62% in favour of an outright ban.<sup>546</sup>

Nova Scotia was the first province to study public opinions toward VLTs. Surveys conducted in 1998 and 1999 found that 66% of respondents disapproved of VLTs—a higher percentage than for any other gaming format.<sup>547</sup> Men had a higher acceptance rate than women -- 23% compared to only 12% for women. Younger adults were more likely to approve of VLTs than older adults. Those under the age of 54 had an acceptance rate of 20% compared to only 9% for those over 54. Over half (55%) of the respondents agreed they would prefer to see VLTs reduced in number or banned altogether, even if it meant an increase in personal tax. Almost half (49%) of respondents said they knew a person with a gambling problem and 81% of that group said the problems were with VLTs. Participation rates of respondents who had played a VLT during the previous year in Nova Scotia were from 15%—20%, considerably higher than the Canada-wide rate reported by

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<sup>542</sup> Dickerson, M. (2003). *Exploring the limits of 'responsible gambling': Harm minimization or consumer protection?* Paper presented at the 12th Annual Conference of the National Association for Gambling Studies, Melbourne Australia.

<sup>543</sup> Smith, G. J. and H. J. Wynne. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute.

<sup>544</sup> Nova Scotia Department of Health. (2002). *2000 Regular Video Lottery (VL) Players Follow Up Survey*. Halifax, N.S.: Author.

<sup>545</sup> Nova Scotia Drug Dependency Services. (1998). *Nova Scotia video lottery players' study highlights, 1997-98*. Halifax: Dept of Health, Drug Dependency Services.

<sup>546</sup> Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation.

<sup>547</sup> Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

the Canada West Foundation, but lower than for most other gambling activities. The surveys found that VLTs accounted for the largest proportion of wagers in the province, and that an estimated 50% of VLT revenue came from 4% of the players. Males under age 35 comprised the majority of players.<sup>548</sup>

### 3.10.3 Casinos

As previously noted, Nova Scotia has two casinos—one in Halifax and one in Sydney. Both are “convenience type” casinos used mainly by local gamblers rather than the “destination type” that draw large numbers of tourists. The Halifax casino does, however, receive some business from tourists, mainly from the other Atlantic provinces. For example, over 50 tour buses travelled from Moncton to Casino Halifax in 2000 for both overnight and day trips.<sup>549</sup> The casinos are owned and regulated by the Government of Nova Scotia and managed by private companies.

The New Brunswick Citizens’ Committee on Destination Gaming described the Nova Scotia casinos in their casino feasibility report for Moncton:

“[Halifax’s] downtown casino, opened in 2000, contains twice the floor space (135,000 square feet) than the interim casino that opened in the Sheraton Hotel in 1995. Local architects Lydon Lynch designed the casino to take advantage of the waterfront setting and to complement the unique blend of modern and historic buildings that mark the Halifax skyline. It has 690 slot machines and 40 table games. The interior of the casino is equally spectacular. The signature style of Las Vegas based casino designer, Paul Steelman, is everywhere on the casino floor. It also has a Crown Club, an upscale gaming in a relaxed atmosphere, complete with lounge and separate slot and table salons. The facility also has four wheelchair-accessible Blackjack tables. Clients must be 19 years of age or over to access the establishment. It is open 24 hours a day, seven days a week. Table games are open 24 hours per day except from 04:00 to noon on Tuesday and Wednesday. The casino is closed on Good Friday, Easter Sunday, Remembrance Day and Christmas Day.

“The Cape Breton Regional Municipality (CBRM, formerly Sydney and vicinity) is Nova Scotia’s second largest community. Its casino, opened in 1995, is adjacent to Centre 200, a sports-culture complex that hosts events throughout the year and is the home arena for the Cape Breton Screaming Eagles, a Québec Junior Hockey League team. It measures 25,400 square feet, includes a restaurant and an entertainment lounge, features 14 tables and 353 slot machines, and operates 24 hours per day on Fridays and Saturdays and from noon to 04:00 on Sundays through Thursdays (it is closed on Good Friday, Easter Sunday, Remembrance Day and Christmas Day).”

<sup>548</sup> Ibid.

<sup>549</sup> KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton.

The Alcohol and Gaming Authority report on convenience gaming in Nova Scotia, using 1996 statistics from the Nova Scotia Gaming Control Commission, presented a profile of the casino gambler. The players were almost equally divided between men (53%) and women (47%). The average player was in his or her fifties, with an annual income of between \$25,000 and \$50,000. People with an income over \$50,000 were more likely to have visited one of the casinos than those whose income was under \$30,000. People with a university education also had a higher attendance rate than those with less education, and those with less than high school education had the lowest attendance rate among educational groups.<sup>550</sup>

Casinos, for the most part, offer recreation and entertainment for the majority of their patrons. In addition, they offer possible economic development benefits and additional public revenue.<sup>551</sup> However, one of the most prevalent criticisms concerning casino gaming is the fact that casinos benefit from the gambling habits of problem and pathological gamblers. The typical problem and pathological gambler loses from 10 to 20 times what a non-problem gambler might lose in a year.<sup>552</sup> Research shows that casinos derive a significant share of their revenue from problem gamblers. Lesieur examined data from surveys of gambling behaviour in Canada and the United States (including Wynne resources, an Alberta study for Alberta Alcohol and Drug Abuse Commission, and studies from British Columbia, New York, Nova Scotia, and Louisiana). The portion of total revenue derived from problem gamblers in casinos was 41.4% for table games and 74.6% for machine gambling.<sup>553</sup>

### 3.10.4 Lotteries

Purchasing lottery tickets in Canada has become a popular means of gaming. A 2003 study from Statistics Canada<sup>554</sup> reported that 65% of the Canadian population had purchased a lottery ticket in the previous year, and 36% had purchased an instant win ticket. Of those ticket purchasers, 37% purchase lottery tickets weekly as do 23% of instant win purchasers. The same study showed that 67% of Nova Scotians had purchased a lottery ticket and 41% had purchased an instant win ticket – somewhat higher than the national average in both cases. In 1998, the typical Atlantic Canadian who purchased lottery tickets was female (54%), married, aged 25 to 59, had a trade school or less education, lived equally in urban and rural areas, and had an annual income lower than \$45,000.<sup>555</sup>

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<sup>550</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>551</sup> Eadington, W. R. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives*, 13(3), 173-192.

<sup>552</sup> Grinols, E. L. (2004). *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press.

<sup>553</sup> Lesieur, H. (1998b). Costs and treatment of pathological gambling. *The Annals. American Academy of Political and Social Sciences (AAPSS)*, 556(March), 153–159.

<sup>554</sup> Marshall, K. and H. Wynne. (2003 Dec). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE*, 16(1).

<sup>555</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

Statistics Canada reported in 1999 that the participation rate for gambling increased with household income until about \$40,000, where it levelled off to just under 90% of Canadian households who had participated in at least one type of gaming during the previous year.<sup>556</sup> The trend by income group was similar for the purchase of government and non-government lottery and raffle tickets, and for spending at casinos or slot machines. For example, 59% of households with an average income of less than \$20,000 spent money on government lotteries and 8%, spent money at casinos, slot machines or VLTs. On the other hand, 78% of households with an income of \$80,000 or more bought lottery tickets and 24% spent money on casinos, slot machines or VLTs. Although, participants with higher incomes spent more on gambling than did low-income participants, the proportion of total income spent on gambling was higher for low-income people. For example, low-income households spent 2.2% of their total household income per year on gambling, or an average of \$296 per household, while high-income households spent 0.5% of their income, or about \$536 per household per year, gambling.<sup>557</sup>

The Atlantic Lottery Commission, which covers all four Atlantic provinces and manages video lottery terminals as well as lottery tickets, reported in its 2002-2003 annual report that net ticket sales were \$270.439 million, and net video lottery receipts were \$435.9 million. Prizes awarded reached \$327 million. This represents a daily average of \$895,000 in prizes. As well, more than 5,800 ticket and video lottery partners received over \$145 million in commissions, and the ALC contributed nearly \$1.4 million to fundraisers, festivals, and music, sporting, and cultural events.<sup>558</sup> The Nova Scotia share of the net profit in 2003 was \$163.068 million, up from \$158.002 million in 2002. Gross ticket sales for 2003 were \$211.935 million; net ticket sales were \$97.967 million; prizes given were \$113.968 million; and net VLT receipts were \$182.104.<sup>559</sup>

In 1998, the Atlantic Lottery Corporation found that, although the amount of money spent on gaming had increased, the number of people participating had remained the same, leading the ALC to conclude that players were spending more.<sup>560</sup> The ALC works actively to develop new products and new marketing strategies to increase the player base, especially to include younger, single, educated, and more affluent players.<sup>561</sup>

Statistics Canada also found that of all the forms of gaming, lottery purchasers have the lowest risk (7%) of becoming at-risk or problem gamblers.<sup>562</sup> The scratch card type of lottery is easily accessed by youth, and appears to be more addictive than forms of lotteries where one must wait

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<sup>556</sup> Marshall, K. (1999). The gambling industry: Raising the stakes. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, Winter.*

<sup>557</sup> Ibid.

<sup>558</sup> Atlantic Lottery Corporation (ALC). (2003). *Giving Back to Atlantic Canadians. 02-03 Annual Report.* Atlantic Lottery Corporation.

<sup>559</sup> Ibid.

<sup>560</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia.* Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>561</sup> Ibid.

<sup>562</sup> Marshall, K. and H. Wynne. (2003 Dec). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, 16(1).*



for the result. A recent study by DeFuentes-Merillas et al., however, did not find this form of lottery particularly addictive. Results of a sample of scratch card buyers in the Netherlands showed the estimated prevalence rates of regular buyers and *potential* problematic scratch card buyers were 28.4% and 2.68%, respectively. Only 0.24% of scratch card gamblers in the sample met DSM-IV criteria for *problematic* scratch card gamblers. Only 0.09% of scratch card gamblers in the sample were addicted uniquely to scratch cards, while 0.15% were also addicted to other games of chance.<sup>563</sup>

Debate in the literature concerning lotteries has to do with the equity and efficiency of lotteries as fund-raising instruments relative to other tax instruments. Morgan argues that, when viewed as a tax instrument, lotteries do not appear to be a particularly equitable or efficient means of revenue generation. He points out, however, that this may not be a fair comparison when lotteries are used by private charities that lack taxation power, or when lotteries are viewed as voluntary. Morgan states that "lotteries may not be a substitute for confiscatory tax schemes when these are politically feasible; rather, lotteries are often used in lieu of other *voluntary* contribution schemes...[and] are shown to be an effective means of financing public goods relative to other commonly used voluntary mechanisms."<sup>564</sup>

Morgan continues that, "relative to the standard voluntary contributions mechanism, lotteries (1) increase the provision of the public good; (b) are welfare improving; and (c) provide levels of the public good close to first-best as the size of the lottery prize increases."<sup>565</sup> Morgan also shows that lotteries are more successful and outperform voluntary giving when prizes are fixed rather than a percentage of the wager and when their profit is earmarked to the provision of specific goods. Lottery sales increase as the size of the prize increases, thus providing greater capacity to improve the public good. Morgan offers a caveat, however, "These implications differ sharply from models in which lottery play is motivated by risk-seeking, love of gambling, or ignorance. In these models, one would not expect changes in betting behavior to vary with the social desirability of the public good."<sup>566</sup>

### 3.10.5 Charity gaming and bingo

Bingo is a popular form of gaming that is often used by charities or charitable causes to increase their revenue. Henriksson notes that a distinctive feature of gambling in Canada is the institutionalization of charitable gambling. Section 207 of the *Criminal Code* allows:

“for the operation of gambling ‘for a charitable or religious object or purpose’, defined at common law as ‘the relief of poverty, disadvantage and distress; the advancement of

<sup>563</sup> De Fuentes-Merillas, L., M. W. J. Koeter, J. Bethlehem, G. M. Schippers and W. Van Den Brink. (2003). Are scratchcards addictive? The prevalence of pathological scratchcard gambling among adult scratchcard buyers in the Netherlands. *Addiction*, 98(6), 725-731.

<sup>564</sup> Morgan, J. (2000). Financing public goods by means of lotteries. *Review of Economic Studies*, 67, 761-784. p. 762.

<sup>565</sup> Ibid. p. 763.

<sup>566</sup> Ibid. p. 777.



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education, culture and the arts; the advancement of religion; and other purposes beneficial to the community (such as amateur sports, public safety, community service clubs, volunteer fire departments, emergency rescue organizations, and provincial, regional or community associations).<sup>567</sup>

Charitable organizations may sponsor gaming activities for which they have received a license and then retain a portion of the net proceeds. In Canada, charities share between 15-20% of the \$5.5 billion in total net profit from gaming.<sup>568</sup> The Alcohol and Gaming Authority (AGA) in Nova Scotia issued 7,056 gaming licenses in 2002-2003.<sup>569</sup> Included in this were 817 licenses for regular event series, and 6,239 for single events. Single events included 153 bingo licenses, 543 ticket lotteries, 5,301 permits, 65 break-opens, and 177 games of chance. Games of chance included charitable and commercial carnival events, Monte Carlo fun nights, and games of chance held at annual fairs and exhibitions.

Commercial bingo is no longer licensed in Nova Scotia. However, there are three commercial bingo halls that were "grandfathered in" when commercial bingo was discontinued in the province in 1995.<sup>570</sup> In 2001-2002, \$2.0 million was wagered at these three commercial bingo halls in Nova Scotia, which represents 2.3% of the total bingo wager. Profits to commercial bingo operators were \$377,000.<sup>571</sup>

The 2001-2002 annual report from the Nova Scotia AGA, found that bingo represented 7.1% of the total gaming wager in Nova Scotia.<sup>572</sup> The \$87.254 million wagered in the same fiscal year was a 0.3% decrease from the \$87.483 million wagered in 2000-2001. Despite the fact that bingo gambling expenditures are smaller than for other gaming activities like lotteries, VLTs, and casinos, bingo ranked first among gaming activities as a means of generating funds for charitable purposes. Organizations such as volunteer fire departments, churches, schools, minor league sports teams, legions, and other community groups use bingo and other gaming events to raise funds. In 2001-2002, \$85.2 million was wagered at charitable bingo events in Nova Scotia. Charities retained \$13.9 million in profits or about 16% of the total wagered, and the province received \$1.2 million, a decrease of 0.6% from the previous year. Prizes represented 73.6% of the money wagered with the total amount of prizes awarded being \$62.7 million.

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<sup>567</sup> Henriksson, L. E. (2001). Gambling in Canada: some insights for cost-benefit analysis. *Managerial & Decision Economics*, 22(1-3), 113-123. P. 115.

<sup>568</sup> Lipton, M. D. (2003b). *Place Your Bets, Canada. Gaming in Canada: An Overview*. International Masters of Gaming Law.

<sup>569</sup> Nova Scotia Alcohol and Gaming Authority. (2003). *Annual Report for the fiscal year ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority.

<sup>570</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>571</sup> Nova Scotia Alcohol and Gaming Authority. (2002). *Nova Scotia Annual Gaming Report 2001-2002*. Nova Scotia Alcohol and Gaming Authority.

<sup>572</sup> Ibid.

Bingo is often played in working class and rural neighbourhoods.<sup>573</sup> Statistics Canada reports that bingo is the only gaming activity to have a negative correlation with income. In 1996, for example, 13% of households with incomes less than \$20,000 played bingo compared with 9% of households with an income of \$80,000 or more.<sup>574</sup> In Nova Scotia, in 1996, 60% of adults with annual household incomes of \$20,000 or less played bingo compared with 36% of adults with household incomes over \$60,000.<sup>575</sup>

Statistics Canada reported that 15% of all households in Nova Scotia played bingo and spent an average of \$958 per spending household in 1999. This compares with 64% of all Nova Scotia households playing the lottery, with lottery spending households averaging \$249 in 1999, and 22% of all Nova Scotia households participating in casino, slot machines, and VLTs play, with spending households averaging \$567 in 1999.<sup>576</sup>

According to the CCHS 1.2, bingo was more popular in Atlantic Canada in 2002 than in the rest of Canada, with 13% of the adult population age 15 and over playing in Newfoundland and New Brunswick, and 11% of the adult population playing in Nova Scotia and Prince Edward Island. This compares with 8% of the Canadian population age 15 and over playing bingo in 2002.<sup>577</sup>

Bingo also has a negative correlation with educational levels, with 59% of players having less than high school education. Sixty-three percent of bingo players are married, and 71% are between the ages of 25 and 54. Women make up 68% of occasional bingo players and 92% of weekly players.<sup>578</sup>

Socializing is a major motivator for bingo participation. The Alcohol and Gaming Authority's study of convenience gaming in Nova Scotia reported that bingo players in focal groups were attracted to bingo for the social activity and as a diversion from family and work stressors, rather than for winning. The report states, "The social world of bingo offered a great sense of caring and belonging that allowed many players to feel that they were a part of a community. Interestingly, for many players, bingo was so integral a feature of daily life that it was not even considered gambling."<sup>579</sup>

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<sup>573</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>574</sup> Marshall, K. (1999). The gambling industry: Raising the stakes. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, Winter*.

<sup>575</sup> MPM Gaming Research. (1999c). *Towards a Convenience Model of Gaming and its Social Effects in Nova Scotia, Annual Gaming Report, Appendix C*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>576</sup> Marshall, K. (2003). Fact-sheet on gambling. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, March*.

<sup>577</sup> Marshall, K. and H. Wynne. (2003 Dec). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, 16(1)*.

<sup>578</sup> MPM Gaming Research. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

<sup>579</sup> *Ibid.* p. 55.

A 2002 study by Cousins examined the social and health characteristics of seniors who play bingo in Alberta.<sup>580</sup> These seniors tended to be older seniors, female, less healthy, with lower incomes and education. The study reported social and psychological contributions that bingo makes to positive health and wellness among these seniors. Cousins suggested that bingo may be popular especially with senior women because there are few other forms of affordable, social leisure activity that are available to people in their circumstances. The outing itself seems to be more important than winning or losing. Cousins concludes that there are problem gambler bingo players, but basically, for the seniors she studied, bingo seems to be a good thing. Sobel also studied the health-giving impacts of bingo. The study evaluated the therapeutic effect of bingo on Alzheimer's patients for cognitive stimulation, short-term memory, concentration, word retrieval, and word recognition. His conclusion was that bingo can be valuable to the daily management of Alzheimer's patients.<sup>581</sup>

Bingo, however, does have problems in certain jurisdictions. A recent study looking at bingo in the United States found that bingo is primarily a cash operation, which provides opportunities to inflate expenses or to under-report income generated. It also found an infiltration by organized crime and an association with graft, corruption, and racketeering.<sup>582</sup>

Alberta undertook a comprehensive review of bingo in 1999 to determine whether the bingo industry is fulfilling the intent of the legislation, policies, and objectives of charitable gaming.<sup>583</sup> Generally, the conclusion was positive, but the review committee presented over 70 recommendations to increase efficiency. The review saw bingo as a distinct form of gaming with its social aspect, history and tradition as a family game, size of the volunteer base, and particular player base. The review acknowledged the complexity of the bingo industry, considering the number of charitable organizations and volunteers involved. It was concerned that, although many of the charitable groups handled their finances well, others may not be able to guard against potential theft or fraud. The review suggested that charitable organizations have better access to bingo, and that bingo halls should have more latitude in the type of games they offer, including use of new technology. Problem gambling was acknowledged but was considered outside the scope of the inquiry.

### 3.11 Conclusion

Gambling activities provide entertainment, venues for socializing, and some kind of hope for a better life—at least financially – for some participants. As we have seen, gambling activities, which basically depend on gamblers wagering money and generally losing in the long run, bring a

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<sup>580</sup> Cousins, S. O., C. Witcher and J. Moodie. (2002). *High Quality Aging or Gambling with Health? The Lifestyles of Elders Who Play Bingo*. Alberta Gaming Research Institute.

<sup>581</sup> Sobel, B. P. (2001). Bingo vs. physical intervention in stimulating short-term cognition in Alzheimer's disease patients. *American Journal of Alzheimer's Disease and Other Dementias*, 16(2), 115-120.

<sup>582</sup> Mathis, G. L. (2000). *An Inquiry into the Scope, Operation, Economics and Social Desirability of Charity Bingo*. Murray State University.

<sup>583</sup> Bingo Review Committee. (1999). *Alberta Bingo Industry Review*. Alberta Gaming and Liquor Commission.

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great deal of revenue to governments in the form of implicit taxes. This money is used to support governmental and non-governmental programs for the public good.

