MEASURING SUSTAINABLE DEVELOPMENT

APPLICATION OF THE GENUINE PROGRESS INDEX TO NOVA SCOTIA

# THE COST of CRIME in NOVA SCOTIA

Initial Data Release

*Prepared by* Colin Dodds and Ronald Colman



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MODULE THREE

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GPI Atlantic gratefully acknowledges funding for this project provided by the:

N. S. Department of Economic Development and Tourism and A.C.O.A. under the Canada – Nova Scotia Cooperation Agreement on Economic Diversification, with cooperation, assistance, facilities, and in-kind support provided by Statistics Canada

### Acknowledgements

In preparing this sector of the Genuine Progress Index, GPI Atlantic wishes to acknowledge, in particular, the ongoing cooperation and assistance of Robert Roe, Senior Policy Analyst, Nova Scotia Department of Justice; Paul Smith, Coordinator, Research and Planning, Nova Scotia Department of Justice; and Dr. Don Clairmont, Department of Sociology, Dalhousie University, who is one of the region's foremost criminologists. All three have kindly taken the time to consult, give advice, review draft reports, and provide expert critical feedback. Mr. Smith generously assisted in locating and tracking down important information which the authors could otherwise not have accessed.

Kit Waters, Director of Policy Planning and Research, Nova Scotia Department of Justice, and Joanne Marriott-Thorne, of the Department's Victim Services Division also generously reviewed earlier drafts, spotted errors and made helpful corrections. We would also like to thank Verona Singer, coordinator of Victim Services in the Halifax Regional Police Department for reviewing the sections on victim losses. In addition, several other members of the Justice Department and representatives from court and police services were provided with draft copies of this report and kindly took the time to review and comment on sections of the report pertaining to their areas, channeling their helpful insights and expert advice back to the authors through the good services of Mr. Roe.

GPI Atlantic has received continuous outstanding assistance from Hans Messinger, Director, Industry Measures and Analysis Division, Statistics Canada, who has cheerfully extended his expertise, generosity and practical support to the entire project from its inception. Mr. Messinger has made several visits to Halifax for the specific purpose of advising the GPI Atlantic team. The methodology for assessing the production losses of homicide victims is Mr. Messinger's, and he has spent countless hours personally with the authors patiently reviewing the measurement techniques, principles, and terminology used in this report, as well as the entire first draft.

Through Mr. Messinger's good offices, a later draft was also reviewed by members of Statistics Canada's Canadian Centre for Justice Statistics. In particular, the authors wish to thank Andrew Kohut, Executive Director, Canadian Centre for Justice Statistics (CCJS); John Turner, Chief, Policing Services Program, CCJS; Shelley Trevethan, Chief, Corrections Program, CCJS; and Karen Swol, Survey Manager, Police Administration Survey, CCJS, for kindly reviewing materials in this report, spotting errors, suggesting revisions, and assisting with the interpretation of data. Their expertise and generous help is deeply appreciated.

The staff of the Statistics Canada Regional Office in Halifax, under Andrew Maw, has provided patient daily hospitality, generous assistance beyond the call of duty, and ongoing technical assistance, in tracking down data sources, answering innumerable questions, and sharing expertise and experience. Without their advice, cooperation and knowledge of sources, it would not have been possible to gather and analyze the data for this report. It is not possible here to list all the members of the Statistics Canada Regional Office who have assisted in countless ways. But a few staff members deserve special mention.

In particular, Rejean Doiron has extended himself selflessly and continuously for more than a year, providing technical and methodological help, identifying and locating sources, and introducing the authors to other staff members with specialized knowledge. His support has been vital to the project. Without it, we would literally be months behind schedule in the work. In addition, Keith Matheson, Marie Burton and Marc Melanson have made their vast knowledge of data sources available to the authors and assisted them in locating materials and information that they would not otherwise have found.

Jarod Dobson's knowledge and understanding of methodologies and measurement techniques have been invaluable; and Dan Sheehy and Jackson McGaw have patiently and continuously provided expert technical assistance far beyond the bounds of what was reasonable for the authors to request. Many other staff members have helped in many ways, and credit is due to Andrew Maw, assistant director, for creating an extraordinary atmosphere of cheerful mutual support and assistance in his office.

John Odenthal, senior policy analyst at the Nova Scotia Department of Economic Development and Tourism, has kindly gone well beyond his duties as project officer for the GPI for the Nova Scotia government, to give ongoing helpful advice, assistance and support to the work. Mr. Messinger, Mr. Maw, and Mr. Odenthal have reviewed each of the GPI components to date in detail, and provided excellent and helpful feedback, as have David Amirault, senior economist and director of research at the Atlantic Provinces Economic Council, and Tom Pinfold, vice-president of Gardner Pinfold Consulting Economists.

In addition, Doug Vaisey and Peter Webster of the research staff at the Saint Mary's University library have assisted the GPI project from the start in identifying sources and finding materials. Gregor MacAskill has also provided invaluable technical assistance. Leonard Poetschke of the N.S. Citizens for Community Development Society has provided ongoing support to the GPI project as a whole, and given very helpful advice on this module. He has personally worked very hard to make the GPI indicators and methods available to Nova Scotia communities as development tools.

Special thanks go to Dennis Pearson of Communication Arts for designing and formatting the report, Cliff Esler for voluntarily maintaining the GPI web site, and Sara Winchell for expert book-keeping advice. In particular, John Leon has provided invaluable management and planning skills without which the GPI project itself would not be "sustainable." He has generously contributed his time on a voluntary basis.

# Needless to say, any errors or misinterpretations, and all viewpoints expressed, are the sole responsibility of the authors and GPI Atlantic.

### **Initial Data Release**

Due to funding constraints, it has not been possible at this time to complete the editing, proofreading, footnoting, checking of sources, reconciling of several facts and figures, and fine-tuning of various aspects of the study. In addition, many important and helpful comments have been received from experts that will require further research and the incorporation of additional data into some tables and graphs to improve their accuracy. This work will proceed during the coming months, and publication of this work is expected in the fall of 1999. A few of these intended changes are listed at the end of Appendix I

However, it has been decided to release the data as available at this time, rather than to delay. The authors would welcome feedback on any errors or misinterpretations discovered by readers of this initial data release. Please send your comments to the address below, or call Colin Dodds at 902-426-4916. To the extent possible, these suggestions will be incorporated into the final version of this report with full acknowledgement to those able who assist in this way.

> Colin Dodds and Ronald Colman April, 1999

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### **PURPOSE OF THE STUDY**

Higher rates of crime make the Gross Domestic Product grow, and are therefore counted as economic growth. Because the GDP is our primary measure of progress, increased spending on prisons, police, courts, burglar alarms and security systems is actually counted as a contribution to our well-being and prosperity. The same is true for gambling, toxic pollution, sickness, divorce, accidents and natural resource depletion. The GDP makes no distinction between economic activities that create benefit and those that cause harm, and thus sends misleading signals to policy makers.

By contrast, the Genuine Progress Index (GPI) counts the costs of crime as a loss and a liability. It explicitly values a peaceful and secure society as a valuable social asset, and regards higher crime rates as signifying a deterioration or depreciation of that social capital. Unlike the GDP, *lower* crime rates make the GPI go up. Reduced crime costs are regarded as savings that can be invested in more productive and welfare-enhancing activities.

The Genuine Progress Index, consisting of 20 social, economic and environmental components, is intended to provide a more comprehensive assessment of our social wellbeing and quality of life than market statistics alone are able to do. As such, it is a small step towards full cost accounting. It aims to provide annual benchmarks of progress and tell us whether our development strategies are sustainable. The first two modules of the GPI, released last year, assigned specific value to unpaid voluntary, community and household work, -- essential productive activity that is currently omitted from the GDP.

This study is intended as a preliminary attempt to assess the economic costs society incurs as a result of crime, and the "contribution" crime currently makes to the GDP and to economic growth. It is also a first step towards distinguishing areas of the economy where growth is clearly undesirable from those that bring long-lasting benefit to society.

It is hoped that the framework, methodologies and data sources presented here can be refined and improved over time. In the long term, the work may help reaffirm as valuable capital assets non-material contributions to the quality of life that are frequently obscured by the dominance of market statistics in our current measures of progress, and thus to reorder policy priorities to protect these assets.

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# Forward

## THE GENUINE PROGRESS INDEX

### 1. Limitations of the GDP as a Measure of Progress

The most commonly used measure of economic and social well-being is the Gross Domestic Product (GDP). Yet, in recent years there has been increasingly widespread acknowledgement by leading economists of the shortcomings of the GDP as a comprehensive measure of progress. Indeed, as an aggregation of the market value of all goods and services, the GDP was not intended, even by its architects, as a composite index of economic welfare and prosperity.

Using GDP levels and growth rates to measure progress takes no account of the value of unpaid work, free time, and natural resource assets. It does not allow policy makers to distinguish the costs and benefits of different economic activities, and it masks changes in income distribution. Such fundamental omissions and limitations render the GDP an inadequate measure of social and economic well-being.

It should be noted that these are not flaws of the GDP per se, but of its use as a benchmark of economic and social health, prosperity and welfare. Nobel Prize winner, Simon Kuznets, who designed the Gross National Product, never endorsed its modern use as an overall measure of progress.

*The welfare of a nation can scarcely be inferred from a measurement of national income* (he warned the U.S. Congress as early as 1934).<sup>1</sup>

As the GNP began increasingly to be used as a measure of general social well-being and progress after the Second World War, Kuznets' reservations about the limitations of the system he helped create grew stronger, and he argued that the whole system of national accounting needed to be fundamentally rethought. In 1962 he wrote

Distinctions must be kept in mind between quantity and quality of growth, between its costs and return, and between the short and the long run....Goals for 'more' growth should specify more growth of what and for what.<sup>2</sup>

When the GDP is misused in this way, it frequently sends misleading and inaccurate signals to policy makers that can result in the depletion of vital resources and investment in economic activities that carry hidden social and environmental costs. What we count and measure is a sign of what we value. By focussing on quantitative material growth as

<sup>&</sup>lt;sup>1</sup> Cobb, Clifford, Ted Halstead and Jonathan Rowe, "If the GDP is Up, Why is America Down?", *The Atlantic Monthly*, October, 1995, page 67.

<sup>&</sup>lt;sup>2</sup> Kuznets, Simon, *The New Republic*, Oct. 20, 1962, cited in Cobb, op. cit., page 67.

our primary measure of progress, we under-value the human, community and social values and environmental quality which are the true basis of long-term well-being, prosperity and wealth.

Because it excludes most non-monetary production<sup>3</sup>, the GDP records shifts in productive activity from the household and non-market sectors to the market economy as economic growth, even though total production may remain unchanged. Thus paid child care, hired domestic help and restaurant food preparation all add to the GDP, while the economic values of parenting, unpaid housework, home food preparation and all forms of volunteer work remain invisible in the economic accounts.

Secondly, market productivity gains may result in greater output *or* increased leisure, but the GDP counts only the former. Longer paid working hours add to GDP growth by increasing output and spending, but free time is not valued in our measures of progress, so its loss counts nowhere in our accounting system. Given this imbalance, it is not surprising that the substantial economic productivity gains of the last 50 years have manifested in increased output, incomes and spending, while there has been no real increase in leisure time.

Omitting the value of unpaid work and free time from our measures of progress has important implications for the changing role of women in the economy, who have entered the paid workforce in growing numbers without a corresponding decline in their share of unpaid work. Indeed, as the fourth module of the GPI demonstrates, women have experienced an increase in their total work load and an absolute loss of leisure time.

Thirdly, because it does not account for income distribution, GDP growth may mask growing inequality. GDP may rise substantially, as it has in recent years, even while most people are getting poorer and experiencing an actual decline in real wages and disposable income. The benefits of what experts refer to as "strong" and "robust" economic growth, based on GDP measurements, may be distributed very unequally. The trend towards rising inequality in a period of strong economic growth has been even more pronounced in the United States than in Canada.<sup>4</sup>

Fourth, the GDP is a current income approach that fails to value natural and human resources as capital assets subject to depletion and depreciation. As such it cannot send early warning signals to policy makers indicating the need for re-investment in natural

<sup>&</sup>lt;sup>3</sup> The Canadian System of National Accounts does include imputations for some non-market production, including farmers' own-account production of food and the implicit rent paid and received by homeowners (Chris Jackson, Statistics Canada, personal communication, 14 September, 1998).

<sup>&</sup>lt;sup>4</sup> Messinger, Hans, *Measuring Sustainable Economic Welfare: Looking Beyond GDP*, Statistics Canada, June, 1997. Messinger demonstrates that the absolute decline in the original U.S. Genuine Progress Index since the early 1970s is largely due to growing disparities in income distribution in that country. Rising inequality is registered in column B of the original GPI as an adjustment to personal consumption based on the share of national income received by the poorest 20 percent of households: Cobb, Clifford, Ted Halstead and Jonathan Rowe, *The Genuine Progress Indicator: Summary of Data and Methodology*, Redefining Progress, September, 1995.

and human capital. For example, the GDP registered massive fish exports as economic growth, but the depletion of fish stocks appeared nowhere in the accounts.

Finally, and perhaps most importantly, the GDP is a quantitative measure only and fails to account for qualitative changes, both in the mix of economic activity and in the quality of our goods and services. There is no recorded relationship, for example, between the cost of consumer durables and capital investments on the one hand and the quality of services they provide on the other, leading to the paradox that the quicker things wear out and have to be replaced, the better for the GDP.<sup>5</sup>

More seriously, increases in crime, divorce, gambling, road accidents, disease, obesity, mental illness and toxic pollution all make the GDP grow, simply because they produce additional economic activity. More prisons, security guards, burglar alarms, casinos, accident costs, dieting pills, anti-depressants, lawyers, oil spill and pollution clean-ups, and the costs of setting up new households after family breakups, all add to the GDP and are thus counted as progress.

This anomaly led Robert Kennedy to remark 30 years ago:

Too much and too long, we have surrendered community excellence and community values in the mere accumulation of material things....The (GDP) counts air pollution and cigarette advertising and ambulances to clear our highways of carnage. Yet the gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It measures neither our wit nor our courage; neither our wisdom nor our learning; neither our compassion or our devotion to our country. It measures everything, in short, except that which makes life worthwhile.<sup>6</sup>

These shortcomings and others led to a recent joint declaration by 400 leading economists, including Nobel Laureates:

Since the GDP measures only the quantity of market activity without accounting for the social and ecological costs involved, it is both inadequate and misleading as a measure of true prosperity....New indicators of progress are urgently needed to guide our society....The Genuine Progress Index (GPI) is an important step in this direction<sup>7</sup>.

<sup>&</sup>lt;sup>5</sup> As Chris Jackson correctly points out (personal communication, September 14, 1998), the Canadian System of National Accounts (CSNA) as a whole does provide information on shifts in the mix of economic activity by sector, industry, commodity and province. The critique that follows, therefore, applies only to the use of GDP as a measure of progress, since industry and commodity shifts registered in the CSNA are rarely if ever invoked as signals of changes in societal well-being and prosperity. Jackson also notes that the CSNA does include the stock of consumer durables on the balance sheet of the personal sector despite the international SNA guidelines to keep it out. The paradox described here, however, still holds true.

<sup>&</sup>lt;sup>6</sup> Kennedy, Robert, "Recapturing America's Moral Vision", March 18, 1968, in *RFK: Collected Speeches,* Viking Press, 1993.

<sup>&</sup>lt;sup>7</sup> Signatories include Robert Dorfman, Professor Emeritus, Harvard University, Robert Heilbroner, Professor Emeritus, New School for Social Research, Herbert Simon, Nobel Laureate, 1978, Partha Dasgupta, Oxford University, Robert Eisner, former president, American Economics Association, Mohan

### 2. The Development of Expanded Accounts

Fortunately, considerable progress has been made in the last 20 years by the World Bank, OECD, United Nations, World Resources Institute and other international organizations, by national statistical agencies, including Statistics Canada, and by leading research institutes and distinguished economists, in developing expanded economic accounts which include critical social and environmental variables. The new internationally accepted guidelines in *The System of National Accounts 1993* suggest that natural resources be incorporated into national balance sheet accounts and that governments develop a "satellite system for integrated environmental and economic accounting," and a satellite account to measure the value of household work.

Accordingly, Statistics Canada recently released its new *Canadian System of Environmental and Resource Accounts (CSERA)*, which consist of natural resource accounts linked to the national balance sheets, material and energy flow accounts linked to the input-output tables, and environmental protection expenditure accounts. Statistics Canada has sponsored an international conference on the measurement of unpaid work, has produced its own extensive valuations of household work, and is developing a Total *Work Accounts System (TWAS)* which includes both paid and unpaid work.<sup>8</sup> Every six years an extensive time use survey is now part of Statistics Canada's General Social Survey. Other agencies are also moving in this direction. Human Resources Development Canada, for example, has recently issued an Index of Social Health for all the provinces and for the country as a whole.

Some composite indices, like the Measure of Economic Welfare (MEW), the Index of Sustainable Economic Welfare (ISEW), the Genuine Progress Index (GPI), and the Index of Economic Well-being (IEW), incorporate up to 26 social and environmental indicators, including unpaid work, income distribution, changes in free time and valuations of natural capital and the durability of consumer goods.<sup>9</sup> These indices also

<sup>9</sup> Hans Messinger, Statistics Canada, *Measuring Sustainable Economic Welfare: Looking Beyond GDP*, June 1997, compares the MEW and the original GPI and replicates the models for Canada. On the original GPI, see Cobb, Clifford, Ted Halstead and Jonathan Rowe, *The Genuine Progress Indicator: Summary of Data and Methodology*, Redefining Progress, September, 1995. Osberg, Lars, and Andrew Sharpe, *An Index of Economic Well-being for Canada*, paper presented to the Centre for the Study of Living Standards Conference on the State of Living Standards and the Quality of Life in Canada, 30 October, 1998, Ottawa.

Munasinghe, Chief, Environmental Policy and Research Division, World Bank, Stephen Marglin and Juliet Schor, Harvard University, Don Paarlberg, Professor Emeritus, Purdue University, Emile Van Lennep, former Secretary General, OECD, Maurice Strong, Chair, Ontario Hydro and Secretary General, Rio Earth Summit, and Daniel Goeudevert, former Chairman and President, Volkswagen AG. Full text and signatory list available from *Redefining Progress*, One Kearny St., San Francisco, CA. 94108.

<sup>&</sup>lt;sup>8</sup> Statistics Canada, *Econnections: Linking the Environment and the Economy: Concepts, Sources and Methods of the Canadian System of Environmental and Resource Accounts,* catalogue 16-505-GPE, issued December 4, 1997; Statistics Canada, *Households' Unpaid Work: Measurement and Valuation,* catalogue 13-603E, #3; Leroy Stone, Ph.D and Marie-Therese Chicha, Ph.D, *The Statistics Canada Total Work Accounts System,* Statistics Canada, catalogue 89-549-XPE, 1996.

distinguish direct contributions to economic welfare from defensive and intermediate expenditures, and from economic activities that produce an actual decline in well-being. There have been continuing improvements in methodologies and data sources in recent years, and excellent models are now available for application.

In fact, the current interest in social indicators and comprehensive measures of progress owes a strong debt to the pioneers in this field of the late 1960s and early 1970s, who recognized the limitations of the GDP and sought to go beyond them. Nordhaus and Tobin's Measure of Economic Welfare and similar efforts to expand the definition of national wealth led to the development of new measurement instruments which today form the basis of recent efforts in this field.

At that time, in the early 1970s, the pioneers' understanding of the potential importance of time use surveys and environmental quality indicators was not matched by the availability of data in these fields. The early recognition of the importance of valuing natural resources, for example, initiated the process of gathering data that did not exist at the time. The work of Andrew Harvey and others in constructing the first standard time use surveys, the development of state of the environment reporting in the same era, and the emergence of other important social indicator measurement tools, have now produced and made available the actual databases that make the Genuine Progress Index possible.

For the first time, 10 and 20-year time series for social and environmental indicators can actually be created. In short, the construction of an actual policy-relevant GPI at this time should not be seen as a "new" phenomenon, but as a natural evolution of earlier work in the field.

The basic principle linking and integrating the components of these expanded accounts is the view of "sustainable development", which reflects a concern (a) to live within the limits of the world's and the community's resources, and (b) to ensure the long-term prosperity and well-being of future generations. The new accounts also use cost-benefit analysis and an investment-oriented balance sheet approach to provide a more comprehensive view of progress than is possible with the current-income approach of the GDP.

The current emphasis on "growth" is replaced by a concern with "development," as defined by former World Bank economist, Herman Daly:

**Growth** refers to the quantitative increase in the scale of the physical dimension of the economy, the rate of flow of matter and energy through the economy, and the stock of human bodies and artifacts, while **development** refers to the qualitative improvement in the structure, design, and composition of physical stocks and flows, that result from greater knowledge, both of technique and of purpose.<sup>10</sup>

<sup>&</sup>lt;sup>10</sup> Daly, Herman, "Operationalizing Sustainable Development by Investing in Natural Capital", in Jansson, AnnMari et. al., (eds), *Investing in Natural Capital: The Ecological Economics Approach to Sustainability*, International Society for Ecological Economics, Island Press, 1994, page 7.

According to Statistics Canada, "sustainable development implies that all people have the right to a healthy, productive environment and the economic and social benefits that come with it", and therefore includes in its definition of sustainability the objective of "equity, both among members of the present generation and between the present and future generations."<sup>11</sup>

The GPI method, in essence, is to assess the economic value of our social and environmental assets and to calculate their depreciation or depletion as costs. Maintenance of these capital assets is seen as providing the basis for economic prosperity. As such, it is a step towards fuller cost accounting than is possible by valuations of produced capital alone.

Any index is ultimately normative, since it measures progress towards defined social goals, and all asset values can therefore be seen as measurable or quantifiable proxies for underlying non-market social values such as security, equity and environmental quality.<sup>12</sup> In the case of this particular study, the normative value or goal that serves as the standard for measuring genuine progress is the aspiration to create a more peaceful society with greater personal security. Lower crime rates are an indicator of success in moving towards that goal and in strengthening an important social asset. Higher crime rates signify a depreciation of that social capital and an erosion of its value.

The Nova Scotia GPI will not generate new methodologies or data, but will use existing sources and apply the most practical and policy-relevant methods already developed by the OECD, the World Bank, national statistical agencies and others. In particular, the Nova Scotia GPI will rely on published data from Statistics Canada and other government sources where ever possible, to ensure accessibility and ease of replication by other jurisdictions.

For more information on the background, purposes, indicators, policy applications and proposed methodologies of the Nova Scotia GPI, please see: *Measuring Sustainable Development: Application of the Genuine Progress Index to Nova Scotia*, Halifax, January 1998.<sup>13</sup>

The Nova Scotia GPI has been designated as a pilot project for the rest of the country by Statistics Canada which is providing ongoing assistance in data collection and analysis, and in staff support. Core funding for the Nova Scotia GPI is provided by the Nova Scotia Department of Economic Development and Tourism and by ACOA through the Canada – Nova Scotia Cooperation Agreement on Economic Diversification.

<sup>&</sup>lt;sup>11</sup> Statistics Canada, *Econnections*, catalogue 16-515-GPE, page 10.

<sup>&</sup>lt;sup>12</sup> For the Nova Scotia GPI, these norms are defined in *Measuring Sustainable Development: What the Genuine Progress Index Can Do For Nova Scotia*, pages 12-15: presentation to the N.S. Government Inter-Departmental Consultation, March 3, 1998, World Trade and Convention Centre, Halifax. Available on the GPI web site at *www.gpiatlantic.org* 

<sup>&</sup>lt;sup>13</sup> This document is available at the following web site: www.gpiatlantic.org and can be downloaded from that site by chapter. The full text, including bibliography, is 135 pages.

A primary goal of the project is to provide a data bank that can contribute to the Nova Scotia government's existing outcome measures initiative. The reports and data will therefore be presented to Nova Scotia policy makers with emphasis on areas of policy relevance. Conclusions will emphasize the most important data requirements needed to update and maintain the index over time. Eventually the data should be usable to evaluate the impacts of alternative policy scenarios and investment strategies on overall progress towards sustainable development in the province.

### 3. Nova Scotia GPI: Third Data Release and Work Plan

This particular report is the third release of data for the Nova Scotia GPI. The first two reports, on the value of civic and voluntary work and on the value of unpaid household work and child-care, were released in July and November 1998. Those two studies measured important economic assets that are hidden and unvalued in our current accounting system. Unpaid voluntary work and household production provide critically important services to society and are an essential precondition for a healthy market economy. Any deterioration in these sectors would directly affect the standard of living and quality of life and have serious repercussions for the market economy.

Since the balance sheet approach of the GPI differs from the current income approach of the GDP by distinguishing assets from liabilities, it is therefore appropriate that this third module measure a sector in which growth is clearly undesirable from the perspective of genuine progress. While unpaid production adds value to the economy and society, an increase in crime diminishes the quality of life. It also lowers the standard of living in monetary terms by diverting precious resources from health, education and other activities that enhance human and social welfare.

It is somewhat perverse that our current accounting system ignores vital assets like the value of voluntary work, while an increase in crime, prisons and spending on burglar alarms makes the GDP grow and is counted as "progress". The contrast between this third report and the first two is therefore a useful illustration of Simon Kuznets' dictum that "goals for 'more' growth should specify of what and for what". The prevailing assumption that growth in and of itself is a sign of a "robust" and "strong" economy is not only simplistic, but misleads policy makers and skews the policy agenda.

Another way of looking at this third data release is in terms of the deterioration or depreciation of a social asset. The Genuine Progress Index treats natural, social and human capital in the same way that the conventional accounts assess the value of produced capital. From that perspective, the social asset considered in this module is a peaceful, harmonious and secure society. Rising crime costs signify a deterioration of the value of that asset, and call for renewed social re-investment in human resources in the same way that a factory owner must consider the repair or replacement of old or malfunctioning machinery.

Later this year, reports will be issued on the value of unpaid overtime and the cost of underemployment, and on the aggregate value of total productive work, with a residual valuation of leisure time or "free" time. Work is currently proceeding on Nova Scotia's natural resource accounts – fisheries; soils and agriculture; and forestry; on the cost of greenhouse gas emissions; on a transportation cost analysis; and on income distribution in the province. These reports will be released in the coming months.

Before the end of 1999, work will also begin on indicators of health and education, and on the remaining social, economic and environmental factors that constitute the GPI. Altogether the Nova Scotia GPI will consist of 20 components.<sup>14</sup> These are listed in Appendix II. The project is scheduled for completion during the year 2000, and an interim progress report will be presented to an inter-provincial conference to be held in Halifax early in 2000.

In consultation with Statistics Canada and in the interests of policy relevance, it has been decided to adopt a sectoral approach to the Nova Scotia GPI, presenting as comprehensive a portrait as possible of each of the 20 components that comprise the Index. Wherever possible, monetary values will be imputed in order to demonstrate linkages between the market and non-market sectors of the economy.<sup>15</sup>

When that process is complete, the results will be arranged in a spread-sheet, doublecounting will be eliminated, and an integrated Genuine Progress Index will be constructed in order to assess progress towards overall sustainable development in the province. The construction of the composite index will require intensive consultations with Statistics Canada staff, government officials and independent experts to determine appropriate weighting mechanisms.

While the initial construction of the index is complex and time-consuming, as these first reports demonstrate, it is being set up to be easy to maintain and update in future years, designed for comparability with other jurisdictions, and presented with a view to practical policy relevance and application. Each report provides the methodologies for other provinces to replicate the measurements, describes the data requirements necessary to maintain the index, and lists major policy implications indicated by the findings. Upon completion, the Nova Scotia GPI should not be regarded as a final and rigid formula, but as a work in progress that will be constantly modified and refined to reflect improved methodologies and new approaches and data sources.

That is the basic framework for the third data release of the Nova Scotia GPI –the costs of crime in the province, which constitutes the third of the 20 components of the index. The more detailed background documents for the project, the completed modules of the index including summaries and press releases, and a summary of this report are available

<sup>&</sup>lt;sup>14</sup> These are listed and described in the two GPI Atlantic background publications entitled *Measuring Sustainable Development,* available on the GPI web site at *www.gpiatlantic.org* 

<sup>&</sup>lt;sup>15</sup> See Section 6.1 of *Measuring Sustainable Development, Module One: The Economic Value of Civic and Voluntary Work in Nova Scotia,* for a further discussion of this issue.

to the public on the GPI web site at *www.gpiatlantic.org* Information on upcoming reports and data releases will be posted on that web site as it becomes available.

### 4. What the GPI is Not

Just as the GDP has been misused as a measure of progress, there are also several potential misinterpretations of the GPI and misuses of the data it presents. These will be discussed in detail as the separate modules are presented. But it may be helpful to list some of the major issues at the start.

- 1) The GPI is not intended to replace the GDP. The GDP will undoubtedly continue to function for the purpose for which it was intended as a gross aggregate of final market production. It is not, therefore, that the GDP itself is flawed. It is the *use* of the GDP as a comprehensive measure of overall progress that is being challenged, and it is this need that the GPI attempts to address.
- 2) Identifying omissions from our measures of progress does not imply that the GDP itself should be changed to include these assets. The purpose of these reports, therefore, is not to suggest that unpaid work should be included in the GDP or that the costs of crime be subtracted from the GDP. Nor will upcoming natural resource accounts and environmental quality valuations recommend the creation of a "green GDP", or "net domestic product" which subtracts defensive expenditures on environmental protection. This can be done, but it is not the purpose of the GPI.

Rather than suggesting changes to the GDP, the GPI in effect adopts a qualitatively different approach. While the GDP is a current income statement, the GPI presents a balance sheet of social, economic and environmental assets and liabilities and reports the long-term flows or trends that cause our assets to appreciate or decline in value. It is only our current obsession with short-term GDP growth trends that is misplaced. The GPI seeks to "put the GDP in its place" rather than to abolish or change it.

3) The GPI assesses the economic value of social and environmental assets by imputing market values to the services provided by our stock of human, social and environmental capital. But this imputation of market values is not an end in itself. It is a temporary measure, necessary only as long as financial structures, such as prices, taxes and monetary incentives, continue to provide the primary cues for the actual behaviour of businesses, consumers and governments.

Monetization is only a tool to communicate with the world of conventional economics, not a view that reduces profound human, social and environmental values to monetary terms. It is a necessary step, given the dominance of the materialist ethic, to overcome the tendency to undervalue the services of unpaid labour, natural resources and other "free" assets, to make their contribution to prosperity clearly visible, and to bring them more fully into the policy arena. It serves to demonstrate the linkages and connections between non-market and market factors, such as the reality that depletion of a natural resource will produce an actual loss of value in the market economy.

In order to separate ends from means in the first two reports, the time use valuations were presented first as the basis of the secondary, and dependent, monetary valuations. Similarly, in the natural resource and environmental accounts that are currently being developed, physical accounts will always precede and form the basis for the subsequent monetary accounts. In the present report, likewise, crime rates are presented before economic costs. As the grip of market statistics on the policy arena is gradually loosened, the desired direction for the GPI is to return to the direct use of time, environmental quality and social variables in decision making. This will also allow for greater accuracy and precision than relying on derivative economic values.

While the assignment of monetary values to non-market assets may appear absurd and even objectionable, we accept court awards for grief and suffering and insurance company premiums on life and limbs as necessary measures to compensate actual human losses. We pay higher rents for dwellings with aesthetically pleasing views and we sell our time, labour and intelligence often to the highest bidder. Similarly, in a world where "everything has its price", monetizing social and environmental variables assigns them greater value and provides a more accurate measure of progress than excluding them from our central wealth accounts.

For those who are uncomfortable with the monetization of non-market values, we have kept these estimates separate in this report. Thus, a *conservative* estimate is given of crime costs due to actual property losses, medical bills, economic production losses, and direct monetary expenditures. Recognizing that this estimate does not correspond to the actual, experienced losses due to crime, we have also provided a second, more *comprehensive* estimate of crime costs which includes court awards for pain, suffering and "shattered lives" due to crime. In other words, we have used proxy estimates from social conventions where monetization of non-market values is *already* accepted as a necessity for giving due attention to these values.

Ultimately, however, it must be acknowledged that money is a poor tool for assessing the non-timber values of a forest, the costs of pollution or global warming, the value of caring work, the quality of education, or the fear, pain and suffering of a crime victim. A materialist criterion cannot adequately assign value to the non-material values that give human life meaning.

Eventually, therefore, the Genuine Progress Index itself should give way to multidimensional policy analysis across a number of data bases. New Zealand economist Marilyn Waring suggests a central triad of indicators – time use studies, qualitative environmental assessments, and market statistics – as a comprehensive basis for assessing well-being and progress.<sup>16</sup>

<sup>&</sup>lt;sup>16</sup> Waring, Marilyn, *Women, Work and Well Being: A Global Perspective*, address delivered at Kings College, Halifax, 30 April, 1998.

In the meantime, and only so long as market statistics dominate our economic thinking and our policy and planning processes, the GPI can provide a useful tool for communication between the market and non-market sectors. By pointing to important linkages between the sectors, the GPI itself can provide a means to move beyond monetary assessments towards a more inclusive and integrated policy and planning framework.

4) The Genuine Progress Index is **not a final product**, but a small step in the direction of more comprehensive measures of progress than are currently in use. The GPI itself should be seen as a work in progress subject to continuous revision, improvement in methodologies, and inclusion of additional variables. It will continue to evolve in form and content with further research, the development of new methods of measurement, and the availability of improved data sources.

Given these caveats, all interpretations and viewpoints expressed in this and other reports are designed to raise important issues for debate and discussion rather than as definitive or final conclusions or prescriptions. For example, current reporting trends and social norms give considerably more weight to street crime than to "white-collar" crime, and this report accordingly focuses on measurements of violent crime and personal theft and may be used to evaluate cost-effective options for reducing these forms of crime. In reality, however, the actual economic losses due to white-collar crime far exceed those due to street crime. If social norms shift to recognize this reality, future GPI valuations of crime costs and reduction strategies will look very different from those in this report.

5) The valuations are not precise. Any attempt to move beyond simple quantitative market statistics to the valuation of goods and services that are not exchanged for money in the market economy will produce considerable uncertainty. In the previous report, for example, six different valuation methods were compared to estimate the economic value of unpaid housework, each producing different aggregates. Similarly in this report, a range of values is presented from the most conservative measurements to more comprehensive estimates including costs of unreported crimes; retail "shrinkage"; losses of unpaid production; and suffering of crime victims. This problem of precision will be accentuated further in the natural resource accounts with attempts to value ecological services and the non-market functions of natural assets.

Despite all these major qualifications it is finally important not to throw the baby out with the bath water! The GPI is a far from perfect tool, and is in its earliest stages of development. But it is still considerably *more* accurate to assign explicit economic value to unpaid production, natural resources and other social and environmental assets than to assign them an arbitrary value of zero, as is currently the case in our conventional economic accounting system. And it is far *more* precise to recognize crime and pollution costs as economic liabilities than to count them as contributions to a more "robust" economy and to social progress. In the long run, the GPI is intended as a step towards "full cost accounting".

Indeed, as we have seen, the new System of National Accounts, Canada's international commitments, and the considerable advances of recent years in developing expanded measures of progress require that further efforts be made to integrate social, economic and environmental variables in our accounting mechanisms. The costs of continuing to ignore our social and environmental assets are too great. We have learned the hard way that measuring our progress in strictly materialist terms, without reference to our social and spiritual values and the quality of our environment, ultimately undermines well-being and prosperity.

With all its limitations, the GPI is still a small step towards measuring sustainable development more precisely than prevailing accounts are able to do. It is itself a work in progress designed to help lay the foundations for the new economy of the 21<sup>st</sup> century, an economy that will genuinely reflect the social, spiritual, environmental and human values of our society.

## 1. Report Summary

Crime conservatively cost Nova Scotians more than half a billion dollars in economic losses to victims; public spending on police, courts and prisons; and private spending on crime prevention in 1997 (Table 1.1). This amounts to nearly \$600 for every man, woman and child in the province, or \$1,650 per household. When losses due to unreported crimes, insurance fraud and shoplifting are added, as well as the costs of shattered lives due to crime, the loss is nearly \$1.2 billion a year or \$1,250 per person (\$3,500 per household). These crime costs amount to between 3% and 6.3% of the provincial GDP. The distribution of these costs is demonstrated in Charts 1.1 and 1.2. Per capita crime costs in Canada are estimated to be 20% - 25% higher than crime costs in Nova Scotia.

These estimates do not include deaths, injuries and property damage due to impaired driving; non-hospital medical, drug and counseling costs; private spending on criminal lawyers; non-retail business spending on alarms, electronic surveillance and other crime prevention and detection equipment; most white collar crime; and a wide range of indirect crime costs. Also, monetary estimates clearly convey only a small part of the true costs of crime, which include the trauma of being violated, pain and suffering, fear and insecurity, and lost opportunities to undertake activities because of crime risks.

In our conventional economic accounts, most crime costs are perversely counted as contributions to economic prosperity and well being. The higher the crime rate and the more we spend on prisons, police, criminal trials, burglar alarms and security systems, the more our economy grows, which in turn is taken as the primary sign of progress.

The same is true for gambling, toxic pollution, sickness, divorce, war, accidents, stress, drug use, overeating, and the depletion of our natural resources, all of which contribute to economic growth. Because a growing economy is regarded as a sign of progress and prosperity, incentives for action to remedy these ills are blunted.

The Gross Domestic Product (GDP) and related market statistics, which are our primary measures of progress, make no distinction between economic activities that cause benefit and those that cause harm. They are purely materialist measures which blindly regard "more" growth as "better", a misuse of national income accounting against which its principal architect, Simon Kuznets, cautioned 60 years ago.

Thus, *The Wall Street Journal* reported that the O.J. Simpson trial alone added \$200 million to the U.S. Gross Domestic Product. The Oklahoma City explosion "benefited" the U.S. economy even more, because government offices and businesses throughout the U.S. responded with expensive investments in high-tech electronic surveillance equipment and additional security guards, producing a boom in the security industry.

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By contrast, the Genuine Progress Index (GPI) regards crime as a liability rather than an asset, and its costs as an economic loss rather than a gain. Unlike the GDP, *lower* crime rates make the GPI go up, and higher crime rates make it go down. Reduced crime costs are seen as savings that can be invested in more productive activities that build communities and enhance well being. Higher costs to maintain a given level of security indicate a decline in the quality of life.

Unlike current measures of progress based on the GDP, the GPI does not view all economic growth as an unqualified good. Crime, pollution and other "regrettable" costs point to sectors of the economy where limits to growth may signify well being, prosperity and progress more accurately than continued growth.

Paradoxically, while the GDP counts crime costs as economic gain, it fails to measure genuine contributions to well being that are not exchanged for pay. Voluntary work and community service, worth nearly \$2 billion a year to the provincial economy, and unpaid household work and child care, worth \$8.5 billion a year, are not valued at all in the GDP, and thus count for nothing in our conventional measures of progress. Other contributions to the standard of living and quality of life, like environmental quality, natural resource health, social equity, health, and security, are also unvalued.

By contrast, the GPI measures and values unpaid voluntary and household work and other social and environmental assets that are the foundation of well being and prosperity. A peaceful, harmonious and secure society is therefore valued as a vital and profound social asset that directly benefits the economy and the quality of life of its citizens. Conversely, high crime rates signify a depreciation of that asset and an erosion of the social and economic value that derive from personal security and social stability. Similarly, a healthy citizenry is a human capital asset that requires less spending on hospitals and defensive health; and a clean environment is a natural capital asset that saves pollution clean-up expenses.

Because it values human, social and natural capital as well as produced capital, and because it distinguishes social assets from liabilities, the GPI can function as a more comprehensive measure of progress than the GDP, and can send more accurate signals to policy makers, economists, journalists and the general public. It is intended as a small step towards "full cost accounting." From this perspective, economic activities that enhance the value of social, economic and environmental assets, and limit growth in areas that undermine these assets, signify social progress. By registering crime costs as an economic loss to society, the GPI demonstrates the inability of market statistics alone to provide adequate benchmarks of progress, and can signal the need for policy initiatives and investments to overcome the causes of crime.

In this case *limits* to growth in crime rates and crime costs are more indicative of progress than unlimited growth. This approach holds true for the fourth GPI data release next month on the cost of greenhouse gas emissions. Like crime, *lower* emissions are seen as a sign of progress. Other GPI components where reduced rates and costs signify progress are air and water pollution, sickness, road accidents, and natural resource depletion, all of

which currently contribute to the GDP and to economic growth statistics, and are thus mistakenly counted as contributions to economic prosperity and well being.

### 1. Crime in Comparative Perspective

From the perspective of conventional market statistics, the Atlantic provinces are generally seen as economically disadvantaged by comparison to the rest of the country. But the reliance on market statistics nationally and internationally produces faulty and misleading comparisons. If a peaceful and secure society is viewed as an important social asset making a vital contribution to the quality of life, and if crime costs are seen as an economic drain eroding the standard of living, then Nova Scotia and its neighbouring provinces have a significant comparative advantage.

Nova Scotia has just 63% of the Canadian crime rate for serious violent crimes, 82% of the national property crime rate, and less than half the rate of robberies and motor vehicle thefts. Nova Scotians therefore require less police per capita to keep the peace, they imprison fewer of their citizens than any other province, and they spend significantly less on locks, alarms, electronic surveillance and other crime prevention and detection devices. These hidden savings actually show up as a *disadvantage* in comparative GDP measures, which see more spending of any kind as a contribution to economic growth.

While crime costs have not been separately calculated here for Canada and the other provinces, it is possible to extrapolate from comparative crime rates, incarceration rates, police to population ratios, and victimization surveys to estimate that average overall crime costs are probably 20% to 25% higher for most Canadians than the figures given here, and about 30% higher in the western provinces.

This would produce an annual overall crime bill of more than \$20 billion for the country as a whole by conservative estimations, and nearly \$45 billion according to the more inclusive "comprehensive" method. This translates into a per capita cost of between \$730 and \$1500; or \$2,000 to \$4,300 per household in Canada. The extra \$400 to \$700 Canadian households pay annually for crime over Nova Scotians, amounts to an additional hidden "crime tax" for a correspondingly less peaceful and secure society.

Again, it must be emphasized that these Canadian estimates are simply extrapolations derived from the Nova Scotia results and from comparative crime statistics. It would certainly be possible to use the methods and data sources in this report to calculate the Canadian crime bill more precisely, and to construct a comparative estimation of crime costs across the provinces. It would also be desirable for such comparative studies and future updates of this report to include major crime costs currently omitted from the estimations, such as the costs of impaired driving; non-hospital medical, drug and counselling expenses due to crime; private spending on criminal lawyers; non-retail business defensive expenditures; health costs of drug offences; and other excluded costs.

The contrast is even more marked by comparison with the United States, which has nearly six times the crime rate for serious violent crimes as Nova Scotia, including 3.5 times as many homicides per capita, five times as many robberies and ten times as many forcible rapes. The U.S. also jails more people than any other country in the world except for Russia, and imprisons more than 10 times as many of its citizens per capita as Nova Scotia. One out of every 150 Americans is behind bars, compared to one out of every 900 Canadians, and just one out of every 1,600 Nova Scotians. A black male in the U.S. has a 28.5% chance of landing in a federal or state prison in his lifetime, and an even higher chance if local and county jails are included.

It costs more than \$44,000 a year to keep an inmate behind bars in Nova Scotia. Every person kept out of prison due to lower crime rates therefore represents a significant economic saving that can be used to hire an extra teacher or to send a student to university for three years, including full-time tuition, accommodation and meals. Nova Scotians spend only a quarter as much per capita on corrections as Americans, but the cost saving does not show up in the conventional market statistics, which record every extra prison, court case, security guard, police officer and burglar alarm as a contribution to the economy and a sign of progress.

Imprisonment is today one of the fastest growing sectors of the American economy, with an average growth rate of 6.2% per year throughout the 1990s, significantly outpacing overall GDP growth. The U.S. spends \$U.S.50 billion a year to keep 1,800,000 of its citizens in prison. Per capita spending on corrections has more than tripled in that country in less than 10 years, helping to fuel the "robust" U.S. economy.

From the GPI perspective, crime costs lower the standard of living by diverting precious resources from health, education, environmental protection, and other activities that enhance human and social welfare. Though the "dynamism" of the U.S. economy is frequently held up as a model to Canadians, the GPI also records the social costs of that growth and the fact that it is driven in part by factors that signify a serious decline in the quality of life.

### 2. A Depreciating Asset

While Nova Scotia maintains a significant comparative advantage in crime costs relative to Canada as a whole, the advantage cannot be taken for granted. It is in fact eroding markedly as the province's crime rate converges rapidly towards the national average. Twenty-five years ago, Nova Scotia's overall crime rate for *all* reported criminal code violations was less than two-thirds the national average. Today it stands at 98% of the national average. In 1972, Nova Scotia's property crime rate was 60% of the Canadian rate; by 1982 it had climbed to 72%; and by 1997 to 82%.

While serious violent crimes are still less than two-thirds the national average, a substantial increase in common assaults has raised the official violent crime rate in the province above the national average. A substantial portion of the increase in the official

crime rate is due to higher reporting rates for assaults, sexual assaults, domestic violence and other crimes, a positive sign signifying reduced social tolerance for violent behaviour once considered socially "acceptable."

But there is also no doubt that Nova Scotia today is a markedly less peaceful, harmonious and secure society than it was a generation ago. Considering only police-reported crimes, the average Nova Scotian is today four times as likely to be a victim of crime as his parents. In 1962, according to the official statistics, the chances of being a victim of crime in Nova Scotia were one in 49. In 1997, they were one in 12,<sup>17</sup> though a portion of this increase must clearly be discounted to account for higher reporting rates. The long-term rise in crime has also been ameliorated by a 16% drop in the provincial crime rate since its 1991 peak.

Homicides and robberies, because of their seriousness, are considered less susceptible to changes in reporting rates than minor crimes like common assaults, and thus may give a more accurate picture of actual changes in the provincial crime rate over time. There are 80% more homicides per capita in the 1990s than there were in the 1960s and 300% more robberies. The rate of break and enter incidents in the province has increased by 330% since 1962, rising from two-thirds the national rate to 80% today.

Higher crime rates translate into higher economic costs. Hospitalization costs due to crime have increased markedly since 1962, due in part to higher violent crime rates and in part to much higher hospitalization costs. Absenteeism due to crime cost the provincial economy an estimated \$4.25 million in lost production in 1997, a three-fold increase since 1971. And 452 potential person-years of production were lost to the economy in 1997 due to past homicides, at a cost of \$23.4 million. Victim property losses have probably increased in direct proportion to the property crime rate.

Public justice costs have also increased, necessitating higher taxes. We now need nearly 50% more police per capita than we did 30 years ago. Compared to Canada as a whole, Nova Scotia had 94% the number of police officers per 100,000 as the rest of the country, up from 74% 20 years earlier. Spending on home security systems likely parallels the increase in break and enter incidents. Per capita spending on theft insurance has more than doubled in the province since the early 1970s, an indicator of public perceptions of crime risk.

Business crime costs also translate directly into higher consumer prices. Spending on instore crime prevention and detection equipment, business losses due to shoplifting and employee theft, and salaries of private security guards, are all passed on to the consumer. Based on Retail Council of Canada surveys, it is estimated that Nova Scotian households each pay about \$800 a year in higher prices due to crime, amounting to 2.6% of their

<sup>&</sup>lt;sup>17</sup> The figures are derived by dividing the number of reported criminal code incidents by the population. This does *not* mean that one in 12 *people* is a victim of reported crime, since some individuals are victimized more than once in a year. The authors wish to thank John Turner, Chief, Policing Services Program, Canadian Centre for Justice Statistics, for his assistance in clarifying this issue (personal communication, 6 April, 1999).

annual consumption budget. Nationwide, the figure is closer to \$900 a year. Insurance fraud costs Nova Scotian households an additional \$200 a year in higher premiums, amounting to about 15% of total insurance premiums, according to the Canadian Coalition Against Insurance Fraud.

While all this extra spending makes the GDP grow and is taken as a sign of growing prosperity, the GPI counts these expenditures just as the average householder does – as costs rather than increases in welfare. If increases in the official crime rate are discounted by one-third to account for higher reporting rates, and if crime costs are roughly proportional to crime rates, then Nova Scotians would have saved \$350 million in 1997 if crime rates were still at 1962 levels, according to the conservative estimate. Using the more comprehensive estimate, the saving would have been \$740 million, money that would have been available for more productive and welfare-enhancing activities.

Returning to the comparative perspective, it is clear that the crime rate in all three Maritime provinces has increased faster than the national rate. Because all three provinces started from a considerably lower base, they are all still below the national crime rate average, but they are catching up rapidly. Explicit recognition of this eroding advantage can prompt policy changes designed to arrest the decline and restore the value of a vital social asset.

### 3. Policy Considerations

In this study we have hypothesized that a growing divergence between crime rates and crime costs may signify an erosion of civil liberties. As police states have demonstrated, it is possible to keep crime rates down by spending more on police, prisons and other repressive measures. In the United States, for example, the gap between crime rates and crime costs has been growing throughout the 1990s, as an ever larger percentage of the population is imprisoned. If civil liberties were to remain constant, crime costs should rise and fall in rough proportion to crime rates.

Because civil liberties are recognized as an important social asset, because the GPI is concerned to reduce rather than increase crime costs, and because a full cost accounting framework naturally points to social, economic and demographic linkages, this study clearly favours policy options that deal with the social *causes* of crime rather than its symptoms. The GPI approach supports the National Crime Prevention Council's contention that crime prevention rather than incarceration is the key to reducing crime, and is not only "the right thing to do and the effective thing to do, but the cost-effective thing to do."

To this end, chapter six notes that crime is not an independent variable but is highly correlated with gender, age, marital status, drug addiction, employment status, educational level, a history of abuse, and prior convictions. These correlations point to potentially cost effective investment strategies that can improve the standard of living and quality of life while yielding additional dividends in crime reduction.

A Montreal study, for example, found that every dollar invested in residential drug treatment programs yielded a seven dollar dividend in savings from reduced crime costs. And a long-term longitudinal study in the United States found that every \$5,000 invested in high quality pre-school education in high crime inner city areas yielded an estimated \$28,000 return to society, including lower crime rates.

Nova Scotia's restorative justice initiative could be an important and powerful model of cost-effective intervention that deals far more effectively with the causes of crime than the conventional adversarial system that focuses on punishment, is plagued by high rates of recidivism, and deals only with symptoms.

By contrast, it would be a serious misuse of the data in this report to ignore the social correlations with crime and to argue that more costly, punitive and repressive measures are the answer to high crime rates. The very purpose of the GPI is to elucidate social, economic and environmental linkages to encourage a deeper understanding of the fundamental roots of progress and decline. Short-term symptomatic treatments cannot provide long-term solutions to social problems like crime.

For this reason, the GPI approach is very much in line with the goals of the restorative justice initiative. Similarly, social investments in education and job creation may have a crime reduction function, and lower crime levels in turn produce savings that become available for further investments in education and job creation, a positive feedback loop that produces social benefit in several areas. The cost of incarcerating one inmate for one year can produce a \$34,000 a year job and an additional \$10,000 educational investment.

While detailed cost-benefit analyses of alternative investment strategies are beyond the scope of this study, the 35-year time series do indicate a remarkable correlation between crime rates and the business cycle nationwide. Across the country, crime rates rose dramatically during the recession of the early 1980s and then declined during the economic recovery, peaking at record high rates during the early 1990s recession and easing off again during the recovery.

After each recession in the last four decades, unemployment rates have not fallen back to their pre-recession levels, and crime rates have also remained correspondingly higher. From 1962 to 1997, each decade saw higher average unemployment rates and higher average crime rates throughout Canada. When discounted for higher reporting rates, the chances of being a victim of crime and the chances of being unemployed in Nova Scotia were both about three times greater in 1997 than in 1962.

The correlation between crime and employment status is confirmed by profiles of prison inmates. In Nova Scotia 58% of inmates were unemployed at the time of admission, and only 22% had full-time jobs. When these statistics are further correlated with the high proportion of young males convicted of offences, the data strongly suggest that investments to reduce high rates of youth unemployment may be a cost-effective crime prevention strategy.

The gender dimension of crime is also important in that women, who are charged with only one-fifth the number of offences as men and who account for only 5% of prison admissions, are effectively subsidizing the costs of male crime from an economic point of view. Though women earn just 66 cents to the male dollar for full-time work in Nova Scotia, female tax dollars pay for prisons and police, and women bear substantial costs of victim losses, theft insurance, higher prices, and home security expenditures, - costs mostly incurred because of male crime. From the GPI perspective, women would have a case for arguing for a public justice tax rebate in proportion to their lower crime rates.

These examples are simply illustrative of the broad range of potential policy applications of the GPI approach, and are not intended as definitive recommendations. Detailed benefit-cost analyses of alternative crime reduction strategies are necessary to determine the most cost effective policy options.

### 4. Conclusion

A peaceful and secure society has been a powerful social asset in Nova Scotia and the Maritimes, that has traditionally signified a high quality of life. As the GPI demonstrates, it has also produced substantial economic cost savings that have perversely appeared as a disadvantage in the conventional economic accounts. Nova Scotia and the Atlantic region today retain a significant comparative advantage, with lower crime rates than the rest of the country, particularly for serious violent crimes and property crimes.

But the gap is narrowing and the advantage slimming. Even accounting for higher reporting rates, Nova Scotians are about three times as likely to be victims of crime as their parents, and the crime rates are converging rapidly towards the national average, with higher crime rates apparently correlated with higher unemployment rates. The trend has led to higher taxes for public justice expenditures, higher shopping bills to pay for instore theft and business crime prevention costs, higher insurance premiums, higher rates of personal spending on locks and alarms, and more victim losses.

If the province is to retain its important advantage, personal security and a peaceful and harmonious society must first be reaffirmed as core values in our measures of progress, a commitment that is lacking in our current reliance on market statistics. With such a commitment, the Genuine Progress Index can then monitor progress towards these and other important non-material goals that are vital for our well being and prosperity. Those measures in turn will stimulate cost effective policy actions designed to attain these goals, a stimulus that is lacking when market statistics and related measures of progress mistakenly count costs as gains.

At a deeper level, the GPI inevitably calls into question the current fascination with the "robust" and "dynamic" American economic model, driven in part by high crime costs and extraordinarily high levels of incarceration. With its substantially lower levels of serious crime, Nova Scotia retains a powerful, currently unvalued, advantage over the

U.S. model that can only be protected and developed by limiting growth in this sector of the economy.

The explicit recognition that *limits* to growth in certain economic sectors may signify progress more accurately than unlimited growth provides a stark contrast to the current reliance on market statistics that confuses quantitative expansion with qualitative improvements in well being. From a full cost accounting perspective, it is highly questionable whether growth in crime, lawsuits, pollution, sickness, war, divorce, gambling, road accidents, drug use, overeating, stress, and natural resource depletion enhances social welfare. Building on social and environmental liabilities in the name of growth will likely produce an accumulation of long-term economic costs that overwhelm apparent short-term gains and undermine genuine prosperity.

By failing to identify and measure economic costs, and by counting them as gains, we lose sight of both the value and the potential deterioration of our social assets, and we fail to take action to remedy trends that undermine our quality of life and standard of living. No blame attaches to this failure, because our economic accounting system has been sending misleading messages to policy makers and the general public alike. We have all been trapped in the materialist illusion that more output and spending produces greater well being.

Conversely, the measurement and valuation of non-material human, social and environmental assets not only draws attention to the true sources of genuine prosperity, but can allow us to focus clearly and unambiguously on the legacy we are leaving our children and on the society we want to create and inhabit in the new millennium.

This understanding has led 400 leading economists, including Nobel Laureates, to sign the following joint declaration:

Since the GDP measures only the quantity of market activity without accounting for the social and ecological costs involved, it is both inadequate and misleading as a measure of true prosperity. Policy-makers, economists, the media and international agencies should cease using the GDP as a measure of progress and publicly acknowledge its shortcomings.

New indicators of progress are urgently needed to guide our society: ones that include the presently unpriced value of natural and social capital in addition to the value of conventionally measured economic production. The GPI is an important step in this direction.

It is the hope of the authors that this case study of the costs of crime will encourage the adoption of a more comprehensive index of progress that integrates economic, social and environmental realities. It is also our conviction that Nova Scotia is well placed to take the lead in this important development and thereby to help create the accounting basis for the new economy of the 21<sup>st</sup> century.

Table 1.1:	Costs of Crime in Nova Scotia,	1997
	(1997\$ millions)	

Conservative Estimate	
Victim Losses: Reported Crimes <sup>18</sup>	
Direct Victim Losses due to Property Crime	102.4
Direct Victim Monetary Losses in Assaults and Sexual Assaults	0.6
Cost of Hospitalization due to Violent Crime	1.6
Lost Potential Economic Production due to Homicide	23.4
Lost Production due to Absenteeism resulting from Criminal Attack	4.2
Subtotal	132.2
Public Justice Costs	
Police Expenditures, incl. N.S. share of RCMP expenditures	143.3
Courts, Legal Aid, and Prosecutions	39.5
Corrections: Provincial, N.S. share of Federal, and Youth	74.8
Subtotal	257.6
Private Defensive Expenditures on Crime Prevention/Detection	
Home Security Systems	45.5
Private Security Guards and Private Investigators	56.3
Retail Business Defensive Costs (Store Surveillance, Alarms, etc.)	37.0
Theft Insurance (Premiums minus Claims)	25.0
Subtotal	163.8
Total Conservative Estimate	553.6
Comprehensive Estimate	
Total Conservative Estimate (from above)	553.6
Victim Losses due to Unreported Property Crime	165.2
\$ Losses, Hospitalization, Absenteeism: Unreported Violent Crime	5.2
Unpaid Household Work Losses	8.2
Unpaid Voluntary Work Losses	1.4
Voluntary Work: Crime Prevention, Legal Aid, w/Victims, Offenders	16.0
Business Shrinkage due to Shoplifting, Employee Theft: Retail Only	113.8
Insurance Fraud (higher premiums)	66.4
"Shattered Lives" (based on court awards for serious violent crimes)	249.0
Total Comprehensive Estimate	1,178.8

#### The following costs are not included:

- Deaths, injuries and property damage due to impaired driving;
- Health, lost production and other costs associated with drug offences, prostitution and other crimes not classified as property or violent crimes;
- Most white collar and corporate crime; fraudulent professional service claims; tax fraud; employment insurance fraud; etc. (except for cases reported and prosecuted);

<sup>&</sup>lt;sup>18</sup> As noted in Chapters 7,8 and 11, average victim losses per crime category are derived from victim surveys, and therefore include both reported and unreported crimes. The same average loss per crime is applied to both reported and unreported crimes in this study, because separate estimates are not available. Because reported crimes are likely to be more serious, the reported crime victim losses are therefore likely to be underestimated and the unreported losses to be overestimated. As an aggregate, however, the two categories correspond to the victim survey results.
- Non-hospital medical costs, drugs and counseling due to violent crime;
- Non-retail business and government defensive expenditures including alarms, electronic surveillance, etc., and non-retail shrinkage due to employee theft;
- Private spending on criminal lawyers;
- Civil Justice costs, including courts, legal aid and litigation costs;
- Indirect and induced crime costs, such as property value losses, foregone economic activity due to fear of crime, etc.

#### Chart 1.1: Conservative Crime Estimate: Distribution of Costs, Nova Scotia, 1997





#### Chart 1.2: Comprehensive Crime Estimate: Distribution of Costs Nova Scotia, 1997

## PART I

# Measuring the Cost of Crime: Why, What, How

## 2. Why Measure the Cost of Crime?

#### 2.1 Indicator of Social Progress

A set of normative values must underpin any index of progress. The moment the word "progress" is used, one cannot avoid the question: "progress towards what?" A goal is definitely implied. Dr. Tony Hodge, former chair of the National Round Table on Environment and Economy, has recommended that the values underlying any set of indicators be made explicit to stimulate the creation of an overlapping societal consensus on what actually constitutes progress.<sup>19</sup>

When the GDP is used as a measure of social progress and well-being, it also reflects a normative choice that is seldom made explicit, namely that all economic growth in *marketed* goods and services is "good". For all paid economic activity, "more" is "better". As Statistics Canada has pointed out, the implicit assumption underlying the GDP is that all spending contributes to welfare.<sup>20</sup>The more industries produce, and the more people buy and spend, the "better off" we are as a society.

Since the GDP does not measure *non-marketed* services, like doing one's own housework, helping a neighbour put on a roof, or volunteering for a charity, these values are excluded when the GDP is used as a measure of progress. So long as money is spent, guns, gambling, prisons and polluting the environment contribute as much to progress as schools, clinics and shelter. The GDP raises the "materialist ethic" to the preeminent social value.

The Genuine Progress Index from the start challenges the viewpoint that all economic growth is "good" or necessarily signifies progress. In fact, the GPI's greatest challenge to the traditional economic thinking which the GDP reflects, is its recognition that progress and well-being may sometimes depend on limits to growth rather than continued economic expansion. Presenting its new Natural Resource Stock Accounts, Statistics Canada noted that the growing recognition that out natural resource base is finite "is translating more and more often into economic policy that looks beyond the conventional orientation of economic growth, setting instead targets for sustainable development."<sup>21</sup>

In adopting a balance sheet approach to accounting, the Genuine Progress Index explicitly distinguishes between assets and liabilities, between economic activity that creates benefit and that which causes harm. In so doing, it explicitly identifies some areas

 <sup>&</sup>lt;sup>19</sup> Hodge, R. A. Tony, "A Systemic Approach to Assessing Progress toward Sustainability" in Dale, Ann and John Robinson (eds), *Achieving Sustainable Development*, University of British Columbia Press, 1996, page 269.
<sup>20</sup> Statistics Canada, *Econnections: Linking the Environment and the Economy: Concepts, Sources and*

<sup>&</sup>lt;sup>20</sup> Statistics Canada, *Econnections: Linking the Environment and the Economy: Concepts, Sources and Methods of the Canadian System of Environmental and Resource Accounts,* catalogue no. 16-505-GPE, December 4, 1997.

<sup>&</sup>lt;sup>21</sup> Idem.

in which growth is not desirable. This module, measuring the costs of crime, is a graphic illustration of this fundamental distinction between the GDP and GPI approaches to measuring progress. While higher crime rates, reflected in more spending on prisons, police, courts, legal fees, burglar alarms, hospitalization fees, are good for the GDP and conventionally count as economic growth and "progress", the GPI counts these as costs. In contrast to the GDP, the GPI goes down as crime costs rise and goes up when crime costs fall. In short, crime is one area where "growth" is not desirable.

According to *The Wall Street Journal*, the O. J. Simpson trial alone added \$200 million to the U.S. GDP in legal fees (\$20,000 a day for the defence), court costs, network news expenses and souvenirs. The *Journal*'s headline proclaimed: "GDP of O. J. Trial Outruns the Total of, Say, Grenada." The car-locking device known as "The Club" adds \$100 million to the American GDP all by itself.<sup>22</sup>

But even these numbers pale by comparison to the estimated contribution to economic growth of the Oklahoma City bombing. Following that crime, government buildings throughout the country, as well as many private firms, invested heavily in sophisticated new security and surveillance equipment as well as additional security guards. Shortly after the bombing, *The Wall Street Journal* reported: "Analysts expect the share prices (of firms making anti-crime equipment) to gain during the next several months as safety concerns translate into more contracts." Indeed, the burgeoning crime-prevention and security industry in the U.S. now has revenues of more than \$65 billion a year, all of which counts as "economic growth" and "progress" under our current accounting system.<sup>23</sup>

As Simon Kuznets, architect of the GDP, warned 35 years ago: "Distinctions must be kept in mind between quantity and quality of growth, between its costs and return, and between the short and the long run." For this reason the GPI makes explicit qualitative distinctions between economic activities that contribute to and detract from welfare. A lower crime rate and the corresponding economic savings may translate into more available funds for measures in education, health, culture and other areas that truly contribute to welfare and social progress.

As noted, such qualitative distinctions require that the normative values underlying the GPI as a measure of progress be clearly specified. An extensive literature review in 1996-97, and consultations with Statistics Canada analysts, Nova Scotia government officials, independent researchers and community organizations, enabled GPI Atlantic to delineate a set of consensus values and goals that can serve as benchmarks of social progress. These goals, on which broad non-partisan agreement exists, are described in detail on pages 18-34 of *Measuring Sustainable Development: Application of the Genuine* 

<sup>&</sup>lt;sup>22</sup> Cobb, Clifford, Ted Halstead and Jonathan Rowe, "If the GDP is Up, Why is American Down?", *The Atlantic Monthly*, October, 1995, page 67.

<sup>&</sup>lt;sup>23</sup> Ibid., page 65.

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Progress Index to Nova Scotia.<sup>24</sup> As each module of the GPI is developed, the value on which assessments of benefit and cost are made is therefore made explicit.

In the case of crime, the underlying normative value is security, and the social asset that is being valued is a peaceful, harmonious and secure society. The GPI project design further divided the fundamental need for human security into three parts ---physical safety, health, and livelihood security.<sup>25</sup> "Genuine progress" occurs when these values are enhanced and declines when they are diminished.

The GPI contains two indicators of physical safety – crime, as described in this report, and automobile accidents, which will form part of the transportation module. In keeping with the goal of integrating social, economic and environmental variables, these indicators are described in economic terms as "costs", using as comprehensive a set of measurements as possible. By contrast to the GDP, the GPI views an increase in crime costs as a drain on the economy and society, and as evidence of the depreciation and deterioration of the social capital asset of a peaceful and secure society. A slowing of growth rates in those sectors of the economy dependent on crime thus signifies progress.

Public opinion surveys, nationally and internationally, consistently report that physical security is a top priority for citizens.<sup>26</sup> An extensive national opinion survey in British cities by a research team from the University of Glasgow found that the largest number of respondents most often gave low crime rates the highest priority as a quality of life determinant. Among 20 indicators of quality of life, concern with crime, both violent and non-violent, far outweighed standard economic considerations like "employment prospects" and "wage levels." which ranked 11<sup>th</sup> and 12<sup>th</sup> in that survey.<sup>27</sup>

Parliamentary debates also demonstrate widespread non-partisan concern with physical security. One Hansard analysis found 139 questions and statements by Canadian Members of Parliament on crime-related issues, compared to a total of 111 on government deficit, employment and wages, and 56 on Quebec.<sup>28</sup> While strategies may differ, certainly no political party or community group openly favours an increase in crime, and the GPI accepts this consensus as a reasonable value base for considering a reduction in crime as an indicator of social progress.

<sup>&</sup>lt;sup>24</sup> Colman, Ronald, Measuring Sustainable Development: Application of the Genuine Progress Index to Nova Scotia: Progress Report and Future Directions, January 16, 1998, pages 18-34, available on the GPI Atlantic web site at www.gpiatlantic.org<sup>25</sup> op. cit., pages 22-23.

<sup>&</sup>lt;sup>26</sup> Roberts, Julian. Public Knowledge of Crime and Justice: An Inventory of Canadian Findings. A report prepared for the Department of Justice, 1994, page 7.

<sup>&</sup>lt;sup>27</sup> Rogerson, R. J., A.M. Findlay, and A. S. Morris, "Indicators of Quality of Life: Some Methodological Issues, Environment and Planning A, volume 21, pages 1655-1666; Findlay, Allan, Arthur Morris, and Robert Rogerson, "Where to Live in Britain in 1988: Quality of Life in British Cities," Cities, volume 5, pages 268-276. Time did not permit a survey of local public opinion polls on this issue; but Kit Waters, N.S. Justice Department, points out that a recent Nova Scotia poll did not rank crime as highly on the list. <sup>28</sup> Canadian Centre for Policy Alternatives, *Monitor*, cited in *Canadian Forum*, March 1995, page 48.

That this is a vital issue to monitor in our core accounts is indicated by the annual *Maclean's* survey of Canadian public opinion. 81% of Canadians think it likely that "the risk of people being exposed to violence and physical harm will be much greater" in the next ten years than it is today.<sup>29</sup> At the very least, we owe it to Canadians not to send misleading signals that, by contributing to economic growth, an increase in crime signifies a gain in social welfare and progress. This can only be done by ceasing to use the GDP as the principal measure of well-being and prosperity.

In the words of the 400 leading economists, including Nobel laureates, who signed a joint statement on the issue in 1995, together with prominent political, business and international leaders:

Policy-makers, economists, the media and international agencies should cease using the GNP/GDP as a measure of progress and publicly acknowledge its shortcomings. New indicators of progress are urgently needed to guide our society....The GPI is an important step in this direction.<sup>30</sup>

In the first two modules of the Nova Scotia GPI, it was pointed out that failing to measure unpaid work produces distortions in GDP growth estimates, since shifts from the nonmarket to the market sectors are counted as economic growth even though no additional production may be taking place. This is a subtle point, since the actual amount of bias depends on the degree to which shifts between the paid and unpaid economies correspond to the business cycle.

By contrast, counting crime costs as contributing to a "robust" and "strong" economy and, by implication, to social well-being, produces a gross and perverse distortion in our measures of progress. Describing these costs in detail can clarify the need to adopt better indicators of prosperity and progress. Clearly the arguments given here apply equally to the costs of toxic pollution, addictive gambling and other activities that detract from social welfare.

From the GPI perspective, measuring the costs of crime raises the very practical question of how much we have to spend as citizens for an acceptable level of security. If we need to spend less to maintain the same level of security, then our quality of life has improved, and our standard of living has increased in direct proportion to the drop in intermediate expenditures. If the cost of maintaining the same level of security goes up, our quality of life is eroding and our standard of living declining.

<sup>&</sup>lt;sup>29</sup> *Maclean's*, December 30, 1996.

<sup>&</sup>lt;sup>30</sup> Full list of signatories available from Redefining Progress, One Kearney Street, 4<sup>th</sup> floor, San Francisco, CA 94108.

## 2.2 Reasons Given by the Solicitor-General

The Solicitor General of Canada has given several important reasons to measure the costs of crime in economic terms:

Information on the cost of crime can serve several purposes:

- a) Cost data allow a complementary and, in some cases, a particularly meaningful way of quantifying the amount of crime in society;
- *b)* By reference to such concepts as gross national product or constant dollars, cost data allow standardized historical comparisons of crime and the response to crime;
- *c)* Cost data allow important comparisons between criminal justice and other basic social expenditures; and
- *d)* Cost data allow comparative cost-benefit analyses to help evaluate social programs and contribute to social policy development....

Until we link social issues to some economic cost concept, until we know more about the cost of crime to society, to victims, and indeed to criminals, we will be unable to answer our ethical questions to our own satisfaction. That is, ethical choices about crime demand knowledge about the consequences of crime.

Obviously, questions of efficiency demand cost information. But so too do the more fundamental questions about whether social programs and policies are working. If we think they are "working,", we still want to know at what price. When we wish to choose among beneficial programs, we will also want to know their relative cost.

Social policy and program development would benefit from knowledge about which crimes cause the greatest losses and which the least, and which groups or categories of people suffer the most heavily.<sup>31</sup>

#### 2.3 Policy Uses

As the Solicitor General notes, economic cost-benefit analysis is essential to determine practical policy options to reduce crime. A detailed break down of costs is necessary to relate social and economic causes and consequences, without which effective solutions cannot be found. To give an extreme example: A massive police presence and draconian sentences may reduce crime, as dictatorships and police states have found. But the costs, in terms of reduced freedoms and civil liberties, may exceed the benefits gained.

<sup>&</sup>lt;sup>31</sup> Solicitor General Canada. *Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims.* 1985, Page 1.

Similarly, an increase in defensive expenditures by one jurisdiction may reduce crime in that area only to shift the burden to a neighbouring one.

Only a detailed cost analysis of the different categories of crime, including victim losses, public costs and private defensive expenditures, can identify policy options that produce overall gains to society as a whole. By linking social and economic variables, potential savings and investment opportunities may be identified that can reduce crime while creating benefits in other social sectors. In this report, for example, public costs for incarceration are correlated with victim losses to determine the instances in which prison sentences are more or less cost-effective in relation to different categories of crime. Similarly, crime statistics are correlated with drug use, educational level, unemployment and other variables to assess where social investments might most effectively reduce crime levels.

It must be emphasized that such correlations are preliminary in this report. Policy options are raised not as definitive conclusions or recommendations, but to stimulate debate and discussion, and to demonstrate how fuller social cost-benefit analyses than are customary at present can provide very useful information to policy makers. It is hoped that the GPI approach can encourage further work in this direction.

As far as we know, this is the first comprehensive attempt to calculate the economic costs of crime in Nova Scotia. As such, we hope it can make a contribution to the policy process. If the valuations are found to be useful, we would recommend that they be updated and maintained on an annual basis.

## 2.4 Questioning Consumerism

The long-term perspective of the GPI and the fact that its values are made explicit inevitably lead to a fundamental questioning of the materialist ethic on which our current measures of progress are based. Nova Scotia's Gross domestic product has increased steadily in the last four decades, as has GDP per capita. We are producing more and spending more than we did 35 years ago, we have more possessions, our economy has been growing, and we have taken all this as a sign of prosperity and well-being.

But, as the results of this report demonstrate, we are also a less peaceful, secure and harmonious society than we were 35 years ago, if the dramatic increase in crime rates is any indication. In our rush for material satisfaction, are we sacrificing the more fundamental values that bind our communities? Robert Kennedy asked this question 30 years ago when he remarked that the GDP "measures everything…except that which makes life worthwhile."

Unless the dominance of the consumer ethic is challenged, unless personal security takes its rightful place as a value of primary importance, and unless it is measured and valued with the same concern and intensity now devoted to measuring GDP, interest rate changes, currency exchange rates, and stock market averages, it will be difficult to

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change current trends. The first step is to acknowledge the reality of Robert Kennedy's insight 30 years ago:

Too much and too long, we seem to have surrendered community excellence and community values in the mere accumulation of material things....(The GDP) measures everything, in short, except that which makes life worthwhile.

The second module of the GPI, which measured the value of unpaid household work, asked a similar question in relation to time use. We have accumulated more and more household appliances and are living in larger houses with fewer people. But our "time-saving" devices have not actually saved us time, and households are working longer hours to pay for their higher levels of spending. The first module of the GPI similarly focussed attention on another hidden value ignored by our current accounting system – the contribution of voluntary and caring work.

In material terms we are a lot "richer" than our parents, with more cars, VCR's, appliances and conveniences and a higher GDP per capita. But are we really richer if we are less peaceful and harmonious, if our community strength is ebbing, if the quality of our environment is deteriorating, and if we are continuously time-stressed? In short, we are so attuned to a pervasive materialist measure of progress – the GDP and its attendant market statistics, that we have forgotten to balance the "joys of consumerism" against other values like security, the value of time, caring for others, and the quality of our environment. At the most profound level, therefore, measuring the costs of crime may awaken a yearning for a more peaceful, secure and harmonious society, and stimulate renewed social and political efforts to achieve it.

## 3. Definitions

## 3.1 What is Crime?

Definitions of criminal activity change over time and are relative to prevailing social norms. "Justice" may be absolute, but "law" is certainly relative. Slavery and capital punishment, though certainly issues of principle, have been "legal" at various times in North America. Economic activities or political dissent that are legal in one society may be criminal in another.

This report focuses on "street crime" such as personal violence and theft, because that is the emphasis of prevailing social norms and legal structures in Canada. But Thomas Gabor estimates that annual losses from corporate crime may be 50 times the losses from street crimes, that tax evasion amounts to \$30 billion a year in Canada, and that \$300-\$400 million worth of services are fraudulently claimed annually in Canada by doctors, lawyers, academics and other professionals.<sup>32</sup> Few of these cases are ever prosecuted and fewer yet result in convictions. A recent report to the Solicitor-General of Canada indicated that organized crime is generating illicit profits of \$20 billion a year.

At the other end of the economic spectrum, Gabor reports a survey of 1700 ordinary people, none of whom had a criminal record. 99% of these law-abiding citizens had in fact committed a criminal offence. A similar survey of male adolescents in Montreal revealed that 97% had committed a crime during their adolescent years. Other studies show that more than 90% of employees pilfer in some work environments, and one estimate attributes one-third of business failures in the USA to employee theft and dishonesty.<sup>33</sup>

In short, those commonly labeled as "criminals" and most frequently punished are those who have committed particular types of offences, like personal violence and theft, that are condemned by this society. "White-collar" crime is less visible, carries less social opprobrium and is much less likely to be punished, though it likely carries considerably higher long-term costs. Beyond pointing out the relativity of definitions of crime, this report does not go beyond the conventional definitions, and cost assessments are therefore proportional to the activities most commonly regarded as criminal. From that point of view, even the "comprehensive" estimates given in this report are inherently conservative.

The "standard offence categories" used in Statistics Canada's Adult Criminal Court Statistics and throughout this report are as follows:

<sup>&</sup>lt;sup>32</sup> Gabor, Thomas, *Everybody Does It! Crime by the Public*, University of Toronto Press, Toronto, 1994, pages 91, 93, 94, 118. <sup>33</sup> On ait more 54, 55, 56, 75

<sup>&</sup>lt;sup>33</sup> Op. cit., pages 54, 55, 56, 75.

- *Crimes against the person:* homicide and related, attempted murder, robbery, kidnapping, sexual assault, other sexual offences, major assault, abduction, common assault.
- *Crimes against property:* breaking and entering, arson, fraud, possession of stolen property, theft, property damage / mischief.
- *Other criminal code:* weapons, administration of justice (including failure to appear), public order offences, morals sexual, morals gaming, unspecified criminal code (including breaches of probation).
- *Traffic:* criminal code traffic impaired driving.
- Drug-related offences: trafficking, possession.
- Other federal statutes: all other federal statutes.<sup>34</sup>

### 3.2 Defensive Expenditures

The costs of crime include not only losses suffered as a result of criminal acts and the consequent public justice costs, but also "defensive expenditures" undertaken to guard against potential crime. The former are incurred after the crime, the latter are designed to protect against the occurrence. Defensive expenditures are an indicator of fear of crime, since they can be expected to rise in direct proportion to increased public anxieties and expectations of crime.

Statistics Canada defines defensive expenditures as those "undertaken to maintain a given level of welfare or to defend against a decline in welfare. All other expenditures are assumed implicitly to be welfare enhancing."<sup>35</sup> The United Nations *Handbook of National Accounting* defines defensive expenditures in relation to the environment as follows:

... The actual environmental protection costs involved in preventing or neutralizing a decrease in environmental quality, as well as the actual expenditures that are necessary to compensate for or repair the negative impacts of an actually deteriorated environment.

If the broader United Nations definition were applied to crime costs, then it would include costs incurred after the commission of a crime as well as those designed to prevent it.

This study uses the term "defensive expenditures" according to the narrower Statistics Canada definition. In relation to crime, they include costs of locks, burglar alarms and other security devices, salaries of security guards, and theft insurance premiums. Strictly speaking, police costs could be regarded in part as "defensive" expenditures, but these are listed separately as part of public justice costs.

<sup>&</sup>lt;sup>34</sup> Carriere, Denyse, *Adult Criminal Court Statistics, 1996-97*, in Statistics Canada, *Juristat*, volume 18, no.7, page 3, box 1.

<sup>&</sup>lt;sup>35</sup> Statistics Canada, *Econnections: Linking the Environment and the Economy: Concepts, Source and Methods of the Canadian System of Environmental and Resource Accounts,* catalogue no. 16-505-GPE, December 4, 1997.

## 3.3 Conservative and Comprehensive Estimates

Conservative estimates of crime costs are actual market losses and expenditures due to reported crime which are directly measurable in monetary terms. These include:

- direct, uncompensated victim losses from reported property crime,
- hospitalization, medical expenses and productivity losses due to reported violent crime,
- public justice costs, including police, courts and correctional services,
- defensive expenditures, including locks, security systems, burglar alarms, security guards, and theft insurance premiums.

However, these figures clearly tell only part of the story. Firstly, victim surveys reveal that many crimes are not reported to police. For example, Statistics Canada's 1993 General Social Survey found that:

- for every 10 reported assaults, 18 more were not reported;
- for every 10 reported robberies, 27 were not reported;
- for every 10 reported break and enter cases, 12 more were not reported.<sup>36</sup>

It is particularly likely that cases of domestic violence and child abuse are seriously under-reported. These unreported cases are not included in the "conservative" estimate of crime costs.

Business fraud and embezzlement is even more rarely reported, very often dealt with by internal investigations, punished by dismissal, and concealed from the public to protect the company's reputation. In the retail trade, employee theft and shoplifting losses, mostly unreported, are known as "shrinkage," with costs passed on to the public in higher prices. Security-coded merchandise, library theft detection systems and similar defensive expenditures are also excluded from the conservative estimate, as are the vast majority of cases of insurance fraud, tax evasion and fraudulent charging for services. Only the insignificant fraction of "white-collar" crimes actually prosecuted is included.

But the most significant omissions from the conservative estimate are crime costs that cannot readily be translated into market terms at all. According to 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

<sup>&</sup>lt;sup>36</sup> Statistics Canada, *An Overview of the Differences between Police-Reported and Victim-Reported Crime,* 1997. Catalogue no. 85-542-XPE, pages 9-11, and appendix.