On the other hand, gambling produces costs to society that are economic as well as social. People with gambling problems are the most visible reflection of these costs. But other impacts on the quality of life and social cohesion of the rest of society might also be present. It is important for policy makers to have accurate information about gaming within the larger socioeconomic context, including distributive issues. This knowledge is necessary in order to make informed decisions that will benefit all segments of the population.

Research into gaming and its impacts is relatively new and uneven. More studies have been done on problem gamblers and negative impacts than have been done on benefits. Studies mainly look at one aspect of gambling, ignoring the interconnections with other aspects, or they are descriptions of costs and benefits without adequate empirical basis. There also has been no attempt to measure impacts on the wellbeing of the population over the long-term. Researchers have produced very few analyses of the costs and benefits of gaming and many of those studies have been discredited because of methodological issues.

Researchers have not reached a consensus about the methodology needed to produce an analysis of the costs and benefits of gaming. However they agree that a key area for further research is the determination of attribution fractions (relative risk ratios) that link gambling in general and problem gambling in particular to particular health and justice outcomes, and to a wide range of social and economic impacts. Economists who want to ensure a clear, rigorous, and disciplined economic approach have spearheaded the debate on assessing the economic benefits and costs of gambling. Recently, investigators from other disciplines such as sociology, population health, psychology, anthropology, and geography, and others who are concerned that qualitative information and intangible costs should also be valued and counted have joined the debate.

Two of the major methodological difficulties are the issues of causality and the value of intangible costs and benefits. It is acknowledged that impacts *associated* with gambling are often difficult to attribute directly to gambling as a *cause*. Causation is always multidimensional, but the empirical work required to develop attribution fractions has not yet been done. Researchers find that intangible costs and benefits are difficult to quantify because, in order to determine them, assumptions and value judgements must inevitably be made. However, as Azmier points out, communities, regions, and provinces have different values and needs that must be considered when choosing indicators: "Imposing a uniform methodology, or the results of one cost-benefit study conducted from one region on another, will not adequately take this into account."<sup>584</sup> It is also not clear how to value the "trade off" between the pain and suffering of gambling costs such as crime, for example, with gambling benefits such as supporting charitable programs and government use of gambling revenues for public goods and services. Other methodological difficulties revolve around the conceptual framework for gambling impact

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<sup>584</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation. p. 18.

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studies, decisions concerning definitions of costs and benefits, and methods of better measurement.

The conclusion from this uncertainty must be either to wait to analyze costs and benefits until the contentious issues are resolved with an agreed upon methodology, or, as Wildman suggests:

“In the meantime cost studies could still be undertaken (given the limits imposed by our current knowledge). Methodological work aimed at better evaluating costs can also be of great help and should be facilitated.”<sup>585</sup>

In assessing the results of this literature review, GPI Atlantic adheres to Wildman’s position, and recognizes that gambling impact assessments are essential both to deal with current issues facing governments and to contribute to the state of knowledge in the area. Governments have important policy choices to make on the management of gaming that cannot wait for the development of a perfect methodology, and empirical case studies are needed that can contribute to the knowledge base on gambling impacts and aid the development of methodologies that are in accord with empirical evidence.

Preliminary evidence available to date indicates clearly that it is important for both tangible and intangible effects of gambling to be addressed in a cost-benefit analysis and for these effects to be viewed through a multidisciplinary lens. The evidence also indicates that it is only through seeing gaming activities and impacts within the context of the larger society that policy makers will have the knowledge required to provide benefit to all segments of the population and to reduce the harm that can be associated with gambling. These basic principles would guide any future GPI study on the costs and benefits of gambling in Nova Scotia.

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<sup>585</sup> Wildman, R. W. I. and S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre. p. 38.

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PART IV  
RESEARCH CASE STUDIES

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This section gives detailed information on the indicators and methodology used in three reports including: the Australian national report from the Productivity Commission, which has been used as a benchmark for gambling impact studies internationally; the Canadian Tax Foundation report which is the only national analysis of gambling impacts in Canada to date; and the working framework for a gambling cost-benefit analysis produced by the Whistler Symposium. These three reports provide useful starting points for methodologies that might be adapted for use in a cost-benefit analysis of gambling in Nova Scotia. The Nova Scotia report from the Alcohol and Gaming Authority, *Towards a Convenience Model of Gaming and its Social Effects in Nova Scotia*, is also potentially useful but was not included here since it is mainly descriptive and since it is already well-known in Nova Scotia and readily available.

## 4.1 Australia

**Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia. Available: <http://www.pc.gov.au/inquiry/gambling/finalreport/>**

The Australian Productivity Commission produced a massive three volume study of Australia's gambling industries in 1999. The Productivity Commission (PC) is an independent Commonwealth agency that is the government's principal advisor on microeconomic policy. It researches economic and social issues affecting population welfare. The Australian government requested the report to assist government decision making and increase public understanding of issues related to gambling. In 2002, Wildman and Chevalier called the 1999 Productivity Commission study "the most comprehensive study to date" of gambling impacts.<sup>586</sup>

The report is based mainly on research, roundtable discussions, public hearings, and surveys. Three surveys were conducted which form the basis of the information used in calculations. These surveys included a *National Gambling Survey* of 10,600 persons, looking at gambling preferences, spending, attitudes, and gambling impacts; a *Survey of Clients of Counselling Agencies*, which involved 400 problem and pathological gamblers; and a *Survey of Counselling Services*.

George Banks, Chairman of the Productivity Commission noted that, in general, surveys understate the extent of problem gambling since people are reluctant to reveal facts about such matters. The Household Expenditure Survey in Australia asks about money spent for gambling and the results show one-quarter of the actual amount based on industry statistics. This, he says,

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<sup>586</sup> Ibid.

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"renders that instrument of little use for analysis of gambling patterns or problems.<sup>587</sup> The implication is that the PC results may be conservative.

The report states that in the United States, the term 'pathological' gambler is closest to the terminology 'problem gambler' used by the Commission. People termed as 'problem' gamblers in most U.S. studies are not categorised as having gambling problems using the thresholds applied in Australia. The Productivity Commission identifies problem gamblers as those scoring 5 or more on the SOGS. Severe problem gamblers are those scoring 10 or more on the SOGS. These definitions, however, are the ones used most often in Canada, so they form a suitable basis for a future cost-benefit analysis of gambling in Nova Scotia.

The PC found it necessary to use proxy measures and high/low estimates to analyse the costs and benefits of the liberalisation of gambling. The range of estimates was less than definitive, because the estimates depended on differing assumptions that could not always be verified empirically. The results fell between a net loss of \$1.2 billion to a net benefit of up to \$4.3 billion (Australian dollars).<sup>588</sup> Lotteries showed a clear net social benefit. Gaming machines had possible losses caused largely by a higher incidence of problem gamblers. Problem gamblers represent 1-2% of the total Australian population but 15% of regular gamblers, those who gamble at least once a week. In 1997-98, problem gambling also accounted for 33% of industry's total revenue.

In 1997-98, the gross profit or expenditure (net loss) from gambling averaged \$760 per Australian adult or 3% of household disposable income. In 2002, Banks assessed the PC findings three years after the PC report was published.<sup>589</sup> He found gambling had risen in Australia since 1997-98 to reach \$14 billion in gross profits, or \$1,000 per capita, and the gaming machine share had reached 57%. This represented a slower growth than shown previously, which was attributed to the maturation of the market. In comparing the PC approach with more recent studies in Australia that showed greater benefits, Banks found differences in methodology among the studies that helped explain the differing results. For example, one study did not treat problem gamblers as different from regular gamblers. This, Banks comments, indicated a "continuing attachment to the 'rational choice theory' of problem gamblers."<sup>590</sup> In that particular study, Banks also found highly inappropriate assumptions about the demand for gambling. By contrast, and in general, according to Banks: "The Commission's methodology has been broadly endorsed by most (though not all) of those professional economists who have acquainted themselves with it."<sup>591</sup>

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<sup>587</sup> Banks, G. (2002). *The Productivity Commission's Gambling Inquiry: 3 Years On*. Presentation to the 12 th Annual Conference of the National Association for Gambling Studies, Melbourne, 21 November 2002, Productivity Commission, Canberra. p. 5.

<sup>588</sup> Unless otherwise stated, all dollar figures in this section on the PC study are in 1997-1998 Australian dollars.

<sup>589</sup> Banks, G. (2002). *The Productivity Commission's Gambling Inquiry: 3 Years On*. Presentation to the 12 th Annual Conference of the National Association for Gambling Studies, Melbourne, 21 November 2002, Productivity Commission, Canberra.

<sup>590</sup> *Ibid.* p. 7.

<sup>591</sup> *Ibid.* p. 6.

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Two innovations in the PC methodology were the way the PC handled measuring benefits and the consumer surplus of problem gamblers. According to the PC, typical cost-benefit of gambling studies either count all expenditures problem gamblers make on gambling as "costs" for which they receive no benefit, or they treat all expenditures by problem gamblers in the same way they treat recreational gamblers, which results in very high estimates of benefits. The Australian study compared problem gamblers with "regular" gamblers, those who gamble at least once a week (excluding the "regular" lottery gamblers), rather than with the general population or recreational gamblers. The PC assumed that problem gamblers do receive at least as much benefit as regular gamblers, and included this benefit as consumer surplus in the calculations.

The study also calculated private costs or transfers, stating that:

“While private benefits and costs do not normally provide a justification for government policy, an exception is that governments may want to take into account the distribution of private benefits and costs among members of society for equity or fairness reasons. Further, when considering an action to address the social benefits and/or costs of an activity, it is also important for governments to consider any impacts such actions might have on private benefits and costs.” (p. 4.3)

The following is an overview of some of the methodology used in the study.

### **Measuring Benefits**

The Australian study found that gambling industries generate a net benefit to consumers in the range of \$4.4 and \$6.1 billion (Australian dollars) a year. In estimating benefits, the PC included three factors, the first two of which represented innovations in methodology:

- Benefit to the majority of recreational gamblers measured as *consumer surplus* retained after consumption taxes
- The benefit, measured as consumer surplus, that problem gamblers receive from part of their expenditure on gambling
- The gambling tax revenue going to the government (essentially a transfer from consumers to government)

According to the Productivity Commission, the real benefits of legalised gambling come not from jobs created but from people having access to an activity they like doing. Like other forms of entertainment, such as films, the benefit is in the experience, rather than in the form of material goods. In other words, the net expenditure of recreational gamblers, or the direct dollar amount spent on gambling, represents payment for the entertainment provided. The benefits are calculated by estimating the *consumer surplus*, or the amount of additional money gamblers would be willing to pay over what they actually pay in order to participate in the same activity. Basically, consumer surplus is measured by looking at current consumption and the amount this would change if the price were to change (called *price elasticity of demand*.)

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The Commission's innovation in estimating this consumer surplus is that they treated problem gamblers differently from recreational gamblers. They argued that problem gamblers do receive benefits from gambling, but that "excessive" spending is compulsive and causes tremendous difficulties, pain and suffering. Therefore, problem gamblers do not get "value for money" on the excessive spending, which means that the benefit they receive is less than the amount of money they spend.

The benefit of gambling to problem gamblers was estimated as the amount problem gamblers would have spent on "recreational" gambling if they had not developed compulsive gambling behaviour. The expenditures of regular gamblers were used to estimate this benefit. The spending by problem gamblers in excess of the estimated "recreational" amount they spent was considered a cost. For example, in Australia in 1997-98, regular gamblers spent \$1,496 each as opposed to the \$12,200 each that problem gamblers spent. This \$1,496 was considered the amount that problem gamblers would have spent on gambling without their problem behaviour and this amount was used to calculate their consumer surplus. Excessive spending per problem gambler was \$10,704. The "benefit" problem gamblers received on this excess spending resulted in a deficit or negative consumer surplus. Consequently, the commission discounted the benefit that problem gamblers received as consumer surplus on the \$1,496. This discount resulted in a net deficit or negative consumer surplus for problem gamblers, which was then used to adjust the total benefit estimates of the gambling industry to consumers. The detailed methodology for estimating this benefit is outlined in Appendix C of the PC report.

Taxes and license fees collected by government represent a transfer of potential consumer surplus to the government. Therefore, gambling-related taxes are included in estimates of consumer benefits. For simplicity, the PC assumed that all tax revenue collected by the government is borne by the consumers, and so included the full value of taxes with other consumer benefits.

The benefit of job creation is considered by the Australian Productivity Commission within the context of the economy as a whole. The PC report states that:

“In looking at the contribution of an industry to the economy, it is important to distinguish between measures of an industry’s size and measures of its net contribution, especially when considering liberalisation [of gambling]. It is also important to distinguish between the net economic impacts associated with the policy-induced expansion of an industry and that of policy-induced contraction.” (p. 5.26)

The study notes that gambling industries account for substantial employment and value added in the economy. However, it finds that the net gains in employment and activity in the expansion of gambling industries are small at the aggregate level when the impact on other industries is taken into account. Also, in the absence of gambling, the money spent on gambling would have been spent elsewhere or it would have been saved or invested.

Surveys asking consumers what they would spend gambling money on if specific types of gambling were not available were reported by the PC. In one Melbourne study, gaming machine

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users were asked what they would spend money on if gaming machines were not available, indicated that they would increase their savings, and spend money on other entertainment, household necessities, and other personal items. Ninety percent of respondents said they would not spend any money on any other form of gambling.

The PC makes the point that:

"The important message is that measures of an industry's size (denoted by such things as investment, turnover, employment etc) are not measures of the net contribution of an industry to the wellbeing of the community or the economy. They are essentially a measure of the amount of the community's resources that are used in the industries, in response to the spending of consumers. In the absence of any particular industry, including gambling, neither the consumer spending, nor the resources of labour, capital, land etc, would disappear. There are alternatives available for both the consumer spending and for the resources used in the industry. While consumers prefer these alternatives less, they would nevertheless also have contributed to the economy in terms of their use of capital and labour, had gambling not been liberalised." (p. 5.27)

Further rationale for the Productivity Commission's approach is discussed in Chapter 5: Assessing the benefits.

## Measuring Costs

Measuring costs is not as straightforward as measuring benefits, since many of the costs are intangibles. Monetization of costs requires assigning a monetary value to such things as pain and suffering – a procedure that is highly controversial and that produces wildly disparate results. Other GPI reports delve into these methodological controversies and the rationale for monetization in detail, and these issues are not dealt with in this literature review.

In measuring costs, the two main surveys used by the Productivity Commission – the *National Gambling Survey* and the *Survey of Clients of Counselling Agencies* – were relied on extensively. The information from the general *National Gambling Survey* is used as a data base more often than the survey on problem gamblers. The national survey of the general population asked questions on adverse consequences only to the group of 'regular' gamblers, those who gambled at least once a week and who represent 39% of the adult population. These regular gamblers were also given the SOGS (South Oaks Gambling Screen) set of questions. Those who scored 5 or more were considered problem gamblers. Around 293,000 people or 2.1 per cent of adults, were estimated to be problem gamblers.

Questions fit into four categories: financial impacts, productivity and employment, crime and legal, and personal and family. Other survey information included current gambling debt and length of problem gambling experience, and demographic information including average number of people in the household, number of children under age 15, and current employment status.

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One potential difficulty with the questionnaire is that it relies on the respondent's assessment of whether gambling is the primary cause of the adverse consequence identified.

The study relied on experts' opinions that, as a rule of thumb, 15-20% of problem gamblers would have problems for a number of adverse impacts ascribed to problem gambling, such as depression, divorce, and separation, even if they did not gamble. For consequences more directly financial, such as embezzlement or bankruptcy, gambling was generally identified as the main problem or cause. This is consistent with findings that gamblers who commit crimes typically have no prior criminal history. In accord with the expert advice noted above, the Commission made adjustments for causality in its estimates of the personal and family impacts of problem gambling, by reducing the number of people estimated to be affected in the survey responses by 20%.

## Results

The Productivity Commission used several indicators of adverse consequences. Some key results of its investigation are summarised below. (r = percentage of non-problem regular gamblers from the *National Gambling Survey* reporting the consequence; pg = percentage of problem gamblers, those who scored SOGS 5+, from the *National Gambling Survey* reporting the consequence; pg-c = percentage of problem gamblers in counselling from the *Survey of Clients of Counselling Agencies* reporting the consequence; na = statistic not available; all survey results refer to the previous 12 months, unless stated as 'ever'; all dollar values are in 1997-98 Australian dollars):

### Financial impacts

Financial costs:

- owed money to pay for gambling, 4.6% r; 51.4% pg; pg-c - na
- borrowed money without paying back, 0.7% r; 18.7% pg; 53% pg-c
- borrowed from loan sharks, 0.1% r; 5.8% pg; 8.4% pg-c (ever)
- declared bankruptcy, 0.03% r (ever), 1.4% pg (ever); 8.4% pg-c (ever)
- lost house, r – na; pg – na; 7.9% pg-c (ever)
- sold property to gamble, 0.3% r; 10.8% pg; 36.7% pg-c
- use of pawnbroker to get gambling funds, 0.5% r (ever); 13.1% pg (ever); pg-c - na
- lost superannuation, r – na; pg – na; 13.4% pg-c (ever)

Calculation of the value of gambling-related debt transfers:

- Assumed that half of the debts of problem gamblers represent a transfer from other members of the family
- Value of lifetime debt per pg-counselling: \$10, 045 (but the PC researchers considered this estimate to be low); "lifetime estimates" assume that gambling problems last an average of 8.9 years. Information on debt for regular and problem gamblers was not available from the *National Gambling Survey*.



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- Average debt rates were applied only to severe problem gamblers (those scoring 10 or more on the South Oaks Gambling Screen-SOGS-46,800 adults).
  - Total amount of gambling-related debt transfers was \$26 million annually.

#### Bankruptcy key data:

- Number of gambling and speculation bankruptcies indicated by official statistics: 317, although the general survey showed 2,900. The PC noted that bankruptcies were likely underreported in the official statistics, since gambling bankruptcies are illegal.
- Cost per bankruptcy, which represents fees to the Insolvency and Trustees Service (Australia): \$4,000
- Total cost of gambling-related bankruptcies was estimated to be \$1.3 million each year.

### Productivity and employment costs

#### Productivity loss due to problem gambling

- Lost time from work or study – 0.7% r; 32% pg (estimated 94,300 people out of the 293,000 people estimated to be problem gamblers); 50.3% pg-c

#### Key data used to estimate the cost of lost productivity due to problem gambling:

- Lower estimate (from the national survey) - Percent of problem gamblers who reported reduced productivity "often to always" in the last 12 months – 0.02% pg, (estimated 7,000 out of 293,000 problem gamblers)
- Higher estimate (from the national survey) - Percent of problem gamblers who reported reduced productivity "sometimes to always" in the last 12 months – 0.17% pg (estimated 49,200 out of 293,000 problem gamblers)
- The average productivity loss of 7.9% of work time, as reported by the problem gamblers in counselling, was used by the PC as a reasonable estimate for the extent of productivity loss for all problem gamblers.
- The average value of productivity loss for problem gamblers, based on average weekly earnings, was equivalent to \$38,600 per problem gambler per year.
- Total cost of lost productivity as a result of problem gambling was estimated to be from \$21 million to \$150 million per year.

The Productivity Commission noted that the calculations for productivity loss due to problem gambling related to job performance and, likely, did not include the productivity loss of those not employed. It made the following comment concerning unpaid work:

"The question in the *National Gambling Survey* related to an adverse effect on *job* performance. While this is likely to pick up those who are employed and self-employed, those who are at home are unlikely to have responded to this question. Yet a reduction in productivity for those at home, bringing up families etc, is just as real a loss as the decline in productivity of those employed. Some 30 per cent of regular gamblers were not

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employed, and if they were included with the same level of productivity loss, this would increase the value of lost productivity by \$7 million to \$50 million a year." (p. J-14)

Job change (unemployment) attributable to gambling:

- The *PC National Gambling Survey* showed that 0.04% of regular gamblers or 5600 people changed their job as a result of gambling in the previous 12 months
- No respondents among the regular gamblers reported that they had been dismissed from their job in the previous 12 months, so statistics for job dismissal were not used in the calculations of the cost of job change.