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caught – cannot be measured in dollars. But these largely unmeasurable costs must be a significant part of any cost-benefit equation.<sup>37</sup>

A Statistics Canada survey on violence against women found that 85% of wife assault victims indicated negative emotional effects. They felt "angry, fearful, had lower self-esteem, depressed, ashamed" and more. One-quarter of married women who have lived with violence reported using alcohol, drugs or medication to cope with the situation.<sup>38</sup> In fact, the more they spend on drugs and counseling services the better it is for the economy, according to the GDP.

The human, social and psychological costs of crime can be immense. In the case of child abuse, the Nova Scotia Justice Department's Victim Services Division reports: "The trauma of a child associated with a withdrawn case or an acquittal can be permanent." Loss of activity and opportunities due to violence and fear can also be long-lasting. A University of Ottawa Criminology Department study has developed a monetary estimate for the cost of "shattered lives," based in part on court awards for victim suffering, which will be used in this report's "comprehensive" cost analysis.<sup>39</sup>

Emotional and psychological losses due to crime have indirect economic impacts that are difficult to measure. Daryl A. Hellman, for example, points out that economic losses due to fear include "reduced retail sales when stores do not open at night, transportation costs incurred by using cars and taxis instead of walking, and resources spent on moving to escape crime."<sup>40</sup> Even "victimless" crimes produce economic costs. An area frequented by prostitutes may reduce property values, and both drugs and prostitution may lead to disease, medical costs and lost production.<sup>41</sup>

In a more subtle way, crime challenges the entire social fabric and imperils the stability of established institutions. For example, Hellman argues that "capitalism relies on the institution of private property....To the extent that we cannot guarantee protection of private property, we diminish the ability of a capitalist economy to function." Aside from direct monetary costs and expenditures, there is also an "opportunity cost" to the time spent committing and fighting crime as "society loses the opportunity to produce goods and services that are of value."<sup>42</sup>

In sum, a "comprehensive" crime cost estimate, while it cannot be precise in monetary terms, actually provides a truer and more accurate portrait of the actual losses experienced by victims and by society as a whole than a conservative estimate based only

<sup>&</sup>lt;sup>37</sup> Solicitor General of Canada. *Canadian Urban Victimization survey, Bulletin 5: Cost of Crime to Victims,* 1985, page 1.

<sup>&</sup>lt;sup>38</sup> Statistics Canada, *Violence Against Women Survey*, 1993, catalogue no. 85-002, volume 14, no. 9, pages 10-11.

<sup>&</sup>lt;sup>39</sup> Welsh, Brandon and Irvin Waller, *Crime and Its Prevention: Costs and Benefits*, Department of Criminology, University of Ottawa, April 1995.

<sup>&</sup>lt;sup>40</sup> Hellman, Daryl A. *The Economics of Crime*, New York: St. Martin's press, 1980, Page 23.

<sup>&</sup>lt;sup>41</sup> Op. cit., page 26.

<sup>&</sup>lt;sup>42</sup> Idem.

on direct expenditures and market losses. From the available literature and specialized studies, estimates for Nova Scotia will therefore be derived wherever possible for the following costs of crime not included in the conservative measurement. (Methodologies are explained in more detail in the next chapter.)

- "Shattered lives": pain and suffering, based on court awards, counseling costs, etc.;
- Losses from unreported crimes;
- Higher consumer prices due to business "shrinkage" and defensive expenditures;
- Losses of unpaid household work time due to crime;
- Value of volunteer hours in law and justice organizations;
- Selected categories of "white-collar" crime where estimates are available;

No estimates are made for property value losses, health costs due to victimless crimes; loss of retail trade in high crime areas; substance and medication use as a result of domestic violence; opportunity costs of lost time; losses due to fraudulent charging for services; and several other categories of white-collar crime and indirect costs where data are simply not available.

Legal costs and civil justice expenditures are also "regrettable" expenditures which do not directly contribute to human and social welfare. In fact, an increase in these costs, while contributing to the GDP and to economic growth, actually indicates an increasingly litigious society and a degraded quality of life. A reduction in these costs is surely as desirable as a reduction in crime costs from the perspective of social harmony and quality of life. Since these costs are not strictly costs of "crime", they are not included in this study. A more detailed description of some of these issues is given in section 3.5.4 below.

## 4 **Qualifications**

## 4.1 Defensive Expenditures are Necessary

Measuring spending on crime as a "cost" rather than as a contribution to economic wellbeing, as do measures of progress based on the GDP, does not imply that this spending can or should be cut. Nor is it somehow "bad" or unnecessary by comparison to welfareenhancing investments. On the contrary, when there is crime, then police, courts, prisons, burglar alarms and security systems are essential. Similarly, when there is sickness, hospitals are necessary; and when there is a toxic oil spill, then a clean-up operation is essential. The logic of the GPI is not that costs can or should be reduced in these areas. Similarly, if tap water is polluted, defensive expenditures on bottled water may be necessary. Bottled water is not bad or negative, but it *is* a regrettable expenditure that guards against a decline in welfare rather than improving well being in its own right.

Paul Smith, N.S. Department of Justice, points out that a criminal supporting a drug habit may commit two or more break and enters a day, costing victims more than one million dollars a year in lost property and money. In such a case, the \$44,000 a year it costs to keep that person in prison is cost-effective. In 1997-98, for example, a total of 425 Nova Scotia offenders were sentenced to a total of 49,595 days in prison for break and enters into homes. Nova Scotian taxpayers paid \$120 per day, or \$6 million, to keep these 425 offenders incarcerated. Had they been at liberty, a significant proportion would likely have continued their criminal behaviour. If 25% of these offenders had committed housebreaks at a rate of one every other day, and the average loss from a break and enter is \$2,370, then victim losses would be  $(49,595 \times 0.125 \times $2,370 = )$  \$14.7 million, and taxpayers would save \$8.7 million a year by locking up these offenders.

In other words, while crime exists, it would be false economy to reduce police or prison costs if those services are needed to protect innocent citizens. Similarly, burglar alarms may provide peace of mind in an area with a high rate of burglaries. Counting crime as a cost rather than as a gain to the economy should not, therefore, be interpreted as implying that justice expenditures are "negative". It is clear that an expenditure may be "regrettable" and at the same time essential.

Instead, the GPI view is that this spending is *symptomatic* of a social ill, that it is "defensive" in nature, and designed to compensate for past damage or to prevent a further decline in welfare, rather than signifying an increase in social well-being. The crime, the sickness, and the toxic pollution are the social liabilities, not the spending designed to alleviate them.

The mistaken message conveyed by the use of GDP growth as a measure of well-being is that this spending is taken as a sign of social progress. The more of it there is, the greater the progress. By contrast, the Genuine Progress Index understands this spending as

signifying the existence of a social liability. The more of it there is, the more serious the liability.

Put another way, the more "defensive" spending there is, the more it signifies the deterioration of social assets like peace and security, health, and a clean environment. The increased spending is, in effect, a re-investment in these social assets. The more peaceful, secure and healthy our society becomes, and the cleaner our environment, the less spending will be necessary on prisons, police, hospitals and toxic clean-up operations. *Then*, and only then, will those savings be available for more welfare-enhancing activities. In the meantime, those defensive expenditure remain necessary, even while the GPI classifies them as "regrettable" rather than "welfare-enhancing".

Simply put, when crime, pollution and sickness diminish, the GPI goes up. By contrast, the GDP goes up when crime, pollution and sickness increase. The associated monetary expenditures are secondary symptoms and necessary consequences.

### 4.2 Changes in Reporting Rates

The tables, charts and ratios in this report are based on official crime statistics released by Statistics Canada, and the economic losses over time are deduced from these crime rates. However, the crime rate statistics reflect only crimes reported to police. An exception is the comprehensive estimate of crime costs in chapter 11, which considers unreported crimes as reported in victimization surveys.

However, in the early 1980s, the Solicitor-General of Canada found that 58% of victims failed to report crimes to the police.<sup>43</sup> By 1996 that figure was down to 48%.<sup>44</sup> The most common reasons victims give for not reporting crimes include that the incident was "not serious", that they took care of the matter themselves, and that they didn't think the police could do anything about it.<sup>45</sup> Victimization surveys have found that sexual assaults and assaults are the least commonly reported crimes, while property crimes and car theft are more commonly reported, partly for insurance reasons.<sup>46</sup>

However, there has been a considerable change over time in reporting rates for particular categories of crime. Comparing the ratio of reported crimes in the Uniform Crime Reporting statistics with the number of crimes reported in victim surveys conducted in Statistics Canada's 1988 and 1993 General Social Surveys (GSS), (see chapter 11, Table

<sup>&</sup>lt;sup>43</sup> Solicitor-General of Canada, "Reported and Unreported Crimes," in Silverman, R.A. and J.J. Teevan, (eds.) *Crimes in Canadian Society*, Toronto, 1986.

<sup>&</sup>lt;sup>44</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective", *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 6, 1996.

<sup>&</sup>lt;sup>45</sup> Nova Scotia Department of Justice, Policy, Planning and Research Division, personal communication, 26 March, 1999.

<sup>&</sup>lt;sup>46</sup> Statistics Canada, CCJS, *Juristat* 18, 6 op. cit.

11.1), it is clear that reporting rates have gone up, and that increases in the official crime rate may not actually reflect higher levels of crime.

Thus, between 1988 and 1993 victimization rates actually declined for personal theft, robbery and assault according to the GSS victim surveys, while reported crimes in each of these categories increased during the same period.<sup>47</sup> Survey data commissioned by the N.S. Department of Justice and Dalhousie University also show that victimization rates declined by seven percentage points since 1992, though in this case the drop matches a similar decline in the reported crime rate during the same period.

The Policy, Planning and Research Division of the N.S. Department of Justice undertook a regression analysis of the common assault rate and all other violent crime against the overall reported crime rate for the period 1980 to 1997.<sup>48</sup> The regression estimates revealed that almost 78% of the increase in the overall crime rate was due to the increase in reported common assaults. If actual levels of violence were increasing, one would expect all violent crimes to be increasing at similar rates. But this was not the case, indicating that increased official rates of violent crime are probably due to increased reporting rates for common assaults.<sup>49</sup> In fact, when annual fluctuations are averaged out into overall trend lines, reported common assault rates increased at more than twice the rate of all other violent crimes.

Legislation may be playing a role here too. Amendments to the Criminal Code in 1983 created new categories of violent crime offences, as well as increasing the penalties for other violent crimes. In addition, reported crime rates are also susceptible to police discretion, and higher reporting rates may be due to increased confidence in the police. An international crime victimization survey in 1996 found that 80% of Canadians thought their police were doing a good job, the highest rate of any industrialized country, and a 1997 Angus Reid survey found that 88% of respondents were either very confident or somewhat confident in their police.

Writing in the *Canadian Journal of Criminology*, two University of Alberta criminologists, Jim Hackler and Kim Don, note that differences in screening and coding practices by different police departments may markedly affect the reported rate of crime. Political pressures to reduce crime rates, they note, may instead produce changes in recording practices, as occurred in New York City. They also cite an American study that found squad car officers did not record 35% of citizen-reported crimes that came to their attention.<sup>51</sup>

<sup>&</sup>lt;sup>47</sup> The authors wish to thank the Polixy, Planning and Research (PPR) Division of the N.S Department of Justice, for its assistance with this section of the report. The insights, knowledge of data sources, and analysis of staff members of this division have been invaluable in tackling this difficult and potentially problematic subject.

<sup>&</sup>lt;sup>48</sup> The analysis used was a Two Stage Least Squares Regression.

<sup>&</sup>lt;sup>49</sup> N.S. Department of Justice, PPR Division, personal communication, 17 March, 1999.

<sup>&</sup>lt;sup>50</sup> N,S, Department of Justice, PPR Division, personal communication, 17 March, 1999.

<sup>&</sup>lt;sup>51</sup> Hackler, Jim, and Kim Don, Department of Sociology, University of Alberta, Edmonton, "Estimating System Biases: Crime Indices that Permit Comparison Across Provinces," *Canadian Journal of* 

How, then, is the dramatic increase in reported crime since 1962 to be interpreted? How much of the reported increase is due to higher reporting rates? According to the official crime rates described in chapter 5, it appears that Nova Scotians are four times as likely to be a victim of crime as 35 years ago, and 4.5 times as likely to be a victim of violent crime. But a substantial portion of this increase appears due to significantly higher reporting rates for common assaults, and the official statistics may therefore be misleading.

To test the actual rates of increase in crime, GPI Atlantic examined three categories of crime in which reporting rates are not likely to have changed substantially over a long period. These are homicides, which are always reported; robbery, where limited data from victimization surveys do not provide evidence of major changes in reporting rates over time; and motor vehicle theft, where reporting is required for theft insurance claims and is therefore likely to remain at a fairly constant rate over time.

As noted in chapter 7, however, "robbery" itself includes several categories of varying seriousness, from robbery with threat and with violence to armed robbery. Since reporting rates increase in proportion to seriousness, they may have changed over time for the less serious varieties.<sup>52</sup>

Nevertheless, Hackler and Don, in their *Canadian Journal of Criminology* article, argue that robbery can be used to construct an index that corrects for discretionary reporting rates by police. They note, for example, that there is little variability among the seven Canadian cities surveyed in the Canadian Urban Victimization Survey in 1981 for the amount of unreported robberies coming to the attention of the police. They conclude that, for comparative purposes: "Robbery is the more accurate measure, and that assault may reflect different recording practices."<sup>53</sup>

The authors recommend that a "recording index", in which the assault rate is divided by the robbery rate, may provide evidence of the degree to which less serious offences are "screened out" by police recording practices, on the assumption that recording rates do not vary greatly for serious crimes like robbery.

Averaging out homicides over six-year time spans in order to correct for unusual annual circumstances, the homicide rate increased in Canada from 1.2 per 100,000 to 1.9 per 100,000 from 1962-67 to 1992-97, a 60% increase. In Nova Scotia the rate went from 1.1 per 100,000 to 1.9 per 100,000, an 80% increase.<sup>54</sup>

*Criminology*, April 1990, pages 243-264. The "squad car" study cited is Black, Donald, "Police Control of Juveniles", *American Sociological Review* 35, pages 64-77.

<sup>&</sup>lt;sup>52</sup> Paul Smith, personal communication, 26 March, 1999.

<sup>&</sup>lt;sup>53</sup> Hackler and Don, op. cit., page 254.

<sup>&</sup>lt;sup>54</sup> Statistics Canada, *CANSIM Database* 2200, for homicide, robbery and motor vehicle theft crime rates.

Reported robberies rose from 26.7 per 100,000 in 1962 to 98 per 100,000 in 1997, a 370% increase. In Nova Scotia reported robberies went from 12 per 100,000 in 1962 to 45 per 100,000 in 1997, a 380% increase.

Motor vehicle thefts in Nova Scotia increased from 95 per 100,000 in 1962 to 271 per 100,000 in 1997, a 290% increase. These figures, as listed in the official crime statistics, are per 100,000 population. However, the number of motor vehicles per capita has risen substantially during this time, so there are also more cars to steal. The rate of motor vehicle thefts per 100,000 vehicles actually declined by 15% between 1975 and 1996, because the number of cars has risen at a much faster rate than the general population.<sup>55</sup>

In all three of these cases, where changes in reporting rates are likely to be less influential, the rate of increase in crime is less than the overall reported rates of increase in violent crime and in criminal code incidents. The official crime rate increases clearly need to be discounted substantially due to changes in reporting rates, particular in consideration of the fact that common assaults account for most of the increase. Nevertheless, if homicide and robbery are any indication, it appears that crime rates have still increased overall since 1962.

Since there are no comparable victimization surveys for the 1960's and 1970's, there is no clear way to know how much to discount the reported crime increases for changes in reporting rates. Because of this difficulty, the most important data recommendation in chapter 12 of this report is for annual victim surveys which are the only available means to assess changes in the overall crime rate for both reported and unreported incidents. An important step in this direction has already been taken in Nova Scotia with annual victim surveys conducted by Corporate Research Associates and commissioned by the N.S. Department of Justice since 1996. These may be expanded over time to provide more extensive information.

Dr. Don Clairmont, criminologist in the Sociology Department at Dalhousie University, rightly suggests that, while higher crime rates may signify the erosion of a social asset, higher reporting rates may indicate actually indicate a more civil society. Violent crime that was once socially "acceptable" is no longer accepted. This is particularly true of crimes like spousal abuse, domestic violence and sexual assault, as well as drunken driving, where reporting rates appear to have increased substantially. In this case, higher reporting rates signify a reduced social tolerance for this behaviour, and the existing of higher social standards for civil behaviour.<sup>56</sup>

An analyst in the N.S. Department of Justice's Policy, Planning and Research Division similarly points out that "an increased propensity to report minor violent offenses to

<sup>&</sup>lt;sup>55</sup> See Chapter 5.3.1 for more details on motor vehicle theft trends.

<sup>&</sup>lt;sup>56</sup> Dr. Don Clairmont, personal communication, March 18, 1999.

police" may signify that "a high or increasing minor violent crime rate may be indicative of the level of tolerance for violence in a society."<sup>57</sup>

## 4.3 Costing Uncertainties

The uncertainty about changes in reporting rates, and the consequent difficulty in interpreting the official crime statistics, also means that no claims can be made for the accuracy of the economic cost estimates derived from them. The only existing estimates of average victim losses per crime, for example, are from the seven-city Canadian Urban Victimization Survey in 1981. Recent published data by province are not available. These dollar losses, adjusted to constant 1997 dollars, have then been applied to the official crime statistics over time.

There are, therefore, several untested assumptions here – first, that the national average losses per crime apply to Nova Scotia; second, that the average loss per crime has remained constant over time; and third, that the official crime statistics over time represent actual changes in the crime rate. We have already noted that the third assumption is questionable because of changes in reporting rates. The first two assumptions are equally uncertain.

These uncertainties need not exist, and one of the purposes of this study is to point to the need for better data in these areas. An annual victim survey could provide data by province; could ask specific questions about the actual dollar loss per crime; and would establish changes in the overall crime rates regardless of reporting rates. All that can be claimed for this study is the establishment of a framework for estimating crime costs, and an attempt to establish suitable methodologies. Actual accurate costing depends on vastly improved data sources, which could be created relatively simply and inexpensively. The results in this study should therefore be regarded as illustrative rather than definitive.

In each chapter, we have tried to illustrate the cost savings that would have occurred if crime costs had remained at 1962 or 1975 levels. Again this is done to demonstrate the GPI method and approach, rather than to claim certainty for the results. Estimates of cumulative costs over time again are based on the official crime statistics and do not account for changes in reporting rates. Furthermore, time did not permit several important steps that still need to be taken to estimate these potential savings more accurately.

First, potential savings are estimated based on estimated expenditures and crime costs in 1962 and 1975. The final version of this report, to be prepared in the coming months will adjust the savings estimations to reflect changes in population, so that the savings estimates represent changes in the reported crime rates rather than differences between actual spending levels. Second, some of the increases in costs are not due to increased

<sup>&</sup>lt;sup>57</sup> Nova Scotia Department of Justice, Policy, Planning and Research Division, personal communication, March 17, 1999.

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crime levels. Rising costs of hospitalization due to crime are in part the result of a steep increase in hospitalization costs. The increased value of lost production due to absenteeism is related to increases in the GDP. Higher business defensive defensive expenditures are based on percentages of retail sales, so that cost increases reflect in large part higher levels of retail sales.

The assumptions underlying the calculation of potential cost savings are explained in detail in Appendix I. In any case, the authors caution that there are enough uncertainties in the derivations, based in part on factors unrelated to crime rate increases, that the estimates given in the text should be regarded as a preliminary first step, and that several further steps are required before confidence can be placed in this aspect of the costing process. For this reason, the estimate of potential cost savings to Nova Scotians given in the Report Summary (Chapter 1) is *not* based on the tables in the text, but is derived strictly from changes in the crime rates and discounted for probable changes in reporting rates.

At this time, the report should be used to understand estimations of *1997* crime costs, in which considerably greater confidence can be placed than the estimates of potential savings to Nova Scotians if crime costs had been at 1962 and 1975 levels. More work is intended on the potential savings aspect of cost estimations before the final publication of this study.

In short, although we tried to use the best data sources available, we became acutely aware of the shortcomings and uncertainties involved in the derivations and extrapolations necessary to make estimations of crime costs. Nevertheless, we would still hold that even a crude attempt to estimate crime costs as costs is still infinitely more accurate than counting these expenses as contributions to economic prosperity and wellbeing, as is currently the case in our present economic accounting system.

For the reasons stated by the Solicitor-General earlier in this chapter, and because it is time to recognize crime costs as loss rather than gain, we strongly recommend that the economic effects of crime be recognized and tallied on an annual basis. We have made some simple recommendations in chapter 12 that would make this possible. If even a tiny proportion of the resources currently devoted to tracking GDP growth were diverted to keeping accounts of vital social and environmental benefits and costs, this would not be a difficult task.

It is our strong hope that future versions of this preliminary estimate of crime costs will be based on improved methodologies and more accurate and up-to-date provincial data sources, so that the cost estimates will be less speculative, and will be based on direct measurements rather than derivations and extrapolations. In order to encourage such improvements, we have been as transparent as possible in chapter 4 in explaining the methodologies and data sources used in this study, and in outlining the future data requirements to maintain this measure in chapter 12.

## 4.4 Overestimates and Underestimates

Some of the costing uncertainties described above may lead to overestimates of certain costs. For example national averages for victim losses per crime may be higher than in Nova Scotia. In the absence of provincial data, such victim losses should probably be adjusted to reflect the Nova Scotia percentage of Canadian annual consumption expenditures and the Nova Scotia percentage of national average or median income levels. In other words, if there are less goods and less money to steal, then it might be supposed that thieves are likely to get away with a proportionately lower value in goods and cash. We have not fine-tuned the cost estimates in this way at this stage, though this can certainly be done as the costing process is improved.

Another overestimate is the inclusion of all police expenditures in the public justice costs described in chapter 9. As a fundamental principle it is true that the policing or law enforcement function in society would not be necessary if citizens never disobeyed the law. In that sense, police costs are necessary "defensive" expenditures predicated on the existence of wrong-doing, rather than welfare-enhancing measures. Just like burglar alarms, they are a response to crime that seeks to prevent a deterioration of existing welfare levels, rather than raising the absolute level of social well-being. If crime and law-breaking declined, there would be correspondingly less need for police. That is the rationale for the inclusion of police expenditures in public justice costs.

However, a proportion of police activities is not related to law-breaking, but responds to accidents and emergencies, particularly on the roads. While accident costs are also "regrettable" rather than welfare-enhancing expenditures, associated police costs should rightly be included in the transportation component of the GPI rather than in this module on crime costs.

In a transportation cost analysis for the British Columbia Lower Mainland, Transport 2021 estimated that 10% of total police costs are attributable to traffic control and emergency services. A California study estimated that if traffic law enforcement, which does include crime control like impaired driving, were included, traffic-related costs amount to 40% of police expenditures.<sup>58</sup> Since law enforcement functions should be included in this study, it would be reasonable to discount the total police expenses in chapter 9 by 10% to account for other emergency, accident, and non-law enforcement related traffic control functions of the police. Again, that procedure may be fine-tuned in future updates of this report.

However, any potential overestimates are probably more than balanced by the range of crime costs omitted from this study due to uncertain data and time constraints. A detailed example of the range of costs due to impaired driving offences that are omitted from this study is given in the next section. There are many other direct and indirect crime costs

<sup>&</sup>lt;sup>58</sup> Transport 2021, *Cost of Transporting People in the British Columbia Lower Mainland*, Greater Vancouver Regional District, Vancouver, 1993, page 29; and Litman, Todd, *Transportation Cost Analysis: Techniques, Estimates and Implications,* Victoria Transport Policy Institute, 1997, page 3.8-3.

excluded from consideration, including non-hospital medical and counseling expenses due to crime, including drug costs; effect of crime on property values; and health and other costs due to "victimless" crimes like drug possession and use and prostitution. A 1997 study conducted by the Canadian Centre on Substance Abuse, for example, estimated \$18.5 billion worth of lost economic production due to substance abuse, a substantial portion of which is certainly attributable to criminal activity.

As noted elsewhere, corporate crime costs, and most categories of white collar crime are also excluded from this study, except for the rare instances where they are reported to police and prosecuted. Even a \$30 V-chip for a television to screen out violence might be regarded as an indirect defensive expenditure related to crime. In short, the cost categories included in this study should be regarded as conservative.

In addition, as mentioned above, "white-collar" crime and corporate crime is almost entirely excluded from the study, except for the rare instances in which cases are actually brought to trial and public justice expenditures incurred. Induced economic costs, like the loss of business or tourism in high crime areas, spending on taxis due to fear of walking alone at night, and other social dimensions of crime are also excluded because data are unavailable.

In addition, only particular public justice costs are included in this report – namely police, courts and corrections. Strictly speaking, the entire budget of both the provincial and federal Justice Departments can be considered a "defensive" expenditure, since justice expenditures are only necessary in so far as crime and wrong-doing exist. The entire Victim Services Division, for example, is quite clearly a direct cost of crime.

If crime were to disappear, which would clearly be desirable for citizens' quality of life, there would be no need for justice departments, and the consequent savings could be invested in welfare-enhancing activities. Conversely, the more crime there is, the greater the need for Justice Department expenditures, which are currently perversely counted as contributions to economic well-being and prosperity. Again, future updates of this study might well include the provincial Justice Department budget, and the portion of provincial taxpayer revenues used to fund the federal department.

Since this study is labeled "The Costs of Crime", we have excluded civil justice expenditures. However, civil justice costs also arise and seek to redress perceived wrongdoings and illegalities. In fact, many civil justice cases arise from crimes. It can be argued, for example, that the civil justice proceedings against O. J. Simpson were barely distinguishable from the criminal proceedings. Certainly, according to the definitions used in the GPI, civil justice expenditures are also "defensive" and "regrettable" in nature, designed to compensate for harm and prevent a decline in welfare, rather than advancing well-being. As such, they also send a misleading message when added to the "growth" measures currently used to assess social progress.

Simply put, more litigation, whether criminal *or* civil, is hardly a sign of progress and prosperity. Indeed, it can be argued that the less litigious a society is, the more

harmonious and peaceful it is. Rather than counting more spending on litigation as a sign of progress, as we currently do, a decline in such spending is probably a truer sign of well-being and of a higher quality of life. From that perspective, all private spending on lawyers should also be counted as a defensive expenditure and a cost of litigation.

While time did not permit in this study, it was our original intention to call this particular module of the GPI "The Costs of Crime *and* Litigation" rather than just "The Costs of Crime". Again, future updates might take this step. Expanding the definition in this way has policy implications. No society will be without its disagreements and disputes. But if litigiousness is defined as an indicator of social disharmony and a depressed quality of life, then more attention might be given to mediation and other non-legal methods of conflict resolution. From an economic point of view, these methods might also produce considerable cost savings that could be re-invested in welfare-enhancing programs that further improve the quality of life.

While this list is by no means exhaustive, the omissions from the study certainly more than compensate for the potential overestimates of crime costs in some categories. It will never be possible, nor is it necessarily desirable, to settle on a final, rigid set of definitions and methods to determine what should and should not be included in this cost estimate. But these uncertainties should not distract attention from the underlying purpose of the study, which is the identification of social costs *as* costs to the economy and wellbeing of citizens. It bears repeating that however crude the cost estimate, it is still conceptually far more accurate than considering these costs as economic gains and contributions to prosperity, as our current accounting system does.

## 4.5 Impaired Driving Victim Losses Omitted

Impaired driving is a crime that frequently results in death, injury and property loss, none of which are counted in this study. In fact, the only impaired driving costs included here are the public justice costs incurred when drivers are arrested, taken to court or imprisoned. Thus, the public costs described in chapter 9 do include impaired drivers.

However, a Statistics Canada study found that only 22% of impaired drivers in Canada receive prison sentences, while 9% receive probation, 66% are fined, and 3% receive other types of sentences. The median fine was \$500, while the median prison term was 30 days.<sup>59</sup> In 1996, nearly 79,000 Canadians and 2,444 Nova Scotians were charged by police with impaired operation of a motor vehicle. This is a rate of 335 per 100,000 population in Canada, and 327 per 100,000 in Nova Scotia.

Public justice costs, however, probably represent only a small fraction of the costs incurred due to this particular crime. Alcohol-related deaths on Canadian roads were

<sup>&</sup>lt;sup>59</sup> Statistics Canada, Canadian Centre for Justice Statistics, Sylvain Tremblay, "Impaired Driving in Canada, 1996," *Juristat*, catalogue no. 85-002-XPE, volume 17, no. 12, November, 1997.

estimated to account for 42% of fatal incidents in 1996.<sup>60</sup> Considering drivers only, Statistics Canada reports that 35% of fatally-injured drivers in Canada were impaired in 1995. In Nova Scotia, 40% of fatally-injured drivers were impaired.

At the time of publication, total figures on deaths due to impaired driving had not been collated. However, 27 fatally-injured Nova Scotian drivers were impaired in 1995, and drivers generally represent slightly more than half of all persons killed in traffic accidents. Using Transport Canada's monetary cost valuation of \$1.56 million per road fatality, deaths from impaired driving therefore probably cost the province \$78 million a year. To make this cost comparable to that of deaths caused by homicide, as described in chapter 8, the productivity losses for each victim would have to be calculated according to age. Because the cost of these deaths is omitted from the conservative estimate of crime costs, the corresponding production losses in unpaid work due to impaired driving fatalities is also omitted from the comprehensive cost estimate in chapter 11.

One recent estimate from Ontario found that taxpayers there are saddled with an annual bill of \$2.5 billion in medical treatment and other costs due to accidents caused by drunk drivers. <sup>61</sup> Accurate figures for Nova Scotia are not currently available on hospitalization and medical costs, and lost production from absenteeism due to injury caused by impaired driving. These would have to be derived from the road traffic accident statistics. Extrapolating from the Ontario study according to comparative population ratios, we may assume that impaired driving costs Nova Scotians about \$205 million a year.

Because these monetary losses due to injury are not counted in the conservative estimate of crime costs based on chapters 7 - 10, the derived costs due to impaired driving injuries in unpaid work losses estimated in chapter 11 are also not included in the "comprehensive" cost estimate. That estimate also does not include the value of unpaid voluntary time donated by groups like Mothers Against Drunk Driving.

Similarly, property losses in the form of wrecked or damaged vehicles due to impaired driving are omitted from the estimate of victim property losses in chapter 7. These would probably have to be derived from insurance company estimates of vehicle property damage due to collision, taking into account the percentage of collisions that are caused by impaired driving.

Chapter 10, on defensive expenditures, does include the difference between premiums and claims paid on theft insurance. If impaired driving costs were included in this estimate of crime costs, this chapter should also include the percentage of the excess of premiums over claims in mandatory motor vehicle insurance payments and optional collision insurance payments that are attributable to impaired driving.

It is clear that the sum total of these costs is very substantial, and it is hoped that future updates of this study might include these estimates of impaired driving costs. This study

<sup>&</sup>lt;sup>60</sup> The Chronicle-Herald, 20 March, 1999, page A8.

<sup>&</sup>lt;sup>61</sup> The Chronicle-Herald, 23 November, 1998, page B1.

also omits a variety of direct and indirect personal and social costs due to other categories of crime, including drug offences and prostitution. These might also include health and medical costs, lost production, property losses, and declines in property values.

In sum, the example of omitted impaired driving costs illustrates that, while some of the costing uncertainties described in the previous section may lead to overestimates in certain cases, the range of excluded costs probably substantially exceeds such errors.

The qualifications described in parts 2, 3 and 4 of section 2.5 all indicate major areas of the cost analysis where improvements are desirable in future updates. There are certainly others. What is notable about all three qualifications described here is that most of the required data could potentially be obtained in a cost-effective manner from a single source – an annual victimization survey at the provincial level. If the questions include loss estimates by crime category, many of the most serious data gaps in this study could be filled.

# PART II

# Crime in Nova Scotia

## 5. Crime Rates

Before presenting monetary estimates, all GPI modules begin with trends in underlying social, economic and environmental indicators. These are the fundamental benchmarks of social progress or decline, and economic costs are assumed to be proportional to trends in these physical indicators. In other words, the costs of crime generally rise if crime rates go up. As crime rates fall, society and households tend to realize savings that can be invested in activities that enhance welfare. However, as in the preceding unpaid work modules and the natural resource accounts that will follow this report, the cost estimates are secondary, derivative values based on underlying trends that must be described first.

There are four major qualifications that must be borne in mind in relating the data presented in this chapter with the cost estimates that follow. *First*, it is possible, as dictatorships have demonstrated, to lower crime rates through police-state measures and draconian punishments. In such a case, crime rates would fall even as costs rise.

It is assumed for the purposes of this report, that civil liberties and basic safeguards of human freedoms remain constant over time, and that this precludes any diminution of human rights for the sake of fighting crime. In other words, the principle of "proportionality" – that the sentence matches the seriousness of the crime – is maintained, and principles of due process are not curtailed. Without this assumption, it is possible that crime rates and crime costs could move in opposite directions. There is evidence that this is in fact occurring in the United States of America, where lower crime rates in recent years are matched by higher rates of incarceration. Here we advance the hypothesis, which remains to be tested, that a growing gap between crime rates and crime costs may indicate movement towards a more repressive society.

*Second*, a fear of crime may raise costs through increased defensive expenditures, even though this fear may not be directly proportional to actual trends in crime rates. This may occur in several ways. For example, if the amount of criminal activity remains constant while population increases, particularly in urban areas, then the crime *rate* (measured as incidents per 100,000 population) will go down even though the public does not perceive the decrease.

Or there may be a time lag. Crime rates in Canada rose rapidly through the 1970s and 1980s and then began to drop in the 1990s. But public perceptions, fears and defensive expenditures in the 1990s may still be responding more vividly to the trends of the previous two decades than to current trends.

*Third*, official crime rates are dependent on public reporting rates, the discretion and capacity of police officers to respond to complaints, and changes in the social and political climate.<sup>62</sup> All three elements have varied over time, particularly in sensitive

<sup>&</sup>lt;sup>62</sup> Jim Hackler & Kim Don. "Estimating System Biases: Crime Indices that permit Comparisons across Provinces", *Canadian Journal of Criminology*, April 1990, Vol. 32, No. 2, Page 244 and 247.

areas like domestic violence, sexual assault and child abuse. A 1996 survey found that Canadians report just over half of all criminal incidents.

Certainly official crime rates *understate* the actual incidence of crime, and, because of increased reporting rates for certain categories of crime over time, they also *overstate* the rate of increase in crime. In other words, the official statistics cannot be taken too literally, either as representations of the actual rates of victimization or of trends in crime rates over time.

Victim surveys have the advantage of accounting for both reported and unreported crimes. Unfortunately, there have been only three national victim surveys in Canada since 1981, and there is insufficient information to estimate with any precision the percentage of the dramatic increase in official crime rates since 1962 that is attributable to higher reporting rates. The best estimate we have from victimization surveys is that overall reporting rates have increased from 42% in 1981 to 52% in 1996. Please see the discussion in chapter 4, on the difficulties in assessing the official rates of crime increase accurately.

Though conservative cost estimates are based on the official crime rates described in this chapter, reference will also be made to victim surveys to develop a more comprehensive estimate of crime costs. Canadian victim surveys in 1988 and 1993 revealed increased reporting rates in 1993 for most crime categories, which may affect the trends presented in this chapter.<sup>63</sup> As mentioned, victimization surveys are conducted too infrequently, however, to determine with certainty the degree to which trends in the official crime rates are influenced by reporting rates or by changes in police responses.

The most important qualification to the data in this section, therefore, is that they reflect only police-reported crime rates. While the chance of being a crime victim in Canada in 1996, according to these official rates, was one in 11, surveys reveal that fully one in four Canadians was actually victimized in 1996, and that only half of criminal acts are actually reported to police.<sup>64</sup> The emphasis on police-reported crime rates therefore produces significantly more conservative results than would the use of victim surveys. This chapter therefore examines the extent to which crime "*officially*" impacts Nova Scotia. The real extent and impact of crime is clearly much greater, though there is evidence that the gap between reported and unreported crimes is narrowing.

Despite these qualifications, changes in crime rates are still relatively reliable indicators of trends in crime costs. Since crime rates have increased in the last four decades, correlations between the data in this chapter and the unit costs that follow will allow

<sup>&</sup>lt;sup>63</sup> Statistics Canada, *An Overview of the Differences between Police-Reported and Victim-Reported Crime,* 1997, catalogue no. 85-542-XPE, pages 9-11 and see Appendix.

<sup>&</sup>lt;sup>64</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective," *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 6, pages 3-4; and Statistics Canada, Roinson, David, Frank J. Porporino, William A. Millson, Shelly Trevethan and Barry MacKilley, "A One-Day Snapshot of Inmates in Canada's Adult Correctional Facilities", *Juristat*, catalogue no. 85-002, volume 18, no. 8, page 2

relative assessments of the savings that would have accrued if crime costs and losses had been maintained at previous levels. From a policy perspective this provides an important economic motivation for renewed efforts to reduce the level of criminal activity in the province.

The *fourth* qualification is that overall crime rate statistics make no distinction between the nature and type of crimes. For this reason, the following sections have included some disaggregated data by crime category. This is important in comparing Nova Scotia to the other provinces. Thus the overall official crime rate in Nova Scotia is 98% of the national average, up from 66% 25 years ago, and the composite official violent crime rate actually exceeds the national average. However, Nova Scotia has only 63% of the Canadian crime rate for *serious* violent crimes, just 82% of the overall property crime rate, and less than half the rate for motor vehicle theft.

This indicates that a sizeable portion of the registered increase in police-reported crimes in the province has been in common and minor assaults. This is the category most susceptible to fluctuations in reporting rates. In other words, the criminal code crime rate must be used with caution, and examined more closely to determine relative changes over time in particular crime categories.

## 5.1 Criminal Code Violations<sup>65</sup>

In determining the true costs of crime, it is necessary to understand the official crime rate. The official crime rate is the number of criminal code violations reported to police per 100,000 population. Criminal code violations are violent crimes, property crimes, impaired driving offences, drug offences, and "other" crimes. Mischief makes up 45 per cent of the total for "other" crimes. 1962 is taken as the starting date for all time series in this study, because official crime statistics have been standardized by the Canadian Centre for Justice Statistics since that date. Earlier statistics are more unreliable and many of the reporting categories are not comparable.

The official police-reported crime rate in Nova Scotia has more than quadrupled since 1962, and more than tripled in Canada as a whole. <sup>66</sup> In 1962 the chances of being a crime victim in Nova Scotia were one in 49, counting only police-reported crimes. In 1997 they were one in 12.<sup>67</sup> In other words, according to the official statistics, the chances of being

<sup>&</sup>lt;sup>65</sup> See chapter 3.1 for definition of criminal code offences. This section includes all categories of criminal code violation: violent crimes, property crimes, drug offences, criminal code traffic offences (principally impaired driving), "other" (including obstruction of justice), and violation of federal statutes.

<sup>&</sup>lt;sup>66</sup> Crime incidents are from Statistics Canada, *CANSIM Database*, matrix 2200, "Crimes by Actual Offences, Canada, Provinces and Territories, by Year"; population statistics used to calculate changes in the crime rate over time are from Statistics Canada, *CANSIM Database*, matrix 1, "Quarterly Estimates of Population for Canada, Provinces and Territories".

<sup>&</sup>lt;sup>67</sup> These figures are derived by dividing the number of criminal incidents by the population. However, this does not necessarily mean that one in 12 *people* is a crime victim, since one person may be victimized

a crime victim are now four times greater than 35 years ago (Table 5.1 and Charts 5.1 and 5.2. The crime rate in Table 5.1 has been derived using population data and criminal code incidents. See Appendix for more detail.)

As mentioned, these figures must be discounted to reflect higher reporting rates for common assaults and other categories of crime. Victimization surveys indicate that reporting rates have increased in the last 20 years from 42% in 1981 to 52% in 1996.<sup>68</sup> While this change accounts for only a portion of the official crime rate increase, it indicates the magnitude of the discount necessary to assess the real rate of crime increase.

When unreported crimes are included, Statistics Canada reports that one in four Canadians were victims of crime in 1996, almost identical to the United States victimization rate and in line with the average among industrialized countries.<sup>69</sup> Statistics Canada's General Social Survey similarly found that 24% of Canadians were victims of crime in 1993.

Nova Scotia victim surveys conducted by Corporate Research Associates (CRA) for the N.S. Department of Justice found that victimization rates declined from one in seven in 1992 to one in ten in 1999. In 1996 the Nova Scotia victimization rate for police-reported crimes was one in 11.8, compared to one in 6.7 for all crimes, a reporting rate of 56% compared to the national average of 52%. In 1997 the Nova Scotia victimization rate for police-reporting rate of 69%.<sup>70</sup>

This may possibly indicate that the gap between reported and unreported crimes is narrowing in the province. Since CRA surveys only about 400 Nova Scotians each year and since the survey has a 10% margin of error, however, not too much confidence can be placed in this apparent trend at this stage. Nevertheless it bears watching, and may eventually provide important information about changes in reporting rates.