Cost of job change:

- Income loss of problem gamblers when unemployed:
  - average period between jobs for the Australian population as a whole and for those changing jobs as a result of gambling: 6 weeks
  - average weekly earnings: \$743
  - loss in income estimated: \$4,300 per job
  - number of regular gamblers who changed jobs as a result of gambling – 5600 people
  - Annual total cost of income loss was estimated at \$24 million.
- Financial cost of job search for the problem gambler who lost his/her job:
  - estimated at \$2,357 per person (approximately half the cost reported by major job search firms)
  - Total job search cost by the problem gambler estimated to be \$13 million
- Cost to employer of finding and training a replacement employee:
  - estimated as 10% of average annual salary of regular gambler
  - cost per staff replacement: \$3,862
  - Total cost to the employer estimated to be \$22 million.
- Payment of unemployment benefits to problem gamblers who change jobs as a result of gambling:
  - Unemployment benefits represent a transfer of some of the cost of being unemployed from the unemployed to the taxpayer. (An amount has already been calculated above for the loss of income by gamblers as a result of unemployment.)
  - The PC assumed that the duration of unemployment for problem gamblers is the same as that of the unemployed in the general population.
  - average length of unemployment: 6 weeks
  - half of all unemployed problem gamblers (and the general population) are unemployed for 2 weeks or less and are therefore not eligible for unemployment benefits
  - average period of unemployment for the other half of all unemployed: 11 weeks, 9 weeks of which would be eligible for unemployment benefits
  - average benefits per person from government for half the problem gamblers who change jobs: average of \$164.67 per week times 9 weeks of payment = \$1,482 per longer-term unemployed problem gambler.

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-is not included in a cost-benefit analysis, as it does not represent a net social cost.

### Crime and legal costs

- Transfers as a result of crime: The PC calculated the value of money and goods stolen as a result of a gambling related crime. In cost-benefit analysis this is a measure of transfers from one segment of society to another, while net costs to society include costs of policing, court appearances, and jail terms.
- Real costs of crime also include defensive expenditures that society undertakes to protect property (e.g. security industry activity and additional manpower needs. These defensive expenditures include costs of guards, surveillance, alarm systems, access control, and closed-circuit TV.)

Key data used to estimate transfers as a result of crime attributable to problem gambling (as calculated by the PC):

- Number of people who had committed gambling related crime (other than fraudulent cheques) in the previous 12 months: 9700 regular gamblers including problem gamblers
- The PC reported the value of money obtained illegally, based on high and low estimates from Walker, M. (1997), *Problem Gamblers Receiving Counselling or Treatment in New South Wales: Baseline Survey, Report to the New South Wales Casino Community Benefit Trust, Sydney.*
- low estimate, value of money and goods stolen: \$500 (counting only stealing directly from a person)
- high estimate, including fraud and misappropriation (deception): \$3,225
- Other estimates of property loss per incident that are not included in the above estimates: breaking and entering (commercial premises): \$1,786; breaking and entering (non-commercial premises): \$2,307.
- Total estimates of transfers as a result of gambling-related crime were from \$5 million to \$31 million per year.

### Cost of police incidents

- Based on the national survey responses, 6300 regular gamblers (including problem gamblers) were involved in an incident with police in the past 12 months
- The PC used \$510 as a cost per police incident, which they took from: Dickerson, M., Allcock, C., Blaszczyński, A., Nicholls, B., Williams, R. and Maddern, R., (1998), *An Examination of the Socio-economic Effects of Gambling on Individuals, Families and the Community Including Research into the Costs of Problem Gambling in New South Wales: The 1997 Study 2 Update, report prepared for the Casino Community Benefit Fund, NSW Government.*)
- Total cost of police incidents was \$3.2 million per year.

### Cost of court cases to attributable to gambling-related crime:

- According to the national survey, 13,100 regular gamblers had been involved in a court case at some point in their lives. However, only 700 of these gamblers reported that they

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had appeared in court in the past 12 months, and the PC used this number as the annual number of gambling-related court cases. The PC noted that 700 is likely lower than the actual number. For example, one report estimated 815 court cases a year attributable to gambling-related crimes from New South Wales alone.

- Cost for each case was estimated to be \$8,000 for each case
- Total cost of court cases involving regular and problem gamblers was estimated to be \$5.6 million per year.

Cost of jail sentences:

- Information on the proportion of problem gamblers who faced jail sentences was only available from the *Survey of Clients of Counselling Agencies*, which indicated that 6.4% of those with severe gambling problems had been incarcerated. The PC applied this percentage to the estimated number of severe problem gamblers in Australia, defined as those who scored 10 or more on the SOGS, identified by the *National Gambling Survey*. By this criterion, the PC estimated there were 46,800 severe problem gamblers in Australia as opposed to 293,000 problem gamblers. A total of 3,000 severe problem gamblers were estimated to have faced prison sentences at some point in their lives in Australia.
- In order to calculate the number of the 3,000 severe problem gamblers who were incarcerated at some point in their lives into an annual number of incarcerations, the PC used 8.9 years to represent the number of years that gamblers have problems. In addition, the PC assumed that incarceration occurs only once in the problem gambler's lifetime.
- Dividing 3,000 severe problem gamblers by 8.9 years resulted in an estimate of 336 severe problem gamblers incarcerated per year as the result of gambling-related crimes.
- The PC calculations assumed that sentence terms of problem gamblers would be low, since most gambling related crimes are non-violent and perpetrators are generally first-time offenders. Based on legal data, the PC estimated that the average prison sentence for a non-violent crime such as fraud, misappropriation, and other theft is only 3.4 months.
- Based on Australian data for 1997-98, the cost of incarceration was \$52,983 per prisoner per year.

The key data used by the PC to make its calculations of prison sentence costs attributable to pathological gambling were:

- Number of problem gamblers receiving a jail sentence as a result of their problem gambling per year: 336
- average sentence: 3.4 months
- average annual cost per prisoner: \$52,983
- Total cost of prison terms relating to problem gambling was estimated to be \$5.1 million per year.

### **Personal and family costs**

Although problem gamblers report poor or fair health at a higher rate than their respective socio-demographic population group without problem gambling, the economic impact of the poorer

physical health of problem gamblers was not estimated. For example, the medical costs of depression, and the full costs of actual suicides were not estimated.

The personal and family costs of problem gambling manifest mainly as psychological consequences such as depression, and the pain and suffering that ensue from divorce and separation attributable to problem gambling. Violent crimes attributable to problem gambling are rare, although there are reports of spousal abuse. It was noted earlier that violence is more often associated with the reaction of a spouse or family member who has suffered abuse, theft, lying, or betrayal on the part of a problem gambler than with the problem gambler himself or herself.

Court awards for pain and suffering made in the United States, relating to the emotional impact of an injury, are substantially higher than the value of economic losses involved. The estimates for gambling-related pain and suffering used by the PC are based primarily on the lower range of payments for victims' compensation and for compensation payments for psychological or psychiatric disorders that are used in New South Wales, Queensland, Australia. Higher estimates are used for serious thoughts of suicide and attempted suicide. The PC estimates are for 12 months only: 1997-98.

The PC has adjusted for uncertain causality by reducing (discounting) the number of people estimated to be affected by 20%. To avoid double counting some groups already counted in other categories, such as those suffering depression or committing suicide as a result of gambling, the PC separated and excluded those with more severe impacts from the numbers with less severe impacts in each category. For example, the numbers estimated for divorce and separation were separated and excluded from the numbers estimated for the breakup of a relationship; the number of people who had thoughts of suicide were excluded from the number reporting depression; and the numbers reporting attempted suicide were excluded from those reporting thoughts of suicide. Also, in an effort to be conservative, dollar values were applied by the PC only to the immediate family and parents of severe problem gamblers, rather than their friends and colleagues.

Financial and emotional costs were considered for the following impacts:

(See "Results" section above for explanation of r, pg, and pg-c designations and sources, na = percentage not available.)

Suffered from gambling-related depression: 4.3% r (ever), 58.1% pg (ever), 95.6% pg-c (ever)  
Suffered from gambling-related depression in last 12 months: 2.6% r, 52.7% pg, pg-c - na  
"Often" depressed in the last 12 months: 0.1% r, 16.4% pg, pg-c - na  
"Always" depressed in the last 12 months: 0.3% r, 5.8% pg, pg-c - na  
Gambling-related money arguments with family: 4.0% r, 42.0% pg, 83.2% pg-c  
Gambling led to breakup of relationship (ever): 0.1% r (ever), 11.3% pg (ever), pg-c (ever)- na  
Gambling led to breakup of relationship in last 12 months: 0.0% r, 4.7% pg, pg-c - na  
Breakup led to divorce or separation: 0.1% r (ever), 9.1% pg (ever), 26.0% pg-c (ever)  
Seriously considered suicide due to gambling: 0.0% r (ever), 9.2% pg (ever), 57.8% pg-c (ever)  
Seriously considered suicide due to gambling in last 12 months: 0.0% r, 4.4% pg, pg-c - na

Attempted suicide (ever): r - na, pg - na, 13.6% pg-c (ever)

Prevalence of violence due to gambling (ever): r - na, pg - na, 13.1% pg-c (ever)

The following adverse effect percentages were derived from the *Survey of Clients of Counselling Agencies* and were adjusted to exclude those reporting the question as not applicable.

Comparable percentages for non-problem regular gamblers and problem gamblers are not available.

Major adverse effect on partner 54.4% pg-c (ever)

Major adverse effect on children 27.6% pg-c (ever)

Major adverse affect on parents 24.1% pg-c (ever)

The following range of values (lower cost and higher cost) were assigned to the emotional costs associated with problem gambling, where there is not direct physical injury involved, in the single year 1997-98. (1997-98 AU dollars per person) were used. These estimates were based mainly on the lower range of payments for victims compensation in use in New South Wales and Queensland, Australia. However, values for thoughts of suicide and suicide attempts were based on the higher range of payments for compensation:

Emotional costs for the immediate family of severe problem gamblers: \$5,000 - \$15,000

Emotional costs for the parents of severe problem gamblers: \$0 - \$5,000

Relationship breakdown: \$5,000 - \$15,000

Divorce or separation: \$15,000 - \$30,000

Violence: \$5,000 - \$15,000

Depression "often to always": \$5,000 - \$15,000

Seriously thought of suicide: \$15,000 - \$30,000

Attempted suicide

    for the gambler: \$30,000 - \$50,000

    for the immediate family: \$15,000 - \$30,000

    for the parents: \$0 - \$5,000

Costs of successful suicides were not estimated by the PC.

Financial costs of divorce and separations due to gambling:

Determining the extent of divorce and separations due to gambling is complicated by the cluster of related factors that accompany these impacts. The PC devotes an 8-page appendix to explaining the methodology used. From the survey, the PC estimated that the likely number of divorces and separations combined attributable to problem gambling ranged between 3200 and 8000 divorces and separations per year. They used the lower number and adjusted it downwards by 20%, calling this a "causality adjustment." This causality adjustment was based on the "rule of thumb" that 20% of the problem gamblers would have had the same problem (in this case, divorce or separation) even without their gambling problem. Therefore, the PC adjusted for "causality" in its estimates of personal and family impacts of problem gambling by reducing by 20% the number of problem gamblers estimated to be affected. The total number of divorces



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and separations in Australia where gambling was the major cause was estimated, after applying the "causality adjustment," to be 2,560 problem gamblers in 1997-98.

The financial cost used per divorce or separation was \$1,100, which represented filing and legal fees. The PC recognised that this is a low estimate since there are many financial costs that are not included, including costs of enforcing child support orders, transaction costs of house sales, and separate household set-up costs. Also excluded from the estimate are long term human capital costs relating to impacts on children's education that might translate to lower earnings later in life. The total annual financial cost for divorce and separation as a result of gambling was estimated to be \$2.8 million. The emotional costs are considered below.

Emotional costs of relationship breakdowns:

To estimate the emotional costs of relationship breakdowns, the PC deducted the number of divorces or separations among problem gamblers from the total number of relationship breakdowns to avoid double counting, adjusted for causality as explained above by discounting the number of relationship breakdowns by 20%, and then doubled the cost figure to account for both persons involved in the breakdown. The combined compensation schedule used by the PC for both partners was \$5,000 (low estimate) and \$15,000 (high estimate). As stated above, these estimates were based mainly on the lower range of payments for victims compensation in use in New South Wales and Queensland, Australia. The calculations resulted in an estimate of 57,600 people adversely affected by a relationship breakdown due to gambling-related problems, excluding those involved in divorce and separation. The total cost was \$288 million (low estimate) to \$864 million (high estimate).

Emotional costs of divorce and separation for immediate family members of problem gamblers:

To estimate the emotional costs of divorce and separation, the PC used the estimated number of divorces and separations among problem gamblers for the year, and reduced this number by 20% to account for those problem gamblers who would have been divorced or separated even if gambling was not involved. The PC also used the average number of people in an Australian household (based on survey results) of 3.3 people, including the gambler, his/her partner, and children. Based on the compensation schedules, the PC used \$15,000 (low estimate) and \$30,000 (high estimate) for each person affected. It multiplied the adjusted number of problem gamblers divorced or separated by 3.3, the average number of immediate family members including the gambler. Finally, it multiplied the resulting number of people affected, times the high and low values for each affected person, to estimate the emotional costs of divorce and separation for the household as a whole. The total estimates of the annual cost of emotional harm from divorce and separation resulting from gambling was \$126 million ( low estimate) to \$864 million (high estimate).

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Emotional distress caused by gambling on the immediate family and parents of severe problem gamblers:

The PC only estimated the value of emotional distress caused by gambling to the immediate family members and parents of *severe* problem gamblers, reduced by 20% for the causality factor. Severe problem gamblers, those scoring 10 or more on the SOGS, represented 44% of the problem gamblers. To avoid double counting, the PC excluded the numbers of severe problem gamblers reporting a breakup of a relationship and attempted suicide, since the impact on families was estimated in those categories. The PC also excluded the number of family members and parents who reported "no effect at all" or "minor adverse effect." The average family size, excluding the problem gambler, was 2.3 persons, and the average number of parents per problem gambler was 1.8 persons. The estimated number of people in the immediate families of the severe problem gambler adversely affected by gambling problems was 151,100 people, and the estimated number of parents adversely affected was 132,200 people. As shown above in the list of range of values, the low and high compensation estimates were \$5,000 to \$15,000 for immediate family members, and \$0 to \$5,000 for parents. The resulting low and high cost range was estimated as \$756 million to \$2.3 billion for immediate family members, and \$0 to \$666 million for parents.

Costs of violence related to problem gambling:

Information on the incidence of gambling-related violence was only available from the 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 PC applied this percentage to the number of severe problem gamblers to get an estimate of the number involved with violence. They assumed that each severe problem gambler was involved in one incident per year, and used the average period of problem gambling of 8.9 years to estimate the number of annual incidents. The number of incidents were then reduced by 20% to adjust for causality. The value for the harm caused was estimated as \$5,000 per incident (low estimate) and \$15,000 per incident (high estimate). The PC estimated that 6,130 severe problem gamblers were involved in violence as a result of gambling during the 8.9 years of their gambling problem. Dividing the number of severe problem gamblers by 8.9 resulted in an estimated 689 incidents per year, and 551 incidents per year after the causality adjustment was applied. The total cost for the harm caused by gambling-related violence was estimated to be \$2.8 million (low estimate) to \$8.3 (high estimate).

Cost of gambling-related depression:

The PC estimated the cost of gambling-related depression using the range of values of \$5,000 (low estimate) and \$15,000 (high estimate) for each problem gambler who reported being "often" or "always" depressed because of gambling in the previous 12 months. This number of problem gamblers was reduced by the 20% causality factor. In addition, the number of problem gamblers who reported serious thoughts of suicide were deducted from those who reported that they were

"always" depressed, since these gamblers were accounted for separately. The estimated number of problem gamblers who reported being depressed "often" was 49,400 and the estimated number who reported being "always" depressed because of gambling was 21,200. The cost of gambling-related depression was estimated to be \$231 million to \$692 million per year.

Medical costs incurred by the problem gambler's depression were not estimated.

Costs of seriously contemplating gambling-related suicide:

The national gambling survey indicated that 4.4% of problem gamblers had seriously thought of suicide in the past 12 months. Adjusting this number of problem gamblers by 20% for causality, and deducting the number of gamblers who had actually attempted suicide, resulted in an estimate of 8,000 gamblers. The PC used information on compensation payments in Australia for psychological and psychiatric disorders to estimate costs of from \$15,000 (lower estimate) to \$30,000 (high estimate) per problem gambler. The total estimate represented an annual cost for those problem gamblers who had seriously contemplated suicide as \$120 million to \$239 million.

Costs of attempted suicide for problem gamblers:

The *Survey of Clients of Counselling Agencies* found that about 28% of males with serious thoughts of suicide attempted suicide, compared with 19% of females with serious thoughts of suicide who attempted suicide. Using these percentages, which were similar to attempted suicide statistics in Australia in 1997-98, the PC estimated that 2,935 problem gamblers, which they adjusted to 2,348 using the causality adjustment of 20%, had attempted suicide in that time period because of gambling-related problems. The cost placed on these attempts was from \$30,000 to \$50,000, the low and high estimates. The results indicated costs for gambling-related suicide attempts per year to be from \$70 million to \$117 million.

Costs of problem gambler attempted suicide for their family members:

The range of costs used for the impacts of gambling-related suicide attempts by problem gamblers on their immediate families was from \$15,000 to \$30,000 for low and high estimates. For the gambler's parents, the range of costs was from \$0 to \$5,000 each. The same numbers used previously of 2.3 immediate family members per problem gambler (excluding the problem gambler) and 1.8 parents per problem gambler were used here. In 1997-98, 2,348 suicide attempts (adjusted for causality) resulted in estimated costs of from \$81 million to \$161 million for family members, and from \$0 to \$21 million for parents. Costs were not estimated for the pain and suffering of family members and parents of problem gamblers who actually committed suicide, although the PC maintained that the cost would be substantial.

Government counselling services (treatment costs):

The PC estimated costs of treatments only for government services to assist problem gamblers. Treatments provided by voluntary or non-governmental agencies are not included. Also funds for research into gambling and problem gambling and for general public information are not included. A total figure of \$20 million per year is used by the PC for this category of costs.

### **Annual transfers as a result of problem gambling**

The following estimates of transfers attributable to problem gambling were based on the *National Gambling Survey* and the *Survey of Clients of Counselling Agencies*:

Debts: \$26 million

Unemployment payments: \$4.1 million

Value of money obtained illegally: \$4.9 million - \$62 million

Social costs by mode of gambling:

The following percentages represent the share of expenditures in each of the following modes accounted for by problem gamblers.

Wagering (horse and greyhound racing and sports betting) 33.1%

Lotteries 5.7%

Scratch cards 19.1%

Gaming machines 42.3%

Casino gaming 10.7%

Other 25.0%

All gambling 33.0%

The PC also calculated the relationships between income levels, number of gaming machines, and expenditure on gaming machines in four different states within Australia on a weighted and unweighted basis for each state. Appendix I in the PC report outlines the specific data and methodology used. The unweighted econometric analysis provided an indication of the relationships between median weekly income, the number of gaming machines, and average annual expenditure on gaming machines in each state. The weighted approach also accounted for differences in the size of the adult population between regions. Both the weighted and unweighted analysis showed similar results, however, the weighted results were considered by the PC to be a better estimation of the relationships. There were a greater number of gaming machines in low income areas within three of the four states. In all four states, at higher levels of expenditure on gaming machines, there were a greater the number of gaming machines. In one of the states, there were higher levels of the expenditure on gaming machines at lower income levels, but in the other three states, there was no statistically significant relationship. The results from the analyses show correlation but not causation between the variables.

### **Critique of the Productivity Commission Report**

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The New Zealand Department of Internal Affairs identified the Australian Productivity Commission report as a "useful and feasible method for assessing gambling impacts."<sup>592</sup> It also called the PC report "the most comprehensive and broad-ranging example of national gambling research to be conducted to date. The Productivity Commission used a relatively balanced, interdisciplinary approach that combined quantitative and qualitative data."<sup>593</sup>

The PC general framework was used in a similar study in New Zealand, but was revised somewhat to reflect differences specific to New Zealand, as well as to incorporate and improve on various criticisms of the PC methodology. The New Zealand report summarized these critiques quoted as follows:

"From the perspective of conventional economics, some problems associated with economic aspects of the Productivity Commission's methodology include:

"The basic concept of 'expenditure' used by the PC assumes that individuals treat a win as equivalent to a negative loss, that is, the utility function is such that the marginal utility of income is symmetric for increases or decreases. Although this assumption appears to be common in gambling studies, it may be that gamblers will value a win of \$100 much more than a loss of \$100.

"In aggregating the costs and benefits some attempt has to be made to allow for the distributional impacts: the poor spend proportionately more of their income on gambling and their marginal utility of income is higher than for the rich. Aggregating 'consumer surplus' to calculate a community's consumer surplus requires strong assumptions about the constancy of the marginal utility of income. Note that the PC seems to sidestep the issue of aggregation by referring to 'consumer surplus', not consumers' surplus.

"If we treat gambling choice as being rational utility maximizing choice (and hence use concepts like consumer surplus) this notion seems inconsistent with the fact that 59% of respondents (and 66% of regular gaming machine/casino gamblers) say they gamble because of the 'dream of winning.' The PC raises questions about the fundamental basis for measuring the benefits of gambling for consumers.

"It is suggested by the PC that the consumer surplus by recreational gamblers 'represents a genuine addition to the welfare of consumers.' However, the estimates of consumers' surplus are an over-statement as they include some displaced consumer expenditures from other sectors. If there is a reduction in savings rates as the result of gambling there are long run costs for future economic growth.

"The Commission argues that the impact on employment is over-estimated since

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<sup>592</sup> 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.

<sup>593</sup> Ibid. p. 110.

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most of the expenditures on gambling would be displaced from other goods and hence lead to a reduction in employment elsewhere. Transfers of consumer expenditures from their local community (regional or rural) to more city based corporations like Australian casinos suggest that impact studies should consider the regional/rural shifts of expenditures and hence employment.

"It is important to note that any tax revenue collected by state/territory governments is simply a transfer and not an economic benefit. The PC argues that the tax revenues are part of the consumer surplus, but if there is a shift of consumer expenditure from other goods to gambling presumably there is a decrease in taxation from those goods. The PC does not account for this shift. Since the state provides monopoly rights to casinos and other gambling venues (TABs, lotteries) it is reasonable from an economic viewpoint to tax the economic rents that are being derived by these corporations.

"Costs of advertising, promotions and marketing by gambling operators should be included in calculations of social costs insofar as they do not provide adequate consumer information."<sup>594</sup>

“[The PC fails] to take into full account the production and distribution aspects of the industry, such as the costs and benefits associated with related industries such as manufacturing. The regional and international flow of taxation, consumer spending and employment are also overlooked. Moreover, levels of foreign ownership in gambling related industries are often not examined. Nor are the public costs of policy failure or market failure given adequate consideration.

"In effect, an arbitrary line between direct and indirect impacts of gambling activity was delineated and subsequently the broader social, economic and regulatory context within which gambling operates became somewhat obscured. Overall, the PC's research was driven by a frame of reference that focussed on impacts specifically related to gambling participation – i.e. the consumption of gambling and the resulting impacts. Importantly, as previously mentioned, the PC's application of the concept of consumer surplus to measure the benefits of gambling is suspect for several reasons, principally because consumers (arguably with the exception of people who bet on racing or sportsbetting) often do not have an idea of the "price" of the gambling activity and hence cannot derive a surplus.

"The assumption behind measuring the consumer's surplus (for an individual) is that 'price' measures what a person is willing to pay for a commodity. For price the Productivity Commission substitute the rates of return of a particular form of gambling. In the case of poker machines, for every dollar put in the slot (gross expenditure or outlay) some is returned as winnings (gross return). The difference between gross expenditure and gross return is net expenditure (i.e. losses). Loss rates, or losses as a

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<sup>594</sup> Ibid.p. 29.



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percentage of gross outlays, may be adjusted, from the 13 per cent maximum permitted in Victoria to the lower rates that occur in practice. These rates are stylized as 'prices'. However, for most gambling products the 'price' is not known to the buyer (gambler) and its derivation as an ex post facto concept does not help in measuring the consumer's surplus. The Productivity Commission acknowledged the difficulty of knowing the price.

"There are problems of assuming a linear demand curve and assuming a constant price elasticity of demand: a linear demand curve has different elasticities at each price. Again the Productivity Commission is aware of this but assumes it away.

"There are severe aggregation problems involved especially where the incomes of different gamblers are likely to be very different: the marginal utilities of money (income) are very different for different individuals.

"The conceptual framework of neo-classical economics from which the demand curve is derived, and with it measures of consumer benefit (or utility), depends crucially on the assumption of rational choice by consumers in maximizing their (individual) utility from their spending decisions. If we assume, reasonably, that gamblers aim individually to win when they gamble then we face a contradiction. Some do win, but we know that collectively they will lose. Machine games and casino games, for example, are designed to secure a house 'edge' so that gamblers will necessarily lose in the aggregate. In moving from an individual possibility to a collective inevitability the calculation becomes illogical.

"In making corrections for problem gamblers the Commission is assuming that these individuals are not "rational" in which case the concept of consumer's surplus is irrelevant. They make some assumptions about altering the demand curve for this group, as if they had "false consciousness".

"Several economists have argued that any estimate of consumer's surplus depends on the assumed price elasticity of demand for gambling. That is, it relies on how responsive (elastic) changes in amounts gambled will be in the face of price changes (for poker machines the proportion of each bet retained by the machine). Blandy and Hawke, for example, use alternative elasticities which give a vastly different range for consumer's surplus. Blandy and Hawke conclude that if problem gambling costs are removed, the 'surplus' becomes negative in aggregate.

"There are also problems calculating tax revenues from gambling as a benefit as it involves double counting. As consumers include the tax in their estimate of the benefits (assuming rational behaviour) it should not be treated as a net benefit but simply a transfer from gamblers to the governments. It can be argued that any increased tax revenues from gambling are a transfer and hence not an economic benefit, although it may help the government in power.

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"Similarly, payments made by the gambling operators to charities and community organizations are not a net benefit but simply a transfer payment from one organization to another. Again, including these payments as a benefit is double counting."<sup>595</sup>

## 4.2 Canada

**Vaillancourt, F. & A. Roy. (2000). *Gambling and governments in Canada, 1969-1998: how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation.**

This is the only study to date to estimate the costs and benefits of gambling in Canada as a whole. Benefits include government revenues, consumer surplus, and employment. Employment creation is considered a transfer and is only considered a benefit of gambling if it is "import, substitute, and/or export generating. Costs include crime, health costs (but not suicide), loss of revenues, and loss of welfare by non-gamblers."<sup>596</sup>

The study first looks at government gambling revenues (GGR) from lotteries, casinos, and video lottery terminals (VLTs)—the three main sources of GGR—and total gambling revenue. It does not consider non-government activities such as charity gaming. This omission has been criticized since it underestimates the importance of gambling as a funding mechanism on which some community service agencies depend.<sup>597</sup> The Canadian study also does not include horse racing (pari-mutuel betting). Horse racing is considered a spectator sport and all the revenues are re-injected into the industry and so do not contribute to provincial revenues.

The study then examines spending on lotteries and gambling in general by regular gamblers and by the population as a whole. Finally, after looking at methodological issues, it presents the costs and benefits of gambling in Canada in 1990 and 1995.

The study uses the following basic definitions:

*Gross revenue ("the handle")* is the amount "handled" or taken in by providers gross of winnings paid and expenses such as salaries. It is the amount bet at casinos and VLTs, and ticket sales for lotteries.

*Net revenue* is the amount taken in minus winnings paid back. The amount of net revenue reported by gambling establishments, in theory, should match that reported on surveys as consumer expenditures. There is usually, however, a large discrepancy between these figures. One of the explanations is that consumers notoriously under-report their spending on gambling activities. It was not possible to calculate under-reporting from the 1996 household expenditure

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<sup>595</sup> Ibid.p. 67-68.

<sup>596</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

<sup>597</sup> Henriksson, L. (2001). Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto: Canadian Tax Foundation. *eGambling*, May(4).

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survey, but for 1992, survey respondents were estimated to have underestimated their lottery purchases, gross of winnings, by a factor of three.

*Government gambling revenue (GGR)* is the amount taken in by the government. GGR is also looked at as a percentage of both total revenues and gross domestic product (GDP). In Nova Scotia casinos, GGR is the amount taken in by the *win tax*. Nova Scotia collects a flat win tax, weekly, of 20% on gambling revenues net of payoffs to players.

For lotteries, the Canadian Tax Foundation report looks at the distribution of gross revenues in terms of prizes, revenue net of prizes, expenses, and federal and provincial GGR; for casinos, it reports net revenue, expenses, win tax, and provincial GGR; and for VLTs, net revenue, expenses, and provincial GGR. In Nova Scotia, expenses consumed more than half of casino net revenues, in contrast to 39% for Manitoba, and 47% for Ontario. The study also gives information on the implicit sales tax and collection costs associated with the GGR. The federal equalization formula takes provincial GGR into account. In Atlantic Canada, net revenue grew by \$100 million between 1990 and 1991, after VLTs were introduced. In Canada as a whole, GGR tripled from \$1.5 billion in 1990 to \$4.5 billion in 1997, probably because of the introduction of casinos and VLTs.

Provincial governments are responsible for gaming activities. Lottery corporations give a yearly payment to the federal government. There is no revenue sharing for casinos or VLTs. Nova Scotia owns two casinos that are privately operated. First Nations receive 50% of the profit from the Sydney casino, which was less than \$100,000 in the 1996-97 fiscal year. In looking at the availability of both lotteries and VLTs, the Canadian Tax Foundation report found that Atlantic Canada has a higher per capita availability for both casinos and VLTs than other regions of Canada.

In its second section, the Canadian Tax Foundation study examined 9 characteristics of gamblers: region of residence, sex, age, education, work status, income, number of household members, marital status, and country of birth (head of household). To ascertain the net effect of each characteristic on gambling behaviour, the authors conducted a multivariate analysis. General findings were: approximately 80% of Canadians gamble, 20% do not, and roughly 5% of gamblers are problem gamblers; both participation and spending increased with income after tax; female-headed households spent less than male-headed ones; and lower-income people spent a higher percentage of their income on gambling than did higher-income persons, signifying that the implicit gambling tax is regressive.

In discussing methodological issues in estimating costs and benefits, the authors refer to Walker and Bennett's neo-classical economic analysis, discussed above, and use the same economic criteria. They recommend taking the following points into consideration:

- Money not spent on an item would either have been spent on a different item or saved. For example, for jobs created in one industry like gambling, jobs lost owing to reduction of spending on other items, must be subtracted.

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- The economic value of any industry to society includes sales (price x quantity) of the good or service, and consumer surplus (the amount above the market value for the good or service that the consumer is willing to pay)—the satisfaction value.
  - The authors disagree with the Australian Productivity Commission that problem gamblers have a negative consumer surplus, since there is an element of enjoyment and choice that problem gamblers share with non-problem gamblers before they start to gamble.

Vaillancourt and Roy's cost-benefit analysis is not broken down by province.

### **Benefits:**

For benefits, the authors use consumer surplus, government gambling revenue (GGR), and additional standard tax revenues, as indicators. Measurement standards include the following:

#### **Consumer surplus**

Since there are no estimates of consumer surplus associated with gambling in Canada, the authors use the Australian Productivity Commission estimates that are not corrected to exclude problem gamblers. In order to calculate consumer surplus, one needs to estimate a demand function and have price-quantity relationships for various levels of prices. These data are not available in Canada, since we have no data on the price of gambling in casinos or on VLTs. It is assumed that the Canadian demand curves for gambling are similar to those in Australia and that there is a proportional relationship between revenues and consumer surplus. In 1997, the Australian net revenue from gambling was A\$11.300 million.<sup>598</sup> The consumer surplus to revenue ratios were A\$7.425 million/A\$11.300 million (high estimate) and A\$4.212 million/A\$11.300 million (low estimate) or 66% and 37% respectively. Net gambling revenues in Canada in 1990 and 1995 were \$2.129 million and \$5.214 million, respectively. Applying the Australian percentages to Canada in 1995 indicates a consumer surplus of \$3.441 million-\$1.929 million.

#### **Government gambling revenue**

This figure is readily available and is the major source of revenue. In 1995, the total GGR for Canada was \$3.45 billion and for Atlantic Canada, \$285 million. The report shows that in 1995 the GGR was about two per cent of total government revenues. Henriksson says that this "invites study on the relationship between the revenue and the expense side of government ledgers."<sup>599</sup> He remarks that, given that a high proportion of provincial budgets are used for health care, if gambling activities cause even a tiny increase in health care expenditures, "the revenue 'growth'

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<sup>598</sup> Australia has one of the largest gambling industries in the world, with an annual expenditure of approximately A\$760 per Australian adult. Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia.

<sup>599</sup> Henriksson, L. (2001). Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto: Canadian Tax Foundation. *eGambling*, May(4).

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becomes illusory." Henriksson also suggests that advertising and marketing expenses are extremely high and should be included in estimates of net revenues.

### **Standard tax revenue**

See Section 3.6 Employment and Education for calculation details.

### **Costs:**

Vaillancourt and Roy use the methodology employed by the National Opinion Research Center (NORC)<sup>600</sup> in the United States in its study of the costs of problem gamblers. They state that they would prefer to estimate the costs for all gamblers rather than problem gamblers alone. However, these data are not available. The authors did not include redistribution transfers in their cost estimates. They consider four types of costs: crime related, health related, job related, and costs incurred by families of gamblers.

### **Crime-related costs**

Crime-related government expenditures in the Vaillancourt and Roy report include police services, tribunals, correctional services for adults, correctional services for the young, and legal expenditures. There are no reliable estimates for the percentage of crimes in Canada related to gambling. Vaillancourt and Roy therefore extrapolate from the NORC U.S. study to estimate Canadian figures. The authors assume that 25% of pathological and problem gamblers would have committed crimes if gambling were illegal. Therefore, they reduce the total costs of legalized gambling crime by 25%. NORC estimates the lifetime costs of crimes committed by pathological and problem gamblers using figures for arrests and corrections. The total lifetime crime cost amounts in US 1997 dollars are US\$2,950 for pathological gamblers and US\$1,630 for problem gamblers. To arrive at annualized Canadian estimates, the lifetime amounts were divided by 40 to estimate annual amounts, the results were changed to Canadian dollars using an exchange rate of US\$1.00 = Cdn.\$1.33; and finally, the results were translated into 1990 and 1995 dollars by multiplying the amounts by 0.97 (1995) or 0.9 (1990). The resulting annualized crime costs were \$88 (1990) and \$95 (1995) for pathological gamblers and \$49 (1990) and \$52 (1995) for problem gamblers. These amounts were then multiplied by the number of pathological and problem gamblers to estimate gambling crime-related costs.

The authors further estimate private spending on crime prevention incurred because of gambling-related crime to be the same as the government costs, although they acknowledge that this figure is probably high. They then reduce the total private and government gambling-related crime costs by 25% (based on U.S. figures), which is the percentage estimated for crimes that would have been committed by problem and pathological gamblers if gambling were illegal. The

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<sup>600</sup> 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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resulting high estimates for crime-related gambling costs in Canada for 1990 were \$96 million and for 1995, \$142 million.

### **Health-related costs**

Again, using NORC figures, and correcting for the exchange rate and inflation, and for higher U.S. health care costs using a factor of 0.85, Vaillancourt and Roy's extrapolations resulted in estimates for mental health care costs of \$384 per pathological and problem gambler for 1995 and for physical health care costs of \$768 per pathological gambler in 1995. These figures were then multiplied by the numbers of pathological and problem gamblers. These numbers assume that none of these costs would arise if gambling were illegal (which the authors acknowledge is probably not the case.) The 0.85 adjustment was arrived at in the following way: health care costs in Canada are 9% of GDP and in the United States are 14% of GDP. The Canada/U.S. ratio of .65 is then adjusted upward, by reducing the U.S. percentage of the GDP of health care costs, to account for the fact that a proportionately greater number of procedures are performed in the U.S.

### **Lost Labour Income and Taxes**

Vaillancourt and Roy consider lost or reduced income attributable to gambling as a transfer or private cost, and, therefore, they do not calculate it. However, the authors assume that the employee who missed work was not replaced, so they calculate the tax revenue lost by government that is attributable to gambling. They assume that the pathological gambler missed 10 hours of work each month. Based on Statistics Canada data, Vaillancourt and Roy assumed the average Canadian wage to be \$15 per hour in 1990 and \$18 per hour in 1995. The tax rate is assumed to be 40% and includes personal income tax, Canada pension plan contributions, and employment insurance contributions. Results indicated that government tax revenue losses due to gambling-related income losses were \$720 per pathological gambler in 1990 and \$864 in 1995.

### **Loss of Welfare by Non-Gamblers**

There are no estimates on the economic costs associated with loss of wellbeing by gamblers' family and friends due to pathological gambling behaviour. Estimates of divorce and counselling costs associated with gambling do not include the loss of wellbeing of families of problem gamblers. Therefore, the authors arbitrarily assumed a cost of \$1,000 per pathological or problem gambler for the loss of wellbeing of these gamblers' families that is attributable to the gambling behaviour.

### **Conclusion**

Vaillancourt and Roy find a net social benefit in gambling even if they more than double the costs associated with problem gambling. They do acknowledge that, although they used the



correct economic approach in their estimates, their results do not account for the important social issue of transfers. They suggest that an alternative approach would be to analyze also the costs and benefits of other policies such as those for alcohol, drugs, and smoking, and then do an incidence analysis. They remark that the NORC study compares the impact of nine major health problems and finds that pathological and problem gambling has the lowest annual cost.

Henriksson, in a review of the Canadian Tax Foundation study, notes that not including transfers, although good practice from the standpoint of conventional economics, is a reason why:

"Students of the overall effects of gambling dismiss economic studies that take this line as irrelevant. Such studies do tell us something, but they manifestly do not tell us everything about the social impacts of gambling.... the [net economic] costs are much less than the social losses, many of which show up in economists' calculations as "mere" transfers. Thus, the authors' conclusion that gains from gambling exceed losses must be interpreted with extreme caution."<sup>601</sup>

Indeed, Henriksson's critique of conventional economic benefit-cost analysis indicates precisely how and why the GPI approach differs in aiming to reflect accurately the full social benefits and costs of economic activity, and thereby to bring economic analysis into line with social reality.

### 4.3 The Whistler Symposium

Wynne and Anielski developed a proposed gambling impact framework based on the work done at the Whistler Symposium.<sup>602</sup> They divide the benefits and costs of gambling into domains and sub-domains, and they identify indicators for each domain and sub-domain. They also include measurement methods and outcomes. The domains, representing scale of analysis include the level of the individual, personal health, household economy, community/workplace, macro-economy, and the environment. Sub-domains that are part of the community domain include groups of people (family unit, ethnic, religious), business and industry, and social institutions (schools, churches). As part of the macro-economy domain, one sub-domain includes government (health, education).

The Whistler Symposium indicators reveal quantitative, qualitative, and monetary (costs and benefits) impacts of gambling. The authors point out that, although the indicator list is preliminary, it is relevant to the various scales or domains of analysis, and includes qualitative measures of quality of life issues, as well as showing the full monetary costs and benefits. On the benefits side the impact indicators for the individual domain include personal pleasure and consumer surplus. For the macro-economy domain the benefits include gaming and other industry revenues and employment, gambling revenues, contribution to GDP, charitable giving,

<sup>601</sup> Henriksson, L. (2001). Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto: Canadian Tax Foundation. *eGambling*, May(4). p. 3.

<sup>602</sup> Wynne, H. J. and M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse.

and employment. The list of cost indicators is more extensive. The following indicator list is adapted from the Whistler Symposium report.<sup>603</sup>

**Table 4. Cost indicators from the Whistler Symposium report**

Domain	Impact indicators
Individual	Individual wellbeing <ul style="list-style-type: none"> <li>o Income, debt &amp; personal bankruptcy</li> <li>o Time use (paid work, and quality time for family, friends, community, and leisure)</li> <li>o Quality time use losses (redistribution)</li> <li>o Educational attainment</li> </ul>
Personal health	Personal health and wellness <ul style="list-style-type: none"> <li>o Suicide</li> <li>o Substance abuse (drugs, alcohol, tobacco)</li> <li>o Mental illness and health</li> <li>o Stress</li> <li>o Disease and physical health (premature mortality, life expectancy)</li> <li>o Self-rated health</li> </ul>
Household economy	Household (Family) health and economy <ul style="list-style-type: none"> <li>o Domestic violence</li> <li>o Financial stress: debt, bankruptcy, lack of disposable income</li> <li>o Bankruptcy</li> <li>o Property values</li> <li>o Divorce/separation</li> <li>o Loss of family time</li> <li>o Legal problems</li> </ul>
Community/workplace (business, industry)	Workplace climate <ul style="list-style-type: none"> <li>o Absenteeism</li> <li>o Job productivity</li> </ul> Community/ Societal Institutions <ul style="list-style-type: none"> <li>o Crime, loan sharking, money laundering</li> <li>o Social cohesion</li> <li>o Charitable giving</li> <li>o Property values</li> <li>o Pawn shop activity</li> <li>o Community health</li> </ul>

<sup>603</sup> Ibid.