Though crime has been rising at a faster rate in Nova Scotia than nationally, overall crime levels are still slightly below the Canadian level because they were so much lower a generation ago. In 1972, Nova Scotia crime rates were only two-thirds the national average. In 1997, they were 98% of the Canadian average (Chart 5.3). Throughout Canada, crime rates have dropped since peaking in 1991, when the chances of being a crime victim were one in 10. In Canada, the crime rate has fallen by 18% since 1991, and

several times in a year. The authors wish to thank John Turner, Chief, Policing Services Program, Canadian Centre for Jusitce Statistics, for his clarification of this issue (personal communication, 6 April, 1999). <sup>68</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International

Perspective", Juristat, catalogue no. 85-002-XPE, volume 18, no. 6, 1996.

<sup>&</sup>lt;sup>69</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective," *Juristat,* catalogue no. 85-002-XPE, volume 18, no. 6

<sup>&</sup>lt;sup>70</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective," *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 6; *Macleans*, 2 January, 1995; Nova Scotia data provided by Paul Smith, N.S. Department of Justice.

in Nova Scotia by 15.5%. National crime rates have continued to fall steadily for each of the last seven years, but they have leveled off since 1994 in Nova Scotia.

The rate of increase in the Nova Scotia criminal code crime rate between 1962 and 1997 has been fifty per cent greater than nationwide, producing a gradual convergence towards the national average. Among the provinces, Nova Scotia has experienced the third largest increase in the criminal code crime rate. Only fellow Maritime Provinces New Brunswick and Prince Edward Island have suffered larger increases in crime. All three provinces are still below the national crime rate average, but they are catching up rapidly. As noted above, however, this increase appears to be confined mostly to common assaults and minor crimes. Serious violent crimes in Nova Scotia still occur at less than two-thirds the national rate.

In terms of the social asset of a peaceful and secure society, Nova Scotia and the other Atlantic provinces enjoyed an important "comparative advantage" a generation ago over the rest of the country. In absolute terms, particularly in relation to serious violent crimes, that advantage still exists. But *relatively speaking*, over time, that asset and the quality of life associated with it have eroded significantly in the last 30 years, as the overall crime rate has begun to catch up to the national average. From the perspective of market statistics like GDP per capita, in which this region has lagged, "convergence" is conventionally regarded as desirable and as a sign of progress. From the perspective of the Genuine Progress Index, convergence is more questionable if quality of life advantages are undermined.

It must be emphasized again that the rates of increase cited here do not account for higher reporting rates. While higher crime rates may be seen as a symptom of a declining quality of life, higher reporting rates may indicate the opposite trend, since they can signify reduced social tolerance for violence and other previously "acceptable" harmful behaviour like domestic and spousal abuse. From that perspective, the degree to which higher official crime rates can be accounted for by increased reporting rates may also indicate movement towards a more "civil" society.<sup>71</sup>

The caveat here is that there is no evidence that reporting rates have increased faster in the Maritime provinces than in the rest of Canada. Therefore the convergence of crime rates and the more rapid rate of increase in crime rates in the Maritimes must still be taken as a sign of eroding advantage. Compared to the rest of Canada, the region is still safer, more peaceful and more secure, especially when differences in serious crimes are considered. However, the advantage is significantly less marked than it was 30 years ago.

<sup>&</sup>lt;sup>71</sup> The authors are indebted to Dr. Don Clairmont, criminologist, Department of Sociology, Dalhousie University, and Paul Smith, Coordinator of Research and Planning, N.S. Department of Justice, for their assistance in identifying and analyzing this apparent paradox, personal communications March 17 and 18, 1999.

#### 5.1.1 Crime and the Business Cycle

As Charts 5.1 and 5.2 illustrate, crime rates are correlated with the business cycle, and thus with employment trends. Crime rates rose during the recessions of the early 1980s and early 1990s as unemployment rates rose. The crime rate fell during the business cycle upturn as employment rates recovered. But when the long-term trend is examined, unemployment rates and crime rates have never recovered to their pre-recession levels, with each decade's average rate higher than the previous one. Thus, Nova Scotians were four times as likely to be a crime victim in 1997 than in 1962, and three times as likely to be unemployed. When the crime rate increase is discounted to reflect higher reporting rates, the actual rate of increase in unemployment rates and crime rates is probably very close. Table 5.4 and Chart 5.10 below illustrate the correlation quite graphically.

While this correlation between crime and unemployment holds *relatively* for trends over time within provinces, it cannot be proven at an absolute level. Within Canada, the provinces with the highest unemployment rates have historically had the lowest crime rates. Newfoundland, in particular, with the highest unemployment rate and consistently the lowest crime rate in the country, defies a simplistic causal link between these factors.

Furthermore, the overall standard of living and consumption level of Canadian households is considerably higher than it was in the 1960s when crime rates were considerably lower, so it is also clear that the crime rate is not a simple function of living standards. In fact, it has been suggested that crime may rise in times of prosperity when there is more available to steal, when property is easier to replace, and when levels of guardianship decline. At such times, the levels of *relative perceived* deprivation may also be higher. An analyst in the N.S. Department of Justice's Policy, Planning and Research Division points out that the boom period 1911-14 also produced some of the highest crime rates in Canadian history.<sup>72</sup>

<sup>&</sup>lt;sup>72</sup> Personal communication, 26 March, 1999.

Date	Incidents	Pop.	Crime	Incidents	Pop.	Crime	Canada	Nova	NS as a
	Canada	(000s)	Rate	Nova	(000s)	Rate	1962=	Scotia	%
		Canada	Canada	Scotia	NS	Nova	100	1962=	of Can
						Scotia		100	Crime
									Rate
1962	514986	18583	2771	15187	746	2036	100	100	73
1963	572105	18931	3022	17953	751	2391	109	117	79
1964	626038	19290	3245	19446	755	2576	117	127	79
1965	628418	19644	3199	20123	756	2662	115	131	83
1966	702809	20015	3511	20547	756	2718	127	133	77
1967	784568	20378	3850	20529	760	2701	139	133	70
1968	897530	20071	4472	23702	767	3090	161	152	69
1969	994790	21001	4737	26128	775	3371	171	166	71
1970	1110066	21297	5212	28278	782	3616	188	178	69
1971	1166458	22026	5296	29518	799	3694	191	181	70
1972	1189805	22285	5339	28213	804	3509	193	172	66
1973	1298551	22560	5756	30701	814	3772	208	185	66
1974	1456885	22875	6369	36102	820	4403	230	216	69
1975	1585805	23209	6833	43814	828	5292	247	260	77
1976	1637704	23518	6964	47574	837	5684	251	279	82
1977	1654020	23796	6951	47110	841	5602	251	275	81
1978	1714297	24036	7132	49942	846	5903	257	290	83
1979	1855271	24277	7642	55020	851	6465	276	318	85
1980	2045399	24593	8317	57355	855	6708	300	329	81
1981	2168201	24900	8708	62085	856	7253	314	356	83
1982	2203668	25202	8744	64636	862	7498	316	368	86
1983	2148633	25456	8441	61665	871	7080	305	348	84
1984	2147657	25702	8356	61933	880	7038	302	346	84
1985	2174175	25942	8381	63372	888	7136	302	351	85
1986	2277749	26204	8692	66510	892	7456	314	366	86
1987	2368956	26550	8923	67427	896	7525	322	370	84
1988	2390007	26895	8886	68906	900	7656	321	376	86
1989	2425936	17379	8861	71254	907	7856	320	386	89
1990	2627193	27791	9453	80365	913	8802	341	432	93
1991	2898988	28120	10309	90008	918	9837	372	483	95
1992	2847981	28542	9978	87646	925	9475	360	465	95
1993	2735626	28941	9452	80207	931	8615	341	423	91
1994	2646209	29251	9047	76572	934	8198	326	403	91
1995	2639654	29606	8916	75095	938	8006	322	393	90
1996	2644893	29672	8828	78810	931	8463	319	416	96
1997	2530354	30004	8433	77696	936	8298	304	408	98

Table 5.1: Criminal Code Crime Rate per 100,000 Population,Canada and Nova Scotia, 1962 – 1997


Chart 5.1: Criminal Code Crime Rate Comparison, Nova Scotia and Canada Rates of Increase, 1962-1997 (1962=100)





<sup>&</sup>lt;sup>73</sup> See footnote on this issue in Section 5.1 above. Percentages derived by dividing crimes by population.

\* NOTE: As explained in chapter 4, part of the apparent increase in crime can be explained by higher reporting rates, especially for common assaults. Official police-reported crime statistics therefore overestimate the actual increase in crime, and these figures should not be taken completely literally.



Chart 5.3: Criminal Code Crime Rate Comparison, Nova Scotia as a Percentage of Canada, 1972-1997

# 5.2 Trends in Violent Crime

The overall trends described above conceal significant differences between different categories of crime. In Nova Scotia, violent crime has risen at a faster rate than property crime, and the violent crime rate in the province, as officially defined, now exceeds the national average. However, if we look more closely, we find that the crime rate for serious violent crimes is still well below the national average, at less than two-thirds the Canadian rate. In fact, all four Atlantic provinces still have considerably less serious violence than the rest of the country.

A regression analysis conducted by the Policy, Planning and Research Division at the Nova Scotia Department of Justice found that 78% of the increase in the violent crime rate is due to the increase in common assaults.<sup>74</sup> As discussed in section 2.5.2 above, that increase itself is probably due largely to increased reporting rates, particularly for spousal

<sup>&</sup>lt;sup>74</sup> N.S. Department of Justice, Policy, Planning adn research Division, personal communication, 17 March, 1999.

abuse and domestic violence, and to a lower social tolerance level for minor violent offences. The 1996 International Crime Victimization Survey found that sexual assault and assault had the lowest reporting rates among crime categories.<sup>75</sup>

While data on reporting rates are not currently published by province, it would be interesting to find out whether reporting rates for common assaults are higher in the Atlantic provinces than in the country as a whole. If so, it might demonstrate a more civil society in the region, at least in the sense of a lower tolerance level for violence. Some evidence that this is the case may be gleaned from the 1999 Corporate Research Associates victimization survey

Because the differences between these two data sets are quite marked, we have presented below both the overall official violent crime rates, and also a comparative analysis of more serious violent crimes, where reporting rates are less likely to have changed over time. According to the first data set, based on official statistics, the violent crime rate in Nova Scotia has risen substantially to surpass the national average. According to the second data set, which examines only serious violent crimes, Nova Scotia remains well below the national average, indicating both that common assaults constitute the major portion of the increase and that higher reporting rates for minor violent offences are likely to explain a significant part of the increase.

Counting only police-reported crimes, in 1997 the chances of being a victim of violent crime were one in 93 in Nova Scotia and one in 102 nationwide, compared to one in 415 and one in 452 respectively in 1962.<sup>76</sup> In other words, according to the official statistics, the chances of being a victim of violent crime in the province have gone up 445% since 1962 (Table 5.2 and Charts 5.4, 5.5 and 5.6).<sup>77</sup> Since 1962, Nova Scotia has suffered an increase in violent crime in 28 out of 35 years, according to the official police-reported statistics.

Among the provinces Nova Scotia now has the fourth highest rate of violent crime in the country after Manitoba, Saskatchewan and British Columbia, and the highest rate east of Winnipeg, when reported common assaults are included. It is 20% higher than in Ontario and 40% higher than in Quebec.

In the last 20 years violent crime in Nova Scotia has been increasing at twice the national rate, according to the official statistics. Throughout the 1970s and 1980s, the Nova Scotia rate of violent crime averaged 16% below the national rate. Since 1992, the Nova Scotia

<sup>&</sup>lt;sup>75</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective," *Juristat,* catalogue no. 85-002-XPE, volume 18, no. 3, 1996.

<sup>&</sup>lt;sup>76</sup> Statistics Canada, *CANSIM Database*, matrices 2200 and 1. The figures are derived by dividing the number of criminal incidents by the population. This does not necessarily mean that one in 93 people is a victim of violent crime, since one person may be victimized several times in a year. The authors wish to thank John Turner, Chief, Policing Services Program, Canadian Centre for Justice Statistics, for his clarification of this issue (personal communication, 6 April, 1999).

<sup>&</sup>lt;sup>77</sup> As noted above, some of the increase may be explained by increased reporting rates for some categories of crime, such as sexual assault, domestic violence and child abuse.

rate of violent crime has been 8% higher than the national rate. The convergence has been sharpest in the last 12 years, with the Nova Scotia rate of violent crime rising steadily from 79% of the national average in 1986 to 110% in 1997 (Chart 5.7).

Serious violent crimes present a very different picture. Counting only homicide, robbery, sexual assault categories 1 and 2 (comparable to the U.S. definition of forcible rape), and assault category 3 (comparable to the U.S. definition of aggravated assault), Nova Scotia has only 63% of the Canadian crime rate, a ratio that has remained fairly constant in recent years.

Compared to the United States, Nova Scotia has only one-sixth the crime rate for serious violent crimes (Chart 5.8). The United States has 3.5 times as many homicides per 100,000 people as Nova Scotia, and five times as many robberies.

Examining each category of serious violent crime separately, Canada as a whole also still ranks well below the United States. The crime rate for forcible rapes is 10% that in the U.S. Aggravated assaults (with a weapon or causing bodily harm) are at one-third the U.S. level, and robberies are at 40% the U.S. rate.<sup>78</sup> By contrast, victimization surveys, which include both reported and unreported crimes in all categories, indicate that the overall chance of being a crime victim is almost the same in Canada as in the U.S.<sup>79</sup>

Among the serious violent crimes, sexual assault is the most likely to be more widely reported today than 35 years ago, and thus the most susceptible to uncertainties as to whether increases in officially reported rates are due to higher rates of victimization or higher reporting rates. By contrast, homicide is always reported, and robbery is also unlikely to change dramatically over time due to changes in reporting rates. In fact, a comparison between the 1981 seven-city Canadian Urban Victimization Survey and the 1988 and 1993 victim surveys in the General Social Survey indicates no clear trend in reporting rates for robbery over time, with an apparent drop in reporting rates followed by a slight increase (see tables 11.1 and 11.2, chapter 11).

The small number of annual homicides makes it necessary to examine averages over several years, in order to correct for unusual fluctuations in particular years. Looking at six-year time periods, it is apparent that the Nova Scotia homicide rate has risen slightly from about 90% of the national average in the 1960's to a rate almost identical with the national average in the 1990's. Over the 35 years, and starting from a lower base, the

<sup>&</sup>lt;sup>78</sup> Government of Canada, Department of Foreign Affairs and International Trade, Investment Marketing Division, *Canada Business Facts 1996*, page 47, citing Statistics Canada, Canadian Centre for Justice Statistics, 1996; U.S. Department of Justice, *Crime in the U.S. 1994*; and F.B.I., *Uniform Crime Reports, 1995*.

<sup>&</sup>lt;sup>79</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective," *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 6, pages 3-4. It should be noted that comparisons of overall *reported* crime rates with the United States are not possible, both because of significant differences in definitions of particular categories of crime, and because reporting rates are believed to be vastly different. Only those crime categories where comparable definitions are possible and where reporting rates are not believed to be very different (mostly serious violent crimes and motor vehicle theft) are used for comparative purposes in this report.

Nova Scotia homicide rate has gone up by 80%, while the national rate has increased by 60% (Table 5.3).

Even in reporting homicide rates, interpretation of the official statistics can be misleading. According to the most recently released Canadian statistics, as reported in *The Globe and Mail*, Halifax had the second highest rate of homicides among Canadian cities for 1997.<sup>80</sup> Though appearing high by Canadian standards, the Halifax homicide rate (3.15 per 100,000) was still only one-third that in U.S. cities (9 per 100,000).<sup>81</sup> For 1997 alone the Canadian rate was 1.7 and the Nova Scotia rate 2.3 per 100,000.

However, the year a homicide is reported does not mean that this is the year the crime occurred. A closer examination of the 1997 data, which appear to indicate a higher Nova Scotia homicide rate, reveals that five of the homicides reported in 1997 actually occurred in 1981.<sup>82</sup> For this reason, averaging rates over longer periods will certainly yield more accurate and comparable results. Thus, for the six-year period 1992-1997, the Canadian and Nova Scotia murder rates were almost identical at 1.91 and 1.88 per 100,000 respectively.

The crime rate for robbery in Nova Scotia is less than half the Canadian average. While the Nova Scotia robbery rate is the highest among the Atlantic provinces, all four Atlantic provinces remain significantly below the Canadian rate, with Newfoundland and Prince Edward Island at 12% and New Brunswick at 20% of the Canadian average (Chart 5.9). It can be argued that, since reporting rates and social attitudes towards minor violence and common assault have less influence on these results, the provincial comparison of robbery rates is a more accurate reflection of serious crime incidence in the country. Certainly, since robbery directly affects the business climate, the comparison indicates a significant advantage for the Atlantic provinces in terms of the costs of doing business.

Nevertheless, the inter-provincial comparison is no cause for complacency. Throughout the country, there has been an alarming increase in the incidence of robbery, and Nova Scotia is no exception to this trend. Again averaging the crime rates over 6-year time periods to even out unusual annual fluctuations indicates that robbery rates have increased by 350% nationwide and by nearly 300% in Nova Scotia between 1962-67 and 1992-97 (Chart 5.10). While not as dramatic as the 450% officially reported increase in violent crime, which includes common assaults, this increase in robberies does indicate a significant erosion in social peace and personal security that is not as attributable to reporting rates as the change in common assaults.

In the absence of hard data, it is tempting to use the comparative increases in official crime statistics for robbery and all violent crime to hypothesize that one-third of the increase in crime is likely attributable to changes in reporting rates, while the other two-

<sup>&</sup>lt;sup>80</sup> The Globe and Mail, 28 October, 1998, page A3.

<sup>&</sup>lt;sup>81</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective," *Juristat,* catalogue no. 85-002-XPE, volume 18, no. 6, page 5.

<sup>&</sup>lt;sup>82</sup> N.S. Department of Justice, Policy, Planning and Research Division, personal communication, 17 March, 1999.

# **GPI**Atlantic

thirds denotes an actual diminution of personal security. However, more research is clearly needed to ascertain the viability of this hypothesis, and in particular to examine the degree to which reporting rates account for the increased incidence in officially reported common assault. The authors did not have the time to pursue this question further at this stage.

As noted in chapter 4, University of Alberta criminologists Jim Hackler and Kim Don, writing in the *Canadian Journal of Criminology*, recommend the construction of a "recording index" in which the crime rate for less serious, "screenable" assault offences is divided by the robbery crime rate, for which reporting variations are less likely. While their recommendation is designed to identify differences in the discretionary recording practices of different police departments, the same logic might be applied to variations over time within a particular jurisdiction.<sup>83</sup>

An analyst in the Policy, Planning and Research Division, Nova Scotia Department of Justice, cautions that "robbery" itself includes several very different categories of crime: robbery with threat, with violence, and with the use of weapons ("armed robbery"). Reporting rates may in fact differ for these different types of robbery, with the more serious likely to have higher reporting rates.<sup>84</sup>

What is perhaps most remarkable about the trends in Chart 5.10 is the degree to which robbery rates appear to follow the business cycle and, in particular, the unemployment rates. Both in Canada and in Nova Scotia and, indeed, in almost all provinces, the robbery rates peaked during the recessions of the early 1980's and early 1990's, easing off as employment rates rose.

Just as the average overall unemployment rate has been higher in each decade, never quite returning to pre-recession levels, so robbery rates have also increased steadily each decade as well. As Canadian unemployment rates rose from an average of 4% in the late 1960s to 6.7% in the 1970s to 9.3% in the 1980s to an average of 10% between 1992 and 1997, robbery rates rose correspondingly from 34 per 100,000 in the 1960s to 68, 93 and 106 per 100,000 in each of the succeeding decades. The Nova Scotia progression follows a similar trend, as do most other provinces (Table 5.4).

It should be noted that the high correlation between robbery rates and unemployment rates is only true relatively speaking, when examining a particular provincial or a national trend over time. Social and cultural factors clearly play a major role as well in determining crime levels, and no claim can be made that an absolute level of unemployment is likely to produce a certain rate of robbery. Thus Newfoundland, for

<sup>&</sup>lt;sup>83</sup> Hackler, Jim, and Kim Don, Department of Sociology, University of Alberta, Edmonton, "Estimating System Biases: Crime Indices that Permit Comparison Across Provinces," *Canadian Journal of Criminology*, April, 1990, pages 243-264.

<sup>&</sup>lt;sup>84</sup> Personal communication, 26 March, 1999.

<sup>&</sup>lt;sup>85</sup> Unemployment rates from Statistics Canada, *Estat Database*, and *Canadian Economic Observer*, *Historical Statistical Supplement*, catalogue no. 11-210-XPB; robbery rates from Statistics Canada, *CANSIM Database*, matrix 2200.

example, consistently has the lowest robbery rate and the lowest overall crime rate in the country, and also has the highest unemployment rate. However, within each province over time, there is a significant enough correlation between unemployment rates and robbery rates, even to the extent of following temporary short-term fluctuations in the business cycle, that the relationship warrants serious attention.

											% Incr in
									NS as a		Compa-
			Violent			Violent			% of	Yrly	rison
	Inci-	Pop.	Crime	Inci-	Pop.	Crime	1962	1962	Can	% •	To
Data	dents	(000s) Corr	Rate	dents	(000s) NG	Rate	=100 Com	=100 NG	Crime	Incr	1962, NS
1062		10502		1904	746	242		100	110	113	IND
1902	41020	18385	221	2021	740	242	100	100	100	11.2	11.2
1905	4/229 54760	10200	249	2021	755	209	113	111	108	25.0	20.1
1964	59790	19290	284	2539	755	227	129	139	118	25.0	39.1
1965	58/80	19644	299	2549	/50	2(9	150	159	115	0.3	59.4
1966	69386	20015	34/	2783	/56	368	157	152	106	9.2	52.2
1967	//614	20378	381	2723	/60	358	1/3	148	94	-2.7	48.2
1968	87544	20071	436	2991	767	390	198	161	89	8.8	61.3
1969	95084	21001	453	3232	775	417	205	172	92	6.9	72.5
1970	102358	21297	481	3391	782	434	218	179	90	4.0	79.3
1971	108095	22026	491	3505	799	439	222	181	89	1.2	81.4
1972	110468	22285	496	3294	804	410	225	169	83	-6.6	69.4
1973	117760	22560	522	3492	814	429	236	177	82	4.7	77.4
1974	126053	22875	551	3664	820	447	250	185	81	4.2	84.8
1975	135424	23209	583	3918	828	473	264	196	81	5.9	95.7
1976	136935	23518	582	4095	837	489	264	202	84	3.4	102.3
1977	135745	23796	570	4076	841	485	258	200	85	-0.9	100.4
1978	138972	24036	578	4401	846	520	262	215	90	7.3	115.1
1979	147528	24277	608	4437	851	521	275	216	86	0.2	115.6
1980	155864	24593	634	4742	855	555	287	229	88	6.4	129.3
1981	162228	24900	652	4793	856	560	295	232	86	1.0	131.5
1982	168646	25202	669	4914	862	570	303	236	85	1.8	135.7
1983	172315	25456	677	5115	871	587	307	243	87	3.0	142.8
1984	179397	25702	698	5161	880	586	316	243	84	-0.1	142.5
1985	189822	25942	732	5203	888	586	331	242	80	-0.1	142.3
1986	204917	26204	782	5509	892	618	354	255	79	5.4	155.4
1987	219381	26550	826	5902	896	659	374	272	80	6.7	172.4
1988	232606	26895	865	6352	900	706	392	292	82	7.1	191.9
1989	248579	27379	908	7034	907	776	411	321	85	9.9	220.7
1990	269503	27791	970	7830	913	858	439	355	88	10.6	254.6
1991	296962	28120	1056	9108	918	992	478	410	94	15.7	310.3
1992	307512	28542	1077	10130	925	1095	488	453	102	10.4	352.9
1993	310201	28941	1072	9874	931	1061	485	439	99	-3.2	338.6
1994	303398	29251	1037	10187	934	1091	470	451	105	2.8	351.0
1995	294603	29606	995	10239	938	1092	451	451	110	0.1	351.4
1996	291437	29671 9	982	10548	931.2	1133	445	468	115	3.8	368.4
1997	296737	30004	989	10153	936.3	1084	448	448	110	-4.3	348.4

Table 5.2: Violent Crime Rate per 100,000 Population



Chart 5.4: Violent Crime Rate, Nova Scotia and Canada, 1962-1997





<sup>&</sup>lt;sup>86</sup> See footnote on this issue in Section 5.2 above. Percentage derived by dividing crimes by population.











Chart 5.8: Serious Violent Crimes, Nova Scotia, Canada, U.S.A., 1993-1997

Sources: Statistics Canada, FBI Crime Statistics, N.S. Department of Economic Development and Tourism. In particular, we are grateful to Mr. John Odenthal, senior policy analyst in the N.S. Department of Economic Development and Tourism, for his assistance in identifying comparable crime categories for purposes of this comparison.

<b>Table 5.3:</b> ]	Increase in	Homicide <b>H</b>	Rate, Car	ada and	Nova So	cotia, i	1962-67 to	1992-97
---------------------	-------------	-------------------	-----------	---------	---------	----------	------------	---------

	Canada	Nova Scotia
1962-67: Av. Rate /100,000	1.19	1.06
1992-97: Av. Rate /100,000	1.91	1.88
Percentage increase	61%	78%

Chart 5.9: Robbery Crime Rate, Canada and Provinces, 1962 - 1997 (Rate per 100,000 population)



Chart 5.10: Increase in Robberies, Canada and Nova Scotia, 1962 – 1997 (Rate per 100,000 population)



	Can	ada	Nova Scotia			
	<b>Robbery Rate</b>	Unemployment	<b>Robbery Rate</b>	Unemployment		
	(per 100,000)	Rate	(per 100,000)	Rate		
1962-69	33.6	4.0%*	16.0	4.9%*		
1970-79	68.1	6.7%	32.8	8.1%		
1980-89	93.3	9.3%	38.3	11.8%		
1992-97	105.7	10.0%	41.6	12.5%		

# Table 5.4: Robbery Rates and Unemployment Rates, Canada and Nova Scotia,1962 – 1997 (Average Rates by Decade)

Sources: Statistics Canada, ESTAT and CANSIM databases.

NOTE: Unemployment rates are averaged for the years 1966-69, the earliest available on Statistics Canada's *ESTAT* and *CANSIM* databases.

#### 5.3 Trends in Property Crime

Property crime rates in Nova Scotia have remained consistently below the Canadian average, but the gap has been closing as the provincial rate of increase in property crimes exceeds the national average. The Nova Scotia property crime rate was 62% of the Canadian rate in 1962, 60% in 1972, 72% in 1982, and 82% in 1997 (Table 5.5 and Chart 5.11). As in other categories of crime, there is a gradual convergence towards the national average. For the most serious of property crime categories, break and enter, the Nova Scotia rate was 67% of the national average in 1962 and 79% of the national average in 1997.<sup>87</sup>

The official Nova Scotia property crime rate has fallen by nearly 20% since 1990 and by 26% from its 1991 mid-recession peak, but it has leveled off since 1994 and is still 340% higher than it was in 1962. The Canadian rate is 257% higher than it was in 1962. For police-recorded crimes, the chances of being a victim of property crime in Nova Scotia were one in 25 in 1997, compared to one in 86 in 1962, and one in 21 nationwide today (Chart 5.12).<sup>88</sup>

As mentioned earlier, higher reporting rates probably account for part of this increase, but it is difficult to estimate an actual percentage. The 1988 and 1993 General Social Survey victim surveys indicate that overall victimization rates for theft of personal property (including both reported and unreported crimes) fell by eight percentage points, while reported thefts rose by just under 1% during the same period, an indication of higher rates

<sup>&</sup>lt;sup>87</sup> Crime incidents from Statistics Canada, *CANSIM Database*, matrix 2200; population statistics used to calculate crime rates over time from Statistics Canada, *CANSIM Database*, matrix 1.

<sup>&</sup>lt;sup>88</sup> See footnotes at sections 5.1 and 5.2 above on calculation of "chance of being a crime victim".

of reporting.<sup>89</sup> There are no comparable victim surveys for the 1960s and 1970s, so it is impossible to judge what percentage of the official property crime increase during this period is due to reporting cases that were previously not reported.

The 1996 International Crime Victimization Survey found that property crimes and car theft generally have high rates of reporting, partly for insurance reasons.<sup>90</sup> More dramatic changes in reporting rates have likely occurred for assaults and sexual assaults, which traditionally have the lowest rates of reporting. The increase in the property crime rate over time is therefore probably subject to a less severe discount than the violent crime rate increase.

The official violent crime rate in Nova Scotia has increased by 445% since 1962, while the official property crime rate has increased by 340%. A significant part of the difference between the two rates is probably due to increased reporting rates for assaults and sexual assaults, while the property crime reporting rate has probably changed less dramatically.

Among the provinces Nova Scotia has just the 7<sup>th</sup> highest rate of property crime in the country and only half the rate of front-runner British Columbia, but Nova Scotia's rate of increase has been the 4<sup>th</sup> fastest in the last 20 years (Chart 5.13). Among crime categories, the Nova Scotia official police-reported crime rate for break and enter was 3.3 times as high in 1997 as in 1962, 3.4 times as high for theft, 2.9 times as high for motor vehicle theft, and 6.4 times as high for fraud (Chart 5.14). Once again, the numbers probably need to be discounted somewhat for changes in reporting rates.

In actual numbers of reported incidents, there were more than four times as many thefts and break and enter incidents in 1997 as there were in 1962, 3.4 times as many motor vehicle thefts, five times as many robberies, and eight times as many reported frauds.<sup>91</sup> Even if higher rates of reporting account for a portion of the change, this dramatic long-term increase may help explain why public perceptions have not yet adjusted to the decline in crime since 1991, and why fear of crime remains high.

It is worth recalling here that these property crime rates refer almost exclusively to "street crime." As noted earlier, estimates of corporate crime are not included in this study, because of data and reporting difficulties, except for the rare cases where such incidents are prosecuted. While half the top 1,000 Canadian companies reported being victims of fraud, the vast majority of incidents remain unreported. Internal corporate fraud investigations should also be counted as a crime cost, but are also excluded in this study.

<sup>&</sup>lt;sup>89</sup> The authors wish to acknowledge the assistance of Paul Smith, Coordinator of Research and Planning, Nova Scotia Department of Justice, on the complex issue of reporting rates.

<sup>&</sup>lt;sup>90</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective," *Juristat,* catalogue no. 85-002-XPE, volume 18, no. 3, 1996.

<sup>&</sup>lt;sup>91</sup> Note that robbery is officially classified as a crime against the person rather than against property, but is included here for illustrative purposes.

									NS as
		Pon.			Pon.		1962=	1962=	a % of Can
	Incidents	(000s)	Crime rate	Incidents	(000s)	Crime rate	100	100	Crime
Date	Canada	Canada	Canada	NS	NS	NS	Canada	NS	Rate
1962	351483	18583	1891	8714	746	1168	100	100	62
1963	387517	18931	2047	10403	751	1385	108	119	68
1964	414048	19290	2146	10937	755	1449	114	124	67
1965	410688	19644	2091	11108	756	1469	111	126	70
1966	451980	20015	2258	11199	756	1481	119	127	66
1967	506151	20378	2484	11109	760	1462	131	125	59
1968	584996	20071	2915	13508	767	1761	154	151	60
1969	655304	21001	3120	15369	775	1983	165	170	64
1970	748519	21297	3515	16203	782	2072	186	177	59
1971	801379	22026	3638	17400	799	2178	192	186	60
1972	807468	22285	3623	17367	804	2160	192	185	60
1973	833148	22560	3693	18528	814	2276	195	195	62
1974	946793	22875	4139	21281	820	2595	219	222	63
1975	1041036	23209	4485	25493	828	3079	237	264	69
1976	1062952	23518	4520	27730	837	3313	239	284	73
1977	1059688	23796	4453	27050	841	3216	235	275	72
1978	1097242	24036	4565	27641	846	3267	241	280	72
1979	1186697	24277	4888	30279	851	3558	258	305	73
1980	1334619	24593	5427	32122	855	3757	287	322	69
1981	1429520	24900	5741	35657	856	4166	304	357	73
1982	1466923	25202	5821	36338	862	4216	308	361	72
1983	1422703	25456	5589	34586	871	3971	296	340	71
1984	1408663	25702	5481	36339	880	4129	290	354	75
1985	1408717	25942	5430	37444	888	4217	287	361	78
1986	1448550	26204	5528	39174	892	4392	292	376	79
1987	1468591	26550	5531	39480	896	4406	293	377	80
1988	1457361	26895	5419	39448	900	4383	287	375	81
1989	1443048	27379	5271	39293	907	4332	279	371	82
1990	1554348	27791	5593	43828	913	4800	296	411	86
1991	1726769	28120	6141	48223	918	5270	325	451	86
1992	1674773	28542	5868	44268	925	4786	310	410	82
1993	1599037	28941	5525	40221	931	4320	292	370	78
1994	1524931	29251	5213	37915	934	4059	276	348	78
1995	1549877	29606	5235	37738	938	4023	277	344	77
1996	1555800	29672	5193	37880	931	4068	275	348	78
1997	1458930	30004	4862	37177	936	3971	257	340	82

 Table 5.5 Property Crime Rate per 100,000 Population

#### 5.3.1 Motor Vehicle Theft: An Illustration of Eroding Advantage

Trends in motor vehicle theft illustrate the advantage that the Atlantic provinces still enjoy in lower property crime rates, and also the fact that this advantage may be eroding. Motor vehicle theft is also a useful illustration because reporting rates are traditionally high for this crime category due to insurance theft claims, and are unlikely to change significantly over time.

The four Atlantic provinces still have the lowest rate of motor vehicle theft in the country. Nova Scotia's rate, though the highest in Atlantic Canada, is still less than half the Canadian average. In 1995, 9 out of very 1,000 Nova Scotian vehicle owners had a vehicle stolen, compared to 18 out of 1,000 in Canada, 21 in France, 22 in the USA and 33 in England.<sup>92</sup>

Based on motor vehicle thefts (MVT) per 100,000 registrations, the Nova Scotia rate of motor vehicle thefts has actually fallen by 9 per cent since 1975, while nationally there has been an increase of 36%. In 1977 the Nova Scotia motor vehicle theft rate per 100,000 vehicle registrations was 77 per cent of the national rate, and only 33% in 1994.

Since 1994, however, the rate of motor vehicle thefts has been rising steeply, and it is now 46% of the national average. There were 2558 incidents of motor vehicle theft in Nova Scotia in 1997, the highest annual total on record, and the highest rate since 1979. In the last few years, the Nova Scotia motor vehicle theft rate has risen considerably faster than the national rate. From 1994 to 1997 it increased by 50% compared to 8% nationwide. Canada even experienced a decline in its vehicle theft rate in 1997, the first decrease in a decade.

In 1996 alone, the rate of increase in vehicle thefts was 30% in Nova Scotia, the largest jump in the country. Halifax had the largest increase of any Canadian city, 59%, followed by St. John at 58%.<sup>93</sup> In fact, 64% of Nova Scotia motor vehicle thefts are committed in Halifax. The overall trends illustrate a quality of life advantage still enjoyed in this region, and one that has been eroding rapidly in recent years. The substantial advantage of a motor vehicle theft rate less than half the national average is important for the business climate as well as for personal security and cost savings. Recent trends indicate that this advantage must be actively protected if it is not to slip away.

The conclusion is the same for trends in other categories of reported property crime. The Nova Scotia rate for break and enter incidents was 67% of the Canadian rate in 1962 but 79% in 1997. The Nova Scotia theft rate was 64% of the national average in 1962, and

<sup>&</sup>lt;sup>92</sup> Statistics Canada, Canadian Centre for Justice Statistics, Julie Sauve, "Motor Vehicle Theft in Canada, 1996", *Juristat*, catalogue no. 85-002, volume 18, no. 1, January, 1998, page 2.

<sup>&</sup>lt;sup>93</sup> John Turner, Chief, Policing Services Program, Canadian Centre for Justice Statistics, recommends that inter-city comparisons be done using Census Metropolitan Area (CMA) data (personal communication, 6 April, 1999). We shall make an effort to adjust these data in this way prior to publication. Table 6.4, comparing overall crime rates in Canadian cities, does use CMA data.

95% of the national average in 1997. In cases of reported fraud, Nova Scotia has already surpassed the national average. In 1962, Nova Scotians committed fraud at 40% of the Canadian rate, and at 128% the Canadian rate in 1997 (Chart 5.14), though this category has wide discretionary powers in reporting and laying of charges.

There is no evidence to demonstrate that reporting rates have changed more dramatically in the Maritime provinces than in the rest of Canada. Therefore, even if higher rates of reporting qualify the absolute rates of increase in police-reported crimes, they do not explain the *relative* narrowing of the gap between this region and the rest of the country.



#### **Chart 5.11: Nova Scotia Property Crime Rate as Percentage of Canada Property Crime Rate**

#### Chart 5.12: The Percentage Chance of Being a Victim of Property Crime<sup>94</sup>, Police-Reported Property Crimes, Canada and Nova Scotia, 1962-1997



Chart 5.13: The Rise in the Property Crime Rate Across Canada



<sup>&</sup>lt;sup>94</sup> See footnotes on calculation of "chances of being a crime victim" in sections 5.1 and 5.2 above.













#### **Motor Vehicle Theft**



**Break and Enter** 

## 5.4 A Depreciating Asset

In sum, police-reported crime rates overall have declined by 15% since peaking at the height of the recession in 1991, but they are still much higher than they were 35 years ago, as are unemployment rates. While part of the increase is undoubtedly due to higher reporting rates for some crimes, there is also no doubt that the chances of being a crime victim both in Nova Scotia and in Canada as a whole have risen markedly in the last four decades.

As noted in chapter 2, the official statistics must be qualified by the higher reporting rates in some crime categories. A higher propensity to report sexual assault, domestic violence and common assault, for example, may be regarded as a refusal to tolerate levels of violence once accepted. To the extent that higher official crime rates reflect increased reporting, the trend may actually signify movement towards a more civil society. Only regular victim surveys can reveal the extent to which reporting rates affect the official police-reported statistics.<sup>95</sup>

Despite this major caveat, it is clear that crime rates and crime costs have risen substantially. The three-fold increase in robberies, where reporting rates are unlikely to have changed significantly, is indicative of the scale of the crime increase nationwide. It is difficult to interpret this in any other way than as a decline in the quality of life.

Our growing material wealth has occurred at the expense of a significant loss in personal security and social peace and harmony. Expressed in economic terms, that loss represents a depreciating asset that is producing higher costs and a loss of services, just as the gradual depreciation of a produced capital asset like factory machinery will show up years later as increasing inefficiencies and a decline in economic production.

Chapters 7 to 11 begin to document these growing economic costs, which are undermining our wealth and prosperity. The first step in arresting this depreciation is to stop adding crime costs to the GDP as if they were actual contributions to economic growth. That is a dangerous illusion that confuses apparent short-term gain for long-term loss and that prevents the development of meaningful social policy. The second step is to begin reinvesting in a valuable asset – the existence of a peaceful and secure society – by devoting resources to eliminating some of the major causes of crime.

The identification of crime costs in this study is intended as a contribution to the first step. Identifying and documenting the costs of crime as what they really are – costs and liabilities, rather than economic stimuli, is a challenging reality check that may initially be unpleasant. But it is also a salutary and liberating step that can lead to a reaffirmation of fundamental social values and a new commitment to measuring and valuing "that

<sup>&</sup>lt;sup>95</sup> An important move in this direction has been taken in Nova Scotia since 1996 with annual victim surveys undertaken by Corporate Research Associates and commissioned by the N.S. Department of Justice.

which makes life worthwhile," in Robert Kennedy's words. Recognizing and acknowledging the problem honestly is necessary before remedial action can occur. With benchmarks of genuine progress in place, policy priorities will naturally change and social policy will respond to signals from the valuation system.

Nova Scotia and the other Atlantic provinces are well placed to take the lead in this process, because they are temporally less distant from a time when these values were stronger. As recently as 25 years ago Nova Scotia's crime rate was less than two-thirds the Canadian average. But this "comparative advantage" has eroded, as the rate of crime increase in Atlantic Canada has far exceeded the national average, and Nova Scotia's overall reported crime rate stands today at 98% of the Canadian rate.

As noted, common assault accounts for most of the increase, and the region retains a significant advantage when serious violent crimes and property crimes are considered, with offence rates still substantially below the Canadian average. However, since reporting rates are not likely to have changed more in one part of the country than another, it is difficult to escape the conclusion that the overall crime trends demonstrate a gradual convergence towards the national average.

This is one area where convergence towards the national average is clearly not what this region needs for its development, nor is it the type of "growth" we want to encourage. But the memory of a more peaceful, secure and harmonious society is recent enough that the political and social will may still be present to reverse the discouraging trends of the last 30 years, and to seek a more balanced path of development that more accurately reflects the region's inherent strengths and genuine values. From the GPI perspective, such a path will be a more effective guarantor of future stability, well-being and prosperity than adherence to the narrow materialist and consumer ethic reflected in our current accounting system.

# 6. Social & Demographic Characteristics

The basic purpose of this study, as explained at the beginning, is to establish an accounting framework that recognizes the costs of crime as losses rather than gains to the economy, in contrast to the existing system of economic accounts that recognizes only quantitative growth as a contribution to prosperity. The GPI distinction between social assets and liabilities necessarily relies on a cost-benefit approach to accounting that can eventually be very useful in assessing the cost-effectiveness of alternative policy options aimed at reducing crime.

However we do not claim to be at that stage, and this study is primarily concerned that the macro-economic accounting framework send accurate signals to policy makers about overall trends in the quality of life. As such, an accurate index of progress should go up when crime rates go down and decline when crime rates rise. Because market statistics dominate the policy arena, the GPI goes a step further and translates the costs of crime into economic terms.

Nevertheless, crime is not an independent variable, but is highly correlated with particular social and demographic characteristics. In particular, high rates of crime are associated with gender, substance abuse, recidivism, unemployment, low education, and age. Understanding these correlations is particularly important in eventually identifying cost-effective investments that can reduce crime rates and produce long-term social savings.

No claims are made in this study for any detailed analysis of these correlations, and nothing that follows should naively imply that crime is *caused* by any of these social and demographic characteristics. We have already noted, for example, that the high correlation between crime trends and unemployment rates over time cannot be taken as a causal relationship in any absolute sense, as the high unemployment and low crime rates in Newfoundland attest.

With these caveats and qualifications, it is still necessary at least to list briefly the major socio-demographic correlations that do exist, both in order to demonstrate the dependent nature of crime, and to point to future policy-relevant uses of the cost-benefit approach on which the GPI is based. Social programs targeted in particular areas may have a significant crime prevention function while producing other social benefits. It is therefore an economically prudent strategy to identify such "no-regrets" measures that improve work skills, productivity and performance, raise educational levels, reduce social service costs and increase the tax base, while reducing crime at the same time.

## 6.1 Gender

85% of adult criminal court cases in Nova Scotia involved males, and 95% of those incarcerated are male.<sup>96</sup> In 1996 just five per cent of admissions to Nova Scotia jails were female, a figure that has remained fairly constant over the last two decades. Nationwide more women are being imprisoned, and the female share of total admissions to provincial jails has risen from five per cent in 1978 to nine per cent in 1996.<sup>97</sup> In federal prisons 98% of inmates are male, indicating that men overwhelmingly commit the most serious crimes.

Between 1986 and 1997 women committed only 13% of all criminal code violations, 10% of violent crimes, 7% of robberies, and just 5% of break and enters and motor vehicle thefts. In every criminal category men significantly outscore women (Table 6.1).

From an economic perspective this effectively means that women are subsidizing the costs of crime committed by men, even though Nova Scotian women working full-time earn only 66 cents on average to the male dollar.<sup>98</sup> Female tax dollars pay for prisons and police, and women bear substantial costs of victim losses, theft insurance, higher prices due to crime, and home security expenditures -- costs incurred largely because of male crimFrom the GPI perspective, women would have a case for arguing for a public justice tax rebate in proportion to their lower crime rates.

One positive gender-related aspect of crime that may be reflective of a more civil society is the higher propensity to report sexual assault, domestic violence and spousal abuse to police. Higher reporting rates for these crimes indicate that levels of violence once tolerated are no longer socially acceptable. As noted, this is one instance where higher official crime rates are not indicative of a depreciating social asset, but rather of higher social standards.

 <sup>&</sup>lt;sup>96</sup> Statistics Canada, Canadian Centre for Justice Statistics, Denyse Carriere, "Adult Criminal Court Statistics, 1996-97", *Juristat*, catalogue no. 85-002, volume 18, no. 7, April, 1998, page 1; Statistics Canada, Robinson, David, et. al., "A One-Day Snapshot of Inmates in Canada's Adult Correctional Facilities," *Juristat*, catalogue no. 85-002, volume 18, no. 8, gives the male percentage as 96%.
 <sup>97</sup> Statistics Canada, *Number of Admissions to Provincial facilities*. Cansim Matrix 318

<sup>&</sup>lt;sup>98</sup> Statistics Canada, *Women in the Workplace*, 2<sup>nd</sup> edition, catalogue no. 71-534, page 42.

Adults Charged by Actual Offences, 1986-1997. <sup>99</sup>									
	Female 1997	Female Total: 1986-97	Male 1997	Male Total: 1986-97					
All Offences, Total	2438	37334	11423	256346					
Criminal Code, Total	2302	28036	10387	128303					
Crimes Of Violence	501	3558	3221	29825					
Murder	4	31	10	128					
Attempted Murder	3	20	7	108					
Manslaughter	1	2	1	14					
Robbery	9	97	137	1390					
Property Crimes	1353	18308	3693	53814					
Breaking & Entering	67	660	886	12960					
Theft-Motor Vehicle	14	133	205	2569					
Theft	754	12242	1810	26170					
Frauds	503	5022	608	9792					

Table 6 1. Crimes by Conder Nove Scotia 1007 and 1086 1007

#### 6.2 Drugs

Studies indicate that 80% of offenders in Canada have used psychoactive substances; that 50-75% had drugs in their urine at the time of arrest; that 30% were actually under the influence when charged; and that 30-50% of prison inmates have drug-dependency problems.100

Time did not permit further exploration of this important correlation, but provocative studies have been undertaken relating substance abuse and addiction in general to crime.<sup>101</sup> The explosive growth of the gambling industry in North America creates an incentive for further exploration of the links between gambling addictions and crime.

<sup>&</sup>lt;sup>99</sup> Statistics Canada, Cansim Disc 1998-2, Cat. No. 10F0007XCB, Matrix 2198: Adults Charged by Actual Offences, Canada, Provinces & Territories.

<sup>&</sup>lt;sup>100</sup> Brochu, Serge, "Estimating the Costs of Drug-Related Crime", CCSA web site, http://www.ccsa.ca/brochu.htm

<sup>&</sup>lt;sup>101</sup> A 1997 report by the Canadian Centre for Substance Abuse, for example, reported lost potential production worth \$18.5 billion a year due to substance abuse. Certainly a percentage of that is attributable to activities defined as criminal under the Criminal Code.

#### 6.3 Previous Convictions

Statistics Canada's "One-Day Snapshot" of inmates revealed that 83% had at least one previous adult conviction.<sup>102</sup>72% of Canadian inmates have served a prior term of provincial incarceration. The "Snapshot's" profile of 401 inmates in Nova Scotia adult correctional facilities, who had been convicted of a "crime against the person," showed that 82% had one or more prior convictions.<sup>103</sup> The latter sample clearly refers to prisoners convicted of more serious offences, rather than those found guilty to non-violent property crimes. Recidivism rates are not regularly maintained, although they are potentially important indicators of the effectiveness of prisons and rehabilitation programs.

In 1954 only 18% of Nova Scotia inmates had a previous conviction. That figure rose steadily through the 1950s when provincial data on prior conviction rates were maintained annually, until 1961 when 36% of inmates had a previous conviction. In other words, the percentage doubled in less than a decade. While data for the intermediate years are not readily available, 55% of Nova Scotia inmates currently incarcerated have served a prior term of incarceration.<sup>104</sup>

But this does not necessarily mean that a higher percentage of offenders are re-offending than previously. As with reporting rates, the statistics may be conveying a double message, and may be telling us more about trends in sentencing than about the propensity to re-offend. Paul Smith of the N.S. Justice Department correctly points out that the tendency to keep less serious offenders out of prison and to seek alternative forms of sentencing means that only those with a fairly significant criminal record are likely to receive a custody term. This is particularly true in Nova Scotia, which has the lowest incarceration rate in the country.

Thus, higher rates of inmates with prior convictions may simply reflect that those guilty of minor offences with no previous records are less likely to go to jail than previously. New legislation and amendments to earlier laws have actually created more non-prison sentencing options and kept more first-time offenders out of jail. By the time an offender actually ends up in prison, he is likely to have accumulated quite a criminal record. This will show up in the statistics as a high proportion of inmate with prior convictions.<sup>105</sup>

GPI Atlantic recommends that provincial recidivism rates be published annually in order to assess the extent to which increases in the number of inmates with prior convictions

<sup>&</sup>lt;sup>102</sup> Statistics Canada, Robinson, "Snapshot", op. cit., Shelley Trevethan, Chief, Corrections Program, Canadian Centre for Justice Statistics, cautions that the percentage is based on data that were available at the time (personal communication, 6 April, 1999).

<sup>&</sup>lt;sup>103</sup> Statistics Canada, A One-Day Snapshot of Inmates in Canada's Adult Correctional Facilities, Nova Scotia, catalogue no. 85-601, page 121.

<sup>&</sup>lt;sup>104</sup> The 55% prior incarceration statistic is supplied by Paul Smith, N.S. Department of Justice, personal communication, March 17, 1999.

<sup>&</sup>lt;sup>105</sup> Robert Roe, Senior Policy Analyst, N.S. Department of Justice, personal communication, 18 March, 1999.

reflect changes in sentencing, and whether a higher or lower proportion of criminals are re-offending after release. It would be helpful to present such recidivism data according to number of offenders as well as number of inmates. These data seem to be critical to any analysis of the success or failure of alternative sentencing options and rehabilitation programs.

#### 6.4 Employment Status

Regression analyses conducted by the Canadian Centre for Justice Statistics demonstrate a strong statistical link between crime and unemployment.<sup>106</sup> In a 1984 study prepared for the U.S. Joint Economic Committee, Harvard University epidemiologist Harvey Brenner in 1984 found that a 14.3% increase in the U.S. unemployment rate (from 4.9% to 5.6%) from 1973 to 1974, was associated with 403 additional homicides and 7,000 additional assaults in that country, with many of the effects spread over a period of six years.<sup>107</sup> Caution must clearly be exercised in implying causal relationships, as demonstrated below, and this study does not attempt to explore the association for Nova Scotia beyond the presentation of a few suggestive statistics.

52% of Canadian prison inmates and 59% of Nova Scotian inmates were unemployed at the time of admission to sentenced custody, five times the unemployment rate in the general population (Table 6.2). A Canadian Centre for Justice Statistics survey of inmates in Nova Scotia prisons found that 67% were unemployed at the time of admission to the correctional facility.<sup>108</sup> As demonstrated in Chapter 5, crime rates are also highly correlated with the business cycle and with unemployment rates over time.<sup>109</sup>

Unemployment rates and crime rates have risen sharply during each of the last two recessions, then dropped back during the business cycle upturn but not to pre-recession levels. Each decade, both unemployment rates and crime rates have risen substantially (Table 5.4). The chance of being a crime victim, as mentioned is earlier was four times greater in 1997 than in 1962, and the chance of being unemployed was three times greater. When official crime statistics are discounted for changes in reporting rates, the correlation is probably very close indeed.

<sup>&</sup>lt;sup>106</sup> Statistics Canada, Canadian Centre for Justice Statistics, *Criminal Justice Trends Canada from 1962: Corrections Program*, page 21.

<sup>&</sup>lt;sup>107</sup> Brenner, Harvey, *Estimating the Effects of Economic Change on National Health and Social Well Being,* a study prepared for the Subcommittee on Economic Goals and Intergovernmental Policy of the Joint Economic Committee, Joint Committee Print 98-198, U.S. Government Printing Office, Washington D.C., 1984; cited in Cobb, Clifford, Ted Halstead, and Jonathan Rowe, *The Genuine Progress Indicator: Summary of Data and Methodology,* Redefining Progress, San Francisco, September, 1995.

 <sup>&</sup>lt;sup>108</sup> Statistics Canada, Canadian Centre for Justice Statistics, *A One-Day Snapshot of Inmates in Canada's Adult Correctional Facilities*, catalogue no. 85-601, page 120. For Canada, the "Snapshot" shows 55% of provincial prisoners and 43% of federal prisoners unemployed at the time of admission.
 <sup>109</sup> Statistics Canada, Canadian Centre for Justice Statistics, *Criminal Justice Trends Canada from 1962;*

<sup>&</sup>lt;sup>109</sup> Statistics Canada, Canadian Centre for Justice Statistics, *Criminal Justice Trends Canada from 1962; Corrections Program,* page 21, reports "a strong statistical link between crime and unemployment" found from regression analysis, but no close association between unemployment and the number of persons actually charged with crime (page 23).

In addition to employment status, economic security may also affect crime rates. Among the unemployed, and especially among unemployed youth, economic insecurity is rising in proportion to the declining percentage eligible for employment insurance benefits. Only 15 per cent of unemployed Canadian workers aged 15 to 24 qualified for benefits in 1997, down from 55 per cent in 1989. In Nova Scotia, the percentage of unemployed youth receiving employment insurance benefits declined by 70%, from 66% in 1989 to 21% in 1997. Among unemployed adults of all ages in Nova Scotia, the percentage receiving benefits fell by 50% from 93% in 1989 to 48% in 1997.

As noted earlier, it is not possible to make an absolute correlation between unemployment status and the propensity to commit crime, as the case of Newfoundland, with the highest unemployment rate and the lowest crime rate in the country, clearly demonstrates. The correlation is strongest in *relative* terms, when trends over time *within* a particular jurisdiction are tracked over time. Crime rate peaks at the height of both the last recessions occurred in Canada as a whole and in almost every province.

Employment Status	1995-96	1996-97	1997-98
Full Time	23.6%	23.6%	21.6%
Other	1.3%	2%	2.2%
Part Time	1.5%	1.8%	1.6%
Seasonal	1.3%	1.5%	1.5%
Student	1.9%	1.3%	1.4%
Unemployed	57.4%	58.4%	58.8%
Unknown	12.8%	11.5%	12.9%
Total Admissions	2622	2134	1914

 

 Table 6.2: Employment Status at Time of Admission to Sentenced Custody, Nova Scotia; 1995-96 to 1997-98<sup>111</sup>

#### 6.5 Education

In Canada as a whole, only 19% of the population have less than a grade 10 education. But 36% of all inmates, 34% of provincial inmates, and 46% of federal prisoners, who are the most serious offenders, have less than a grade 10 education. A Canadian Centre

<sup>&</sup>lt;sup>110</sup> Canadian Labour Congress, *Left out in the Cold: The End of UI for Canadian Workers*, 1998; McCarthy, Shawn, "Just 36% of Jobless get UI: Tight Rules Blamed as Labour Study Finds Number of Recipients at Record Low," *The Globe and Mail*, Jan 27, 1999, P. A1 & A4.

<sup>&</sup>lt;sup>111</sup> Nova Scotia Justice Department, Policy, Planning and Research Division kindly supplied these data in personal correspondence, January, 1999. The table includes all persons sentenced to custody terms in Nova Scotia. It includes persons sentenced to provincial custody and federal custody.

for Justice Statistics survey of Nova Scotia prison inmates found that 42% had less than a grade 10 education, compared to 19% in the population as a whole.<sup>112</sup>Since offenders given sentences of two years or more serve their time in federal facilities, there appears to be a direct correlation between poor education and both overall crime rates and seriousness of offence. By contrast, crime rates appear to go down in direct proportion to level of education.<sup>113</sup>

In other words, people with jobs and a decent education are far less likely to commit crimes than those who are unemployed and poorly educated. While this certainly does not prove that unemployment and poor education *cause* crime, as many case studies demonstrate, the correlation does indicate that investments in job creation and education are likely to produce positive spin-off benefits in reduced crime.

### 6.6 Aboriginals

Aboriginals in Nova Scotia are jailed at four times their representation in the population. While they make up only 1.5% of the general population, they accounted for 6% of all admissions to custody in 1997-98. Of 3,318 admissions to provincial and federal custody and on remand, 199 were natives. Considering only provincially sentenced offenders, 5% were aboriginals in 1996 and 3.8% were in 1997-98.

This disproportion is in line with the rest of the country, where aboriginals accounted for 16% of prison admissions compared to a 3% general population share. In Saskatchewan, aboriginals are jailed at nearly seven times their share of the population. 74% of prisoners in that province are aboriginals, compared to an 11% population share.

Again, the correlation demonstrates that job creation and social support programs in aboriginal communities may be cost-effective investments that may reduce crime rates and crime costs while raising the standard of living and quality of life in general. Because the absolute number of aboriginal admissions to custody is small, such investments would certainly need to be justified primarily by their larger intended social and economic purposes and objectives, from a cost accounting perspective. But a full costbenefit analysis would certainly include the potential reduction in crime costs as a beneficial side effect of such programs.

<sup>&</sup>lt;sup>112</sup> Statistics Canada, Canadian Centre for Justice Statistics, *A One-Day Snapshot of Inmates in Canada's Adult Correctional Facilities*, catalogue no. 85-601, page 120.

<sup>&</sup>lt;sup>113</sup> Statistics Canada, Robinson, David, et. al., "A One-Day Snapshot of Inmates in Canada's Adult Correctional Facilities", *Juristat*, catalogue no. 85-002, volume 18, no. 8, pages 5 and 6. Shelley Trevethan, Chief, Corrections Program, Canadian Centre for Justice Statistics, points out that Statistics Canada has not actually stated that crime rates are proportional to level of education, so GPI Atlantic takes full responsibility for this inference (personal communication, 6 April, 1999).

#### 6.7 Is Crime an Urban / Metropolitan Problem?

The crime rate for Halifax for all reported criminal code offences was 9388 per 100,000 population in 1997, up slightly from 9198 in 1995.<sup>114</sup> This was actually lower than the reported rate in 16 other Nova Scotia municipal areas with smaller populations (Table 6.3: arranged according to percentage change in crime rates between 1986 and 1995). Clearly Halifax is not the only Nova Scotia jurisdiction with a crime problem. From the data in Table 6.3, there does not appear to be a direct correlation between crime rates and population size.

On the other hand, the victimization survey in Statistics Canada's 1993 General Social Survey found that when reported and unreported crimes are both considered, the nationwide results did reveal a difference between rural and urban areas. In that survey, 27% of urban residents and only 17% of the rural population reported that they were victims of crime in 1993.

Nationally, there is also no correlation between crime and population size. According to the official statistics, Halifax has the highest reported crime rate among major cities east of Winnipeg, including Toronto and Montreal, but less than most western cities (Table 6.4). Again the official numbers must be treated with caution. Whether city boundaries include only inner city areas or whether they include suburbs and even rural areas may affect reported crime rate statistics. For example, Vancouver's high crime rates compared to Toronto (consistently double the rate) may have a lot to do with their respective city boundaries. Similarly, differences in provincial and municipal police policies may affect reporting rates, since police discretion may vary widely.

<sup>&</sup>lt;sup>114</sup> These numbers are not strictly comparable due to the major boundary changes that have taken place as a result of amalgamation in the Halifax metropolitan region.

Criminal Code Offences <sup>115</sup>	Rate/100,000	Rate/100,000	% Change
	1986	1995	
Sydney Mines	6822	3080	-55
Windsor, Ns (Rcmp)	16361	12162	-26
Glace Bay	5296	4478	-15
Yarmouth (RCMP)	17667	15063	-15
Lunenburg	10677	9259	-13
North Sydney	8675	7577	-13
Sackville	6062	5828	-4
Berwick	12176	12783	5
Truro	15963	16943	6
Bridgewater	14357	15304	7
Springhill	5388	5791	7
Port Hawkesbury (RCMP)	8308	9098	10
New Glasgow	12804	14370	12
Kentville	10060	11717	16
Digby (RCMP)	18385	21636	18
Pictou (RCMP)	8283	10075	22
Liverpool (RCMP)	7909	9967	26
Oxford (RCMP)	5667	7143	26
Sydney	8919	11362	27
Blacks Harbour	4429	5727	29
Middleton	10053	15833	58
Stellarton	4204	8868	111
Trenton	4781	10517	120
Mahone Bay	4000	9818	145
Wolfville	6719	18132	170

<b>Fable 6.3: Crime Rat</b>	e: Nova Scotia	Municipal A	reas: 1986 - 1995
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<sup>&</sup>lt;sup>115</sup> Statistics Canada. <u>Criminal Justice at a Glance: Data Highlights from the Canadian Centre for Justice</u> <u>Statistics, 1997.</u> CD Rom. File: *Common Offences, Selected Municipal Areas, 1986-95.* 

СМА	1995	1996	1997	% Change 95-96	% Change 96-97
Toronto	7452	6920	6549	-7.14	-5.36
Montreal	7776	7981	7531	2.64	-5.64
Vancouver	14516	14868	13029	2.42	-12.37
Ottawa-Hull	10245	9045	7825	-11.71	-13.49
Edmonton	8573	8569	8836	-0.05	3.12
Calgary	7889	7843	7796	-0.58	6
Quebec	6082	6398	5664	5.2	-11.47
Winnipeg	10543	9829	10281	-6.77	4.6
Halifax	9198	9608	9388	4.46	-2.29
Victoria	12683	12014	11434	-5.27	-4.83
Saskatoon	10996	11638	12126	5.84	4.19
St. John's	6471	7526	7077	16.3	-5.97
St. John, NB	6822	7973	6980	16.87	-12.45

 Table 6.4: Crime Rate: Selected Census Metropolitan Areas: 1995 - 1997<sup>116</sup>

### 6.8 Age

A one-day survey of Canada's inmate population revealed that the median age of those on-register was 32 years old, (31 in provincial prisons and 34 in federal prisons), whereas the median age in the general adult population was 41. In Nova Scotia, the median age of inmates was 30, compared to the general population median of 42.Of those found guilty in adult criminal courts in Nova Scotia, 1995-96, 31% were aged 18-24, 32% 25-34, 21% 35-44, 9% 45-54, and 5% were aged 55 or over.<sup>117</sup> In other words, most criminals are relatively young.

It has been suggested that changes in the crime rate are partly dependent on changes in the number and proportion of young male adults in the population. Since crime is highly correlated with this demographic group, the aging of the Canadian population should produce a proportionate decline in the crime rate. We have tried to test this proposition with somewhat indeterminate results (Chart 6.1).<sup>118</sup>

<sup>&</sup>lt;sup>116</sup> Statistics Canada. *Canadian Crime Statistics*, 1995-97. Table 3.2.

<sup>&</sup>lt;sup>117</sup> Statistics Canada. Criminal Justice at a Glance: Data Highlights from the Canadian Centre for Justice Statistics, 1997. CD Rom. File: Adult Criminal Court – Most Serious Sentence, 1995-96.

<sup>&</sup>lt;sup>118</sup> The authors with to thank Dr. Don Clairmont, Department of Sociology, Dalhousie University, for recommending that this proposition be tested.



(Violent Crime and Property Crime Rates per 1,000 population)



It can be seen that the sharpest drop in the percentage of 15 to 34 year-old males in the Nova Scotia population has occurred in the last 10 years, and this may well be reflected in declines in the property crime rate in the 1990s, though the correlation is less clear for violent crime and for the 1980s as a whole. Also, the sharp increase in crime in the early 1990s occurred despite an ongoing drop in the proportion of young males in the population, and seems more highly correlated with the recession than with age factors.

Needless to say, both factors may work together, and high unemployment rates among male youth may produce the highest correlation with increased crime rates. This proposition needs to be tested further with regression analyses. Paul Smith's 1987 thesis did find that age-specific unemployment rates were linked to motor vehicle thefts.<sup>119</sup>

Nationwide, youth unemployment has remained steadily high since 1990 and has consistently been about 80% higher than for older groups. Youth unemployment reached 20% during the recession of the early 1980s and 18% during the 1990s recession. But unlike the 1980s, in which the recovery produced a steady drop in youth unemployment

<sup>&</sup>lt;sup>119</sup> Paul Smith, personal communication, 17 March, 1999.

to 11% in 1989, the economic recovery of the 1990s has not proportionately benefited youth. While overall unemployment rates fell during the 1990s, youth unemployment remained steadily high, averaging 17% in 1997, more than twice the rate for adults.<sup>120</sup>

As Statistics Canada notes:

Since the end of the last recession, the beneficiaries of employment growth have been adult men and women. Aside from a little spark around the end of 1994, youths' employment growth has yet to be rekindled.<sup>121</sup>

Among those who are employed, young workers have also experienced the greatest growth in temporary, part-time, and limited-term jobs, <sup>122</sup> and therefore have the highest rates of underemployment. Again, no simplistic correlations can be made with crime, but it is likely that combining age and gender specific data with employment characteristics will yield useful information.

Nova Scotia youth courts hear more cases than in the past, a trend that runs counter to that in the country as a whole. In 1996 3,549 Nova Scotia youth appeared in court, up from 3,078 in 1992.<sup>123</sup> Nationally the figure has dropped from 115,187 in 1992 to 110,065 in 1996. Though the number of Nova Scotia youth appearing in court has increased at a rate in excess of the national average, the overall rate of youth criminal cases is now about the same as the national average. It is noteworthy that the fastest rates of increase in youth arrests in Nova Scotia have been among the younger age groups, with court appearances by 14-year-olds up 93% since 1992, 15-year-olds up 42%, and 13-year-olds up 33% (Table 6.5).

	92	92	93	93	94	94	95	95	96	96	92-96	92-96
Age	Can	NS	Can %	NS %								
12	88	68	93	54	91	75	97	75	95	78	7	15
13	224	151	232	185	221	161	234	192	229	201	2	33
14	446	235	433	282	407	304	419	351	421	453	-6	93
15	615	384	630	427	577	443	581	570	589	545	-4	42
16	751	686	732	683	703	809	684	785	660	793	-12	16
17	781	816	773	779	720	755	712	834	677	706	-13	-14

Table 6.5: Cases Heard in Youth Court, Canada and Nova Scotia, 1992 – 199	6:
(Rate of youth court cases per 10,000 youth within each age group) <sup>124</sup>	

<sup>&</sup>lt;sup>120</sup> Statistics Canada, *Canadian Economic Observer*, catalogue no. 11-210-XPB, table 8, page 34.

<sup>&</sup>lt;sup>121</sup> Statistics Canada, *Perspectives on Labour and Income*, Autumn 1997, catalogue no. 75-001-XPE, p. 12.

<sup>&</sup>lt;sup>122</sup> Statistics Canada, *Perspectives on Labour and Income*, Winter, 1995, catalogue no. 75-001E, pp. 38-39.

<sup>&</sup>lt;sup>123</sup> Statistics Canada. <u>StatCan: CANSIM Disc, 1998-2</u>. Cat. No. 10F0007XCB. Matrix 8901: *Cases Heard* by Youth Courts, by Age of the Accused for Canada and the Provinces, Annual.

<sup>&</sup>lt;sup>124</sup> Statistics Canada. *StatCan: CANSIM Disc, 1998-2.* Cat. No. 10F0007XCB. Matrix 8901: *Cases Heard by Youth Courts, by Age of the Accused for Canada and the Provinces, Annual.* Matrix 6370: Population by Single Years of Age, Age Groups and Sex, for Nova Scotia, July 1. Matrix 6367: Population by Single Years of Age, Age Groups and Sex, for Canada, July 1. See Appendix on methodology.

The trend in youth court cases is worrying. If criminals learn their trade when they are young the overall crime rate in Nova Scotia looks set to increase, especially given the high recidivism rates noted above. Further research is needed to understand more about the socio-economic and demographic background of young offenders. In particular, it seems important to examine the relationship between child poverty and crime, and to determine whether the increase in child poverty rates in Nova Scotia is responsible in part for the higher numbers of children appearing in youth courts.

### 6.9 Marital Status

Single people are more likely to commit crimes than married people. The Canadian Centre for Justice Statistics survey of Nova Scotia prison inmates found that 55% were single, another 11% were separated or divorced, and only 33% were married. If assessed on a per capita basis against the proportions of the general population single, married and divorced, the disproportion is even more dramatic.

### 6.10 Television Violence

The effect of television and movie violence on crime is an extremely controversial topic beyond the scope of this study. Nevertheless, it would also be wrong to omit the fact that many citizens groups concerned to limit violence on television do claim that a correlation with crime exists. The following numbers are not intended to reach any conclusion on this subject, but simply acknowledge the arguments frequently made in the public arena.

Statistics Canada's General Social Surveys reveal that the average Canadian watches an average of 22.7 hours of television a week. The hours watched by teenagers have actually declined from 20.3 in 1986 to 17.1 in 1994, and by children from 22 to 17.7. The extent to which increased use of video games, which may be at least as violent as foregone television programs, has replaced TV is not clear. By the time Canadian children reach high school, most of them have seen between 10,000 and 15,000 hours of television. By age 18, the have seen an estimated half million commercials.

One study reports that by the time he or she leaves elementary school, the average Canadian child has witnessed 8,000 murders and 12,000 violent deaths on television. American studies report that the average American child watches more than one thousand murders, rapes, armed robberies and assaults on television each year, and that 90% of programs shown during children's prime viewing time contain violence.

The chairman of the U.S. FCC reports that hundreds of studies do show a "significant link" between exposure to TV violence and aggressive behaviour, and that studies comparing groups of children according to their television watching patterns find that
television accounts for a 5%-15% increase in levels of violence. 80% of surveyed Americans also believe that television is harmful to society, and especially to children.

In response to these concerns, "V-chips" have become available that can screen out violent programs. These devices increase the average cost of a television by up to \$30. This added cost is counted as an economic gain in the Gross Domestic Product and a sign of well-being in our conventional measures of progress. From the GPI perspective, the V-chip is a "defensive" expenditure, if not a direct cost of crime, that does not actually enhance welfare but protects against harm and prevents a decline in existing well being.

### 6.11 History of Abuse

A recent study profiling U.S. prisoners by the United States Justice Department's Bureau of Justice Statistics revealed that almost half the female inmates and 13% of jailed men in the U.S. have been abused sexually or physically at least once in their lives. More than a quarter of the women and 3% of the men said the abuse included rape. While comparable Canadian figures were not available to the authors at this time, the correlation is clearly worth investigating to give further clues to the origins of criminal behaviour.

### 6.12 Conclusion

From the above correlations, it is clear that poorly educated, unemployed, young, single males are the most likely socio-demographic group to commit crimes. A drug habit and a prior conviction increase the likelihood further.

While it is beyond the scope of this study to recommend specific policies to reverse the dramatic increase in crime in the last 36 years, the correlations noted in this section definitely point to areas for social investment likely to yield cost-effective solutions to high crime rates. For example, drug treatment and rehabilitation programs, as well as investments in education and job creation, particularly among youth and the Aboriginal population, are likely to be cost-effective investments that deal with some of the major social causes of crime. They will likely reduce crime costs and save money in the long-run while improving the quality of life in other areas simultaneously.

From the GPI perspective, long-term cost-benefit analyses can be useful in identifying cost-effective crime reduction strategies. For example, a Montreal study indicates that every dollar invested in residential drug treatment produces a seven dollar saving in crime costs. The Perry Pre-School Program in the United States found that a \$5,000 investment in early childhood education yielded a \$28,000 return in dividends to society, including reduced crime costs. And community supervision has proven more cost-effective for minor crimes in reducing recidivism than prison sentences. Recognizing correlations between crime and social-demographic characteristics is a necessary first step in such analyses and indicates where attention may be most usefully directed.

# PART III

# The Economic Costs of Crime in Nova Scotia

## **GPI**Atlantic

Chapters 7, 8, 9 and 10 address only the value of direct economic losses due to crime which are calculable in monetary terms. But there are also psychological costs, like the trauma of being violated. And there are clearly indirect consequences of crime. High crime areas may induce individuals to live elsewhere if they fear their possessions will be stolen, entailing moving expenses. Property values may decline, potential investors may be discouraged, and tourism may be affected if the likelihood of personal loss is high. Fear of violence, personal violation or theft may also restrict movement and reduce economic activity, particularly at nighttime. There is also an economic opportunity cost to foregone activities, and to the time and effort devoted to replacing stolen possessions, producing and installing security devices, and recovering from and fighting crime.

Because these and other indirect costs are not measured, the losses described in the next four chapters clearly understate the full economic impact of crime and are therefore described as "conservative" estimates. They estimate only:

- those direct victim losses due to property crime and violent crime that are calculable in monetary terms;
- public expenditures on police, courts and prisons; and
- individual defensive expenditures on security devices and crime prevention.

The conservative estimate omits some direct monetary losses for other crime categories, such as property damage to vehicles and hospitalization costs due to accidents caused by impaired driving – a criminal offence, and the economic and medical costs of "victimless" crimes like illegal drug use and prostitution.

Despite these limitations, the trends in victim losses, public expenditures on justice, and defensive expenditures over time provide an indicator of the economic impact of changes in the crime rate. They also demonstrate clearly that a decline in personal security and quality of life due to crime directly lowers the economic standard of living. And they demonstrate the absurdity of adding these costs to our official estimates of economic well-being and of assuming that any kind of growth signifies an increase in prosperity.

Because of the severe limitations of the conservative estimate in actually describing the full economic impact of crime, chapter 11 attempts to construct a more "comprehensive" estimate of crime costs, based on court awards for "shattered lives," and retail trade figures on "shrinkage" due to theft, which translates into higher consumer prices. Valuations of unpaid work from the first two modules of the Genuine Progress Index are also used to approximate some of the costs of activity loss due to crime. Even this "comprehensive" estimate clearly does not include many of the indirect costs of crime mentioned above.

In the chapters that follow, economic costs and potential savings are listed for each section separately. The cumulative total costs are given in the summary table in chapter one, along with total potential savings to Nova Scotia that would accrue if crime rates were still at 1962 levels. From the GPI perspective, which distinguishes economic activity that causes benefit from that which causes harm, these savings from lower crime rates would be available for more productive purposes like investments in education and public health.

## 7. Victim Property Losses

The cost estimates in this chapter represent the total value of direct victim property losses due to crime. Many of these losses are uncompensated and borne entirely by the victims. To the extent that they are compensated by insurance claims, the cost is borne by society in the form of theft insurance premiums. In order to avoid double-counting, only the difference between actual insurance claims and premiums will be listed separately under "defensive expenditures" in chapter 10.

As noted in chapter 5, Nova Scotia's property crime rate is still well below the Canadian average. While property crimes constituted 62% of total criminal code violations nationwide in 1997, they amounted to only 48% of Nova Scotia's 77,696 reported criminal code incidents.<sup>125</sup> In the course of these crimes it is estimated that Nova Scotians lost more than \$100 million in property and money, equal to the total production value of the entire forestry and logging industries in the province. In the last two decades Nova Scotians have lost more than two billion dollars in property and money due to crime, equal to a quarter of the provincial debt (Table 7.1).<sup>126</sup>

If reported property crimes had been at 1975 levels, Nova Scotians would have saved \$34 million in property and money in 1997. If crime had remained at 1962 levels, they would have saved \$80 million. If crime levels had remained at 1962 levels throughout the last 35 years, Nova Scotians would have saved a total of \$1.8 billion in direct property losses alone.

That substantial saving would have contributed to a higher quality of life and been available for more productive welfare-enhancing investments. Either the money was spent replacing lost property or it produced a direct decline in living standards. If it was invested in higher theft insurance premiums, it incurred an opportunity cost in lost investment opportunities that will adversely affect future generations. Rather like government budgets, the annual deficit caused by direct victim losses is enlarging the crime-related debt society carries.

<sup>&</sup>lt;sup>125</sup> Statistics Canada, Rebecca Kong, "Canadian Crime Statistics, 1997", *Juristat*, volume 85-002-XPE, volume 18, no. 11.

<sup>&</sup>lt;sup>126</sup> See Appendix for more detailed description of methodology. In sum, average loss per incident is derived from Brantingham, Paul and Stephen Easton, "The Crime Bill: Who Pays and How Much?", *Fraser Forum*, 1996, The Fraser Institute, page 23, which in turn derives its values for motor vehicle theft from the Insurance Corporation of British Columbia, and for other crimes from Statistics Canada, *Juristat*, volume 12, no. 5, 1981. Losses per crime are not available separately for the provinces, and it is therefore assumed that the national averages apply to Nova Scotia. Number of crimes in each category is from Statistics Canada, *Juristat*, volume 85-002-XPE, 1997. Monetary figures have been translated into 1997 dollars using Statistics Canada, *The Consumer Price Index*, volume 62-001, for Nova Scotia and Halifax. Forestry industry figures are from Statistics Canada, *Provincial Gross Domestic Product by Industry*, *1984-1997*, catalogue no. 15-203-XPB, page 20. NOTE that robbery is officially classified as a "violent crime" rather than a "property crime", but property losses due to robbery are included here in order to maintain consistency in this report.

Though Nova Scotians still have lower property losses due to crime, there has been a gradual decline in comparative advantage over time. Averaged out among *all* households, including those that were not victims of crime, direct victim losses in 1997 were \$297 per household in Nova Scotia compared to \$319 nationwide. In 1962 the loss was \$132 per household in Nova Scotia compared to \$205 in Canada as a whole. In other words, Nova Scotian households enjoyed a 36% economic advantage in reduced property crime losses compared to other Canadian households in 1962, but only a 7% advantage in 1997.<sup>127</sup>

Needless to say, *actual* average property losses for crime victims are about 10 times higher than these per household figures, and the overall erosion in Nova Scotia's crime-related quality of life advantage is considerably more dramatic when the other costs detailed in the following chapters are added to direct victim property losses.

These differences are hidden in our current accounting system. Strictly speaking, the narrowing of the income gap between Nova Scotians and other Canadians since 1962 should be adjusted at least to reflect the differences in household property losses due to crime. In other words, the good news is that Nova Scotians retain a direct income advantage in lower property crime losses. The bad news is that Nova Scotians are rapidly losing this advantage and will do so completely if current trends continue.

In Table 7.1 below, victim losses (in millions of 1997 dollars) are derived from the Solicitor-General's estimates on average losses per property crime in Canada, as follows:

- Theft: \$2,188;
- Mischief: \$655;
- Break and Enter \$2,370;
- Motor Vehicle Theft: \$3,728;
- Robbery \$2,934;
- Fraud \$3,625.

As noted in Chapter 4, these are the only values available at present. But they are based on national figures and are badly outdated. A comparison with comparable and more recent U.S. figures issued by the U.S. Federal Bureau of Investigation, reveals that the robbery and theft losses given here may be overestimated, while the motor vehicle loss is probably understated, and the break and enter losses are broadly comparable. Paul Smith, N.S. Department of Justice, concurs with these suppositions.

There is a pressing need for a provincial level victim survey that can determine average property losses for different crime categories. In the meantime, future updates of this report might wish to discount the values given here according to the ratio between average Nova Scotian and Canadian consumption levels (from Statistics Canada's *Family*)

<sup>&</sup>lt;sup>127</sup> Direct victim property losses (\$102.4 million in N.S. and \$3.5 billion in Canada) are divided by the number of dwellings (344,779 in N.S. and 10,899,427 in Canada) to derive losses per household. Dwelling counts are from Statistics Canada, *A National Overview: Population and Dwelling Counts*, catalogue no. 93-357-XPE, page 11, and from the 1961 census.

*Expenditure Survey*), or according to relative weekly salaries, since lower levels of affluence are likely to produce lower dollar theft losses. We have not done this here, in part because of the significant crime costs omitted from this study. As Chapter 4 notes, the probable overestimates in this section are more than compensated by the omissions, exclusions and underestimates elsewhere.