	<ul style="list-style-type: none"> <li>o Addiction and problem gambling treatment and services</li> <li>o Public sector regulatory costs and welfare program costs</li> </ul>
Macro-economy	<ul style="list-style-type: none"> <li>Macro-economy and government</li> <li>o GDP, income, and employment redistribution impacts on other sectors</li> <li>o Labour productivity</li> <li>o Loss of government tax revenues from other sectors</li> <li>o Government expenditures</li> <li>o Efficiency of tax instrument</li> <li>o Income &amp; wealth inequality</li> </ul>
Environmental wellbeing	<ul style="list-style-type: none"> <li>o Air quality</li> <li>o Noise</li> <li>o Land</li> </ul>

Source: Wynne, H. J., & M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse, p.21. Available: [http://www.ccsa.ca/docs/whistler\\_final.doc](http://www.ccsa.ca/docs/whistler_final.doc).

The report lists five major measurement methods that can be used to assess the impacts of gambling in the various domains and sub-domains, stating that other models could fit within these five. The models they use are: 1) financial analysis; 2) cost-benefit analysis (CBA); 3) cost-effectiveness analysis (CEA); 4) cost-utility analysis (CUA), and; 5) Genuine Progress Indicator accounting and wellbeing analysis (which might include public health models).

Finally, the report suggests, "The outcome of the impact analysis of the 'benefits' and 'costs' of gambling might be the construction of a Genuine Progress Indicator (GPI) wellbeing account, and statements for gambling activities that would include:

- A statement of the condition (assets and liabilities) of gambling and its impacts (i.e. a GPI gambling balance sheet) reported at various domains and sub-domains;
- A 'net benefit income statement' for gambling that shows the full monetary costs and benefits associated with gambling activity in society, including highlighting dimensions of CUA and CEA at various scales (i.e. domains and sub-domains).
- Indicators of physical, qualitative, and monetary impacts of gambling, derived from the GPI balance sheet and income statements, and used in an impact report framework. The authors suggest that this might resemble the "triple bottom line" (economic, social, environmental) corporate annual reports emerging from some international corporations. These impact 'statements' could become the basis for reporting on the full and integrated impacts (qualitative and monetary indicators) of gambling in a "balanced accounting framework."<sup>604</sup>

<sup>604</sup> Ibid., p.23

The Whistler Symposium report lists current GPI accounting initiatives under way:

- "The Alberta GPI sustainable wellbeing accounting project by the Pembina Institute for Appropriate Development... includes a preliminary GPI analysis of the impact and cost of problem gambling in Alberta;
- The Nova Scotia GPI initiative... does not [yet] include an analysis of the cost of gambling;
- The Australian GPI 2000 by the Australian Institute led by Clive Hamilton (includes a cost of problem gambling estimate from 1950 to 1999 for Australia to adjust Australia's GDP), and;
- The U.S. GPI by Redefining Progress includes many social and environmental costs and benefits that are used to adjust the U.S. GDP figures for an estimate of sustainable economic welfare, however, does not consider gambling."<sup>605</sup>

The Symposium concluded, in part, that "assessing gambling impacts is not a zero-sum gain; whatever the magnitude of the benefit, the emphasis should be on mitigating or reducing costs."<sup>606</sup>

#### 4.4 Cost and Impact Tables

Following are three summary tables from the literature of costs and impacts associated with gambling. They provide samples of the range of benefits, costs, and impacts considered in various studies.

**Table 5: Annual social costs of pathological gambling (from Grinols 2001)**

Category	Average annual costs per pathological gambler (in U.S. dollars, averaged from eight 1994-1997 U.S. studies that contain original research that ties social costs directly to pathological gamblers.)
<b>Crime</b>	
Apprehension, increased police costs	\$257
Adjudication	\$676
Incarceration, supervision costs	\$3,065
<b>Business and Employment</b>	
Lost productivity	\$1,082
Lost time and unemployment	\$2,913
Bankruptcy	\$316
Illness	\$700
<b>Social Service</b>	

<sup>605</sup> Ibid., p.23-24

<sup>606</sup> Ibid., p.27

Therapy and treatment costs	\$189
Unemployment and social services	\$442
<b>Family costs</b>	
Divorce and separation	\$111
<b>Abused dollars</b> (lost gambling money acquired from family, friends, or employers under false pretences)	\$3,834
<b>Total</b>	<b>\$13,585</b>

Source: Adapted from Grinols, E. L. (2001). Business profitability vs. social profitability: Evaluating the social contribution of industries with externalities, the case of the casino industry. *Managerial & Decision Economics*, 22(1-3), 143– 162.

**Table 6: Summary of estimated rate of consequences for problem, pathological, and low-risk gamblers**

**Methodological notes:**

"The following table presents certain values and calculations used to estimate the cost per problem and pathological gambler. Specifically, the estimates of this study compare the rate of costly consequences for these gamblers relative to “predicted” or expected rates for individuals with similar characteristics, but who are low-risk gamblers (they have gambled, but never experienced any symptoms of problem gambling).

"Specifically, the analysis adjusts for a standard set of characteristics that are believed to be predictive of the behaviors and outcomes of interest....These factors...include age, gender, ethnic identity, educational attainment, use/problems with alcohol and drugs, respectively, and region of the country in addition to variables representing the gambling type of the individual. The purpose of these calculations is to adjust for basic and systematic differences between different types of gamblers that might be related to the outcomes of interest, rather than simply take the difference in outcomes for pathological and problem gamblers and compare them to those with no history of problems.

"The costs are based on the “excess” or difference between the actual rate and the predicted rate, where the predicted rate is calculated from the “odds ratio.”...Note that for all types of consequences except one the “predicted” rate of problems for problem and pathological is greater than the unadjusted rate for low-risk gamblers. This indicates that problem and pathological gamblers on average are more likely to have characteristics that are associated with the consequences of concern, even if they were not problem gamblers. For example, other tabulations have shown that problem and pathological gamblers are more likely to have alcohol and drug problems and lower educational attainment. If these factors are not adjusted for the cost estimates will be somewhat inflated, as having these characteristics (alcohol and drug problems) is generally significantly and negatively related to measures such as divorce, health, and criminal justice involvement.

"For example, the problem of “job loss” was reported by 13.8 percent of pathological gamblers who had been employed during the prior year, compared to a rate of 4.0 for low-risk gamblers. In the logistical regression the “odds ratio” is 2.62, which means that the odds of pathological gamblers experiencing job

loss is 2.62 times greater than for low-risk after adjusting for other characteristics. These data imply that pathological gamblers without their gambling problems would have a predicted rate of 5.8 percent. This is greater than the value for low-risk gamblers of 4.0 percent, due to the other characteristics which indicate that pathological gamblers are at higher risk of job loss even without the gambling issues.

"Predicted rates are estimated from the rates for pathological and problem gamblers, respectively, and their "odds ratios" from multivariate logistical regressions comparing each respective type of gamblers to low-risk gamblers."<sup>607</sup>

Type of Costly Consequence/ Problem	Actual rate of consequence per problem for (1) pathological and (2) problem gamblers	Predicted rate of problem without gambling (see methodological notes above)	Unadjusted rate of problem for low-risk gamblers for comparison	Rate of consequences that can be directly attributed to gambling
<b>(1) Pathological gamblers (severe problem)</b>	%	%	%	%
Job loss	13.8	5.8	4.0	8.0
Unemployment insurance	15.0	5.9	4.0	9.1
Welfare benefits	4.6	2.4	1.3	2.2
Bankruptcy	19.2	10.8	5.5	8.4
Divorced ever	53.6	33.5	29.8	20.1
Health poor or fair	31.1	15.7	13.9	15.4
Mental health utilization	13.3	6.7	6.5	6.6
Arrested ever	32.3	19.3	11.1	13.0
Incarceration ever	21.4	6.3	4.0	15.1
<b>(2) Problem gamblers (moderate problem)</b>				
Job loss	10.8	5.5	4.0	5.3
Unemployment insurance	10.9	5.3	4.0	5.6
Welfare benefits	7.3	2.3	1.3	5.0
Bankruptcy	10.3	6.3	5.5	4.0
Divorced ever	39.5	32.1	29.8	7.4
Health poor or fair	16.4	not significant	13.9	16.4
Mental health utilization	12.8	5.6	6.5	7.2
Arrested ever	36.3	15.3	11.1	21.3
Incarceration ever	10.5	6.2	4.0	4.3

Source: Gerstein, D. R., J. Hoffmann, & C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago, p. 55.

<sup>607</sup> Gerstein, D. R., J. Hoffmann and C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago. p. 57-58.



**Table 7: Summary of gambling impacts from an economic perspective**

<b>POSITIVE IMPACTS</b>	<b>Individual/ personal impact</b>	<b>Community / Social impact</b>	<b>Economic transfer</b>
<b>Economic Development</b>			
Net job creation		√	
Net business sector growth		√	
Tourist spending		√	
Additional infrastructure <sup>608</sup>		√	
Rise in property values <sup>609</sup>	√		√
<b>Government Gambling Revenues</b>			
Obtained from local spending			√
Obtained from tourist spending		√	
Spending on charities and community programs			√
<b>Gambling as a Leisure Activity</b>	√	√	
<b>NEGATIVE IMPACTS</b>			
<b>Economic Development</b>			
Net job loss		√	
Net business sector decline		√	
Long-term infrastructure replacement		√	
Traffic congestion		√	
Decline in property values	√		√

<sup>608</sup> Viewed as a positive impact for the community as long as the province pays for a portion of the infrastructure

<sup>609</sup> If buyer and seller originate from within the community, a change in property values is often viewed as an economic transfer

Problem Gambling			
<b>Personal and interpersonal</b>			
Personal effects (e.g., depression, stress)	✓		
Psychological impacts on family & friends		✓	
Family break-up (e.g., divorce, suicide)		✓	
<b>Work and Study</b>			
Job loss <sup>610</sup>	✓		✓
Costs of re-hiring/training workers		✓	
Absenteeism/lost worker productivity		✓	
Unemployment compensation			✓
<b>Legal</b>			
Crime (e.g., embezzlement, fraud) <sup>611</sup>	✓		✓
Policing/incarceration costs		✓	
Judiciary costs		✓	
Additional security costs		✓	
<b>Financial</b>			
Bad debts, personal bankruptcy <sup>612</sup>	✓		✓
Costs to recover bad debts		✓	
<b>Health and Treatment</b>			
Operating counselling/treatment programs		✓	

Source: Azmier, J. J., R. Kelley, & P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation, p. 14.

<sup>610</sup> If the job is filled by a previously unemployed individual, this can be looked upon as economic transfer.

<sup>611</sup> Increased fear and insecurity for those who fall prey to these crimes is a personal cost. However, the actual movement of money is often viewed as an economic transfer

<sup>612</sup> While the lender of money will be worse off as a result of an unpaid debt, from a community perspective this is often seen as an economic transfer.

## 4.5 Data sources and needs

This section provides a representative, rather than exhaustive, selection of data sources.

### 4.5.1 General Canadian data sources

#### Canadian Community Health Survey

A new source of information on problem and pathological gambling, using a sample size of 36,984 respondents drawn proportionally from each province, was released by Statistics Canada in September 2003. Cycle 1.2 of the Canadian Community Health Survey—Mental Health and Wellbeing (CCHS 1.2) includes a section on the risk of problem gambling by age group and sex for the provinces and Canada as a whole. The gambling questionnaire was based on a modification of the Canadian Problem Gambling Index (CPGI). It uses a 9-item scale that contains questions on income, health, social relations, gambling behaviour, and socio-economic characteristics of non-problem, low and moderate risk, and pathological gamblers. One of the most valuable aspects of the CCHS is that information is provided by regions so that, for the first time, we can access data at smaller aggregates than was previously possible.<sup>613</sup>

Risk of gambling problem, household population aged 15 and over, 2002

By age group and sex, Canada excluding territories

<http://www.statcan.ca/english/freepub/82-617-XIE/pdf/5110075.pdf>

By sex, Canada and provinces

<http://www.statcan.ca/english/freepub/82-617-XIE/pdf/5110076.pdf>

#### Deaths and hospitalization data

Deaths and hospitalization data are collected at hospitalization release. In 2001, Nova Scotia began using the 10<sup>th</sup> revision of the International Classification of Diseases (ICD-10), which now has a code for pathological gambling (F63.0).<sup>614</sup>

#### Employment data

##### Labour Force Survey

A household survey collected monthly by Statistics Canada

##### Income and Expenditure Accounts

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<sup>613</sup> Marshall, K. and H. Wynne. (2003 Dec). Fighting the odds. *Perspectives on labour and income*, Statistics Canada Catalogue number 75-001-XPE, 16(1).

<sup>614</sup> Nova Scotia Health Records Association. (2003). *Newsletter*. Nova Scotia Health Records Association.

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Statistics Canada annual and quarterly accounts of data on expenditures, income, household facilities and equipment, and other characteristics of families and individuals

### **The Annual Survey of Arts, Entertainment and Recreation**

The Annual Survey of Arts, Entertainment and Recreation data for 2001, released 7/11/03, has begun to survey the gambling industry separately. In April 1998, the first survey, whose reference year was 1997, covered a sample of gambling establishments drawn from Statistics Canada's Business Register (BR). The survey collected information on revenue, operating expenses, employment, inventories, and other business practices.

The sample for the survey was based on the North American Industrial Classification System (NAICS), which codes gambling separately and provides information on different types of gambling:

“This coding system [has] replaced the 1980 Standard Industrial Classification (SIC) currently used by Statistics Canada, and will be implemented in stages throughout the Agency. The BR, as well as the annual business surveys, began converting to NAICS in 1997; most monthly and quarterly surveys [began] in 2000, and the census [incorporated] NAICS in 2001. Although NAICS includes the main gambling codes in the SIC, it also allows for a more detailed analysis of the gambling industry as it is broken out into sub-groups (for example, casinos, lotteries and other gambling). Furthermore, the new coding system will allow for comparisons with the United States. Currently, the SIC system in the United States does not code gambling separately.”<sup>615</sup>

### **Family Expenditure Survey (FAMEX)**

Starting in 1996, FAMEX introduced four additional questions to its gaming activity section, which already included a question on government-run lotteries. Annual data on household expenditures are now available for casinos and slot machines, bingo, non-government lotteries and raffles, and winnings from games of chance.<sup>616</sup>

## *4.5.2 Nova Scotia data sources*

### **Nova Scotia Gaming Sources**

The Nova Scotia Gaming Commission, the Nova Scotia Gaming Foundation, the Alcohol and Gaming Authority, and the Atlantic Lottery Commission all collect information that will be essential for any report on the costs and benefits of gaming in Nova Scotia. In particular, the 1998-1999 two-volume *Annual Gaming Report* from the Nova Scotia Alcohol and Gaming

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<sup>615</sup> Marshall, K. (1999). The gambling industry: Raising the stakes. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, Winter*. p. 2.

<sup>616</sup> Ibid. p.3.

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Authority is an anthology of independent research reports that provides a wealth of information on gaming in Nova Scotia. Specifically, it looks at the socio-economic impacts of gambling, the prevalence of problem and pathological gambling, and public opinions about gambling.<sup>617</sup>

## **Municipal Indicators**

Government of Nova Scotia, Department of Service Nova Scotia, and Municipal Relations

Data on a series of economic, demographic, social, political, and infrastructure indicators for all municipalities for two fiscal years, either plotted individually for a single indicator and community, or all at once in a spreadsheet. Data (only some of which will be relevant to a cost of gambling study) include: Taxes as a % of Total Revenue; Transfers from Other Governments; Residential Tax Burden (RTB); Uniform Assessment per Dwelling Unit; Mandatory Expenditures; Expenditures per Dwelling Unit; Liquidity Ratio; Deficits Last 5 years; Uncollected Taxes; Reserves as a % of Expenditures; Debt Service Ratio; Debt Outstanding/Uniform Assessment; Capital from Revenue; Total Capital From Operating; Increase in Uniform Assessment; Commercial/Total Assessment; Average Household Income (AHI); Residential Tax Burden/ Average Household Income (RTB/AHI); Change in Population; Age Profile; Voter Turnout; Municipal Elections Candidates; Training Costs per Employee; Succession Planning; Strategic Planning; Documentation; Legislative/Capita; Administration/Capita;. Police Services/\$1,000 Assessment; Police Services/Capita; . Fire Services/\$1,000 Assessment; Fire Services/Capita; Roads and Streets; Storm and Wastewater/Km; Sewer Main Backups/Km; Solid Waste Collection/Ton; Solid Waste Disposal/Ton; Recycling Costs/Ton; Water Treatment & Distribution; Water Tests; and Water Main Breaks/Km).

[www.gov.ns.ca/snsmr/muns/indicators/default.asp](http://www.gov.ns.ca/snsmr/muns/indicators/default.asp);

[www.gov.ns.ca/snsmr/muns/indicators/public](http://www.gov.ns.ca/snsmr/muns/indicators/public)

## **Provincial level indicators**

*GPI Atlantic* is developing an index of sustainable development and wellbeing – the Genuine Progress Index –and has a number of publications applying this system to Nova Scotia, which contain information relevant to a cost of gambling study for the province. For example, GPI Atlantic has produced detailed estimates for the cost of crime in Nova Scotia, for the health costs of various risk behaviours, and for income distribution in the province. See [www.gpiatlantic.org](http://www.gpiatlantic.org).

*Nova Scotia Economic Indicators* is published monthly by the NS Department of Finance. This is a compendium of key economic indicators for Canada and Nova Scotia updated on a monthly, quarterly, and annual basis. Summary tables include statistics on population, migration, labour force, consumer price index, income, retail trade, commodity sectors, construction, and gross domestic product, as well as the health reports and status of women reports.

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<sup>617</sup> Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

The *Maritime Series – State of the Regions* reports by the Canadian Institute for Research on Regional Development (CIRRD) at the University of Moncton, includes three 145-page reports containing detailed N.S. information, with economic, socio-demographic, and other data on: The Economic Region of Annapolis Valley and Halifax (2003); The Economic Region of Southwestern Nova Scotia (2000); and The Economic Region of Northeastern Nova Scotia (1997). Again, some of these data will be relevant in assessing regional differences in gambling impacts within the province. [www.umoncton.ca/icrdr/fs\\_act\\_pub\\_colmar\\_etat\\_en.html](http://www.umoncton.ca/icrdr/fs_act_pub_colmar_etat_en.html)

#### 4.5.3 General data needs for gaming studies

##### **Citizens' Committee on Destination Gaming**

The following indicators were used in the New Brunswick report, *The Potential Economic, Social, and Image Impacts of a Casino in Moncton*, which looked at impacts rather than economic costs and benefits of gaming.<sup>618</sup>

**Economic Indicators:** Police Services, Ambulance Services, Creation of Jobs, Economic Spin-Offs, Tourism & Hotels, Restaurants, Cultural Industry, Import Gambling, Keep Local Gambling, Social Services & Addiction Treatment (ex: social costs), Municipal Revenues: Local 'win' tax, Property taxes, % of province \$, license fees; Insurance Costs, Bankruptcies, Parking Facilities, Lighting, Security, Public Transportation, Potable Water, Sanitary Sewer, Soil Contamination, Air Quality, Noise, etc., Housing & Real Estate, Grants to Volunteers.

**Social Fabric Indicators:** Prostitution, Theft, Frauds & Money Counterfeit/Laundry, Drunkenness & Impaired Driving, Car Accidents, Parking Infractions, Traffic Offences, Traffic Congestion, Drug Offences, Credit Card Offences, Assaults, Problem Gambling: Stress rate, Family suffering, Suicide/attempt, Job/absenteeism, Financial woes, Other abuses, Local Volunteer or Charity Bingo, Organized Crime, Corruption of Local Elected Officials, Homelessness

**City Image Indicators:** Natural Setting, Environmental Sustainability, Safe, Clean Streets, Supportive of our Neighbourhoods, Cultural Diversity, Social Responsibility, Relaxed, Healthy Lifestyle, Architectural Landscape.

##### **Canada West Foundation**

*Triumph, tragedy or trade-off?: Considering the impact of gambling*<sup>619</sup>

<sup>618</sup> 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.

<sup>619</sup> Azmier, J. J., R. Kelley and P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation.