	Break & Enter	Motor Vehicle Theft	Robbery	Theft	Fraud	Vandalis m	Annual Total	Potential Savings '75	Potential Savings '62
1962	5.21	2.62	0.26	11.38	1.74	1.93	23.14		
1963	6.67	2.86	0.26	13.60	1.74	2.27	27.39		4.25
1964	6.93	2.91	0.28	14.45	1.82	2.44	28.84		5.70
1965	5.91	3.32	0.39	15.24	2.35	2.52	29.74		6.60
1966	6.22	2.81	0.32	15.70	1.93	2.58	29.55		6.41
1967	6.57	2.91	0.43	14.96	2.03	2.56	29.46		6.32
1968	7.37	3.45	0.43	18.78	2.65	2.93	35.60		12.46
1969	9.33	4.05	0.48	20.40	3.07	3.20	40.52		17.38
1970	9.56	3.40	0.39	22.28	3.23	3.43	42.29		19.15
1971	10.65	4.69	0.52	22.55	4.26	3.50	46.18		23.04
1972	11.26	4.71	0.69	21.98	4.13	3.33	46.10		22.96
1973	12.70	4.87	0.53	23.00	4.16	3.58	48.83		25.69
1974	14.02	5.41	0.93	26.98	5.07	4.17	56.58		33.44
1975	16.94	6.65	0.99	31.53	6.53	5.02	67.67		44.53
1976	18.62	7.07	1.02	34.20	6.46	5.78	73.15	5.48	50.01
1977	17.58	7.37	0.85	33.95	6.27	6.13	72.16	4.49	49.02
1978	17.51	6.84	1.07	35.30	7.35	6.48	74.55	6.88	51.41
1979	18.05	8.10	0.93	39.29	7.87	7.11	81.34	13.68	58.20
1980	19.89	7.93	1.21	41.57	8.02	6.72	85.34	17.68	62.20
1981	20.91	7.66	1.21	47.96	9.03	7.50	94.27	26.60	71.12
1982	19.54	6.22	1.10	50.55	10.78	7.40	95.61	27.94	72.47
1983	16.86	5.36	1.17	48.91	12.26	7.05	91.61	23.94	68.47
1984	18.05	5.28	1.08	51.28	12.81	7.08	95.58	27.91	72.43
1985	19.09	5.78	0.81	51.02	15.14	7.12	98.97	31.30	75.82
1986	20.41	5.86	0.67	53.38	15.17	7.51	103.00	35.33	79.86
1987	20.66	5.55	0.79	53.87	15.36	7.91	104.14	36.47	81.00
1988	20.34	5.50	0.91	54.06	15.20	8.31	104.31	36.65	81.17
1989	18.30	6.04	0.88	54.11	17.26	8.70	105.29	37.62	82.14
1990	22.40	6.55	0.88	59.27	17.76	9.10	115.96	48.29	92.82
1991	27.81	7.39	1.36	62.00	20.03	10.44	129.04	61.38	105.90
1992	25.27	7.03	1.36	56.76	19.21	9.70	119.33	51.67	96.19
1993	22.23	6.62	0.96	53.22	15.50	8.63	107.17	39.50	84.03
1994	20.79	6.23	1.09	49.77	15.30	8.10	101.29	33.62	78.15
1995	20.94	6.70	0.89	49.13	15.24	7.82	100.72	33.05	77.58
1996	22.52	8.98	1.27	47.26	14.28	8.42	102.74	35.07	79.59
1997	21.79	9.54	1.25	47.19	14.28	8.38	102.42	34.75	79.27
Total	578.91	204.28	29.70	1,346.87	335.26	214.86	2,709.88	669.30	1,876.78

Table 7.1: Direct Victim Losses due to Property Crime, Nova Scotia, 1962 – 1997(Millions of 1997 dollars)

## 8. Victim Losses: Violent Crime

This chapter will tabulate only those victim costs of violent crime that can be directly measured in monetary and market terms. These are of three types – direct monetary losses; hospitalization costs; and productivity losses. Clearly these do not come close to estimating the actual costs of violent crime, and must be regarded as extremely conservative.

For example, the loss of a human life is clearly far more costly in human and social terms than the economic loss of productive output. Even more seriously, the murder of an elderly person, age 65 or over, counts for nothing in this estimate since homicide assessments are in terms of economic productivity only. Future research on the lost consumption of victims may partially overcome this problem. As before, only reported crimes are counted. Non-hospital medical and drug costs, counseling costs and other expenditures are also excluded because accurate data are not currently available.

These limitations produce significant underestimates of victim costs due to violent crime. Chapter 10 strives to give a more accurate (if less precise) portrait of actual crime costs by including estimates for victim pain and suffering based on court awards.

### 8.1 Direct Monetary Losses due to Assault and Sexual Assault

Direct financial losses in money and possessions stolen from victims of assault and sexual assault amounted to more than \$600,000 in 1997 (Table 8.1). This represents a 450% increase in annual victim losses in real terms since 1962. A cumulative total of \$11.8 million worth of possessions has been stolen from victims of assault and sexual assault during this 36-year period. If the rate of victimization had remained at 1962 levels the potential savings in direct monetary losses due to assault would have been about \$8 million. And if the rate had remained at 1975 levels there would have been a saving of approximately \$4 million.<sup>128</sup>

<sup>&</sup>lt;sup>128</sup> Solicitor-General of Canada, *Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims*, 1985, page 3. This report notes that a dollar loss occurred in 32% of sexual assault incidents and 18% of assaults, and that the mean net dollar loss (after recovery) for those incidents where an economic loss took place was \$266 for sexual assault incidents and \$224 for assaults (\$372 and \$314 in 1997 dollars). These ratios and losses are applied to the number of reported incidents to construct the table that follows. See Appendix for more details.

<b>Table 8.1: Direct Victim Monetary Losses</b>	s due to Assault and Sexual Assault, Nova
Scotia, Constan	t 1997\$, (\$000s)

Date	Estimated \$ Loss: Sexual	Estimated \$ Loss: Assault	Total \$ Loss: Assault & Sexual Assault	Potential Savings if Rate Remained	Potential Savings if Rate Remained at 275 Level
1962	Assault 26.5	83.7	112 2		75 ECVG
1963	20.3	93.8	125.4	15.2	
1964	37.3	117.8	123.4	46.9	
1965	37.4	118.3	157.7	47.5	
1966	40.8	129.2	172.0	61.8	
1967	40.0	126.4	168.3	58.1	
1968	43.9	138.8	184.7	74.5	
1969	47.4	150.0	199.4	89.2	
1970	49.8	157.4	209.1	98.9	
1971	51.4	162.7	216.1	105.9	
1972	28.3	152.9	203.2	93.0	
1973	51.2	162.1	215.3	105.1	
1974	53.8	170.0	225.8	115.6	
1975	57.5	181.8	241.3	131.1	
1976	60.1	190.1	252.1	141.9	12.8
1977	59.8	189.2	251.0	140.8	11.6
1978	64.6	204.3	270.8	160.6	31.5
1979	65.1	205.9	273.0	162.8	33.7
1980	69.6	220.1	291.7	181.5	52.3
1981	70.3	222.4	294.8	184.6	55.4
1982	72.1	228.1	302.2	192.0	62.8
1983	75.2	237.4	314.4	204.2	75.1
1984	75.7	239.5	317.2	207.0	77.9
1985	76.4	241.5	319.8	209.6	80.5
1986	80.8	255.7	338.5	228.3	99.2
1987	86.6	273.9	362.5	252.3	123.2
1988	93.2	294.8	390.0	279.8	150.7
1989	103.2	326.5	431.7	321.5	192.3
1990	123.3	361.2	486.5	376.3	247.2
1991	134.4	418.1	554.5	444.3	315.1
1992	163.0	460.3	625.3	515.1	386.0
1993	160.9	452.2	615.1	504.9	375.7
1994	143.2	474.3	619.5	509.3	380.2
1995	140.7	484.0	626.8	516.6	387.4
1996	137.2	499.0	638.2	528.0	398.8
1997	139.1	475.9	617.0	506.8	377.6

Sources: Solicitor General Canada. *Canadian Urban Victimization Survey: Cost of Crime to Victims, Bulletin No. 5,* 1985, p. 2& 3. Statistics Canada. *Canadian Crime Statistics,* 1990-1997, table 3.3. Statistics Canada. Cansim CD Rom, Cat. No. 10F0007XCB, matrix 2200. See methodology section in Appendix for more details.

### 8.2 Hospitalization Costs

A seven city Statistics Canada victim survey in 1982 found that 350,000 criminal incidents resulted in 50,500 nights in hospital and 405,700 days lost due to some form of incapacitation.

Extrapolating from these data, Nova Scotia victims spent an estimated 2,412 days in hospital as the result of criminal activity in 1997. At an annual operating expense of \$662 per patient day, hospitalization expenses due to crime amounted to \$1.6 million in 1997. Hospitalization costs due to crime have risen by more than 1000% since 1962, due in part to higher violent crime rates and in part to higher hospitalization costs (Table 8.2).

Since 1962 an estimated \$28 million has been spent on hospitalization due to violent crime in Nova Scotia. Had hospitalization expenditures due to crime remained at 1962 levels an additional \$25 million would have been available for progressive social programmes including improved medical care. If both variables had remained at 1975 rates \$14.5 million would have been saved.

Caution must be exercised when interpreting these data. Savings would have been considerably less had the cost per day for hospitalization remained constant over time. It is possible to impute a constant dollar figure for hospital care so that hospital expenditures due to criminal activity can be isolated from general increases in hospital costs. However in reality, Nova Scotia taxpayers have to pick up the bill for crime related hospitalization regardless of increases in the cost of hospital care. Because it more closely approximates a full cost accounting of crime, the GPI therefore includes increased hospital expenditures as part of crime-related hospitalization costs.

Data were not available for non-hospital medical costs, counselling and drug expenses due to crime. For future updates of this study, it is recommended that if direct data on medical costs cannot be obtained from victimization surveys, estimates be made by applying the overall ratio between medical spending and hospital expenditures in Canada to the \$1.6 million hospitalization estimate in this chapter.

Date	Estimated \$ Cost	Potential Savings if Rate Remained at 1962 Level	Potential Savings if Rate Remained at 1975 Level
1962	137		
1963	160	23	
1964	173	36	
1965	176	39	
1966	175	38	
1967	171	34	
1968	190	53	
1969	200	63	
1970	209	72	
1971	235	98	
1972	237	100	
1973	272	135	
1974	347	210	
1975	479	342	
1976	571	434	92
1977	545	408	66
1978	555	418	76
1979	643	506	164
1980	655	518	176
1981	715	578	236
1982	859	722	380
1983	848	712	370
1984	894	757	415
1985	947	811	469
1986	1044	907	565
1987	1070	933	591
1988	1138	1001	659
1989	1255	1118	776
1990	1485	1348	1007
1991	1765	1629	1287
1992	1857	1720	1378
1993	1765	1628	1287
1994	1598	1461	1119
1995	1567	1430	1088
1996	1643	1506	1164
1997	1621	1484	1142

## Table 8.2: Cost of Hospitalization due to Crime in Nova Scotia. Constant 1997\$, (\$000s)

Sources: Sources: Solicitor General Canada. *Canadian Urban Victimization Survey: Cost of Crime to Victims, Bulletin No. 5,* 1985, p4. Statistics Canada. Cansim CD Rom, Cat. No. 10F0007XCB, matrix 2200. Statistics Canada. *Hospital Indicators*, Cat. No. 83-246, Table and *Hospital Statistics,* Cat.No.83-217, Table 12. See chapter 4 for more details on methodology and data sources.

### 8.3 Potential Production Losses

#### 8.3.1 Homicide Victims: Measurement System and Results

The relatively few instances of homicide in Nova Scotia may produce dramatic fluctuations in the number of homicides committed from one year to the next, making annual trend assessments problematic. In order to assess long-term trends more reliably and to average out annual fluctuations, the period 1962-1997 has been divided into six six-year periods. From the first period to the most recent period, here has been a 78% increase in the murder rate.

Comparing the same two periods, the actual number of murders has risen from 48 to 106 (chart 8.1). From 1962 to 1967 there were an average of eight murders a year. Between 1968 and 1991, the number of murders remained steady, averaging 13 a year. From 1992 to 1997, there were an average of 18 murders a year. Since 1962 there have been a total of 463 murders in Nova Scotia.

The economic cost of these murders is assessed by calculating the lost potential production of homicide victims, or the productive capacity lost when homicide victims aged 18-65 are taken from the workforce. No argument is made that this even begins to approximate the real losses due to murder. The assessment of potential production losses is simply a proxy measure to indicate that homicide does have direct economic costs. A clear flaw in this method is that no valuation for production losses is made for elderly homicide victims, since they are no longer in the workforce. The estimates given in this section should therefore be regarded as extremely conservative.

Though care has been taken in developing the methodology described below, the use of production losses to estimate murder costs cannot be taken too literally. The limited data available suggest that homicide victims actually have higher rates of unemployment and marginal employment than the general population.<sup>129</sup> But since production loss is the only valuation used in the conservative crime estimate of the value of a human life, the assumption is made that victims could have contributed a full-time full year of work. Even if they were not actually working these hours at the time they were killed, the method is justifiable from the perspective of "opportunity cost." It is the contribution they *could* have been making to the economy had they lived.

Even this full-time full-year production loss estimate yields a life value estimate considerably below that used by Transport Canada for traffic fatalities (see below). Therefore, it is not considered justifiable to discount the value further to take into account actual employment status at the time of the crime.

<sup>&</sup>lt;sup>129</sup> Paul Smith, N.S. Department of Justice, personal communication, 17 March, 1999.

The investment-based approach of the Genuine Progress Index is applied here to human capital, just as it is to produced, natural and social capital elsewhere. From that perspective the death of a homicide victim cannot be "expensed" in a single year, but must be measured over the productive life span of the individual. This is one of the principal differences between the GPI accounting method and the current income approach of the GDP, and is more in line with sound business practices that see capital investments and their depreciation as principal determinants of the rate of future service flows.

For example, current accounting methods "expense" highway capital costs as if they were consumed in the same year as the expenditure, with previous investments effectively regarded as sunk costs. The GPI, by contrast, regards highways as capital investments that produce a return over their expected life span, and which are subject to depreciation if they are not properly maintained. "Ignoring sunk costs," as Douglass Lee notes, "is a short-run perspective that is incompatible with the long-term existence of the highway system."<sup>130</sup>

Similarly, the GDP counts only current year timber, fish and produce sales, and thus effectively counts the depletion of natural resources as economic gain. The GPI, by contrast, regards the health of the natural resource base itself as the source of wealth, and counts deterioration in soil and forest quality or decline in fish stocks as depreciation of the natural capital asset. By the same logic, high levels of child poverty are regarded in the GPI as a failure to invest in human capital, since poverty is positively correlated with poor health, premature death and poor educational attainment, all of which carry high social costs in the future and result in lower workplace productivity.

Natural, social and human capital are therefore viewed in the same way that a factory owner sees the need for investment in plant and capital equipment and measures its depreciation over its expected life-span. The responsible owner or manager recognizes that if he sells off his machinery or allows it to fall into disrepair, future service flows will suffer, the enterprise will lose competitiveness, and the potential for long-term wealth will be undermined.

Application of this investment-based accounting approach to all forms of capital is the only way to ensure long term social sustainability, and is the essence of any "sustainable development" strategy. Without it we have no way of measuring whether current levels of economic activity are likely to leave the next generation better or worse off than the current one. It is a profound shift in view that regards the strengthening of educational, health and environmental quality not merely as current year expenditures but as direct investments in social, human and natural capital.

The approach also has a sound economic basis in the Hicksian definition of income as the maximum amount that can be spent on consumption in one period without reducing real consumption expenditure in future periods.<sup>131</sup> This requires that the productive capacity of capital be maintained so that it provides undiminished potential to support present and

<sup>&</sup>lt;sup>130</sup> Lee, Douglass, Full Cost Pricing of Highways, Transportation Research Board, U.S. Department of Transportation, January, 1995, page 13. <sup>131</sup> Hicks, J.A., *Value and Capital*, 2<sup>nd</sup> edition, Oxford University Press, Oxford, 1946.

future generations, and measures long-term prosperity according to our ability to live off the interest of capital rather than by depleting capital stocks.

Applying this accounting approach to measuring the loss of human capital in the case of a homicide victim requires that the full productive life span of the victim be considered and that production losses be "expensed" on an annual basis over that expected life span rather than deducted in a single year. The method is the same that Douglass Lee applies to investment-based highway accounting – namely to measure the replacement costs of the existing system and then to annualize those costs. This is probably the first attempt made to assess lifetime potential production losses of homicide victims in this way.

Cold-hearted though this approach appears on the surface, it actually serves in practice to recognize lifetime human potential rather than simply to "write off" the loss of life and then forget about it. The major flaw in its current application is to confine that human potential to market economic production alone, but this is consistent with the narrow approach adopted in the "conservative" estimate of crime costs altogether. Clearly the loss of a human life in practice is far greater than the loss of economic production in the market place.

In the comprehensive cost estimate in chapter 11, the homicide victim's unpaid work is included. Even this, of course, is a very limited view of full human potential and worth, and so court awards for pain and suffering are also used to assess values for emotional losses due to violent crime in that comprehensive estimate.

Whether human life should be assessed in monetary terms at all is answered in accord with the principles laid out in section 4 (3) of the forward. Just as insurance companies put dollar values on human lives and limbs in order to ensure that losses are compensated in practice, it is necessary to assess losses in monetary terms here only so long as current social norms use monetary values as measures of worth and policy prioritization. If human needs were met other than through monetary compensation, monetization here would be unnecessary. The GPI approach may therefore be understood in the perspective of social acceptance of the need for monetary assessments of human losses by courts and insurance companies.

For the purposes of this report, GPI Atlantic has tabulated data on all homicide victims in Nova Scotia back to 1921. Age data has been assessed to determine the number of victims who would have been of working age (16-65 years) in any given year. For example, if someone age 20 were murdered in 1950, the value of one year of productive work would be assessed as a cost of crime for each year up to 1995. Similarly, a 20 year old killed in 1996 would register only one year's lost potential production in 1997, but the costs of that crime would continue to appear in the Genuine Progress Index until the year 2042.

The crime of homicide meant that 452 people were lost to the workforce in 1997 in Nova Scotia. In stark terms this means that one of the six victims of homicide in 1932, an infant boy, would still have been in the workforce had he lived. By recognising this fact, and giving his absence meaning in economic terms, we are actually remembering the boy in some small way. Based on the average weekly wage of \$503.77<sup>132</sup> homicide victims would have added an additional \$11.8 million to the Nova Scotia economy in 1997 had they lived.<sup>133</sup>

However wages represent only a portion of the value of actual output or economic production, which is a more accurate gauge of the actual economic loss sustained by the death of that worker. In order to gauge the actual value of lost production, the Nova Scotia GDP is divided by employment figures to obtain the real GDP per person at work, \$51,855 in 1997. Multiplied by the 452 homicide victims between 1921 and 1997 who would have been of working age in that year, this yields a total loss of productive output of \$23.4 million. This is the figure used in the GPI conservative estimate for the economic loss due to homicide.

In this way, the 1997 homicide cost actually reflects homicide rates in earlier years. Conversely, a higher homicide rate in 1997 will not show up immediately in the GPI, but will continue to reverberate as higher crime costs for the expected life span of the victims.

Again, this methodology is consistent with the approach used for natural capital accounting. Soil erosion in the 1970s or the over-harvesting of fish in the 1980s and timber in the 1990s will produce a loss of goods and services well into the 21<sup>st</sup> century. Conversely, restorative forestry costs in the present are, in effect, compensation for prior damage or losses. The reinvestment in natural capital will not show up as gain until an increased flow of services is produced 50 or 60 years hence.

The method is explained in detail here for two reasons:

- a) As far as we know, it is the first time that it has been applied to an assessment of crime costs in general and to homicide costs in particular.
- b) It helps explain an approach that will be used throughout the Genuine Progress Index in valuations of natural resources, health, education and other variables, and goes to the heart of sustainable development accounting practices.

To test whether the \$23.4 million figure derived from the method described above is realistic in absolute terms, we have applied Transport Canada's monetary cost valuation of \$1.56 million per road fatality to the average of 18 murders to per year for the 1992 – 1997 period. There is no intrinsic reason why a homicide victim should be counted differently than a road fatality. This completely different valuation method would yield an annual loss of \$28 million a year due to homicide in Nova Scotia. It can be seen that the GPI methodology yields a somewhat more conservative result, but one that is within a reasonable range of alternative valuation methods.

<sup>&</sup>lt;sup>132</sup> Statistics Canada. *CANSIM Database*, Cat. No. 10F0007XCB, matrix 4330, "Average Weekly Earnings (including Overtime) of all Employees, Firms of all Sizes, by Industry, 1980 SIC, Unadjusted Data, N.S., Monthly and Annual".

<sup>&</sup>lt;sup>133</sup> See Appendix on methodology for details.



Chart 8.1: Number of Murders in Nova Scotia, 1962-1997

#### 8.3.2 Production Losses Due to Absenteeism Caused by Crime

In 1997, absenteeism due to crime cost the economy nearly \$2 million in lost wages, again using the assumption of full-time full-year employment status as described above. This is a three-fold increase since 1971. However, each worker contributes more to the economy than his worth in wages. The actual contribution of workers' production to the Gross Domestic Product also includes profit they generate for the firm in which they are employed, part of which is then invested in capital improvements. Work days lost due to absenteeism caused by crime has therefore been calculated by the loss to the GDP as a whole rather than by wage equivalents alone. In 1997 the economy lost \$4.25 million due to crime-induced absenteeism. Since 1962 the cumulative loss due to crime-related absenteeism is \$43 million (Chart 8.2).



Chart 8.2: Loss to the Economy (GDP) due to Absenteeism Caused by Crime

## 9. Public Justice Costs

Expenditures on police, courts and prisons are direct taxpayer costs that are the direct consequence of criminal activity. In other words, without crime they would not be required. More crime translates into more spending on police, lawyers, court costs and prisons which appears in the GDP as economic growth. From the GPI perspective, less crime and lower public justice expenses are positive signs, which translate into taxpayer savings available for health care, education and other welfare-enhancing activities.

The per capita costs of the criminal justice system in Canada and in Nova Scotia for 1997 are given in Chart 9.1, with the distribution of those costs summarized in Chart 9.1a. Expenditures on police account for 55% of the public justice bill, corrections for 29% and courts for 16%.<sup>134</sup> More detailed descriptions of each component appear in the following sections.



#### Chart 9.1: Per Capita Justice Expenditures, Canada and Provinces<sup>135</sup> (1997 \$)

<sup>&</sup>lt;sup>134</sup> Statistics Canada, Canadian Centre for Justice Statistics, *Canadian Criminal Justice at a Glance*, page 8.
<sup>135</sup> Statistics Canada, *Juristat*, catalogue no. 85-002-XPE, volume 17, no. 3. NOTE: The composite statistics here are for 1994/95, adjusted to 1997 dollars. In the following sections, 1997 data for Nova Scotia is applied to the estimates wherever recent figures are available. In addition, these composite figures, as supplied by Statistics Canada, exclude some significant expenditures, such as prosecutions and municipal courts. These are added in the more detailed section break-downs in this chapter. For this reason, the composite total for Nova Scotia in this chart does not exactly match the total derived from the following sections. This chart is therefore presented for comparative purposes only, and includes the cost of police, most courts, adult and youth corrections, and legal aid. The composite total derived from the separate sections should be regarded as more inclusive and accurate.





### 9.1 Police

Dr. Don Clairmont, Department of Sociology, Dalhousie University, points out that the Atlantic region generally has high service delivery costs on a per capita basis, compared to the rest of the country, for most public services. This is due to greater population dispersion and less urban concentration.<sup>137</sup> Police strengths and prison costs should be seen in that context. For this reason, the following comparative estimates of ratios of police to population ratios should be treated with caution.

The correlations between police strength and crime rates are complex, as regression analyses carried out by the Canadian Centre for Justice Statistics (CCJS) have demonstrated. While simplistic causal links cannot be drawn, the CCJS conclusions demonstrate the importance of raising the issue of the relationship between police strength and crime rates:

<sup>&</sup>lt;sup>136</sup> Statistics Canada, *Juristat*, catalogue no. 85-002-XPE, volume 17, no. 3, table 5, page 12. Distribution is based on 1994-95 figures, but is not believed to have changed significantly since then. To the estimates given in Table 5 of that document have been added the estimated Nova Scotia share for federal corrections, courts, prosecutions, and RCMP expenditures, as described in more detail in the rest of this chapter.
<sup>137</sup> Dr. Don Clairmont, personal communication, 18 March, 1999.

... The incidence of crime is increasing more rapidly than the ability of police forces to deal with it. As we have seen, crime has increased more than police strengths<sup>138</sup>.

The major caveat for the data presented below, therefore, is that statements about the nature of the links between crime rates and police to population ratios should be treated as hypotheses to be tested, rather than as definitive conclusions.

In 1997 there was one police officer for every 584 Nova Scotians. In 1965 we needed only one police officer for every 848 Nova Scotians. In 1977, Nova Scotia needed only 74% the number of police officers per 100,000 as the rest of the country to keep the peace, because of the lower crime rate in the province. Today the province has 94% as many police per 100,000 as the Canadian average (Table 9.2, Charts 9.2 and 9.3).<sup>139</sup>

In 1997 municipal and provincial expenditures on policing in Nova Scotia totaled \$105.6 million.<sup>140</sup> Nova Scotia taxpayers' share of non-provincial RCMP costs, based on share of the national population, was \$38.1 million.<sup>141</sup> The total bill paid by Nova Scotia taxpayers for policing in 1997 was therefore \$143.7 million.

Not only are there more police per population, but the cost of policing has risen. In the last 10 years alone the cost per police officer across Canada has gone up more than 15%, from \$95,000 to \$110,000 per officer in constant dollars, when civilian support staff are included.<sup>142</sup> Since 1974 the number of police officers has grown by 33% in Nova Scotia compared to 14% in Canada as a whole, producing a correspondingly higher per capita cost increase.<sup>143</sup>

<sup>&</sup>lt;sup>138</sup> Statistics Canada, Canadian Centre for Justice Statistics, *Criminal Justice Trends Canada from 1962: Corrections Program*, page 17.

<sup>&</sup>lt;sup>139</sup> 1965 police data from Statistics Canada, *Police Administration Statistics*, 1967-77, catalogue no. 85-204, page 27. 1997 police data from Statistics Canada from Statistics Canada, *CANSIM Database*, catalogue no. 10F0007XCB, matrix 301. Population data from Statistics Canada, *CANSIM Database*, catalogue no. 10F0007XCB, matrix 1. See Appendix on methodology and data sources for more details. The N.S. Department of Justice, Policy, Planning and Research Division, points out that part of the change in proportion could be due to cut-backs in other provinces and to differing population concentrations and dispersions. Personal communication, 17 March, 1999.

<sup>&</sup>lt;sup>140</sup> Statistics Canada. February 1999. *Police Personnel and Expenditures in Canada – 1997 and 1998*. Cat. No. 85F0019, p.17.

<sup>&</sup>lt;sup>141</sup> Statistics Canada, Canadian Centre for Justice Statistics, *Police Administration Annual Survey*, catalogue no. 85F0019-XPE, February, 1999. RCMP Federal, Administration, Headquarters and Training Academy costs not paid for by the provinces came to \$1,220 million in 1997. Using a simple population share ratio (3.12% of the total), it has been assumed that the Nova Scotia share of these costs came to \$38 million in 1997.

<sup>&</sup>lt;sup>142</sup> The figures are derived by dividing the total cost of policing by the number of police officers. Because the total policing expenses include the costs of civilian support staff, whose work is essential for policing functions, these per-officer figures are clearly not police officer salaries. The authors are grateful to Karen Swol, Survey Manager, Police Administration Survey, Canadian Centre for Justice Statistics, for her expert advice and assistance with this section of the report.

<sup>&</sup>lt;sup>143</sup> Statistics Canada, *CANSIM* matrix 301.

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From the GPI perspective, this increased spending, due partly to a more rapid increase in the crime rate from a markedly lower base, represents a decline in comparative advantage for the province. If the policing expenditures had remained at the 1962 level, Nova Scotian taxpayers would have saved \$129 million in 1997. This could have paid the salaries of 2800 additional teachers or 3700 additional nurses. In total, Nova Scotians would have realized a cumulative saving of more than \$2billion since 1962 if provincial policing expenditures had remained at 1962 levels.

Halifax had one officer for every 479 citizens in 1997, compared to one police officer for every 584 citizens in Nova Scotia as a whole.<sup>144</sup> Table 9.3 lists police to population ratios in different Nova Scotia municipalities.

Kit Waters, Director of Policy Planning and Research, N.S. Department of Justice, correctly points out that there are many other factors related to the increase in officer strength other than an increase in crime rates. She notes that having more police on the streets produces higher reported rates of crime, both as a result of increased police initiative and from the creation of more reporting opportunities. In addition the emphasis on community based policing in recent years will, if successful, have produced more confidence in the police and consequently higher reported crime rates.

From that perspective the low reported crime rates of the 1960s and the fewer officers per capita at that time may reflect less reporting as much as less crime. As noted in chapter three, evidence is not currently available to estimate the precise relationship between officer strength, crime rates, and reporting rates. The authors therefore acknowledge that the assumption in this section that more police are "needed" due to higher crime rates should be seen as a hypothesis rather than as a proven fact.

Despite or perhaps because of the increased number of police, the Nova Scotia reported crime rate has quadrupled since 1962 and nearly doubled since 1974. It is now 98% of the Canadian average compared to 66% 25 years ago. In 1974 there were 29 reported crimes per police officer in Nova Scotia; in 1984 there were 43 reported crimes per officer; and in 1996 there were 48 reported crimes per officer, ratios that are almost identical with the Canadian average.

<sup>&</sup>lt;sup>144</sup> Statistics Canada, *Crime and Police resources in Canadian Municipalities, 1997*, catalogue no. 85-223, December, 1998. The authors with to thank Karen Swol, Survey Manager, Police Administration Survey, Canadian Centre for Justice Statistics, for her assistance with these data. She points out that the Halifax figures are for the Halifax regional Municipality police force only, and exclude RCMP officers. Since RCMP strengths are not available by municaplity, comparisons of total police strengths between municipalities are difficult. Police to population ratios in Table 9.3 exclude RCMP officers (personal communication, 6 April, 1999). John Turner, Chief, Policing Services Program, Canadian Centre for Justice Statistics, points out that comparisons of police strengths between Canadian cities should use Census Metropolitan Area (CMA) data (personal communication, 7 April, 1999). Because of time constraints, we have omitted such a comparison from this report.

<sup>&</sup>lt;sup>145</sup> Statistics Canada, Besserer, "Criminal Victimization: An International Perspective," *Juristat,* catalogue no. 85-002-XPE, volume 18, no. 6, reports that 80% of Canadian respondents say their police are doing a good job, the highest percentage of any industrialized country.

While the increase over time is certainly due in part to higher reporting rates for some crime categories, the numbers may also indicate that the dramatic increase in the proportion of police per population has not stemmed the rise in crime. Depending on which factor is seen as the causal component, the increased number of police may lead to higher reporting rates, or higher actual crime rates may necessitate more police. The truth is probably a combination of both factors. A Canadian Centre for Justice Statistics analysis of the relationship concluded that "the incidence of crime is increasing more rapidly than the ability of police forces to deal with it."<sup>146</sup>

	1965	1974	1997
Canada Average	612	476	554
Newfoundland	933	734	710
Prince Edward Island	1048	667	673
Nova Scotia	848	671	584
New Brunswick	1055	654	584
Quebec	595	416	540
Ontario	631	467	535
Manitoba	814	539	514
Saskatchewan	851	369	547
Alberta	739	544	636
British Columbia	689	567	583

#### Table 9.2: Population per Police Officer, Canada and Provinces, 1965 – 1997

Sources: 1965 Police data from Statistics Canada, *Police Administration Statistics*, *1967-77*, Cat. No. 85-204, p.27. 1974 & 1997 Police data from Statistics Canada, Cansim matrix 301, Cat. No. 10F0007XCB. Population data from Statistics Canada, Cansim matrix 1, Cat. No. 10F0007XCB. See Appendix for methodology.

<sup>&</sup>lt;sup>146</sup> Statistics Canada, Canadian Centre for Justice Statistics, *Criminal Justice Trends Canada from 1962, Corrections Program*, page 17.





Chart 9.3: Nova Scotia Police Strength in Relation to Canada, 1977-1997





Police Force	Police Officer Total	Per Capita Cost	Population per Police Officer
Halifax	435	162	460
Cape Breton	154	129	462
Amherst	19	121	537
Bridgewater	18	140	444
Kentville	13	131	462
New Glasgow	29	127	486
Stellarton	9	114	589
Truro	27	164	444
Yarmouth	16	116	494
Annapolis Royal	3	209	200
Berwick	6	150	383
Hantsport	4	186	300
Lunenburg-Mahone Bay	10	157	370
Middleton	6	195	300
Springhill	9	149	467
Trenton	7	169	414
Wolfville	11	163	345
Antigonish	8	99	588
Digby	5	148	440
Oxford	3	142	467
Parrsboro	3	115	533
Pictou	6	93	650
Port Hawksbury	5	75	840
Shelburne	4	108	550
Windsor	6	107	633

### Table 9.3: Police Strength and Costs, Nova Scotia Municipalities

Source: Police Resources in Nova Scotia, 1996<sup>147</sup>

<sup>&</sup>lt;sup>147</sup> Nova Scotia Department of Finance. *Nova Scotia Statistical Review, 1998*, p.121.

### 9.2 Court Costs

The economic costs of the criminal court system include salaries of judges, prosecutors and defence lawyers, including legal aid staff, plus overhead and administrative costs. Civil justice costs are not included in this study, nor is the lost economic production due to court time of jurors and witnesses.

Across Canada, Statistics Canada has estimated that legal aid constitutes about 4% of total public justice spending, prosecutions account for 3%, and other court costs for another 9%.<sup>148</sup> This includes both federal and provincial spending. Since precise court costs are not separately available for the provinces, the Nova Scotia share has been extrapolated from Statistics Canada estimates for criminal court costs in Canada to estimate a 1997 expenditure of \$39.4 million for total public criminal court costs, including legal aid, in Nova Scotia.<sup>149</sup>

The estimate includes one-half of legal aid spending in the province, the approximate percentage attributable to criminal cases.<sup>150</sup> Nova Scotia's prosecution expenses in 1994-95, the latest available year for precise data, were nearly \$8 million, the second highest per capita rate in the country.<sup>151</sup> The Nova Scotia share of federal prosecution costs is estimated at about \$1.3 million per year, based on population share. These expenses are also included in the composite \$39.4 million estimate, as are half the expenses of municipal courts, normally excluded from the composite court cost figures released by Statistics Canada.

The total estimate has been tested against a model used by the Fraser Institute and found to be comparable.<sup>152</sup> Because many of the estimates in this section are derived rather than

<sup>&</sup>lt;sup>148</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Justice Spending in Canada," *Juristat*, catalogue no. 85-002, volume 17, no. 3, January, 1997. See footnote for Chart 9.1a above.

<sup>&</sup>lt;sup>149</sup> Statistics Canada, *Juristat*, catalogue no. 85-002-XPE, volume 17, no. 3, table 5, "Spending on Selected Justice Services in the Provinces and Territories", notes that municipal courts, amounting to 15% of the caseload in Nova Scotia, are excluded from the provincial estimates provided. Using the 50% break-down of civil and criminal cases derived from the legal aid figures, we have therefore added an additional 7.5% to the criminal court costs to account for the cost of municipal court proceedings.

<sup>&</sup>lt;sup>150</sup> The 1995 / 96 ratio of legal aid expenditures in Nova Scotia was almost exactly 50:50 for criminal and civil justice cases. Statistics Canada, *Legal Aid in Canada*, catalogue no. 85FOO15XPB, page 43.

<sup>&</sup>lt;sup>151</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Prosecutions: Resources, Expenditures and Personnel, 1994-95", *Juristat*, catalogue no. 85-402,October, 1996, page 4, table 1. Statistics Canada, Canadian Centre for Justice Statistics, Denyse Carriere, "Adult Criminal Court Statistics," *Juristat*, catalogue no. 85-002, volume 18, no. 7, page 6 indicates that Nova Scotia has the second highest number of prosecutors in the country on a per capita basis, but the second lowest rate of convictions (59.1%), and the lowest rate of any province on a per prosecutor basis.

<sup>&</sup>lt;sup>152</sup> About one-half of all legal aid cases in Canada are attributable to civil rather than criminal cases, according to Statistics Canada. See also Brantingham and Easton, *The Crime Bill*, op. cit., Fraser Forum, page 28, for the methodology used to derive estimates for Canadian criminal court costs. The authors of that study use the percentage of legal aid cases attributable to criminal cases (50%) to estimate the percentage of total Canadian court costs devoted to criminal proceedings, and assign legal aid and

direct measurements, it is recommended that future updates of this report investigate judicial costs in more detail than has been possible here.

With cuts in government services, legal aid services are in a state of crisis across the country, and it has been suggested that more people are appearing in court without adequate legal representation.<sup>153</sup> According to Statistics Canada, "fewer people are applying for legal aid, and even fewer applications are being approved for full service."<sup>154</sup> Nova Scotia is now in the final year of a four-year budget reduction program that has included cutting the number of approved cases.

Legal aid spending in Nova Scotia dropped by 8% between 1995 and 1996. Nevertheless, Nova Scotia still approved 76% of applications for legal aid in 1996-97 compared to only 62% nationwide. 59% of legal aid approvals in the province were for criminal cases. while most approvals across the country were for civil cases. Nova Scotia's legal aid spending, while below 1991 levels, is still more than double the level 10 years ago.<sup>155</sup>

While the nationwide decline in legal aid in the 1990's appears superficially as a fall in crime costs and partially reflects declining crime rates since 1991, it may also reflect a decline in due process afforded to those charged with an offence. As noted at the beginning of chapter 5 above, the correlation of economic costs with crime rates rests on the assumption that there is no erosion of civil rights. Otherwise it would be possible to reduce crime rates through police state measures. Further research is necessary to determine whether cuts in legal aid have in fact reduced opportunities for a fair trial.

While this study deals only with the costs of crime, civil justice costs are also "regrettable" expenditures in so far as litigation cannot be considered to enhance welfare and is generally considered necessary in response to perceived harm or wrong-doing. In addition, many civil cases arise from crime. If the justice system as a whole is understood as necessary to redress perceived wrongs, then it makes sense to consider civil justice expenses as "costs" rather than "gains" to the economy in the same way that crime costs are considered in this study. If total court costs, including legal aid and prosecution expenses, were included in this study, another \$40 million would be added to the bill.

prosecution expenses in the same way. In 1992 dollars, the Nova Scotia population share of the Fraser Institute's total estimate for Canadian court costs, including legal aid and prosecutions, would be \$32.5 million. Adjusted to 1997 dollars, the amount is \$34.3 million, which is comparable to the estimate derived here directly from Canadian criminal court costs. The difference in the two estimates can be explained because the GPI estimate includes the Nova Scotia share of *federal* prosecution costs, because it is derived directly from criminal court costs rather than extrapolated from total court costs, because it adds in municipal court costs, and because the GPI estimate is from more recent data. With appropriate adjustments for the additional costs included in the GPI estimate, the total expense would be almost identical to the Fraser Institute result.

<sup>&</sup>lt;sup>153</sup> Statistics Canada, Canadian Centre for Justice Statistics, Johnstone, Rebecca and Jennifer Thomas, "Legal Aid in Canada: 1996-97", *Juristat*, catalogue no. 85-002, volume 18, no. 10, page 9<sup>154</sup> Johnstone, op. cit., *Juristat*, catalogue no. 85-002, volume 18, no. 10.

<sup>&</sup>lt;sup>155</sup> Johnstone, op. cit., Juristat, catalogue no. 85-002, volume 18, no. 10, page 8, table 5.

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Because this study does not does not include civil justice costs, spending on lawyers is also excluded, with the exception of legal aid and prosecution costs for criminal cases. If future updates of this work include the costs of litigation as regrettable expenditures, either Statistics Canada Family Expenditure Surveys or else earnings data can be used to assess legal costs.

Extrapolating from national data, Nova Scotia households would have spent more than \$33.3 million in 1996 on legal services, though a custom tabulation of the provincial micro-data will likely reveal a lower per capita expenditure in the province than the national average. Nova Scotia miscellaneous household consumption expenditures are about 90% of the national average, while the province has only 81% as many lawyers on a per capita basis. For this reason, the \$33 million estimate should probably be discounted by a further 10% to \$30 million for a more accurate extrapolation.<sup>156</sup>

Alternatively, earnings data for Nova Scotia reveal lawyer costs of \$86.8 million in 1995. This would include business and government as well as household spending, but does not include costs for paralegals and legal secretaries, nor of law firm overheads. Paralegals earn an additional \$8.5 million in Nova Scotia, and legal secretaries earn \$17.4 million, for a total "litigation cost" of \$112.8 million for the legal profession.<sup>157</sup> These data are given for illustrative purposes only in order to reveal the magnitude of civil justice costs. Clearly further analysis would be required before these costs could be included in an estimate of total justice costs.

The logic for including these costs in future updates of this study is that, from the GPI perspective, a less litigious society enhances the quality of life, and frees money for more productive investments. Higher per capita spending on litigation signifies a more contentious and less harmonious society, and a potential growth of social conflict which carries its own costs. As with crime, a decline in legal spending is more likely a sign of progress than the increased spending currently assessed as a contribution to well being and prosperity.