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This report included recommendations on the data that should be collected for any comprehensive study on the impact of gambling::

1. Gambling Labour Force Characteristics for Each Type of Gambling
  - Number of employees
  - Number of gambling employees who were previously unemployed
  - Socio-demographic characteristics of gambling employees
  - Percentage of employees employed full-time
  - Average Annual and hourly wages
  
2. Annual and Aggregate Gambling Statistics for Each Type of Gambling
  - Per capita adult expenditures and losses
  - Expenditures and losses as a percentage of household disposable income
  - Gambling revenue as a percentage of total provincial revenues
  - Annual growth rates
  - Percentage of gambling patrons from outside region
  - Average visitor spending
  - Tourists citing gambling as primary reason to visit region; as a contributing factor
  
3. Problem Gambling Data
  - Prevalence of problem gambling in a region
  - Personal and family effects of problem gambling including divorce, suicide, bankruptcy
  - Number of problem gamblers who seek treatment
  - Revenues and expenditures allocated for problem gambling treatment, education and prevention
  
4. Gambling related crimes and regulations
  - Community crime statistics where gambling was cited as a motivating factor for below fields:
    - a) Violent Crime--homicides, attempted murders, assaults, robberies, harassment/stalking
    - b) Non-Violent Crimes--break and enter, vehicle theft, fraud, theft over/under \$5,000
  - Total number and cost of gambling-related court trials
  - Cost of gambling-related crime regulations and prevention programs
  
5. Charitable Sector and Social Spending
  - Total number of gambling-related charitable donations, value and number of grants
  - Amount and value of non-gambling charitable donations and grants
  - Gambling revenue contributions to government social spending and grant programs
  - Number, type and size of charities that receive gambling revenue donations and grants
  
6. Regional Labour Market Data
  - Employment and labour force participation
  - Per-capita personal and disposable income
  - Per-capita savings rates

#### 7. Regional Economic and Housing Data

Retail sector such as total retail sales and business bankruptcies

Revenues by industries that gambling may have a large impact on such as: leisure, hotel, restaurant, and traditional gambling

Regional variables such as GDP, investment, housing starts, value of residential and commercial building permits, hotel and commercial starts

#### 8. Regional Tourism Data

Overnight trips made by local residents to other regions

Visitors from other regions / provinces making overnight trips to local area (non-business)

### **Australian Institute for Gambling Research (AIGR)**

The following indicators and sources are used in *Social and Economic Impacts of Gambling in New Zealand*.<sup>620</sup>

- Gambling participation surveys
- Gambling statistics, trends
- Health and epidemiology data
- Community development, social action research
- Comparative community studies, attitude surveys
- Community surveys, sub-populations
- Community services data
- Ethnographic studies
- Historical studies, social histories
- Industry profiles and patronage
- Media content analysis
- Problem gambling prevalence trends
- Social wellbeing, quality of life indices
- Social disadvantage indices
- Ownership and control networks
- Labour force & union data
- Financial, tax, economy, retail data
- Needs analysis
- Community forums, consultation, submissions
- Stakeholder interviews, roundtables, steering groups
- Focus groups
- GPI data

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<sup>620</sup> Masterman-Smith, H., S. Martin and J. McMillen. (2001). *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR).

- GDP data
- Consumer protection data
- Layered stat geo-stat mapping
- Business surveys
- Client use of support services
- Bankruptcy data and needs analysis
- Crime and regulation data
- Suicide data
- Tourism surveys
- Time-use, travel studies

### **Gambling Impact Data Needs Assessment from AIGR**

Professor Jan McMillen of the AIGR provided the Whistler symposium with a list of indicative (rather than comprehensive) gambling impact data needs gathered from the Australian experience. This was attached to the Whistler Symposium report as Appendix 5. The list is also included in Masterman-Smith, H., S. Martin, & J. McMillen. (2001) *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR). McMillen's suggestions for baseline data on gambling impacts are quoted below, and constitute the last four pages of this literature review.<sup>621</sup>

- National gambling statistics can include:
  - o turnover per adult capita and provincial/national totals
  - o expenditure (real and actual) - per adult capita and totals
  - o annual rates of growth
  - o % Household Disposable Income
  - o \$ taxation (gaming and racing, all gambling)
  - o % provincial revenue (gaming and racing, all gambling), etc.
- Characteristics of the gambling industries - by sector and by province/state, compiled annually or biannually e.g.:
  - o See the Australian Bureau of Statistics compilation, *Gambling Industries*, for the type of aggregate data collected in Australia. However, these data frameworks are under review following deficiencies identified in the Productivity Commission's inquiry.
  - o Detailed industry operating data, as reported by New Jersey casinos (e.g. income and expenditure, purchasing data, marketing etc.) would assist regional analysis of economic costs and benefits.
- Gambling labour force statistics – by sector and by province/state, compiled annually; e.g. the Australian Bureau of Statistics compiles data on:

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<sup>621</sup> McMillen, J. (2001). Gambling Impact Data Needs (Appendix 5). In Wynne and Anielski (Eds.), *The Whistler Symposium Report* (pp. 40-45). Edmonton: Canadian Centre on Substance Abuse.

- o number of employees by gambling enterprise
  - o type of operator/employer (private, public; size of enterprise, etc);
  - o number of employees by category of work (e.g. gaming, administration, technical support)
  - o standard socio-demographics (gender, age, education levels, marital status, cultural identification, etc)
  - o full-time, part-time, casual employment;
  - o annual/hourly salaries by category of employee
  - o annual staff turnover rate by category of employee
  - o level of unionisation;
  - o number and type of industrial disputes;
  - o Equal Employment Opportunity policies, affirmative action programs
  - o OHS requirements and issues (e.g. passive smoking)
- Social disadvantage index: To assist identification of ‘at risk’ communities. Data should be capable of analysis at the lowest statistical area possible – e.g. at the level of 200 households, local community, community of interests.
  - National time use data, leisure statistics that include gambling participation in each province, capable of breakdown to units of 200 households.
  - Social wellbeing index – to measure gambling impacts on quality of life.
  - Problem gambling data – by local community and province:
    - o prevalence of problem gambling – general population survey data, specific groups and communities.
    - o Surveys of gambling clients receiving counselling or other support services.
    - o Demand for gambling-related support services, e.g. surveys of welfare and community agencies. Development of a national Minimum Data Set and resources/support to compile the necessary data will ensure reliable, quality data.
    - o Data on personal and family impacts – effects on children, partners, divorce or separation, domestic violence, psychological wellbeing, etc
    - o The development of the CPGI and the HARM measures in Canada will assist quantitative analysis.
    - o However, qualitative data about the nature of problem gambling and its impacts on particular individuals and communities are equally important – e.g. from focus groups, ethnographic studies.
  - Data on prevention programs:
    - o Consumer information – costs and benefits. Program evaluation studies.
    - o Community education programs - costs and benefits. Program evaluation studies.
    - o Primary and secondary prevention programs, early intervention. Efficacy, program evaluation studies.
    - o Community surveys, focus groups – to identify quality of life issues and impacts.

- Data on treatment programs, community support services – at provincial and local community levels, compiled annually:
  - o distribution of services by type: e.g. counselling, community health service, stand-alone, integrated
  - o resources, staffing, professional qualifications
  - o access: hours of operation; mode of access (crisis line, telephone/internet counselling, clinic visits, etc), public subsidy or private fee-for-service, etc;
  - o client usage patterns – gamblers, families, gambling industry workers, others.
  - o problem gambling services provided (financial counselling, psychological counselling, relationship counselling, emergency relief, health services, domestic violence support, etc)
  - o problem gambling Minimum Data Set (MDS) – to record the use of problem gambling services, client data, etc. In Australia, the states of Victoria and Queensland have collected data using their own versions of MDS for several years. These models have been generally criticised, however, and an improved MDS is being developed by the NSW Department of Health
  - o program evaluation studies, efficacy studies.
  
- Health data:
  - o epidemiological data that record gambling-related health problems. The Australian Medical Association has a National Policy on Problem Gambling, framed as a public health issue, but has not yet developed a research strategy. In 1998 the NSW AMA developed an education program for General Practitioners, including the DAGS (Drug, Alcohol and Gambling Screen). However, no mechanisms or funding for compilation and analysis of these data have been established.
  - o Gambling-related suicide. In Australia, data collection is unsystematic and ad hoc; attribution to gambling as the principal causal factor has been difficult.
  - o Co-morbidity data, e.g. gambling and alcohol, depression, parental neglect, etc. This is a crucial area in which methods must also be developed to address attribution factors.
  
- Layered geo-mapping of various data sets – to identify ‘at risk’ communities, sites with high levels of gambling problems, areas of service need, quality of life impacts, etc.
  
- Ethnographic studies and community studies to explore the cultural meanings and practices of gambling in different communities and groups. Such studies are essential first steps to refining existing data sets and methodologies to ensure they are culturally sensitive.
  
- Crime and regulation:
  - o Community crime statistics and court records that identify direct relationships to gambling (to overcome the attribution problem), to disentangle gambling-related crimes from other trends and externalities).
  - o Data on gambling participation and problems in penal/correctional systems
  - o Costs of gambling regulation and policing – both proactive/preventative and reactive regulation (i.e. data that differentiates gambling from other more general regulatory and enforcement costs).
  - o Data on the resource allocation effects of corruption. This is a complex issue that could vary case by case.

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o Calculation of the benefits of regulation (i.e. diminished crime or no crime). Program evaluation studies.

- Financial and economic data:

- o Regional economic data and frameworks for analysis – e.g. Queensland is establishing annual regional data on household expenditure. Data would include the usual measures of economic activity. Where possible, emphasis should be given to actual data and trends, not estimates.

- o Retail data to measure the impacts of gambling on local business. This is not an easy task, given the generally poor records for the retail sector.

- o Production: gambling-related absenteeism, loss of productivity, reduced unpaid household services.

- o Bankruptcy: data that identify the direct contribution of gambling to bankruptcy. Australian data are fundamentally flawed in this area, and are virtually useless.

- o Data from financial institutions on gambling-related refinancing, loans, mortgage closures, etc.

- o Taxation – participation data to explore conventional tax issues at the national, provincial and community levels (regressivity, tax incidence, sensitivity analysis, etc.)

- o Data on the collection and distribution of charitable funds – to explore issues of equity, efficiency and effectiveness, etc.

- Urban and environmental impacts:

- o Environmental impact studies – e.g. on traffic, pedestrian patterns, urban aesthetics, heritage and cultural issues, etc.

- o Costs and benefits of town planning requirements; are they public or private costs/benefits, etc.

- o Community surveys and focus groups – to examine the impacts on community image, quality of life, etc.

- Surveys, focus groups, interviews and observation:

- o These provide useful sources of data for elaboration and cross-validation of other data sets.

- o For example, detailed national survey data can show the socio-demographic profiles of Canadian gamblers as a whole, by province, location (postcode is best, or metropolitan, non-metropolitan), gender, age, income, education, personal status and cultural identity.

- o For each socio-demographic characteristic:

- the proportion of Canadian gamblers who participated in a particular gambling activity
- of those who gambled, the proportion of gamblers in a particular province/community who participated in a particular activity
- comparison of patterns between recreational/occasional gamblers, regular gamblers and gamblers with problems
- the proportion of each group in the population.





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## REFERENCES

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Abbott, M. W., & R. A. Volberg. (1999). *Gambling and problem gambling in the community: An international overview and critique*. Department of Internal Affairs [New Zealand]. Available: [http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/\\$file/report1.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/report1.pdf/$file/report1.pdf).

Alberta Alcohol and Drug Abuse Commission. (1994). *Female Problem Gamblers in Alberta: A Secondary Analysis of the Gambling and Problem Gambling in Alberta Study*. Edmonton: Alberta Alcohol and Drug Abuse Commission.

American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision*. Arlington, Va.: American Psychiatric Association.

Anders, G. C. (1996). The Indian Gaming Regulatory Act and Native American Development. *International Policy Review*, 6(1), 84-90.

Atlantic Lottery Corporation (ALC). (2003). *Giving Back to Atlantic Canadians. 02-03 Annual Report*. Atlantic Lottery Corporation. Available: <http://www.alc.ca/English/AboutALC/AnnualReport/images/alcannrep.pdf>.

Auger, D., & D. Hewitt. (2000). *Dream chaser: Alberta Aboriginal adult gambling prevalence study*. Edmonton: Nechi Training, Research & Health Promotions.

Australian Institute for Gambling Research. (2000). *The Impact of the Expansion of Gaming on the Tourism, Entertainment and Leisure Industries*. Victorian Casino and Gaming Authority. Available: [http://www.gambling.vcga.vic.gov.au/domino/web\\_notes/VCGA/austGamblingCompHistory.nsf/ea42ba9724e2382c4a2568ac0019a371/a915f169b7ba5e884a2568ac001c0293?OpenDocument#The%20Impact%20of](http://www.gambling.vcga.vic.gov.au/domino/web_notes/VCGA/austGamblingCompHistory.nsf/ea42ba9724e2382c4a2568ac0019a371/a915f169b7ba5e884a2568ac001c0293?OpenDocument#The%20Impact%20of).

Azmier, J. J. (2000). *Canadian gambling behaviour and attitudes: main report*. Canada West Foundation. Available: <http://www.cwf.ca>.

---. (2001). *Gambling in Canada 2001 : an overview*. Canada West Foundation. Available: <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=866FE244FF51B28087256BD5006193CF>.

Azmier, J. J., R. Kelley, & P. Todosichuk. (2001). *Triumph, tragedy or trade-off?: Considering the impact of gambling*. Canada West Foundation. Available: <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=0A568C150AF0694587256BD5006219D4>.

Banks, G. (2002). *The Productivity Commission's Gambling Inquiry: 3 Years On*. Presentation to the 12 th Annual Conference of the National Association for Gambling Studies, Melbourne, 21

---

November 2002, Productivity Commission, Canberra. Available:  
<http://www.pc.gov.au/research/speeches/cs20021121/index.html>.

Baseline Market Research Ltd. (1996). *Final report: 1996 prevalence study on problem gambling in Nova Scotia*. Problem Gambling Services, Nova Scotia Dept. of Health. Available: [https://dspace.ucalgary.ca/retrieve/411/aci\\_sm.pdf](https://dspace.ucalgary.ca/retrieve/411/aci_sm.pdf).

Berdahl, L. (1999). *The Impact of Gaming upon Non-Profits: A 1999 Survey of Gaming Grant Recipients (main report)*. Canada West Foundation. Available:  
<http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=AD4AE5D7630A398487256BD500033022>.

Bingo Review Committee. (1999). *Alberta Bingo Industry Review*. Alberta Gaming and Liquor Commission. Available: [http://www.aglc.gov.ab.ca/publications/991004\\_bingo\\_report.asp](http://www.aglc.gov.ab.ca/publications/991004_bingo_report.asp).

Bland, R., S. Neuman, H. Orn, & R. Stebelsky. (1993). Epidemiology of pathological gambling in Edmonton. *Canadian Journal of Psychiatry*, 38, 108–112.

Blaszczynski, A., & E. Farrell. (1998). A case series of 44 completed gambling-related suicides. *Journal of Gambling Studies*, 14, 93-109.

Blaszczynski, A., & C. Marfels. (2002). *Running Head: Determining gambling related suicides in psychological autopsies. A Protocol for Determining Gambling-related Suicides in Psychological Autopsy Studies*. presented at the Discovery 2002 Conference, Responsible Gambling Council, Niagara Falls, 21-24 April 2002.

Blaszczynski, A., & D. Silove. (1996). Pathological gambling: Forensic issues. *Australian and New Zealand Journal of Psychiatry*, 30(358-369).

Boughton, R., & J. M. Brewster. (2002). *Voices of women who gamble in Ontario: A survey of women's gambling, barriers to treatment and treatment service needs*. Toronto: Ontario Ministry of Health and Long Term Care.

Brantingham, P., & S. Easton. (1996). *The Crime Bill: Who Pays and How Much? Fraser Forum*. Vancouver: The Fraser Institute.

Breen, R., & M. Zimmerman. (2002). Rapid onset of pathological gambling in machine gamblers. *Journal of Gambling Studies*, 18(1), 31-43.

Brown, R. (1987). Pathological gambling and associated patterns of crime: Comparison with alcohol and other drug addictions. *Journal of Gambling Behavior*, 333, 98-114.

Brown, S., & L. Coventry. (1997). *Queen of Hearts: The Needs of Women with Gambling Problems*. Melbourne: Financial and Consumers Rights Council.

---

Chevalier, S., & D. Allard. (2001). *Lotteries, slot machines & health: Survey on gambling in Montréal [Summary Report]*. Montreal-Centre Regional Health and Social Services Board. Available: [http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1\\_eng.pdf](http://www.santepub-mtl.qc.ca/Publication/synthese/rapv5n1_eng.pdf).

Citizens' Committee on Destination Gaming, & D. Bourgeois (Chairperson). (2001). *The Potential Economic, Social, and Image Impacts of a Casino in Moncton*. Moncton [New Brunswick] City Council. Available: <http://www.moncton.org/search/english/CITYHALL/citydepartments/casinofinalreport.pdf>.

Clayton, D., & A. Barceló. (2000). The Cost of Suicide Mortality in New Brunswick, 1996. *Chronic Diseases in Canada*, 20(3), Available online: [http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/cdic-mcc/20-22/e\\_e.html](http://www.hc-sc.gc.ca/pphb-dgspsp/publicat/cdic-mcc/20-22/e_e.html).

Clotfelter, C. T. (2000). *Do Lotteries Hurt the Poor? Well, Yes and No*. Duke University. Available: <http://www.pubpol.duke.edu/people/faculty/clotfelter/lottsum.pdf>.

Collins, D., & H. Lapsley. (2003a). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 123-148.

---. (2003b). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies, Summer*, 19(2), 123-148.

Colman, R. (1998). *Measuring Sustainable Development: The Nova Scotia Genuine Progress Index: Framework, Indicators and Methodologies*. Genuine Progress Index Atlantic (GPI Atlantic). Available: <http://www.gpiatlantic.org/pdf/general/framework.pdf>.

---. (n.d.). *Costing Policy Change: A Case Study In Applying The GPI Cost Of Crime Methodology To A Hypothetical Policy Shift from Legalized Cannabis Use to Prohibition of Cannabis as a Prosecutable Offence*. GPI Atlantic. Available: <http://www.gpiatlantic.org>.

Colman, R., & C. Dodds. (1999). *The Cost of Crime in Nova Scotia*. GPI Atlantic. Available: <http://www.gpiatlantic.org/publications/socialcapital.shtml#crime>.

Committee on the Social and Economic Impact of Pathological Gambling National Research Council. (1999). *Pathological Gambling: A Critical Review*. Washington, D.C.: National Academy Press.

Corporate Research Associates Inc. (2001). *2000 Nova Scotia Visitor Exit Survey. Final report*. Nova Scotia Department of Tourism & Culture. Available: [http://www.nstpc.com/docs/0112756\\_Visitors\\_Exit.pdf](http://www.nstpc.com/docs/0112756_Visitors_Exit.pdf).

---

Cousins, S. O., C. Witcher, & J. Moodie. (2002). *High Quality Aging or Gambling with Health? The Lifestyles of Elders Who Play Bingo*. Alberta Gaming Research Institute. Available: [http://www.abgaminginstitute.ualberta.ca/documents/research/Cousins\\_bingo.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/Cousins_bingo.pdf).

Criminal Intelligence Service Canada. (2000). *Annual Report on Organized Crime in Canada 2000*. Criminal Intelligence Service Canada. Available: <http://www.cisc.gc.ca/AnnualReport2000/Cisc2000/annualreport2000.htm>.

---. (2002). *Annual Report on Organized Crime in Canada 2002*. Criminal Intelligence Service Canada. Available: <http://www.cisc.gc.ca/AnnualReport2002/Document/annual%20report%202002.pdf>.

Crockford, D. N., & N. el-Guebaly. (1998). Psychiatric co-morbidity in pathological gambling: A critical review. *Canadian Journal of Psychiatry*, 43, 43-50.

Cunningham-Williams, R., r. L. Cottle, W. Compton, & E. Spitznagel. (1998). Taking chance: problem gamblers and mental health disorders—results from the St. Louis Epidemiological Catchment Area (ECA) study. *American Journal of Public Health*, 88, 1093–1096.

Cuthbertson, C. (2004, May 5). 'Years of losses, of pain'. *The Daily News*, pp. 3.

Cyrenne, P. (1995). *An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba*. Winnipeg: University of Winnipeg, Department of Economics.

De Fuentes-Merillas, L., M. W. J. Koeter, J. Bethlehem, G. M. Schippers, & W. Van Den Brink. (2003). Are scratchcards addictive? The prevalence of pathological scratchcard gambling among adult scratchcard buyers in the Netherlands. *Addiction*, 98(6), 725-731.

Department of Justice Canada. (2004). *Bankruptcy and Insolvency Act: Part VI Bankrupts*. Department of Justice Canada. Available: <http://laws.justice.gc.ca/en/b-3/6575.html>.

Derevensky, J. L., & R. Gupta. (2000). Prevalence estimates of adolescent gambling: A comparison of the SOGS-RA, DSM-IV-J, and the GA 20 Questions. *Journal of Gambling Studies*, 16(2/3), 227–251.

---. (2004). *Adolescents with gambling problems: A synopsis of our current knowledge*. eGambling, issue 10. Available: <http://www.camh.net/egambling/archive/pdf/EJGI-Issue10/ejgi-issue10-derevensky-gupta.pdf>.

Dickerson, M. (2003). *Exploring the limits of 'responsible gambling': Harm minimization or consumer protection?* Paper presented at the 12th Annual Conference of the National Association for Gambling Studies, Melbourne Australia.



---

Doiron, J., & R. Nicki. (1999). *The prevalence of problem gambling in Prince Edward Island*. Department of Health and Social Services, Prince Edward Island. Available: <http://www.gov.pe.ca/photos/original/gambling.pdf>.

Dow Schull, N. (2002). *Escape mechanism: Women, caretaking, and compulsive machine gambling*. Working Paper No. 41. Center for Working Families, University of California. Available: [http://www.bc.edu/bc\\_org/avp/wfnetwork/berkeley/papers/41.pdf](http://www.bc.edu/bc_org/avp/wfnetwork/berkeley/papers/41.pdf).

Eadington, W. R. (1995). Economic development and the introduction of casinos: Myths and Realities. *Economic Development Review*, 13(4), 51-54.

---. (1998). *Contributions of Casino Style Gambling to Local Economies*. Presented at the 1998 National Public Policy Education Conference, held September 21-23, 1998 in Clackamas, Oregon. Available: <http://www.farmfoundation.org/1998NPPEC/eadington1.PDF>.

---. (1998). *The spread of casinos and their role in tourism development*. Presented at the 1998 National Public Policy Education Conference, held September 21-23, 1998 in Clackamas, Oregon. Available: <http://www.farmfoundation.org/1998NPPEC/eadington2.PDF>.

---. (1999). The Economies of Casino Gambling. *Journal of Economic Perspectives*, 13(3), 173-192.

---. (2003). Measuring Costs from Permitted Gaming : Concepts and categories in evaluating gambling's consequences. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 185-213.

Easton, B. (2003). *The Analysis of Costs and Benefits of Gambling*. Brian Easton. Available: <http://www.eastonbh.ac.nz/modules.php?name=News&file=print&sid=443>.

Education Network of Ontario. (2004). *Ontario Social Studies Curriculum Content: The First Nations Communities- Reserves*. Education Network of Ontario. Available: <http://www.enoreo.on.ca/socialstudies/grade3content/reserves.htm>.

Elia, J., & D.F.Jacobs. (1993). The Incidence of Pathological Gambling among Native Americans Treated for Alcohol Dependence. *The International Journal of Addiction*, 28(7), 659—666.

Evans, W. N., & J. H. Topoleski. (2002). *The Social and Economic Impact of Native American Casinos*. Department of Economics, University of Maryland. Available: [http://www.bsos.umd.edu/econ/evans/wpapers/evans\\_topoleski\\_casinos.pdf](http://www.bsos.umd.edu/econ/evans/wpapers/evans_topoleski_casinos.pdf).

Federal, P. a. T. A. C. o. P. H. (1999). *Toward a Healthy Future: Second Report on the Health of Canadians*. Health Canada, Statistics Canada, Canadian Institute for Health Information. Available: [http://www.hc-sc.gc.ca/hppb/phdd/pdf/toward/toward\\_a\\_healthy\\_english.PDF](http://www.hc-sc.gc.ca/hppb/phdd/pdf/toward/toward_a_healthy_english.PDF).

Ferris, J., & H. Wynne. (2001). *The Canadian Problem Gambling Index: Final Report*. Canadian Centre on Substance Abuse. Available: <http://www.ccsa.ca/pdf/ccsa-008805-2001.pdf>.

Flinn, B. (2004, May 5). "Province promises new policy on gambling". *The Daily News*, pp. 3.

Focal Research Consultants Ltd. (1998). *Nova Scotia Video Lottery Players' Survey, 1997/98*. Halifax: Department of Health, Drug Dependency Services, and Problem Gambling Services. Available: <http://www.gov.ns.ca/health/downloads/highlites.pdf>.

---. (2002). *Video Lottery Responsible Gaming Feature Research*. Nova Scotia Gaming Corporation. Available: <http://www.gamingcorp.ns.ca/responsible/pbrgf.htm>.

Garrett, T. A. (2004). *Casino Gaming and Local Employment Trends*. The Federal Reserve Bank of St. Louis Review 86(1). Available: <http://research.stlouisfed.org/publications/review/04/01/garrett.pdf>.

Gerstein, D. R., J. Hoffmann, & C. Larison. (1999). *Gambling impact and behavior study*. National Opinion Research Center. The University of Chicago. Available: <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

Goss, E., & E. Morse. (2004). *The Impact of Casino Gambling on Bankruptcy Rates: A County Level Analysis*. Creighton University. Available: [http://www.gaming.uleth.ca/agri\\_downloads/1212/Casino\\_bankruptcy%20031204.pdf](http://www.gaming.uleth.ca/agri_downloads/1212/Casino_bankruptcy%20031204.pdf).

Grinols, E., & J. D. Omorov. (1996). Development or Dreamfield Delusions: Assessing casino gambling's costs and benefit. *Journal of Law and Commerce*, 16, 49-87.

Grinols, E. L. (1995). Gambling as economic policy: Enumerating why losses exceed gains. *Illinois Business Review*, 52(1), 6-12.

---. (2000). Casino gambling causes crime. *Policy Forum. Institute of Government and Public Affairs*, 3(2).

---. (2001). Business profitability vs. social profitability: Evaluating the social contribution of industries with externalities, the case of the casino industry. *Managerial & Decision Economics*, 22(1-3), 143– 162.

---. (2004). *Gambling in America: Costs and Benefits*. Cambridge: Cambridge University Press.

Grinols, E. L., D. B. Mustard, & C. H. Dilley. (1999). *Casinos and Crime*. Report prepared for the U.S. National Gambling Impact Study Commission, Washington, D.C. Available: [http://www.scfuture.clemson.edu/scdigest/gambling/papers/casinos\\_dmustard.pdf](http://www.scfuture.clemson.edu/scdigest/gambling/papers/casinos_dmustard.pdf).

- 
- Gupta, R., & J. L. Derevensky. (1998). An empirical examination of Jacobs' General Theory of Addictions: Do adolescent gamblers fit the theory? *Journal of Gambling Studies*, 14, 17–49.
- Hawke, A. (2000). *Measuring the impact of gambling: An economist's view*. Hawke Institute, University of South Australia. Available: <http://www.unisa.edu.au/hawke/institute/resources/Working%20paper%204.pdf>.
- Hayward, K., & R. Colman. (2003). *The Tides of Change: Addressing Inequity and Chronic Disease in Atlantic Canada. A Discussion Paper*. Population and Public Health Branch, Atlantic Region, Health Canada. Available: [http://www.hc-sc.gc.ca/hppb/regions/atlantic/pdf/Tides\\_Inequity\\_and\\_Chronic\\_Disease.pdf](http://www.hc-sc.gc.ca/hppb/regions/atlantic/pdf/Tides_Inequity_and_Chronic_Disease.pdf).
- Henderson, E., & S. Russell. (1997). The Navajo gaming referendum: Reservations about casinos lead to popular rejection of legalized gambling. *Human Organization*, 56(3), 294-301.
- Henriksson, L. (2001). Book Review: Vaillancourt, F., & A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto: Canadian Tax Foundation. *eGambling*, May(4).
- Henriksson, L. E. (1999). *Government, gambling and healthy populations*. Workshop on Addiction and Population Health. Available: [http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government\\_gambling-e/henriksson.htm](http://collection.nlc-bnc.ca/100/200/300/ccsa-cclat/government_gambling-e/henriksson.htm).
- . (2001). Gambling in Canada: some insights for cost-benefit analysis. *Managerial & Decision Economics*, 22(1-3), 113-123.
- Henriksson, L. E., & R. G. Lipsey. (1998). *Should Provinces Expand Gambling?* Coalition for Education and Research into Gambling Expansion (CERGE).
- Hewitt, D. (1995). *Spirit of Bingoland: A Study of Problem Gambling among Ontario Native People*. Edmonton: Nechi Training, Research and Health Promotion Institute.
- Hewitt, D., D. Auger, & M. Hodgson. (1995). *Firewatch, An Adolescent Gambling Prevalence Study*. Edmonton: Nechi Training, Research and Health Promotion Institute.
- Hirsch, P. (2000). *Seniors and Gambling: Exploring the Issues. Summary Report*. AADAC: Alberta Alcohol and Drug Abuse Commission. Available: <http://www.corp.aadac.com/programsservices/research/pdf/SenGambSumRpt.pdf>.
- Hutchinson, B. (1999). *Betting the House: Winners, Losers and the Politics of Canada's Gambling Obsession*. Toronto: Viking.
- Industry Commission. (1998). *Telecommunications Equipment, Systems and Services, Report no. 61*. AusInfo, Canberra: Industry Commission.

International Centre for Youth Gambling Problems and High-Risk Behaviors (YGI). (2004). *YGI Website*. McGill University. Available: <http://www.youthgambling.com/>.

Jacobs, D. F., A. R. Marston, R. D. Singer, K. Widaman, T. Little, & J. Veizades. (1989). Children of Problem Gamblers. *Journal of Gambling Behaviour*, 5, 261-268.

Jason, D. R., M. Taff, & L. Bogholi. (1990). Casino-related deaths in Atlantic City, New Jersey 1982-1986. *American Journal of Forensic Medical Pathology*, 11, 112-123.

Jeannotte, M. S. (2002). *Gambling on Culture in Canada: Gaming as a source of funding for culture, the arts and heritage*. Submitted to CIRCLE Round Table Rome, November 14-16, 2002. Department Of Canadian Heritage, Government of Canada. Available: [http://www.culturescope.ca/file\\_download.php/SRA-676-e.pdf?URL\\_ID=1731&filename=10686013411SRA-676-e.pdf&filetype=application%2Fpdf&filesize=294776&name=SRA-676-e.pdf&location=user-S/](http://www.culturescope.ca/file_download.php/SRA-676-e.pdf?URL_ID=1731&filename=10686013411SRA-676-e.pdf&filetype=application%2Fpdf&filesize=294776&name=SRA-676-e.pdf&location=user-S/).

Kelley, R. (2001). *First Nations Gambling Policy in Canada*. Canada West Foundation. Available: <http://www.cwf.ca/abcalcwf/doc.nsf/publications?ReadForm&id=AA6EA396C07B7EA087256BD5005F936D>.

Kiedrowski & Associates Inc. (2001). *Native Gaming and Gambling in Canada*. Indian Northern Affairs Canada. Available: <https://dspace.ualgary.ca/retrieve/699/Final+Native+Gaming5.pdf>.

Korn, D., R. Gibbins, & 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.

Korn, D. A., & H. J. Shaffer. (1999). Gambling and the Health of the Public: Adopting a Public Health Perspective. *Journal of Gambling Studies*, 15(4), 289-365.

Korn, D. A., & H. Skinner. (2000). *Gambling expansion in Canada: An emerging public health issue*. Canadian Public Health Association Position Paper. Available: [http://www.cpha.ca/english/policy/pstatem/gambling/pp2000\\_e.pdf](http://www.cpha.ca/english/policy/pstatem/gambling/pp2000_e.pdf).

KPMG. (2002). *Casino Market Assessment: Moncton, New Brunswick*. City of Moncton. Available: <http://www.moncton.org/search/english/CITYHALL/publications/finalcasinoreport.pdf>.

KPMG Management Consultants. (1995). A Critical Review of 'An Analysis of the Net Social Benefits from Legalized Gambling in the Province of Manitoba'. In Ross, M. & P. Cyrenne (Eds.), *Assessment of the benefits and costs of the Manitoba Lotteries Corporation*: KPMG Management Consultants.

- 
- . (2003). *Canadian Gaming Industry Highlights*. KPMG Management Consultants. Available: <http://www.kpmg.ca/en/industries/ice/hospitality/documents/GamingCredentials.pdf>.
- LaBrie, R., & H. J. Shaffer. (2003). *Toward a Science of Gambling Regulation: A Concept Statement*. AGA Responsible Gaming Lecture Series, Vol 2 (2).
- Ladouceur, R. (1996). The Prevalence of Pathological Gambling in Canada. *Journal of Gambling Studies*, 12(Summer), 129-142.
- Ladouceur, R., J. Boisvert, M. Pepin, M. Loranger, & C. Sylvain. (1994). Social cost of pathological gambling. *Journal of Gambling Studies*, 10(4), 399-409.
- Ladouceur, R., C. Bouchard, N. Rhéaume, C. Jacques, F. Ferland, J. Leblond, & M. Walker. (2000). Is the SOGS an Accurate Measure of Pathological Gambling Among Children, Adolescents and Adults? *Journal of Gambling Studies*, 16(1), 1-24.
- Lesieur, H. (1992). Compulsive gambling. *Society*, May/June, 43-50.
- . (1998a). Costs and treatment of pathological gambling. *ANNALS, AAPSS*, 556,(March), 153-159.
- . (1998b). Costs and treatment of pathological gambling. *The Annals. American Academy of Political and Social Sciences (AAPSS)*, 556(March), 153-159.
- Lesieur, H. R., & C. W. Anderson. (1995). *Results of a 1995 Survey of Gamblers Anonymous Members in Illinois (N=184)*: Illinois Council on Problem and Compulsive Gambling.
- Lipton, M. D. (2003a, September 17, 2003). *First Nations Gaming in Canada*. Paper presented at the Global Gaming Exposition, Las Vegas, Nevada.
- . (2003b). *Place Your Bets, Canada. Gaming in Canada: An Overview*. International Masters of Gaming Law. Available: [http://www.gaminglawmasters.com/jurisdictions/canada/A03\\_lw.htm](http://www.gaminglawmasters.com/jurisdictions/canada/A03_lw.htm).
- Lipton, M. D., Q.C. (2002). *Internet Gaming: A Look at Online Gambling in Canada*. The International Masters of Gaming Law. Available: [http://www.gaminglawmasters.com/jurisdictions/canada/inet\\_canada.html](http://www.gaminglawmasters.com/jurisdictions/canada/inet_canada.html).
- Marfels, C. (1997). Casino Gaming and VLT Gaming: Substitution Effect or Supplementation Effect? *Gaming Law Review*, 1(3), 333-340, Available: <http://is.dal.ca/~cmarfels/substitution.html>.
- . (2001). Gambling and Resident Suicides: Evidence from the Las Vegas Market. *Gaming Law Review*, 5(1), 33-41.

- 
- Margolis, J. (1997). *Casinos and Crime: An Analysis of the Evidence*. Washington, D.C.: American Gaming Association.
- Marshall, K. (1999). The gambling industry: Raising the stakes. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, Winter*.
- . (2003). Fact-sheet on gambling. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, March*.
- Marshall, K., & H. Wynne. (2003). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, 16(1)*.
- . (2003 Dec). Fighting the odds. *Perspectives on labour and income, Statistics Canada Catalogue number 75-001-XPE, 16(1)*.
- Martin, T., & B. D. Kirkcaldy. (1998). Gender differences on the EPQ-R and attitudes to work. *Personality and Individual Differences, 24(1)*, 1-5.
- Martins, S., D. Lobo, H. Tavares, & I. V. Genti. (2002). Pathological gambling in women: a review. *Revista do Hospital das Clínicas, 57(5)*, 235-242.
- Masterman-Smith, H., S. Martin, & J. McMillen. (2001). *Social and Economic Impacts of Gambling in New Zealand*. Australian Institute for Gambling Research (AIGR). Available: [http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/\\$file/Social&EconomicImpacts.pdf](http://www.dia.govt.nz/Pubforms.nsf/URL/Social&EconomicImpacts.pdf/$file/Social&EconomicImpacts.pdf).
- Mathis, G. L. (2000). *An Inquiry into the Scope, Operation, Economics and Social Desirability of Charity Bingo*. Murray State University. Available: <http://www.murraystate.edu/qacd/cbpa/bber/articles/mathis.pdf>.
- McGowan, V., J. Droessler, G. Nixon, & M. Grimshaw. (2000). *Recent research in the socio-cultural domain of gaming and gambling: An annotated bibliography and critical overview*. Alberta Gaming Research Institute. Available: [http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural\\_mcgowan.pdf](http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural_mcgowan.pdf).
- McKenzie, D. (1997). *Canadian Profile: Alcohol, Tobacco & Other Drugs*. Ottawa: Canadian Centre on Substance Abuse.
- McLaughlin, P. (2004). Province ups its share of VLT revenue. *The Daily News*, pp. 8.
- McMillen, J. (2001). Gambling Impact Data Needs (Appendix 5). In Wynne, H. J. & M. Anielski (Eds.), *The Whistler Symposium Report* (pp. 40-45). Edmonton: Canadian Centre on Substance Abuse.



---

McMullan, J. L., & J. Mullen (2001). What Makes Gambling News? *Journal of Gambling Studies*, 17(4), 321-352.

Miller, S. (2004 March 26). WTO overrules US on internet gambling. *Wall St Journal*.

Minnesota Department of Human Services Gambling Program. (1996 March). "What happens to families..." *Beyond the Odds Newsletter*. Available: <http://www.miph.org/gambling/bto/btosum96/whathappens.html>.

Morgan, J. (2000). Financing public goods by means of lotteries. *Review of Economic Studies*, 67, 761-784.

MPM Gaming Research. (1998). *Towards a Convenience Model of Gaming and its Social Effects in Nova Scotia, Annual Gaming Report, Appendix F*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

---. (1999a). *Convenience Gambling in Nova Scotia: A Study of Consumer Income and Expenditure Patterns*. Halifax: Nova Scotia Alcohol and Gaming Authority.

---. (1999b). *Final Report. Convenience Gaming and Social Impacts in Nova Scotia*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

---. (1999c). *Towards a Convenience Model of Gaming and its Social Effects in Nova Scotia, Annual Gaming Report, Appendix C*. Halifax, N.S.: Nova Scotia Alcohol and Gaming Authority.

Munro, B. (2003). *Seniors who gamble: A summary review of the literature*. Alberta Gaming Research Institute. Available: [http://www.abgaminginstitute.ualberta.ca/documents/research/Munro\\_Seniors.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/Munro_Seniors.pdf).

National Council of Welfare. (1996). *Gambling in Canada*. National Council of Welfare. Available: [http://www.ncwcnbes.net/htmdocument/reportgambling/Gambling\\_e.htm](http://www.ncwcnbes.net/htmdocument/reportgambling/Gambling_e.htm).

National Council on Problem Gambling. (2004). *What is problem gambling*. National Council on Problem Gambling. Available: <http://www.ncpgambling.org/>.

National Crime Prevention Council. (1996). *Money Well Spent: Investing in Preventing Crime*. Ottawa: National Crime Prevention Council.

National Gambling Impact and Policy Commission (U.S.). (1999). *The National Gambling Impact Study Commission : Final report*. National Gambling Impact and Policy Commission. Available: <http://govinfo.library.unt.edu/ngisc/reports/fullrpt.html>.

National Opinion Research Center (NORC). (1999). *Gambling impact and behavior study*. National Opinion Research Center at the University of Chicago. Available: <http://www.norc.uchicago.edu/new/pdf/gamble.pdf>.

Nova Scotia Alcohol and Gaming Authority. (1999). *Annual Gaming Report. Volume I*. Halifax, N.S.: Alcohol and Gaming Authority.

---. (2000). *Nova Scotia Annual Gaming Report 1999-2000*. Nova Scotia Alcohol and Gaming Authority. Available: <http://www.gov.ns.ca/aga/AnnualReport/Gaming%202000%20Report.pdf>.

---. (2002). *Nova Scotia Annual Gaming Report 2001-2002*. Nova Scotia Alcohol and Gaming Authority. Available: <http://www.gov.ns.ca/aga/AnnualReport/Gaming%202002%20Report.pdf>.

---. (2003). *Annual Report for the fiscal year ending March 31, 2003*. Nova Scotia Alcohol and Gaming Authority. Available: <http://www.gov.ns.ca/aga/AnnualReport/Section%2066%202003.pdf>.

Nova Scotia Department of Health. *Problem Gambler Services website*. Available: <http://www.gov.ns.ca/heal/gambling/>.

---. (2002). *2000 Regular Video Lottery (VL) Players Follow Up Survey*. Halifax, N.S.: Author.

---. (2004). *Who operates gambling in Nova Scotia?* Nova Scotia Department of Health. Available: <http://www.gov.ns.ca/health/gambling/HowCanWeHelp/WhoOperates/>.

Nova Scotia Department of Tourism Culture and Heritage. (2004). *2003 Nova Scotia Tourism Year in Review*. Nova Scotia Department of Tourism Culture and Heritage. Available: [http://www.gov.ns.ca/dtc/pubs/insights/view\\_issue.asp?TI\\_IssueID=65](http://www.gov.ns.ca/dtc/pubs/insights/view_issue.asp?TI_IssueID=65).