If less lawyers mean less litigation, Nova Scotia is a considerably less litigious and contentious society than the United States, and somewhat less litigious than Canada as a whole. There is one lawyer for every 700 Nova Scotians compared to one for every 300 Americans and one for every 500 Canadians. But perhaps Nova Scotians are taking each other to court more than they once did. Between 1990 and 1995 alone, the proportion of

<sup>&</sup>lt;sup>156</sup> Statistics Canada, *Family Expenditure in Canada*, catalogue no. 62-555: Legal expenditures are included in "Miscellaneous Expenditures" (Lines 3600-3622), with legal services on Line 3603 disaggregated at the national level only in the published reports. In Canada as a whole, legal services amount to 7.67% of total miscellaneous expenditures. Applying the same ratio to Nova Scotia yields a per household average expenditure of \$99.40 on legal services, compared to the Canadian average of \$110 per household. The household expenditure is then multiplied by the 335,150 Nova Scotia households.

<sup>&</sup>lt;sup>157</sup> Earnings data are from Statistics Canada, EO 12 (Line 4112), indicating 1,350 lawyers with average earnings of \$64,310, for a total of \$86,818,500. Nova Scotia has 81% as many lawyers as the Canadian average, and Nova Scotia lawyers earn 83% the average earnings of lawyers in the rest of the country.

lawyers to the general population rose by 6% in Nova Scotia compared to 3% nationwide. As with crime, the GPI sees less legal spending as a quality of life advantage that still obtains in the province. But the recent trend is disturbing, and a valuable but invisible asset may be eroding.

### 9.3 Corrections

Among the many forms of sentencing, only corrections costs are included here. From the GPI perspective, fines have a neutral function, since they are simply a transfer of funds from one population group to another. On the one hand, they can be seen as providing social benefit and a potential increase in welfare. On the other hand, there is an opportunity cost to these fines. Had the crime not been committed, these fines could have been invested in welfare-enhancing activities rather than as a form of restitution for harm done. For this reason, fines are omitted from the calculations.

It costs taxpayers an estimated \$121 to keep an inmate in a Nova Scotia prison for a single day, or \$44,165 for a year (Table 9.4).<sup>158</sup>

Year	Cost Per Day
1978	\$86
1980	\$88
1982	\$95
1984	\$88
1986	\$109
1988	\$121
1990	\$135
1992	\$128
1994	\$120
1996	\$119
1997	\$121*

## Table 9.4: Daily Cost per Inmate in Nova Scotia Provincial Jails(1997 Constant Dollars)

<sup>&</sup>lt;sup>158</sup> Paul Smith, N.S. Department of Justice, correctly points out that, due to the large fixed costs of running a prison, an increase in bed days will cause average daily costs per inmate to drop, while a decrease in bed days will cause average daily costs per inmate to increase. The authors agree with Mr. Smith that a per capita cost estimate would be a better measure. In this study, per capita crime costs have been calculated only for the final composite total described in chapter 1. Future updates of the study might estimate per capita costs for each crime cost category, including incarceration costs.

<sup>&</sup>lt;sup>159</sup> Statistics Canada. *1978-1996 Adult Correctional Services in Canada*. (Statistics Canada Catalogue No. 85-211), Table 11. The average daily inmate cost has been calculated by dividing the *Institutional Operating Costs* by the *Total days Stay*. The average daily inmate cost is translated to 1997 constant dollars by using the Consumer Price Index.

#### \*Estimate

The institutional operating cost for Nova Scotia provincial jails for 1997 is estimated to be \$17.6 million.<sup>160</sup> Most of the expenses are for staffing, since corrections require almost a one-to-one ratio of custodial staff to inmates: 0.88 staff per inmate in prisons.<sup>161</sup> For the cost of incarcerating an inmate for a year, forty four thousand dollars, it would be possible to hire an extra secondary school teacher (average salary \$37,138) or to send a person to university for a three year undergraduate degree (including full-credit tuition, residence accommodation and meal plans).<sup>162</sup> Considering the correlation between crime and low education, certain preventive investments may be more cost-effective than dealing with the consequences of crime (Chart 9.4).



**Chart 9.4: The High Cost of Incarceration** 

The \$17.6 million annual provincial incarceration costs are only for custodial service expenditures. When Community Supervision Services and Headquarters and Central

<sup>&</sup>lt;sup>160</sup> Statistics Canada. 1978-1996 Adult Correctional Services in Canada. (Statistics Canada Catalogue No. 85-211), Table 11. Inmate days are 1996 figures, but estimates are in 1997 dollars. Statistics Canada, "Average Daily Inmate Cost of Corrections by Province", Juristat, catalogue no. 85-002, volume 12, no.

<sup>22,</sup> page 8, and Statistics Canada, *Criminal Justice at a Glance*, catalogue no. 85-211. <sup>161</sup> Brantingham and Easton, *The Crime Bill*, The Fraser Forum, page 29.

<sup>&</sup>lt;sup>162</sup> Footnote and pie chart. The cost of a three year degree at Saint Mary's University in Halifax is based on data from the 1998-99 Registration catalogue, p.21. A Canadian student taking five full undergraduate courses pays \$4025.50, a meal plan costs \$4950, and apartment rental on campus is \$2105. The total cost for the year is \$11080. To get the total cost for a degree the one-year total has been multiplied by three. The average salary for secondary school teachers in Nova Scotia is from Statistics Canada, 1996 Census, Cat. No. 93F0029XDB96005. The data is for 1995, but has been updated to 1997 figures using the Consumer Price Index. The average wage in Nova Scotia is from Statistics Canada, 1999. Employment, Earnings and Hours, October 1998, p. 53.

Services costs are included, as they should be to estimate the full costs of adult corrections resulting from crime, the total cost to the taxpayer is in excess of \$25 million. (Chart 9.5).<sup>163</sup>

Nova Scotia spends a considerably smaller percentage of its Adult Corrections budget on Custodial Services than any other province in Canada and this has been the case for the last five years.<sup>164</sup> This leaves more money and resources for community supervision programs.<sup>165</sup> The Nova Scotia government's commitment to restorative justice, conditional sentencing and adult diversion programs would seem to indicate that the Justice Department will continue to favour community programs over incarceration.<sup>166</sup>

In fact, the most dramatic increases in Nova Scotia Corrections have been in community supervision and probation. The number of offenders committed to community supervision rose 73% between 1992 and 1996 to 8,370.<sup>167</sup> The average number of offenders partaking in Nova Scotia probation programmes increased by 22% during the same period to 4,339.<sup>168</sup> Probation supervision costs the taxpayer only \$1,344 a year per offender, a fraction of the cost of incarceration.<sup>169</sup>

It should be noted that "parole" is quite different from probation or community supervision, which are alternative sentencing options. Parole refers to prisoners released back into the community after a penitentiary stay. These ex-prisoners are required to report to a parole officer regularly for a specified period of time. Provincial expenditures on parole and approved temporary absence programs are included in the total provincial correctional expenditures described above. However, the authors are uncertain whether the Nova Scotia share of federal parole costs is included in the estimate of federal penitentiary costs described below. If not, these need to be calculated, based either on the provincial share of the general taxpaying population or on the percentage of Nova Scotia inmates in federal penitentiaries.

 <sup>&</sup>lt;sup>163</sup> Statistics Canada, March 1997, *Adult Correctional Services in Canada, 1995-96*, catalogue no. 85-211, page 48.
 <sup>164</sup> Statistics Canada, March 1997, *Adult Correctional Services in Canada, 1995-96*, catalogue no. 85-211-

<sup>&</sup>lt;sup>164</sup> Statistics Canada, March 1997, *Adult Correctional Services in Canada, 1995-96,* catalogue no. 85-211-XPB, table 8.

<sup>&</sup>lt;sup>165</sup> Statistics Canada, March 1997, *Adult Correctional Services in Canada, 1995-96,* catalogue no. 85-211-XPB, table 8.

<sup>&</sup>lt;sup>166</sup> Nova Scotia Department of Justice, June 1998. Restorative Justice: A Program for Nova Scotia.

<sup>&</sup>lt;sup>167</sup> Statistics Canada, March 1997, *Adult Correctional Services in Canada, 1995-96,* catalogue no. 85-211-XPB, table 21.

<sup>&</sup>lt;sup>168</sup>Ibid.

<sup>&</sup>lt;sup>169</sup> Average offender count on probation program is from Statistics Canada, March 1997, *Adult Correctional Services in Canada, 1995-96,* catalogue no. 85-211-XPB, table 21. The cost of probation is from Statistics Canada, March 1997, *Adult Correctional Services in Canada, 1995-96,* catalogue no. 85-211-XPB, table 10. See Appendix on methodology for calculation.





Chart 9.6: Nova Scotia Spends Less on Imprisonment in Proportion to Total Corrections Costs than other Provinces



The overall cost of corrections in Nova Scotia, including probation and administrative costs has increased by nearly 80% since 1979 from \$14 million to \$25 million a year in constant dollars.<sup>170</sup> On a per capita basis, Nova Scotians are each spending 60% more on corrections than they were in 1979, compared to an increase of only 3% nationally. Nova

<sup>&</sup>lt;sup>170</sup> Statistics Canada. Adult Corrections in Canada, table 8, catalogue No. 85-211.

Scotians are still spending less on corrections than other Canadians but, as with the crime rate, the gap is narrowing. In 1979, Nova Scotians spent only 53% as much as other Canadians on corrections. In 1996, they were spending 81% as much (Charts 9.7, 9.8 and **9**.**9**).<sup>171</sup>

However, in marked contrast to trends in the United States (see below), most of the increased corrections costs are not for imprisonment. In fact, the actual rate of incarceration has declined since the early 1980s with the growing use of community supervision and probation instead of imprisonment (Chart 9.10). Sentenced inmate counts have actually dropped from a high point of 6.4 per 10,000 adults in 1982 to 4.4 per 10,000 in 1997, due to increased reliance on adult diversion programs, conditional sentencing and other alternatives to incarceration. With the exception of a dramatic decline to custody admission rates due to the Bail Reform Act of 1970-71, on register inmate counts have remained fairly steady since the Second World War at about 6 per 10,000 population.<sup>172</sup>

In fact, Nova Scotia still has the lowest rate of imprisonment in the country, 36% below the national average, though *median* sentences are consistently longer than the Canadian average, 60 days in 1996 compared to 31 days for the rest of the country.<sup>173</sup> Only one in eight people charged in Nova Scotia ends up in prison, compared to one in five in the rest of Canada. Of those actually found guilty of a crime, Canada imprisons one-third, and Nova Scotia only one-fifth. 55% of convictions in Nova Scotia result in a fine.<sup>174</sup> In 1996, just 2,113 offenders were given prison sentences.

In other words, the Nova Scotia pattern seems to be to keep less serious offenders out of prison, but to send serious offenders to jail for longer. This would also help explain the high rate of Nova Scotia prisoners with prior convictions noted earlier. Indeed, for each of the last 20 years, Nova Scotia has imposed longer sentences than the national average.

<sup>&</sup>lt;sup>171</sup> Municipal, provincial and federal data for Corrections dating from 1963 are available, but they are not comparable to the data from 1979 to 1997. Paul Smith, N.S. Department of Justice, points out that in 1986 the province took over the running of provincial institutions from the municipalities, accounting for a large part of this increase in expenditures. It is not clear to the authors at the time of publication whether the Statistics Canada data, on which these figures are based, include municipal prison costs. In any case, future updates of this section should ensure that municipal prison costs prior to April, 1986 are factored in to the calculation. In addition, the narrowing of the gap between Nova Scotia and the other provinces may be due as much to cost cutting by other jurisdictions as to increased expenditures by this province. <sup>172</sup> Inmate counts supplied by Paul Smith, N.S. Department of Justice, personal communication, 17 March,

<sup>1999</sup> 

<sup>&</sup>lt;sup>173</sup> Statistics Canada, *CANSIM database*, matrix 318. Note that comparative incarceration rates are subject to several alternative interpretations. Comparing "on-register" counts, which include inmates on temporary leaves of absence, work programs and other leaves, yields different results than comparing "in-house" counts. Even within in-house counts, there are significant differences between comparing total incarceration rates, including prisoners on remand awaiting trial, and comparing only sentenced inmates. Additional confusion exists in assessing the provincial proportion of federal penitentiary inmates. For this reason, the comparative incarceration rates given here vary somewhat from the international comparison below, since attempts have been made to reconcile the latter figure with U.S. estimates.

<sup>&</sup>lt;sup>174</sup> Statistics Canada, Canadian Centre for Justice Statistics, Denyse Carriere, "Adult Criminal Court Statistics," Juristat, catalogue no. 85-002, volume 18, no. 7, April, 1998, pages 1 and 9.

## **GPI**Atlantic

Over the past two decades, Nova Scotia courts have handed down average median sentences of 52 days compared to the national average of 30 days.<sup>175</sup>

Also, as demonstrated below, Nova Scotia has the highest rate of admissions to federal prisons in the country, 3.6 per 10,000 adult population, compared to 2.0 per 10,000 in Canada as a whole. This is significant, since federal admissions are generally for serious offences and carry sentences of two or more years.

Still, despite the propensity to keep minor offenders out of prison in the province, long sentences for serious offences are still the exception to the rule. In Nova Scotia 37% of prison sentences are for less than one month and only 6% of all prisoners are sentenced for a year or more. In 1997-98, the *average* sentence length in the province was 114 days, with an average sentence served to release of 55 days.<sup>176</sup> Though media publicity tends to emphasize the most sensational and alarming crimes, the vast majority of prison sentences are actually for relatively minor crimes, such as non-payment of fines.

The "typical" Nova Scotia prisoner is between 20-24years old, male, and sentenced to a 1-3 month term for a property crime. 19% of prison sentences are for violent crimes, 24% are for property crimes, 12% for impaired driving, and 22% for other offences, such as obstruction of justice or non-payment of fines.<sup>177</sup> In the last ten years there has, however, been a significant change in the cause of admissions. Just as the violent crime rate in the province has increased more rapidly than the property crime rate, violent crime prison admissions have jumped from less than 30% of property crime admissions 10 years ago to more than 70% today.





<sup>&</sup>lt;sup>175</sup> Idem.

<sup>&</sup>lt;sup>176</sup> Paul Smith, N.S. Department of Justice, personal communication, 17 March, 1999.

<sup>&</sup>lt;sup>177</sup> Statistics Canada, *Adult Correctional Services in Canada, 1995-96,* catalogue no. 85-211-XPB, pages 56-58.



Charts 9.8 and 9.9: Nova Scotia per capita Corrections Costs have Risen in relation to Canada

Chart 9.8: Nova Scotia and Canada per capita Corrections Costs, 1979 - 1996

Chart 9.9: Nova Scotia Costs as Percentage of Canadian Costs: Canada = 100





Chart 9.10: Inmates in Nova Scotia Provincial Prisons, 1967 - 1997 (Rate of Incarceration per 10,000 population)

#### 9.3.1 Federal Penitentiary Costs

Since Nova Scotia taxpayer dollars fund both federal and provincial prisons, federal expenditures on Nova Scotia criminals must be added to the corrections costs. Federal prisons house the most serious offenders. It costs \$133 a day or \$48,500 a year to imprison someone in a federal penitentiary, which hold criminals with sentences of two or more years.<sup>178</sup> Since the general population pays the taxes that fund federal penitentiaries, the Nova Scotia share of the nearly one billion dollar cost of operating federal corrections, based on share of the general population, comes to 30 million dollars of taxpayers money.<sup>179</sup>

Estimating the cost of federal corrections based on population probably underestimates the real cost of incarcerating Nova Scotia criminals in federal institutions. Without knowing the number of federal inmates sentenced in the province it is not possible to calculate the real cost of crime attributable to inmates who committed their crime in Nova Scotia. However, Nova Scotia inmates make up a larger share of the penitentiary population than Nova Scotians do of the general population. Nova Scotia has had the

 <sup>&</sup>lt;sup>178</sup> Statistics Canada, *Adult Correctional Services in Canada, 1995-96,* catalogue no. 85-211-XPB, page 85.
 The numbers are for 1996 but have been altered to 1997 values using the Consumer Price Index.
 <sup>179</sup> See Appendix on methodology for more details.

highest rate of admissions to federal penitentiaries per 10,000 adults charged of any province for the last two years, and has incarcerated federally at a higher rate overall for the last five year period based on aggregate figures for that period (Chart 9.11).

This trend is also true in relation to the general adult population. The Nova Scotia rate of admissions to federal custody in 1996 was 80 per cent higher than the national average of two adults per 10,000 population (Chart 9.12). If admissions are an accurate indicator of prison population, and federal corrections costs were apportioned according to the home province of admissions, Nova Scotia would be responsible for 5.88 per cent of incarceration costs instead of the 3.13 per cent the taxpaying population currently pays.<sup>180</sup> In such a scenario Nova Scotia would have to pay \$57 million.

The relatively high proportion of Nova Scotian federal penitentiary inmates appears to be directly correlated with sentencing trends, since federal prisons house inmates sentenced to two or more years. As noted above, Nova Scotia sends less people to prison than any other province, but imposes longer sentences than the other provinces.





<sup>&</sup>lt;sup>180</sup> Statistics Canada. March 1997. *Adult Correctional Services in Canada, 1995-96*. In 1995-96 there were 259 admissions from Nova Scotia, and 4402 in Canada overall.

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5

Nfld



Chart 9.12: Inmates per 100,000 adult population in Federal Penitentiaries, by Province

#### Lost Economic Production 9.3.2

PEI

NS

NB

Counting only the 28% of inmates who were employed at the time of incarceration, the lost economic production of prisoners would cost the Nova Scotia economy an additional \$1.25 million a year, at average weekly industrial wages. This is based on 22% who were employed full-time, and 6% working at part-time, seasonal and other forms of employment. Since the education data in chapter 6 indicate generally lower educational levels for inmates, the cost estimate here has been discounted for the lower wages paid to less educated workers for a total estimated loss of about \$1 million a year.<sup>181</sup>

Que

Ont

Man

Sask

Alta

BC

Kit Waters, Director of Policy Planning and Research, Nova Scotia Department of Justice, points out that offenders frequently contribute "volunteer" community service work as a condition of their sentence. Future updates of this report might include positive valuations of the social benefits provided, using the replacement cost estimates for voluntary work described in chapter 11.2.2. These could then be netted against the lost economic production estimates given in the above paragraph.

#### 9.3.3 Youth Corrections

In 1996-97 on average there were 174 youths, 17 and younger, in custody in Nova Scotia. This represents a rate of 23 per 10,000 youths.<sup>182</sup> In the same period, the average number

<sup>&</sup>lt;sup>181</sup> Employment data from Paul Smith, N.S. Department of Justice.

<sup>&</sup>lt;sup>182</sup> Statistics Canada, "A Profile of Youth Justice in Canada", Juristat, catalogue no. 85-544, page 44.
of youths on supervised probation at month end in Nova Scotia was 1,495, a rate of 197 per 10,000 youths.<sup>183</sup> This is broadly in line with the national average. In 1995 the government of Nova Scotia spent \$16.7 million on youth corrections, in constant 1997 dollars.<sup>184</sup>

Kit Waters, Director of Policy Planning and Research, N.S. Department of Justice, points out that there is also a significant federal contribution for justice costs associated with young offenders. Time did not permit an examination of the extent to which this federal spending is included in the public justice costs described here. Future updates of this study may need to adjust the youth corrections expenditures accordingly.

### 9.3.4 Total Corrections Costs

Adding together provincial and federal corrections expenses in Nova Scotia, including parole, probation and community supervision, plus youth corrections costs and inmate production losses, means that the corrections system as a whole costs Nova Scotians \$75 million a year.

### 9.3.5 Comparison with United States Corrections

The United States spends 50 billion dollars a year on corrections.<sup>185</sup> This amounts to \$US186 or \$CAN280 per person per annum, compared to \$92 per person per year in Canada<sup>186</sup> and just \$78 in Nova Scotia<sup>187</sup>. The United States has the second highest rate of incarceration in the world after Russia, with 0.67 percent of its population behind bars. The average American spends 3.6 times as much jailing people as the average Nova Scotian.

The American prison population has grown by an average 6.2% annually throughout the 1990's, and has more than doubled over the last 12 years. At the end of 1985 there were 313 adult prisoners for every 100,000 U.S. residents. By mid-1998, the figure was 668 per 100,000, just behind Russia's rate of 685 prisoners per 100,000. In 1996 the United States had 600 prisoners per 100,000 compared to Russia's 690. At the present rate of growth, the United States will very soon be the world's leading jailer.

At mid-1998, U.S. jails and prisons held 1.8 million people, according to the U.S. Bureau of Justice Statistics, compared to 744,208 at the end of 1985. In 12 years the number of U.S.

<sup>&</sup>lt;sup>183</sup> Ibid., page 48.

<sup>&</sup>lt;sup>184</sup> Statistics Canada. "Justice Spending in Canada", *Juristat,* Statistics Canada Cat. No. 85-002, Vol. 17, No.3.

<sup>&</sup>lt;sup>185</sup> Estimate is based on data from *Statistical Abstract of the United States, 1997.* 117<sup>th</sup> edition, U.S.

Department of Commerce. See Appendix on methodology and data sources for more details.

<sup>&</sup>lt;sup>186</sup> Statistics Canada, "Justice Spending in Canada", *Juristat*, Vol.17, No.3, p.12.

<sup>&</sup>lt;sup>187</sup> Statistics Canada. Cansim matrix 1. Population estimate for 1997 is 945,080.

adults in prison has more than doubled. The Justice Department reported that in June 1998, federal and state prisons held 1.2 million people, while local jails held another 600,000.<sup>188</sup>

By contrast, Nova Scotia's incarceration rate is 62 per 100,000 population, less than 10% the American rate.<sup>189</sup> The Canadian incarceration rate of 115 per 100,000 is the fourth highest in the world, after South Africa at 265 per 100,000. Internationally, Nova Scotia's incarceration rate is comparable to that in western European countries, and is almost identical to that in Sweden (Chart 9.13).<sup>190</sup>

Stated another way, the United States has 11 times as many of its people behind bars as Nova Scotia. One out of every 150 Americans is behind bars, compared to one out of every 900 Canadians and one out of every 1600 Nova Scotians.

In the last fifteen years the United States has increased spending on corrections by more than 230%. For the average American this translates into an almost threefold per capita increase from \$US64 per year in 1993. Prisons are one of the fastest growing areas of the American economy, and the growth has helped fuel the increase in the American GDP.

Economic analysts, praising the "robust" American economy with its "miraculous" growth rates, rarely consider what is driving this growth and whether it is contributing to an actual improvement in the average American's standard of living and quality of life. They largely ignore GDP architect Simon Kuznets' admonition always to examine the type and purpose of growth in determining a nation's welfare. There is a strange paradox in a society conventionally described as prospering and with a booming economy on the one hand, while at the same time doubling its prison population and locking up more of its citizens than ever.

The GPI is unambiguous on this issue. Higher crime costs signify the deterioration of a vital social asset, a degraded quality of life, and a setback for social progress. This has very practical economic implications that have a direct impact on well being and prosperity. The money Nova Scotians save by a relatively lower corrections bill can be spent on social programs and activities that enhance their quality of life and raise their

<sup>&</sup>lt;sup>188</sup> U.S. Bureau of Justice Statistics, as reported by The Associated Press, *The Chronicle-Herald*, 15 March, 1999, page A10.

<sup>&</sup>lt;sup>189</sup> Data supplied by Policy, Planning and research Division, N.S. Department of Justice. As of June 30, 1998, there were 365 "in-house" inmates in provincial prisons, including 259 sentenced, 89 on remand, and 17 "other status". This is the same date for which the U.S. data are issued by the U.S. Bureau of Justice Statistics. For 1997-98, there were also 221 federally sentenced prisoners resident in Nova Scotia at the time of admission. We have attempted to use incarceration statistics for Nova Scotia that appear to be as comparable as possible to those issued by the U.S. Justice Department. Thus, the 62 per 100,000 figure includes only in-house inmate counts for sentenced prisoners and those on remand and excludes inmates "on register" but on temporary leaves of absence, work programs and other forms of institutional leave. This may explain why this figure is not entirely reconcilable with inmate counts and incarceration rates mentioned earlier in this section. Some of the discrepancy may also lie in the difficulty in identifying the Nova Scotia proportion of inmates in federal penitentiaries.

<sup>&</sup>lt;sup>190</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective", *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 6, 1996. The 1996 International Crime Victimization Survey included 11 industrialized countries among the 34 countries surveyed.

standard of living, giving them a comparative quality of life advantage over the U.S. in this area. By measuring crime costs in economic terms, it is possible to assess the extent of the loss in social progress due to regrettable expenditures.



#### **Chart 9.13: International Rates of Incarceration** (Inmates per 100,000 population)

Sources: U.S. Bureau of Justice Statistics (June 1998 data); Nova Scotia data for June 1998 supplied by Policy, Planning and Research Division, N.S. Department of Justice; Russian data from The Sentencing Project, U.S.A., reported in *The Chronicle-Herald*, 15 March, 1999, page A10; Statistics Canada, Canadian Centre for Justice Statistics, *Criminal Victimization: An International Perspective* (1996 figures for 11 industrialized countries including USA, Russia, Sth. Africa, Canada, Germany, Sweden, Japan);

Prison statistics reveal graphically some U.S. quality of life sacrifices, such as the dramatic division of that society on racial lines. For example, 63% of U.S. jail inmates in 1996 belonged to racial or ethnic minorities. The rate of prison incarceration is eight times higher for blacks than for whites, and 3.5 times higher for Hispanics than for whites. The lifetime chance of a black man spending time in a federal or state prison is now 28.5% in the U.S. If local and county jails were included, holding about half as many inmates again as federal and state prisons, the chance of a black man being jailed is probably over 40%. In other words, the U.S. is putting a very large proportion of its black male population behind bars.

More generally the high rate of incarceration in the United States may signify a serious erosion of civil liberties and civil rights in that country. On December 31, 1997, U.S. state prisons were operating at between 15% and 24% above capacity, while federal prisons were operating at 19% above capacity. The overcrowding in American prisons is due to a higher ratio of guilty verdicts resulting in incarceration, and longer sentences. Since the increased prison population comes at a time when the crime rate is falling, it appears that the crime rate is being reduced in part by removing large portions of the population from society for long periods at considerable public expense.

However, locking offenders up more frequently and for longer periods in overcrowded conditions negatively impacts the civil rights of offenders, which ultimately cannot be separated from the civil rights of the general population. Since a cardinal tenet of civil liberties is that punishment fit the crime, the current trend towards excessive sentencing and the clear preference for punishment over prevention raises serious questions about the extent to which Canadians may wish to adopt the U.S. social and economic model despite its impressive GDP growth rates.

The U.S. solution to rising incarceration costs and a growing prison population is increasingly to turn American prisons over to the private sector, a model attracting growing attention in Canada. To make a profit, low operating costs may be achieved through reductions in space per prisoner, lower pay rates for guards, and cuts in rehabilitation programs. But more and longer prison sentences and a high rate of recidivism stimulate economic growth and increase profits for prison operators, leading Ed Finn of the Canadian Centre for Policy Alternatives to point out that private prisons rest on the assumption that "more crime equals more profits".<sup>191</sup>

### 9.3.6 Implications and Conclusion

Since the GPI is based on long-term cost-benefit analysis rather than the current income approach of the GDP, it necessarily questions whether initial cost savings from private prisons may be false economies from a social cost-accounting perspective, unless prison profits were based on a completely different criterion like reduced recidivism rates.

The policy issues raised in crime cost accounting raise similar questions about other economic stimuli like increased gambling, divorce, sickness, overeating, stress, accidents, toxic pollution and natural resource depletion, all of which make the GDP grow. The GPI approach inevitably focuses more attention on preventive strategies rather than symptomatic treatment, and evaluates growth strategies strictly in terms of their long-term impact on the overall standard of living and quality of life.

From this perspective, the critical variables in crime reduction are the socio-demographic correlations described briefly in chapter 6, since they reveal areas where preventive

<sup>&</sup>lt;sup>191</sup> On the appropriateness of the private prison model for Canada, see Ed Finn, "More Crime = More Profits", *Canadian Forum*, September, 1996, pages 7 and 8.

interventions have the highest potential yield from cost-effective investments that can enhance the quality of life. In its emphasis on prevention, on the judicious evaluation of long-term benefits and costs, and on recognising limits to growth, the GPI accounting approach is more conservative than one which promotes limitless growth without regard to quality.

### 9.4 Victims' Assistance Fund

The Nova Scotia Justice Department's Victims' Services Division administers a Victims' Assistance Fund for victims of crime generated from a victim surcharge on fine and non-fine dispositions on both provincial statute and federal offences.<sup>192</sup> The fund is used for services, research and promotion of the rights of victims of crime, but cannot, by law, be used to provide direct compensation to individual victims.

Most of the revenue comes from motor vehicle and liquor control offences. Due to a decline in charges laid, there has been an annual decrease in surcharges collected in each of the last six years for a total loss of 20% since 1992. The 1997-98 surcharge collected was \$650,405, and there is currently \$706,000 in uncommitted revenues in the fund.

Total awards for 1996/97 were \$792,372. Awards are made by the Director of Victim Services.<sup>193</sup> On an annual basis the Victims' Assistance Fund supports the Child Victim Witness Program and staffing for the Regional Victims' Services offices. It has also supported new initiatives such as the Production of Records in Sexual Offences Pilot Program, and the Department's Framework for Action Against Family Violence. Since its initiation in August, 1989, disbursements and commitments from the fund total nearly \$6.2 million.

This spending is included in this section because it is a publicly administered justice program not accounted for in other sections of this chapter. It may be argued that the fund is simply a transfer of funds form offender to victim, and not therefore a cost to society. Yet it is included here as a cost of crime, since there is an opportunity cost to the investment. The fund represents money that could be spent more productively on welfare-enhancing measures if the crimes had not occurred. In fact, the decline in surcharge revenues in proportion to a diminution of charges laid illustrates the direct connection between these revenues and expenditures on the one hand, and the rate of crime on the other. Victimization itself is regrettable, and the funds spent assisting victims are "regrettable" for the same reason – society wishes that they would not need to be spent, and could instead be invested in more productive actions.

<sup>&</sup>lt;sup>192</sup> This section is based on N.S. Department of Justice, Victim Services' Division, "Victims' Assistance Fund," *Activity Report 1997/98*, pages 50-56

<sup>&</sup>lt;sup>193</sup> Information on administration of program from Joanne Marriott-Thorne, Victim Services Division, Nova Scotia Department of Justice, personal communication, 19 March, 1999.

Strictly speaking, all Justice Department spending is a defensive expenditure for the same reason, and a cost of crime paid by the taxpayer. If crime were to disappear, the spending would not be necessary and could be invested in more productive activities. While crime exists, it is an essential expenditure. However, due to time constraints, the Justice Department budget has not been analyzed here, and only the Victims' Assistance Fund included in the calculations as a very direct and immediate crime cost.

# **10. Private Defensive Expenditures**

Defensive expenditures in this context are those undertaken by households and businesses to protect themselves against crime. They do not contribute to welfare in a positive sense, but are designed to guard against any decline in security and well-being, or to compensate for a past decline. Clearly the public costs described in the last chapter can be viewed as defensive expenditures as well. But this chapter focuses on private spending on locks, burglar alarms, surveillance systems, security guards, and theft insurance premiums for the purpose of crime prevention and detection.

Lars Osberg and Andrew Sharpe argue that such defensive spending is analogous to intermediate inputs in production, such as the expenses which firms incur to bring materials to the work site.

Since intermediate inputs in the business sector are netted out in the calculation of value added, it can be argued that similar expenditures by households should be subtracted from marketed consumption to obtain a better estimate of true consumption flows. Similarly, if the good that individuals want to consume is "a crime free street," but it now takes a greater expenditure on police services to produce that good, this should not be counted as an increase in consumption.<sup>194</sup>

## 10.1 Defensive Expenditures and Fear of Crime

Defensive expenditures increase in direct response to the fear of crime and to subjective perceptions of the likelihood of crime, as well as to objective changes in the crime rate itself, and are, therefore, an important indicator of public perceptions of personal security.

Once again, our conservative definition of costs is confined to monetary expenditures only. Fear of crime can clearly produce defensive behaviour as well as defensive expenditures. Restricting one's movements by staying home at night, or taking a taxi to avoid walking in the dark may be reactions to the fear of crime that have a direct impact on the quality of life and, in some cases, produce indirect costs that are not measured here.

Overall Canadians feel less safe than they did just a few years ago. In 1996, 27% of Canadians reported that they did not feel safe walking alone in their area after dark, compared to 22% who gave that response in 1992. Compared to 10 other western countries surveyed in the 1996 International Crime Victimization Survey, Canadians felt less safe than any country except the United Kingdom. 25% of Americans did not feel safe and only 13% of Swedes said they did not feel safe (Chart 10.1).<sup>195</sup>

<sup>&</sup>lt;sup>194</sup> Osberg, Lars and Andrew Sharpe, *An Index of Economic Well-being for Canada*, presented to the Centre for the Study of Living Standards Conference on the State of Living Standards and the Quality of Life in Canada, Ottawa, October 30, 1998, pages 8-9.

<sup>&</sup>lt;sup>195</sup> Statistics Canada, Canadian Centre for Justice Statistics, Besserer, Sandra, "Criminal Victimization: An International Perspective", *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 6, March 1998, page 9.



#### Chart 10.1: Percent of Population Who Do Not Feel Safe Walking Alone in Their Area After Dark, International Perspective

Source: Sandra Besserer, Statistics Canada, "Criminal Victimization: An International Perspective, Results of the 1996 International Crime Victimization Survey, *Juristat*, catalogue no. 85-002, volume 18, no.6, page 9, figure 11.

Data for the Halifax-Dartmouth area shows a different trend. The 1984 Canadian Urban Victimization Survey found that 48 per cent of Halifax-Dartmouth interviewees felt unsafe walking alone in their neighbourhood after dark.<sup>196</sup> The same survey showed that only 40 per cent of respondents from across Canada reported similar feelings.<sup>197</sup> Recent data indicates that Nova Scotians feel safer in their communities than had previously been the case. Thirty per cent of Nova Scotians felt unsafe walking alone in their community at night in 1993. By 1998, according to the Nova Scotia Justice Department, only 19 per cent reported such feelings.<sup>198</sup> If the data are comparable to those in the International Crime Victimization Surveys described above, then they seem to contradict the national trend.

Paul Smith, Nova Scotia Justice Department, notes that an in-depth re-interviewing process following the 1995-96 British victimization survey revealed that the survey probably overestimated the "fear of crime" by 15-20%. The interviews suggested that

 <sup>&</sup>lt;sup>196</sup> Ministry of the Solicitor General of Canada. Programs Branch User Report: Preliminary Findings of the Canadian Urban Victimization Survey: Halifax-Dartmouth, catalogue no. 1984-50, page17, table 8.
 <sup>197</sup> Ibid, Table 9.

<sup>&</sup>lt;sup>198</sup> Nova Scotia Justice Department Website: http://www.gov.n.s.ca/just/outcomem.htm.

many of the respondents' fears were actually related to specific and particular circumstances, and were not generalized as the survey results implied.<sup>199</sup> For this reason, the results reported in this section should be treated with caution.

However, it is also clear that fear of crime translates into actual defensive behaviour. 24% of Canadians said that they avoided certain places or people when they were last out in their area after dark, up from 20% in 1989 and 21% in 1992. Canada ranked third after the USA (29%) and the United Kingdom (28%) in adopting such defensive behaviour.<sup>200</sup>

Canadian women are more than four times as likely to feel unsafe walking alone in their area after dark, and about three times as likely to worry about being home alone at night. Persons 65 and over are twice as likely to feel unsafe walking alone in their area after dark than others.<sup>201</sup>

30% of Canadians feel the chance of break-in is "likely" or "very likely" in the next 12 months, the third highest rate among the surveyed countries, and well ahead of the United States (23%), Sweden (16%), Austria (13%) and Finland (11%). In the 1993 General Social Survey, 25% of Canadians reported feeling worried when alone in their homes in the evening or at night.<sup>202</sup>

Not surprisingly, Canada also ranks third among countries adopting special household security measures, after Great Britain the USA. 78% of Canadian households have a burglar alarm, special door locks, special door/window grills, a watch dog, a high fence, a neighbourhood watch scheme, or a security guard or caretaker compared to only 54% of Austrians, 53% of Swedes, and 49% of Swiss. The use of each of these seven specific measures was higher than average in Canada.<sup>203</sup>

Again, trends over time are significant, because the fear of crime and defensive expenditures in Canada appear to be growing despite a downturn in the actual crime rate since 1991. Between the 1992 and 1996 victimization surveys, burglar alarm use in Canadian households increased from 12% to 19%, the use of special door locks was up from 42% to 52%, and the proportion of households with watch dogs increased from 23% to 27%.<sup>204</sup>

In sum, the fear of crime translates into actual monetary expenditures on crime prevention, which are assessed in the remainder of this chapter.

<sup>&</sup>lt;sup>199</sup>Paul Smith, personal communication, 26 March, 1999.

<sup>&</sup>lt;sup>200</sup> Statistics Canada, Canadian Centre for Justice Statistics, Besserer, Sandra, "Criminal Victimization: An International Perspective – Results of the 1996 International Victimization Survey," *Juristat*, catalogue no. 85-002, volume 18, no. 6, March, 1998, page 10.

<sup>&</sup>lt;sup>201</sup> Statistics Canada, Sacco, Vincent, "Fear and Personal Safety", *Juristat*, catalogue no. 85-002, volume 15, no. 9, March 1995, page 1.

<sup>&</sup>lt;sup>202</sup> Op. cit., page 5; and Statistics Canada, Besserer, op. cit., page 9.

<sup>&</sup>lt;sup>203</sup> Statistics Canada, Besserer, op. cit., pages 9 and 10.

<sup>&</sup>lt;sup>204</sup> Op. cit., pages 10 and 11.

## 10.2 Derived Estimates for Home Security Spending

Evidence from victimization surveys indicates that across Canada, households are investing more money in home security systems than ever before. Burglar alarm use in Canada increased from 12% of households in 1992 to 19% in 1996, and the use of special door locks rose from 42% of households in 1992 to 52% in 1996.<sup>205</sup> No separate data are available for Nova Scotia. Are these growing crime prevention expenditures a sign of increased well being and prosperity, as the use of the GDP as a measure of progress implies? Or are increased home security expenditures regrettable costs, signifying a less secure society and eroded quality of life?

The Genuine Progress Index takes the latter view and counts home security expenditures as defensive measures designed to protect against a further decline in well being. If crime rates decreased and Canadians felt more secure, the money saved could be invested in activities that enhanced well being and the quality of life in absolute terms.

Using 1982 constant dollars, the original U.S. Genuine Progress Index estimated that the costs of crime borne directly by households was \$20.1 billion in 1992. Of this total, \$5.2 billion was spent on locks and safe deposit boxes, and another \$2.8 billion was spent on burglar alarms and other electronic security systems.<sup>206</sup>

Using the original GPI methodology, Hans Messinger and Abe Tarasofsky of Statistics Canada have made an estimate of crime costs for Canada, which is used in Osberg and Sharpe's new *Index of Economic Well-being for Canada*. In constant 1992 dollars, this amounts to \$112 per capita in 1971, rising 39.4% to \$156 in 1997. Converted to 1997 dollars, this amounts to \$118 in 1971 and \$165 in 1997.<sup>207</sup>

Of this total, direct victim crime costs have already been counted in chapters 6 and 7 of this report. Therefore, only household spending on security devices is counted here, amounting to 39% of the household costs estimated in the U.S GPI, or \$61 per capita in Canada. Government and business costs are excluded *a priori* in the U.S. GPI, and so this figure reflects only spending on home security devices.

<sup>&</sup>lt;sup>205</sup> Statistics Canada, Canadian Centre for Justice Statistics, "Criminal Victimization: An International Perspective", *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 3, 1996.

<sup>&</sup>lt;sup>206</sup> Cobb, Clifford, Ted Halstead and Jonathan Rowe, *The Genuine Progress Indicator: Summary of Data and Methodology*, Redefining Progress, San Francisco, September, 1995, pages 17-18. The 1992 figures are derived by using Cobb et. al.'s assumed 2.8% growth rate in spending on locks and safe deposit boxes based on their \$4.3 billion estimate for 1985 from Laband, David and John Sophocleus, "An Estimate of Resource Expenditures on transfer Activity in the United States", *Quarterly Journal of Economics*, August 1992, pages 959-983. Their estimate for alarms and electronic security systems is from Parr, Gary, "\$12.5 Billion Targeted for 1995", *Security Distributing and Marketing*, January, 1995.

<sup>&</sup>lt;sup>207</sup> Messinger, Hans and Abe Tarasofsky, "Measuring Sustainable Economic Welfare: Looking Beyond GDP", paper presented at the annual meeting of the Canadian Economics Association, St. Johns, Newfoundland, June, 1997; Osberg and Sharpe, op. cit., page 9.

Here we have further reduced this estimate by two factors. The 1996 International Crime Victimization Survey found that 78% of Canadian households had at least one security measure, such as burglar alarms and special door locks, compared to 84% of U.S. households that employ such measures.<sup>208</sup> Using this proportion would reduce per capita spending on security devices to \$57 for Canada.