Nova Scotia Drug Dependency Services. (1998). *Nova Scotia video lottery players' study highlights, 1997-98*. Halifax: Dept of Health, Drug Dependency Services.

Nova Scotia Gaming Corporation. (2003). *Annual Report 2002-2003*. Nova Scotia Gaming Corporation.

---. (n.d.). *What Makes NSGC a Leader*. Author. Available: <http://www.gamingcorp.ns.ca/responsible/makesleader.htm>.

Nova Scotia Gaming Foundation. (2002). *Annual Report 2002*. Nova Scotia Gaming Foundation.

Nova Scotia Health Records Association. (2003). *Newsletter*. Nova Scotia Health Records Association. Available: <http://www.nshra.ca/newsletter.html>.

Nova Scotia Office of Aboriginal Affairs. (2004). *Office of Aboriginal Affairs*. Nova Scotia Office of Aboriginal Affairs. Available: <http://www.gov.ns.ca/abor>.

Omnifacts Research. (1993). *An examination of the prevalence of gambling in Nova Scotia. Report #93090*. Halifax: Nova Scotia Department of Health, Drug Dependency Services.

Othsuka, K., E. Bruton, & L. Deluca. (1997). Sex differences in pathological gambling using gaming machines. *Psychological Reports*, 80, 1051-1057.

Patton, D., D. Brown, J. Dhaliwal, C. Pankratz, & B. Broszeit. (2002). *Gambling involvement and problem gambling in Manitoba*. Addictions Foundation of Manitoba. Available: [http://www.afm.mb.ca/pdfs/FinalGamblingReport\\_Full\\_.pdf](http://www.afm.mb.ca/pdfs/FinalGamblingReport_Full_.pdf).

Pernanen, K., S. Brochu, M.-M. Cousineau, L.-G. Cournoyer, & F. Sun. (2000). *Attributable fractions for alcohol and illicit drugs in relation to crime in Canada: conceptualization, methods and internal consistency of estimates*. Bulletin on Narcotics, LII (1 & 2), United Nations Office on Drugs and Crime. Available: [http://www.unodc.org/unodc/en/bulletin/bulletin\\_2000\\_01\\_01\\_1\\_page006.html](http://www.unodc.org/unodc/en/bulletin/bulletin_2000_01_01_1_page006.html).

Petry, N. (2000). Gambling problems in substance abusers are associated with increased sexual risk behaviors. *Addiction*, 95, 1089–1100.

Policy Research Unit. (1995). *The Social Impact of Gaming in New Zealand. A report prepared for the 1995 Review of Gaming. Review of Gaming Series No 3*. Christchurch: Department of Internal Affairs. Available: <http://www.dia.govt.nz/Pubforms.nsf/URL/SocialImpactOfGaming.pdf>.

Porteous, S. D. (1998). *Organized Crime Impact Study*. Public Works and Government Services of Canada. Available: [http://www.psepc-sppcc.gc.ca/Publications/Policing/pdf/1998orgcrim\\_e.pdf](http://www.psepc-sppcc.gc.ca/Publications/Policing/pdf/1998orgcrim_e.pdf).

Potenza, M. N., D. A. Fiellin, G. R. Heninger, B. J. Rounsaville, & C. M. Mazure. (2002). Gambling: An Addictive Behavior with Health and Primary Care Implications. *JGIM: Journal of General Internal Medicine*, 17(9), 721-732.

Poulin, C. (2000). Problem Gambling Among Adolescent Students in the Atlantic Provinces of Canada. *Journal of Gambling Studies*, 16(1), 53-78.

---. (2002). *Nova Scotia Student Drug Use Survey 2002: Technical Report*. Halifax: Dalhousie University, Community Health and Epidemiology. Available: [http://www.gov.ns.ca/health/downloads/2002\\_NSDrugTechnical.pdf](http://www.gov.ns.ca/health/downloads/2002_NSDrugTechnical.pdf).

Problem Gambling Services. (n.d.). *What is gambling?* Nova Scotia Department of Health. Available: <http://www.gov.ns.ca/health/gambling/WhatIsProblemGambling/Gambling/>.

Problem Gambling Services Nova Scotia Department of Health, & Department of Education and Culture. (1997). *Drawing the Line: A Resource for the Prevention of Problem Gambling*. Halifax: Province of Nova Scotia.

---

Proctor, S. (2000, March 5). VLTs Pad Millbrook Accounts: \$12 Million in Profits Helps Band Build Future. *The Sunday Herald*, pp. A1.

Productivity Commission. (1999). *Australia's Gambling Industries*. Commonwealth of Australia. Available: <http://www.pc.gov.au/inquiry/gambling/finalreport/>.

Raylu, N., & T. P. S. Oei. (2002). Pathological Gambling : A Comprehensive Review. *Clinical Psychology Review*, 22(7), 1009-1061.

Rephann, T. J., M. Dalton, A. Stair, & A. Isserman. (1997). Casino Gambling as an Economic Development Strategy. *Tourism Economics*, 3(2), 161-184.

Responsible Gambling Council (Ontario). (2003 February 27). Suicides linked to gambling. *NewsScan*, 5(9).

---. (2003 June 6). Coroners to record gambling suicide ties. *NewsScan*, 5(23).

Rose, G. (1990). Reflections on the changing times. *British Medical Journal*, 301, 683-687.

Rothman, K. J. (1986). *Modern Epidemiology*. Boston: Little, Brown, and Company.

Schellinck, T., T. Schrans, G. Walsh, & J. Grace. (2002). *2002 Seniors Survey – Prevalence of Substance Use and Gambling Among New Brunswick Adults Aged 55+*. New Brunswick Department of Health and Wellness. Available: <http://www.gnb.ca/0378/pdf/SeniorsFinalReport2002ENG.pdf>.

Schrans, T., T. Schellinck, & G. Walsh. (2001). *2000 Regular VL Players Follow up: A Comparative Analysis of Problem Development & Resolution*. Addiction Services, Nova Scotia Department of Health. Available: [http://www.gov.ns.ca/heal/downloads/VLPlayers\\_TechnicalReport.pdf](http://www.gov.ns.ca/heal/downloads/VLPlayers_TechnicalReport.pdf).

Schwer, R. K., W. N. Thompson, & D. Nakamuro. (2003). *Beyond the Limits of Recreation: Social Costs of Gambling in Southern Nevada*. 2003 Annual Meeting of the Far West and American Popular Culture Association. Las Vegas, NV. Available: <http://www.stopslotsmd.com/gafinele.pdf>.

Shaffer, H., M. Hall, & J. Vander Bilt. (1997). *Estimating the Prevalence of Disordered Gambling Behavior in the United States and Canada: A Meta-analysis*. Harvard Medical School Division of Addictions. Available: <http://www.hms.harvard.edu/doa/html/publications/meta.pdf>.

Shaffer, H. J., & D. A. Korn. (2002). Gambling and Related Mental Disorders: A Public Health Analysis. *Annual Review of Public Health*, 23, 171-212, Available: <http://www.hms.harvard.edu/doa/html/reprints/shafferkornarph.pdf>.

---

Single, E. (2003). Estimating the Costs of Substance Abuse : Implications to the estimation of the costs and benefits of 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), 215-233.

Single, E., D. Collins, B. Easton, H. Harwood, H. Lapsley, P. Kopp, & E. Wilson. (2001). *International Guidelines for Estimating the Costs of Substance Abuse-Second Edition*. Canadian Centre on Substance Abuse. Available:  
[http://www.emcdda.eu.int/.../policy\\_law/expenditure/International%20guidelines%202001%20edition-4.doc?search](http://www.emcdda.eu.int/.../policy_law/expenditure/International%20guidelines%202001%20edition-4.doc?search).

Smith, G., & H. Wynne (1999). *Gambling and Crime in Western Canada: Exploring Myth and Reality (summary report)*. Canada West Foundation. Available:  
<http://www.gamblingresearch.org/download.sz/Gambling&CrimeSummaryRpt.pdf?docid=1539'xxx'>.

Smith, G. J., & H. J. Wynne. (2000). *A review of the gambling literature in the economic and policy domains*. Alberta Gaming Research Institute. Available:  
<http://www.abgaminginstitute.ualberta.ca/documents/reviews/economic.pdf>.

---. (2002). *Measuring Gambling and Problem Gambling in Alberta Using the Canadian Problem Gambling Index*. Alberta Gaming Research Institute. Available:  
[http://www.abgaminginstitute.ualberta.ca/documents/research/gambling\\_alberta\\_cpqi.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/gambling_alberta_cpqi.pdf).

---. (2004). *VLT Gambling in Alberta: A Preliminary Analysis*. Alberta Gaming Research Institute. Available:  
[http://www.abgaminginstitute.ualberta.ca/documents/research/VLT\\_Gambling\\_Alberta.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/VLT_Gambling_Alberta.pdf).

Smith, G. J., H. J. Wynne, & 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. Available:  
[http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling\\_and\\_crime.pdf](http://www.abgaminginstitute.ualberta.ca/documents/research/Gambling_and_crime.pdf).

Sobel, B. P. (2001). Bingo vs. physical intervention in stimulating short-term cognition in Alzheimer's disease patients. *American Journal of Alzheimer's Disease and Other Dementias*, 16(2), 115-120.

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]. Available:  
<http://www.grp.vic.gov.au/CA256D9600166477/page/Research+Reports-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research?OpenDocument&l=25-Research+Reports~&2=0-The+Social+and+Economic+Impacts+of+Gaming%3a+A+Framework+for+Research~&3=~>.

---

Solicitor-General of Canada. (1985). *Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims*. Ottawa: Solicitor-General of Canada.

South Australian Centre for Economic Studies (SACES). (2003 December). *Measurement of Prevalence of Youth Problem Gambling In Australia: Report on Review of Literature*. Department of Family and Community Services [AU]. Available: [http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/\\$File/PrevalenceStudiesFinalReport.pdf](http://www.facs.gov.au/internet/facsinternet.nsf/vIA/gambling/$File/PrevalenceStudiesFinalReport.pdf).

Special issue on gambling. (1995). *Economic Development Review*, 13(4).

Spunt, B., I. Dupont, H. Lesieur, H. J. Liberty, & D. Hunt. (1998). Pathological gambling and substance misuse: A review of the literature. *Substance Use and Misuse*, 33, 2535-2560.

Statistics Canada. (2003). *2001 Census. Profile - Nova Scotia*. Statistics Canada. Available: <http://www12.statcan.ca/english/census01/products/standard/prprofile/prprofile.cfm?G=12>.

Statistics Canada Housing Family and Social Statistics Division. (1999). *A Portrait of Seniors in Canada. Third Edition*. Ottawa, Ontario: Publications Division, Statistics Canada.

Stewart, S., L. McWilliams, J. Blackburn, & R. Klein. (2002). A laboratory-based investigation of relations among video lottery terminal (VLT) play, negative mood, and alcohol consumption in regular VLT players. *Addictive Behaviour*, 27, 819–835.

Stewart, S. H., & M. G. Kushner. (2003). Recent Research on the Comorbidity of Alcoholism and Pathological Gambling. *Alcoholism: Clinical and Experimental Research*, 27(2), 285-291.

Strachan, M., & R. Custer. (1993). Female compulsive gamblers in Las Vegas. In Eadington, W. & J. Cornelius (Eds.), *Gambling Behaviour and Problem Gambling* (pp. 235-238). Reno, Nevada: Institute for the Study of Gambling and Commercial Gaming.

Taber, J., R. McCormick, & L. Ramirez. (1987). The prevalence and impact of major life stressors among pathological gamblers. *The International Journal of the Addictions*, 22, 71-79.

Thompson, W., R. C. Gazel, & D. Rickman. (1995). *The Economic Impact of Native American Gaming in Wisconsin*. The Wisconsin Policy Research Institute. Available: <http://www.wpri.org/Reports/Volume8/Vol8no3.pdf>.

Thompson, W. N. (2000). Theft is a social cost: Bigger than we may have thought. *Report on Problem Gambling*, 1(44), 46.

Thompson, W. N., R. Gazel, & D. Rickman. (1996). *The Social Costs of Gambling in Wisconsin*. Wisconsin Policy Research Institute Report, 9(6), 1-44. Available: <http://www.wpri.org/Reports/Volume9/Vol9no6.pdf>.



---

Thornton, G. (2000). *Review of First Nation Gaming Commissions, Sources and Uses of Funds Analysis*. Province of Nova Scotia Office of Aboriginal Affairs. Available: <http://www.gov.ns.ca/abor/pubs/Summary%20Report.PDF>.

Toneatto, T. (2000 March). *Relationship between gender and substance use among treatment-seeking gamblers*. eGambling, issue 1. Available: <http://www.camh.net/egambling/issue1/research/>.

Toneatto, T., R. Boughton, & D. Borsoi. (2002). *A Comparison of Male and Female Pathological Gamblers in Ontario*. Centre for Addiction and Mental Health. Available: <http://www.gamblingresearch.org/download.sz/malefemale%20Toneatto.pdf?docid=1517','xxx'>.

Topp, J., E. Sawka, R. Room, C. Poulin, E. Single, & H. Thompson. (1998). *Policy discussion paper on problem gambling*. Canadian Centre on Substance Abuse. Available: <http://www.ccsa.ca/pdf/ccsa-007450-1998.pdf>.

Tutton, M. (2004, April 11). *Atlantic lottery considering internet gambling: CEO*. CNET - Tech News. Available: <http://cnews.canoe.ca/CNEWS/TechNews/2004/04/11/pf-417464.html>.

United States General Accounting Office (GAO). (2000). *Impact of Gambling: Economic Effects More Measurable Than Social Effects*. United States General Accounting Office. Available: <http://www.gao.gov/archive/2000/gg00078.pdf>.

---. (2002). *Report to Congressional Requesters. Internet Gambling: An Overview of the Issues*. United States General Accounting Office. Available: <http://www.gao.gov/new.items/d0389.pdf>.

Vaillancourt, F., & A. Roy. (2000). *Gambling and governments in Canada, 1969-1998 : how much? who plays? what payoff?* Toronto, Ontario: Canadian Tax Foundation.

Van Brunschot, E. G., & L.-A. Keown. (2000). *Gambling in context: The socio-cultural domain: Literature overview and annotated bibliography*. Alberta Gaming Research Institute. Available: [http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural\\_gibbs.pdf](http://www.abgaminginstitute.ualberta.ca/documents/reviews/sociocultural_gibbs.pdf).

Volberg, R. (2003). *Has there been a "feminization" of gambling and problem gambling in the United States?* eGambling, issue 8. Available: <http://www.camh.net/egambling/issue8/feature/index.html>.

Volberg, R. A. (2004 Feb 1). *Fifteen years of problem gambling prevalence research: What do we know? Where do we go?* eGambling, issue 10. Available: [http://www.camh.net/egambling/issue10/ejgi\\_10\\_volberg.html](http://www.camh.net/egambling/issue10/ejgi_10_volberg.html).

Volberg, R. A., & M. W. Abbott. (1997). *Gambling and problem gambling among indigenous peoples*. *Substance Use & Misuse*, 32(11), 1525-1538.

---

Volberg, R. A., D. R. Gerstein, E. M. Christiansen, & J. Baldrige. (2001). Assessing Self-Reported Expenditures on Gambling. *Managerial & Decision Economics*, 22(1-3), 77-96.

Volberg, R. A., & E. Silver. (1993). *Gambling and Problem Gambling among Native Americans in North Dakota*. Albany, N.Y.: Gemini Research.

Walker, D., & H. Barnett. (1999). The Social Costs of Gambling: An Economic Perspective. *Journal of Gambling Studies*, 15(3), 181-212.

Walker, D. M. (2000). *A Simple Model to Explain and Illustrate the Definition of "Social Cost"*. International Symposium on the Economic and Social Impact of Gambling (1st : 2000, 23 - 27 September : Whistler, BC). Canadian Centre on Substance Abuse. Available: <http://www.ccsa.ca/pdf/ccsa-009988-2000.pdf>.

---. (2003). Methodological Issues in the Social Cost of Gambling Studies. Presented at the First International Symposium on the Economic and Social Impacts of Gambling, September 23-27, 2000. *Journal of Gambling Studies*, 19(2), 149-184.

---. (2003). *Review of Schwer, Thompson & Nakamuro "Beyond the Limits of Recreation: Social Costs of Gambling in Las Vegas"*. Nevada Resort Association. Available: [http://www.responsiblegambling.org/articles/beyond\\_the\\_limits\\_of\\_recreation.pdf](http://www.responsiblegambling.org/articles/beyond_the_limits_of_recreation.pdf).

Walker, D. M., & A. H. Barnett. (1999). Response to McGowan's comment on "The social costs of gambling: An economic perspective". *Journal of Gambling Studies*, 15(3), 217-221.

Wardman, D., N. el-Guebaly, & D. Hodgins. (2001). Problem and Pathological Gambling in North American Aboriginal Populations: A Review of the Empirical Literature. *Journal of Gambling Studies*, 17(2).

Welsh, B., & I. Waller. (1995 April). *Crime and its Prevention: Costs and Benefits*. Ottawa: University of Ottawa Department of Criminology.

Wenger, L., B. McKechnie, & J. Wiebe. (1999). *Fast Facts on Gambling*. The Awareness & Information Unit of The Addictions Foundation of Manitoba. Available: [https://dspace.ucalgary.ca/retrieve/724/Fast\\_Facts\\_Gambling\\_p1-64\\_.pdf](https://dspace.ucalgary.ca/retrieve/724/Fast_Facts_Gambling_p1-64_.pdf).

Westphal, J. R., & L. J. Johnson. (2001). *Innovation in the Cost- Benefit Analysis of Legalized Gambling: Estimating Opportunity Costs for Gambling Disorders*. Paper presented at "Innovation 2001" Conference hosted by the Canadian Foundation on Compulsive Gambling, Toronto, Ontario, April 22- 25, 2001. Available: [http://www.responsiblegambling.org/.../Innovation\\_in\\_the\\_CostBenefit\\_Analysis\\_of\\_Legalized\\_Gambling\\_Estimatiing.pdf](http://www.responsiblegambling.org/.../Innovation_in_the_CostBenefit_Analysis_of_Legalized_Gambling_Estimatiing.pdf).

Wiebe, J. (2002). *Gambling Behavior and Factors Associated with Problem Gambling Among Older Adults*. Dissertation: University of Manitoba: Department of Community Health Sciences.

Wiebe, J., E. Single, & A. Falkowski-Ham. (2003). *Exploring the Evolution of Problem Gambling: A one year Follow-Up Study*. Responsible Gambling Council Canadian Centre on Substance Abuse Ontario Problem Gambling Research Centre. Available: ['xxx'](http://www.gamblingresearch.org/download.sz/helpseeking%20final%20report.pdf?docid=3828).

Wildman, R. W. I., & S. Chevalier. (2002). *Problems Associated with Gambling: A Preliminary Investigation into Health, Social and Psychological Aspects*. Ontario Problem Gambling Research Centre. Available: <http://www.inspq.qc.ca/publications/JeuxHasardArgent/WildmanChevalier.pdf>.

Women's Health in the North. (2000). *Playing for time: Exploring the impacts of gambling on women*. Problem Gambling Victoria. Available: [http://www.problemgambling.vic.gov.au/commcare/dhscpg.nsf/2fc3379bd0005bd64a2566cf00283d52/d5a501d3280169f74a256938000b937d/\\$FILE/playing%20for%20time.pdf](http://www.problemgambling.vic.gov.au/commcare/dhscpg.nsf/2fc3379bd0005bd64a2566cf00283d52/d5a501d3280169f74a256938000b937d/$FILE/playing%20for%20time.pdf).

Women's Inter-Church Council of Canada. (2003 Summer, Fall). *WICC News. Grant recipients 2003*. Women's Inter-Church Council of Canada. Available: <http://www.wicc.org>.

World Health Organization. (1947-2004). *WHO Definition of Health*. Available: <http://www.who.int/about/definition/en>.

Wynne, H. J. (2002). *Gambling and Problem Gambling in Saskatchewan. Final Report*. Saskatchewan Health. Available: [http://www.health.gov.sk.ca/ps\\_fin\\_rep\\_prev\\_of\\_prob\\_gam.html](http://www.health.gov.sk.ca/ps_fin_rep_prev_of_prob_gam.html).

Wynne, H. J., & M. Anielski. (2001). *The Whistler Symposium Report*. Canadian Centre on Substance Abuse. Available: [http://www.ccsa.ca/docs/whistler\\_final.doc](http://www.ccsa.ca/docs/whistler_final.doc).

Wynne, H. J., & H. J. Shaffer. (2003). The Socioeconomic Impact of Gambling: The Whistler Symposium. *Journal of Gambling Studies*, 19(2), 111-121.