We have further taken the comparative rate of police-reported break and enter offences for Nova Scotia and Canada as a proxy for the likelihood of household investment in security devices. In 1997, Nova Scotia reported 9193 break and enter incidents compared to 373,355 in Canada as a whole. In proportion to population, the Nova Scotia break and enter rate is 22% less than the Canadian rate.

We have therefore assumed that annual expenditures on security devices in Nova Scotia amount to \$44.5 per capita, compared to \$57 in Canada as a whole. This amounts to \$42.1 million a year in Nova Scotia and \$1.7 billion a year in Canada, in direct proportion to the comparative rate of break and enter offences. Adjusted to 1997 dollars, as used in this report, the totals are \$45.47 million in Nova Scotia and \$1.84 billion in Canada. Because no direct measurements are available, we have assumed a constant ratio between the rate of break and enter offences in the province and defensive expenditures on security devices. (Table 10.1)

Since 1962 a cumulative total of more than \$1.2 billion has been spent on security devices in the Nova Scotia. If 1962 estimated levels of expenditures had been maintained the potential savings to the province would have been in excess of \$815 million. If the Nova Scotia public had continued spending at the same rate as that of 1975 the potential savings to 1997 would have been around \$160 million.

It should also be noted that this may be a low estimate for Nova Scotia, because the assumption that household expenditures are reduced by the lower rate of break and enter offences is not proven. Thus, the International Crime Victimization Survey found that 53% of Canadians who believed the chance of break-in was "very likely" or "likely" used special door locks, compared to 52% of those who thought it unlikely. As well, Canadians who had been victimized during the previous five years were no more likely to have special home security measures than those who had not been victimized.<sup>209</sup> Nevertheless, this report errs on the side of conservatism by discounting Nova Scotia expenditures by 22% until better evidence is available.

The best circumstantial evidence for a direct relationship between break and enter rates and defensive expenditures is found in Statistics Canada's 1988 General Social Survey, which reported that 14% of Atlantic region households installed security devices in 1987 compared to 23% in Canada as a whole.<sup>210</sup> This corresponds to 61% of the Canadian

<sup>&</sup>lt;sup>208</sup> Statistics Canada, Besserer, Sandra, "Criminal Victimization: An International Perspective", *Juristat,* catalogue no. 85-002-XPE, volume 18, no. 6, page 10.

<sup>&</sup>lt;sup>209</sup> Statistics Canada, Besserer, op. cit., page 11

<sup>&</sup>lt;sup>210</sup> Statistics Canada, Sacco, Vincent, and Holly Johnson, "Patterns of Criminal Victimization in Canada," General Social Survey Analysis series no. 2, catalogue no. 11-612, March, 1990, Figure R, page 81.

average. In that year the per capita rate of police-reported break and enter offences in the Atlantic provinces was 59.5% of the Canadian rate. The Nova Scotia rate in that year was 70.8% of the Canadian rate.<sup>211</sup>

An alternative method of assessing household defensive expenditures would be to determine the average cost of each type of household security measure and to apply this to the percentage of households that use these measures. Thus, the 1996 International Crime Victimization Survey found that 52% of Canadian households use special door locks, 19% have a burglar alarm, 20% have special door/window grills, 19% have a high fence, 27% have a watch dog, 12% employ a caretaker or security guard, and 34% participate in a Neighbourhood Watch program.<sup>212</sup>

For example, Weiser deadbolts sell in Nova Scotia for between \$53 and \$220 before tax.<sup>213</sup> Though time did not permit a full costing of such specific household defensive expenditures based on sample sales data for the present report, this method could in future provide a useful test for the estimate derived above. As a small step in this direction, GPI Atlantic has made calculations for annual expenditures on locks.

Statistics Canada's *Products Shipped by Canadian Manufacturers, 1994-95* gives the value of locks and keys produced in Canada as \$431 million for 1995.<sup>214</sup> To this must be added imports of locks and keys to the value of \$295 million.<sup>215</sup> Locks and keys exported from Canada, amounting to \$140 million,<sup>216</sup> are subtracted from this total for a total value of \$586 million. Translated to 1997 dollars this amounts to \$603 million.

There are three major qualifications to this figure, which make it likely that \$603 million is a significant underestimate of actual Canadian expenditures on locks and keys:

- 1) This is not the retail price of locks and keys, but the value after manufacture. In the case of imports and exports, it is the value at the point of entry or exit. No figures are available for retail sales of locks and keys in Canada, either in absolute numbers or in dollar values.
- 2) The figure also does not include the costs of installation.
- 3) It should be noted that the \$603 million figure applies to all locks and keys used in government and business enterprises as well as households. Since this section focuses on home security devices, we have not adjusted the figure upwards to represent the normal retail mark-up, on the assumption that this downward bias will compensate for any potential double-counting in the government and business sectors.

<sup>&</sup>lt;sup>211</sup> These are derived figures. The break and enter rates are arrived at through the number of incidents and population data. Statistics Canada *Cansim disc* Cat. No. 10F0007XCB, "Crimes by Actual Offence," Matrix No. 2200, and Statistics Canada *Cansim disc* Cat. No. 10F0007XCB, "Quarterly Estimates of Population for Canada, Provinces and Territories," Matrix No.1.

<sup>&</sup>lt;sup>212</sup> idem.

<sup>&</sup>lt;sup>213</sup> Based on visit to Kent Building Supplies, Micmac Mall, Dartmouth, Nova Scotia.

<sup>&</sup>lt;sup>214</sup> Statistics Canada, *Products Shipped by Canadian Manufacturers, 1994-95,* sections 8301, 8301.2 and 8301.4, catalogue no. 31-211-XPB, page 223, table 1.

<sup>&</sup>lt;sup>215</sup> Statistics Canada, catalogue no. 65-203-XPB, pages 1043-1045, lines 8301.10 to 8301.70.

<sup>&</sup>lt;sup>216</sup> Statistics Canada, catalogue no. 65-202-XPB, pages 751-753, lines 8301.10 to 8301.70.

Nevertheless the \$603 million value is used to provide a provisional estimate here for the purposes of testing the derived estimates given above. Based on the Nova Scotia share of Canada's break and enter incidents, provincial expenditures on locks and keys would be \$3.5 million in 1962, and \$14.8 million in 1997.

Compared to the estimate of \$45.5 million in Nova Scotia and \$1.84 billion in Canada for total expenditures on security devices, derived from Messinger and Tarasofsky above, it seems reasonable that locks and keys would amount to one-third of total defensive security expenditures. In dollar values, U.S. spending on locks accounted for slightly under one-third of the US GPI estimate for defensive expenditures due to crime, with safe deposit boxes, burglar alarms and other electronic security systems accounting for the rest. In other words, this preliminary test using Canadian manufacturing data indicates that the estimate of \$45.5 million used in this report is a fair one.

Date	Defensive	Potential Savings if	Potential Savings if
Date	Expenditures	Maintained	Maintained
1962	10.87		
1963	13.93	3.06	
1964	14.47	3.60	
1965	12.33	1.46	
1966	12.98	2.11	
1967	13.72	2.84	
1968	15.38	4.51	
1969	19.47	8.60	
1970	19.96	9.09	
1971	22.23	11.36	
1972	23.50	12.63	
1973	26.50	15.63	
1974	29.26	18.39	
1975	35.35	24.48	
1976	38.86	27.98	3.50
1977	36.68	25.81	1.33
1978	36.54	25.67	1.19
1979	37.67	26.80	2.31
1980	41.51	30.64	6.16
1981	43.63	32.76	8.28
1982	40.78	29.91	5.43
1983	35.20	24.32	-0.16
1984	37.66	26.79	2.30
1985	39.84	28.97	4.49
1986	42.59	31.72	7.24
1987	43.51	32.24	7.76
1988	42.45	31.58	7.10
1989	38.18	27.31	2.83
1990	46.75	35.88	11.40
1991	58.03	47.16	22.68
1992	52.74	41.87	17.39
1993	46.38	35.51	11.03
1994	43.40	32.52	8.04
1995	43.70	32.83	8.35
1996	47.00	36.13	11.64
1997	45.47	34.60	10.11
	1208.13	816.76	160.40

# Table 10.1 The Cost of Household Defensive Measures in Nova Scotia, 1962 – 1997(millions of 1997\$)

### 10.3 Security Guards and Private Investigators

Because security guards and private investigators are employed mostly by government and business, these expenditures were not included in the U.S. GPI estimates for crime costs. This is due to two accounting assumptions:

- 1) The U.S. GPI excluded government spending *a priori*, because the index was based only on personal consumption.
- 2) Business expenses are intermediate costs, and therefore show up ultimately in the price of products and services sold to consumers, which again are measured in the personal consumption data.<sup>217</sup>

The estimate by Messinger and Tarasofsky that is also used by Osberg and Sharpe follows that methodology, and thus also excludes spending on security guards and private investigators. Because the derived estimate in section 10.2 above is based explicitly on *household* spending on crime prevention, in accordance with these assumptions, separate estimates are also made in the Nova Scotia GPI for business losses due to crime. When these losses are passed on to consumers in the form of higher prices, that portion of spending is in fact a cost of crime, and is counted as such in this report.

Messinger and Colman have recognized the limitations of this "macro approach" that focuses from the start on creating a bottom line index. By excluding government and business expenditures, the original GPI could not provide comprehensive estimates for each component of the index, and thus has limited utility for policy purposes. To identify cost-effective crime prevention strategies, for example, policy-makers need to see a breakdown of the total costs of crime. For this reason the Nova Scotia GPI begins with as complete a description of each component of the index as possible, before any attempt to eliminate double-counting and to compile a composite index of sustainable development.<sup>218</sup>

Because they are not counted in the estimate in section 10.2 above, expenditures on security guards and private investigators are added here. The Solicitor-General's Department, which licenses private security guards and investigators, shows that there were 2008 licensed guards and investigators in Nova Scotia in 1997-98, a 12% increase from the previous year.<sup>219</sup> Statistics Canada employment and earnings data shows that salaries paid to security guards and private investigators came to \$56.3 million in 1997 (Table 10.2).

<sup>218</sup> Messinger, Hans and Ronald Colman, *Measuring Sustainable Development: A Nova Scotia Pilot Study,* paper presented to the Centre for the Study of Living Standards Conference on the State of Living Standards and the Quality of Life in Canada, Ottawa, October 31, 1998, page 4.

<sup>&</sup>lt;sup>217</sup> Cobb, et. al., op. cit., page 17.

<sup>&</sup>lt;sup>219</sup> Document PS540N00, "Private Guard Licensing System", from Karen Forsyth, Department of the Solicitor-General; provided by Paul Smith, N.S. Department of Justice.

Extrapolating back to 1962, Nova Scotia businesses and individuals have spent a cumulative total of \$1.7 billion in 1997 dollars on private security guards and investigators since 1962. If the need for the services of the two professions had been maintained at the rate experienced in 1962 over \$900 million could have been saved and spent on more productive and welfare-enhancing activities. The potential savings if the 1975 rate had held steady to the present day would have been about \$200 million.<sup>220</sup>

Brantingham and Easton's report on crime costs for the Fraser Institute correctly points out that since overhead, clerical and managerial expenses are counted in the estimate of public policing costs, these should be taken into account in estimating private security costs as well.<sup>221</sup> Assuming that private security has the same overhead as public policing, we should add 24% to the total for salaries for a total 1997 expenditure of \$69.8 million in Nova Scotia.

Interestingly, Nova Scotia proportionately spends one-third less on a per capita basis on security guards than the national average. This reflects a property crime rate almost 20% less than the national average, and a rate for serious violent crimes less than two-thirds the national average. From the GPI perspective, this savings is a direct quality of life advantage enjoyed by the province that translates into potential productive investments in welfare-enhancing activities.

However, the trends bears close watching. The Fraser Forum report demonstrates that the number of private security guards is increasing much faster than the number of police in Canada. There are today almost twice as many private security guards in the country as police. In 1971 there were only 28% more. But because private security guard salaries are so much lower than police salaries, the total salary bill for private and public policing is almost identical.<sup>222</sup>

If there is a gradual and subtle privatization of society's policing functions, what are the implications of this trend? The subject is beyond the scope of this study, but is worth investigating. From the perspective of crime costs, lower salaries paid to private security guards may keep policing expenses down. But the social costs may be considerable if property is less equitably protected.

<sup>&</sup>lt;sup>220</sup> Sources for Table 10.2: Statistics Canada. *1961 Census of Canada*, vol. 3, part 3, "Wage-Earners: Earnings & Employment," p. 21.35. *1971 Census of Canada*, vol.3, part 6, "Income of Individuals," p.17.25. *1981 Census of Canada*, "Worked in 1980 – Employment Income by Occupation," Cat. No. 92-930, p. 1.45. *1986 Census of Canada*, The Nation: Employment Income by Occupation, Cat. No. 93-116, p.1-47. *1996 Census of Canada*, CD Rom Cat. No. 93F0029XDB96005, p. 2.85. See Appendix on Methodology and Data Sources for more details.

 <sup>&</sup>lt;sup>221</sup> Brantingham and Easton, *The Crime Bill*, The Fraser Forum, page 28.
 <sup>222</sup> Idem.

Date	Total Salaries of Security Guards & Private Investigators	Potential Savings if 1962 Levels Maintained	Potential Savings if 1975 Levels Maintained
1962	22.8		
1963	25.1	2.3	
1964	27.4	4.6	
1965	29.8	7.0	
1966	32.1	9.3	
1967	34.4	11.6	
1968	36.7	13.9	
1969	39.0	16.2	
1970	41.3	18.5	
1971	42.5	19.7	
1972	43.6	20.8	
1973	44.7	21.9	
1974	45.8	23.0	
1975	46.9	24.1	
1976	48.0	25.2	1.1
1977	49.1	26.3	2.2
1978	50.2	27.4	3.3
1979	51.4	28.6	4.5
1980	52.5	29.7	5.6
1981	55.4	32.6	8.5
1982	58.4	35.6	11.5
1983	61.4	38.6	14.5
1984	64.4	41.6	17.5
1985	67.4	44.6	20.5
1986	64.4	41.6	17.5
1987	61.4	38.6	14.5
1988	58.4	35.6	11.5
1989	55.4	32.6	8.5
1990	52.4	29.6	5.5
1991	53.0	30.2	6.1
1992	53.5	30.7	6.6
1993	54.1	31.3	7.2
1994	54.6	31.8	7.7
1995	55.2	32.4	8.3
1996	55.8	33.0	8.9
1997	56.3	33.5	9.4

# Table 10.2: The Cost of Security Guards and Private Investigators Operating in<br/>Nova Scotia, 1962-1997, (Millions of 1997\$)

### 10.4 Other Business Defensive Expenditures

The Retail Council of Canada reports that store theft costs retailers \$4 billion a year.<sup>223</sup> Extrapolating according to both population share and comparative theft rates, this would mean a loss of \$118 million a year in Nova Scotia, costs which produce higher prices for consumers. Retailers respond to this threat by hiring security guards and installing electronic surveillance equipment and other crime prevention and detection systems.

This report follows the Australia Institute's GPI methodology in including the cost of "target hardening" in estimates of crime costs.<sup>224</sup> Hellman points out that situational crime prevention strategies, including target hardening and "operation identification" techniques, are designed to "increase the cost of doing business for criminals."<sup>225</sup> Of course, they also increase the cost of doing business, which is passed on to consumers in the form of higher prices.

The Retail Council of Canada reports that 56% of respondents with annual sales under a million dollars, reported spending more than 0.51% of sales revenues on loss prevention equipment. For larger retailers, defensive spending may take the form of electronic article surveillance (EAS). According to K-Mart President, Don Beaumont, loss prevention is actually built into the layout of new or renovated stores throughout Canada.

Once sophisticated target hardening is employed in some stores, there is increasing pressure for other businesses to follow suit, in order to prevent the displacement of theft onto softer targets. Thus, Safeway spokesman Grant Hardman has expressed concern that electronic article surveillance in some grocery chains will drive criminals to Safeway stores that have not installed the system. In response, Mike Boudreau, director of loss prevention for Atlantic Wholesalers, based in Dartmouth, N.S., claims that this is a good argument for all stores to install EAS.

Clearly the salaries of loss prevention officers like Boudreau should also be included in business crime prevention costs. However, no direct measurements are available for large retailer investments in target hardening and crime loss prevention. Since slightly more than half the Retail Council of Canada respondents reported spending *more* than 0.51% of sales on loss prevention equipment, that figure may be assumed here to represent a median estimate for business expenditures.

On the basis of Boudreau's argument that loss prevention techniques in one establishment produce pressure on other retailers to adopt similar measures, it will further be assumed that all these costs are passed on directly to consumers in the form of higher prices. If this were not the case, then those businesses that did invest in such equipment might experience a decline in their profit margins and become less competitive than businesses that somehow managed to prevent crime without such investments.

<sup>&</sup>lt;sup>223</sup> Canadian Press Newswire, April 15, 1996, from CBCA Database.

<sup>&</sup>lt;sup>224</sup> Hamilton, Clive, *The Genuine Progress Indicator: A new index of changes in well-being in Australia,* The Australia Institute, October, 1997, page 42.

<sup>&</sup>lt;sup>225</sup> Hellman, op. cit., page 105.

Statistics Canada's monthly retail sales figures<sup>226</sup> are used here to estimate the percentage of all retail sales revenues that can be attributed to business defensive expenditures on electronic article surveillance and other crime prevention and detection equipment. 0.51% of the \$7.255 billion in annual retail sales in Nova Scotia amounts to \$37 million for 1997.

This means that the average Nova Scotia household pays \$110 a year more in higher prices for groceries and other household goods due to in-store crime prevention and detection measures. The average Canadian household pays \$121 a year more for this particular crime cost. If crime prevention and detection costs were similar for other areas of consumption expenditures than retail sales, which is likely but not currently known, then the average Nova Scotian household would be spending \$158 a year more in higher prices, based on annual average consumption expenditures of \$30,469 per household. The average Canadian household would be spending \$174 extra a year based on average household consumption of \$34,024.<sup>227</sup>

In estimating past business costs due to crime, we have assumed that business defensive expenditures are directly proportional to changes in the crime rate for common theft (Table 10.3). This parallels our earlier assumption that household defensive expenditures on security equipment are directly proportional to the rate of break and enter incidents over time.

Clearly it is desirable to replace these derived estimates with more direct measurements. The addition of a few key questions to existing Statistics Canada business surveys could provide much more accurate information on these issues in the future.

Based on the estimates in Table 10.3, cumulative total business defensive expenditures since 1962 in Nova Scotia amount to about \$850 million. If 1962 expenditures had been maintained to date shopkeepers and store owners would have saved \$780 million, and if the 1975 level had held steady retailers would have saved \$380 million. Since these losses are passed on to the consumer through higher prices, it can be assumed that consumer shopping bills would be proportionately lower had lower rates of defensive expenditure continued.

Not included in these estimates are business defensive expenditures on internal fraud investigations and other internal company measures designed to prevent corporate and white collar crime. Because this entire category of crime is so hard to document, it is currently excluded from this study. As noted earlier, the magnitude of corporate crime may be enormous, with costs estimated at up to 50 times the value of street crime.<sup>228</sup> There are many other indirect defensive expenditures, such as the development of computer software programs for the criminal justice system and for business crime detection, that are also excluded from these estimates. The fact that these costs are indirect should not obscure the reality that they contribute directly to higher prices for goods and services paid by the public.

<sup>&</sup>lt;sup>226</sup> Statistics Canada. E-Stat Table, Cansim matrix 2399.

<sup>&</sup>lt;sup>227</sup> Estimates based on 335,150 households in Nova Scotia, and \$10,900,500 households in Canada. Annual consumption expenditures of \$30,469 per household in Nova Scotia and \$34,024 in Canada are from Statistics Canada, Family Expenditure Survey, 1996. Of this total approximately 70% is taken as retail goods expenditures. <sup>228</sup> Gabor, op. cit. estimates the annual costs of corporate crime at \$200 billion in Canada.

Date	Expenditures	Potential Savings if 1962 Levels Maintained	Potential Savings if 1975 Levels Maintained
1962	2.1		
1963	2.8	0.71	
1964	3.4	1.25	
1965	3.9	1.81	
1966	4.4	2.33	
1967	4.7	2.55	
1968	6.3	4.24	
1969	7.4	5.31	
1970	8.8	6.73	
1971	9.8	7.69	
1972	10.3	8.17	
1973	11.1	8.99	
1974	14.0	11.84	
1975	16.6	14.52	
1976	18.7	16.56	2.04
1977	18.3	16.23	1.71
1978	20.5	18.36	3.84
1979	23.6	21.46	6.93
1980	23.4	21.33	6.81
1981	28.2	26.13	11.61
1982	29.1	27.03	12.51
1983	30.3	28.19	13.67
1984	35.0	32.92	18.39
1985	37.8	35.72	21.20
1986	40.0	37.87	23.35
1987	42.7	40.56	26.04
1988	44.4	42.32	27.80
1989	43.9	41.84	27.32
1990	45.8	43.68	29.16
1991	42.9	40.77	26.25
1992	40.6	38.52	23.99
1993	39.5	37.44	22.92
1994	37.0	34.94	20.42
1995	35.8	33.71	19.19
1996	36.7	34.54	20.02
1997	37.2	35.10	20.57

# Table 10.3: Business Defensive Expenditures on Crime Prevention Equipment,<br/>Nova Scotia 1962-1997, (Millions of 1997\$)

Sources: Retail sales: Statistics Canada. E-Stat Table, Cansim matrix 2399 http://cansima.statcan.ca/cgi-win/CNSMCGI.EXE and Cansim CD Rom, Cat. No. 10F0007XCB, Theft: Statistics Canada *CANSIM Database*, CD Rom, Cat. No. 10F0007XCB, matrix 2200. See Appendix on methodology for more details. Savings calculations are based on estimated expenditure levels in 1962 and 1975.

## 10.5 Theft Insurance Premiums

Theft insurance is clearly a regrettable expenditure due to crime that reduces spending on welfare-enhancing measures. Designed to guard against losses due to crime, it is as defensive in nature as the installation of burglar alarms or the hiring of security guards. A small portion of life insurance premiums and a portion of other insurance that compensates for bodily harm are protections against losses due to violent crime. But because of the difficulty in estimating these percentages accurately, they are presently excluded from the estimates here, and only theft insurance is considered.

Since direct victim losses from property crimes have already been counted in chapter six, only the difference between premiums and claims is counted here, in order to avoid possible double counting. In other words, it is assumed that theft insurance claims actually compensate a portion of victim losses due to property crime. Only the amount paid in premiums above and beyond these claims is therefore truly a "defensive" expenditure.

In 1997 the theft insurance portin of property insurance premiums was \$25 million higher than claims for property theft. Between 1962 and 1997 the cumulative total difference between premiums and claims is estimated at \$424 million. Because the data used in compiling this information are from two disparate sources, calculating the potential savings if premiums were at 1962 and 1975 levels, as in earlier sections, is problematic. The historic figures have to be reconciled with modern data before such estimates can be attempted.

Statistics Canada's 1993 General Social Survey (GSS) reported that of all stolen property incidents, nothing was recovered in 82.5% of cases. The 1988 GSS reported that nothing was recovered in 85.6% of cases. In that year all stolen goods were recovered in 7% of cases and some portion were recovered in another 7%. The 1985 Canadian Urban Victimization Survey (CUVS) reported that nothing was recovered in 87% of cases (Chart 10.2).229

Insurance claims for property theft have steadily declined. The 1993 GSS reported that only 11% of victims surveyed received insurance compensation for stolen property, and 27% were compensated for motor vehicle theft. The 1988 survey reported that 12% of property crime victims received insurance compensation while 79% did not even try to claim. For motor vehicle theft, 30% of victims received insurance compensation in 1987, and 62% made no claims. The 1985 CUVS reported that private insurance provided compensation for stolen property in about 19% of cases.<sup>230</sup>

<sup>&</sup>lt;sup>229</sup> Statistics Canada, General Social Survey, catalogue no. 12 FOO 42-XPE, table 27; Statistics Canada, catalogue no. 11-612, page 102, table 27; Statistics Canada, Canadian Urban Victimization Survey (CUVS) no. 5, *Cost of Crime to Victims*, 1985, page 3, table 4.

<sup>&</sup>lt;sup>230</sup> Statistics Canada, General Social Survey, catalogue no. 12 FOO 42-XPE Table 34; Statistics Canada, catalogue no. 11-612, page 113, table 34; Statistics Canada, CUVS, no. 5, *Cost of Crime to Victims*, 1985, page 3, table 4.

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These averages conceal a significant distribution difference. The CUVS revealed that the recovery rate, through both police intervention and insurance claims, is much higher for those in the highest income bracket than for those with lower incomes. As a result, the mean net loss from property crime is actually less for the wealthiest sector than for those with lower incomes.231

However, the most significant trend in theft insurance has been the growing gap between claims and premiums. Between 1971 and 1996 theft insurance premiums in Nova Scotia have jumped by 142%, while claims have gone up by only 72% in constant dollars. In 1971, claims amounted to 69% of premiums. In 1996, claims were just 48% of premiums. Claims are still at the same level they were 25 years ago, while premiums have doubled in that time. Interestingly, insurance companies have also reported record profits - \$1.6 billion in 1995 – as the gap between premiums and claims has widened dramatically.

While there have been fluctuations in these proportions over time, the gap between premiums and claims in the province has been growing steadily wider since 1991. Theft insurance premiums have continued to rise even while the property crime has been declining (Chart 10.2).

In 1996 defensive expenditures in theft insurance premiums minus claims amounted to \$24.6 million, down slightly from \$27.6 million in 1995. These two years represent the largest recorded gaps between premiums and claims. Because claims were greater in some years than others, the trend line for this item does not follow the steady direction of crime rates. In fact, the measurements given here are not derived from the crime rates but are based directly on insurance industry figures.

<sup>&</sup>lt;sup>231</sup> CUVS, op. cit., page 4, table 5.



Chart 10.2: Property Theft Insurance Premiums and Claims, Nova Scotia, 1971-1996 (1997\$ millions)

Date

# **11. Comprehensive Estimates**

The true or full costs of crime are significantly greater than the direct economic losses and expenditures described in chapters 7-10 and which together make up the GPI "conservative" estimate of crime costs. But crime may also shatter lives, cause psychological trauma and long-term physical disabilities, restrict movement, disrupt plans, lower property values and have a variety of negative consequences that induce further social and economic losses not measured in the "conservative" estimate. To give just one concrete example, 85% of women who report wife assault also indicate that they experience negative emotional effects, which may in turn require counseling, drug treatment, legal assistance and other costs.

Several crime costs are omitted from this study altogether, because data are unavailable, including the costs of impaired driving, non-hospital medical and drug costs due to violent crime, economic losses due to juror and witness time in court, private legal defence costs, most employee theft in government and business except for retail trade, health costs and production losses from drug and prostitution offences, and so on.<sup>232</sup> In addition, most corporate crime, fraudulent professional claims, tax evasion, embezzlement and other white-collar crimes are rarely prosecuted and, are therefore excluded from this study because of lack of data.

However, this chapter does attempt to estimate five categories of costs which are not included in the conservative estimate of crime costs, but for which it is possible at least to derive certain estimates. While certainly not a complete description of crime costs, the "comprehensive" cost estimate attempted in this chapter at least begins to approximate a truer picture of how crime actually affects people and of the larger losses incurred by individuals and society.

The five categories of losses which, together with the conservative estimate in chapters 7-10, make up the comprehensive estimate of crime costs in this chapter, are:

- 1) *Unreported Crimes*. The conservative estimate counts only losses due to police-reported crimes.<sup>233</sup> In this chapter, victim surveys are used to estimate losses due to unreported crimes.
- 2) *Unpaid Work Losses*. The conservative estimate of crime costs includes only economic losses to the market economy, and excludes any losses incurred through the disruption of lives outside the work place. Since the Genuine Progress Index values

<sup>&</sup>lt;sup>232</sup> Legal costs are given in Chapter 9. Since civil justice costs are omitted from the final totals in this study, and because it has not been possible to break down private legal expenditures into criminal and civil costs, therefore private legal spending on criminal cases is also omitted from this report.

<sup>&</sup>lt;sup>233</sup> Two exceptions are the hospitalization costs and production losses due to absenteeism caused by violent crime in chapter 8, since these estimates are based on victim surveys which include both reported and unreported crime and are not calculated on a per incident basis.

unpaid work as well as paid work <sup>234</sup>, hourly values from the first two modules of the GPI are used to estimate losses of voluntary work, community service and household production due to crime.

- 3) *"Shrinkage"*. Reports from the retail trade industry are used to estimate inventory losses due to theft. These losses are generally passed on to the consumer in the form of higher prices.
- 4) *Insurance Fraud*. Reports from the insurance industry are used to estimate the additional amount paid by consumers in higher premiums due to fraudulent claims against insurance companies. In order to avoid double-counting, theft insurance premiums, already considered in chapter 10, are excluded from the estimates in this chapter.
- 5) "*Shattered Lives*". Most importantly, court awards for grief and suffering are used to approximate the human and psychological costs of crime that cannot be captured in a simple economic cost analysis. For example, the only victim cost included for homicide and assault in the conservative estimate is the economic production lost through work place absence. Clearly this is a severe underestimate of the losses actually experienced both by victims and their families and friends. Losses incurred by family and friends are effectively ignored entirely in the conservative estimate, though children may lose their parents and spouses may suddenly be forced to fend for themselves. In fact, the economic production estimate in chapter 8 effectively places no value at all on the murder of an elderly person who no longer works in the market economy.

To remedy these shortcomings, this chapter uses estimates from a University of Ottawa criminology study that examines court awards, and from a Fraser Institute study by criminologists Brantingham and Easton that derives economic estimates for "shattered lives" due to crime, in order to produce a more comprehensive estimate of crime costs in Nova Scotia.

Again it must be repeated that, while these five costs form the basis for our comprehensive estimate of crime costs, they still exclude some major categories of loss mentioned earlier. Gabor, for example, estimates that there is \$200 billion worth of corporate crime annually in Canada compared to \$3-4 billion of street crime; that tax evasion costs Canadians \$30 billion a year; and that between \$300 and \$400 million worth of services are fraudulently claimed every year in Canada.<sup>235</sup> While this crime translates directly into higher prices and reduced services for Canadians and thus constitutes an actual economic loss, it is excluded entirely from this study due to lack of hard data, except for the rare instances where cases are brought to court.

<sup>&</sup>lt;sup>234</sup> Colman, Ronald, *The Economic Value of Civic and Voluntary Work in Nova Scotia*, GPI Atlantic, Halifax, July 1998 and February 1999; Colman, Ronald, *The Economic Value of Unpaid Housework and Child Care in Nova Scotia*, GPI Atlantic, Halifax, November, 1998.

<sup>&</sup>lt;sup>235</sup> Gabor, Thomas, *Everybody Does It! Crime by the Public*, University of Toronto Press, Toronto, 1994, pages 91, 93, 94, 118.

## 11.1 Unreported Crimes

The conservative estimate of crime costs in chapters 7 - 10 considered only policereported crimes. However, there are many more crimes that are not reported to police. Victim surveys in Canada have found that less than 30% of personal thefts and just over half of violent assaults were reported to police. By contrast, motor vehicle theft is mostly reported, probably because reporting renders the victim eligible for insurance claims.<sup>236</sup>

There have been only two national Canadian victim surveys administered as part of the 1988 and 1993 General Social Surveys (GSS). In 1981, a Canadian Urban Victimization Survey (CUVS) collected data for seven Canadian cities. With the exception of one pilot study in British Columbia and a study of burglary victims in Toronto, no major victimization surveys were undertaken before the 1980s, and there is therefore no way of knowing to what extent changes in reporting rates influenced the official crime statistics in the 1960s and 1970s.<sup>237</sup>

While the CUVS is not entirely comparable to the later (GSS) surveys, it does appear that police reporting rates increased for assaults and for break and enter incidents between 1982 and 1993, though they seem to have decreased for robbery. Unfortunately the data are insufficient to estimate how much of the increase in reported crimes is due to higher reporting rates in some categories.

A 1997 Statistics Canada publication compares data collected from the General Social Survey victim surveys (GSS) of 1988 and 1993 with Uniform Crime Reporting (UCR) statistics (Table 11.1).<sup>238</sup> The 1981 Canadian Urban Victimization Survey (CUVS) provides data specific to Halifax-Dartmouth (Table 11.2).<sup>239</sup>

Crime	GSS/UCR Ratio, 1988	GSS/UCR Ratio 1993
Sexual Assault	_	1.8:1
Robbery	3:1	2.7:1
Assault	2:3:1	1.8:1
Break and Enter	1.3:1	1.2:1

<sup>&</sup>lt;sup>236</sup> Assault ratio from 1988 and 1993 General Social Survey data compared to Uniform Crime Reporting statistics, in Statistics Canada, *An Overview of the Differences between Police-Reported and Victim-Reported Crime, 1997,* catalogue no. 85-542, pages 9-11; personal theft ratio from Solicitor-General Canada, *Canadian Urban Victimization Survey: Reported and Unreported Crimes,* bulletin no. 2, 1984, page 5.

<sup>&</sup>lt;sup>237</sup> Evans and Leger, op. cit., page 167.

<sup>&</sup>lt;sup>238</sup> Statistics Canada. May 1997. An Overview of the Differences between Police-Reported and Victim-Reported Crime, 1997. Cat. No. 85-542, p.9-11.

<sup>&</sup>lt;sup>239</sup> Solicitor General Canada. 1984. *Canadian Urban Victimization Survey: Reported and Unreported Crimes*. Bulletin No.2, p.5.

Crime	Halifax-Dartmouth: %	Seven-City Average: %
Sexual Assault	29	38
Robbery	45	45
Assault	35	34
Break and Enter	61	64
Motor Vehicle Theft	74	70
Household Theft	48	44
Personal Theft	28	29
Vandalism	40	35
Overall % Reported	42	42
Overall % Not Reported	58	58

# Table 11.2: Percentage of Criminal Incidents Coming to the Attention of the Police, Canadian Cities, 1982

Based on these ratios, the number of unreported crimes in Nova Scotia is estimated in Table 11.3 below. Because of the inadequacy of the data, no claim to accuracy is made here. However, the 1982 survey indicates that Halifax reporting rates were in line with the national average at that time, and it is therefore assumed that Nova Scotia reporting rates are not markedly different from the Canadian averages given in the General Social Survey. Since accurate time series are not available for unreported crimes, the same ratio will be arbitrarily applied to all years in the summary estimates in chapter 1. It is one of the recommendations of this study that annual victim surveys be conducted at the provincial level to provide more reliable data.

The average property losses per crime used in Table 11.3 are the same as those in chapter 7, and are based on estimates by the Solicitor-General derived from a victim survey. Since police-reported crimes are likely to be more serious than unreported crimes and to involve larger losses, the loss calculations in chapter 7 are likely to be serious underestimates, since they are based on average losses in the victim survey which includes both reported and unreported crimes. Conversely, the use of these average losses per crime in this section is likely to inflate the losses actually incurred in unreported crimes. However if the same average loss per crime is used here as in chapter 7, the disparities should even out, and the total comprehensive estimate for victim losses in both reported and unreported property crimes will reflect the actual values in the victim surveys which include both categories.

The same reasoning applies to monetary losses, hospitalization costs and production losses due to violent crime. The results in chapter 8 are also based on the average losses per incident reported in victim survey data, which includes both reported and unreported crime. Since reported crimes are likely to be considerably more serious than unreported ones, the monetary loss, hospitalization cost and production loss estimates in chapter 8 should be considered underestimates and those in this chapter will be overestimates. Again, the comprehensive loss estimate will even out these results to reflect the actual survey data.

Adding together losses from reported and unreported property crime, Nova Scotians lost nearly \$270 million in money and property in 1997 (Table 11.3). Based on reported crime rates over time, and assuming a constant ratio between reported and unreported crime, the cumulative loss in property and money due to all crime since 1962 is more than five billion dollars.

	# Reported Incidents	#Unreported Incidents	Average Loss/Crime	Total Loss Unreported	Total Loss All Crime
Theft	21,568	50,325	\$2,188	\$110.1	\$157.3
Break/Enter	9,193	1,837	\$2,370	\$4.4	\$26.2
Motor Veh. Theft	2,558	900	\$3,728	\$3.4	\$12.9
Vandalism	12,788	19,182	\$655	\$12.6	\$21.0
Fraud	3,861	9000	\$3,625	\$32.6	\$46.9
Robbery	425	722	\$2,934	\$2.1	\$3.3
			TOTAL:	\$165.2	\$267.6

#### Table 11.3: Estimated Victim Losses from Unreported Property Crimes, Nova Scotia, 1997, (1997\$ millions)

NOTES:

- Estimates of unreported crime incidents are based on the ratio between total crimes reported in victim surveys in the 1993 General Social Survey and in the Halifax-Dartmouth rates reported in the 1982 Canadian Urban Victimization Survey, in proportion to reported crimes in the Uniform Crime Reporting statistics.
- No estimates are available from the victim surveys for unreported fraud. The ratio of unreported to reported fraud has here been assumed to be the same as that for theft.
- Robbery is officially classified as a violent crime rather than a property crime, but property losses due to robbery are included here, as they have been in chapter 7.
- Average losses per crime are from the Solicitor-General Canada, in Statistics Canada, *Juristat*, volume 12, no. 5, 1981, except for motor vehicle theft, which is from the Insurance Corporation of British Columbia, as reported in Brantingham, Paul, and Stephen Easton, "The Crime Bill: Who Pays and How Much?", *Fraser Forum*, 1996, The Fraser Institute, page 23.
- The total losses in column 5 add the unreported losses from this table to the reported losses from chapter 7. Since the average loss per crime is taken from the victim surveys and includes both reported and unreported crime losses, this total loss figure in column 5 can be considered more reliable than the separate estimates for either reported or unreported crimes, since the former are likely to be more serious than the latter and to involve larger losses.

Victim monetary losses from unreported assaults and sexual assaults, hospitalization costs due to unreported violent crime, and economic production lost due to absenteeism, cost Nova Scotians an estimated \$5.2 million in 1997. Reported and unreported incidents combined cost Nova Scotians \$11.7 million (Table 11.4). Based on reported rates of assault and sexual assault over time, and assuming the same ratio of reported to unreported incidents which is particularly questionable in this case, the cumulative cost of victim losses due to assault and sexual assault in Nova Scotia since 1962 is nearly \$250 million.

Since the data on both hospital stays and absenteeism are from victimization surveys, the basis for calculation is the same for both reported and unreported crimes: Based on the Solicitor-General's report, for every 100 criminal code incidents, victims spent 3.15 days in hospital, and missed 25.3 days of work. From this we have extrapolated that Nova Scotians spent an estimated total of 4,405 days in hospital due to crime in 1997, and missed an estimated 35,383 days, or about 100 person-years of work due to crime.

As mentioned above, because these losses are averaged out over reported and unreported crimes, the reported costs listed below are likely to be underestimated and the unreported costs to be overestimated. More credence may be given to the total rather than to the break-down between the two categories.

# Table 11.4: Estimated Victim Losses due to Unreported Assault and Sexual Assault,<br/>Nova Scotia, 1997, (1997\$ millions)

	Reported Incidents	Unreported Incids.	Total Incidents
# Incidents	9598	7678	17,276
Monetary Losses	\$0.62	\$0.49	\$1.11
Hospitalization	\$1.62	\$1.30	\$2.92
Absenteeism	\$4.25	\$3.40	\$7.65
TOTAL LOSSES	\$6.49	\$5.19	\$11.68

NOTES:

- The ratio between total incidents in the 1993 General Social Survey victim survey and reported crimes in the Uniform Crime Reporting statistics is the same for assault and sexual assault (1.8:1). For this reason, they are considered together here.
- In 1997 there were 8,431 reported cases of assault, and 1,167 reported cases of sexual assault in Nova Scotia.
- As in the previous table, the average losses per crime are taken from the victim surveys and include both reported and unreported crime losses. Therefore the total loss figure in column #3 can be considered more reliable than the separate estimates for either reported or unreported crimes, since the former are likely to be more serious than the latter and to involve larger losses.

### 11.2 Unpaid Work Losses

While the conservative estimate of crime costs in chapters 7 - 10 assesses only market production losses, the actual loss experienced by crime victims and by society at large clearly goes beyond the work place. An assault victim may not be able to take care of children or household tasks, and may incur additional expenses by hiring someone to perform this work. A crime victim may also be unable to perform customary voluntary and community service work.

Since the Genuine Progress Index explicitly values this unpaid productive work, it should also be included in the comprehensive assessment of production losses due to crime. The GPI uses Statistics Canada's definition of unpaid work as only that which could be performed for pay by a third party in the market economy. In other words, loss of leisure time due to crime and loss of household activities which do not constitute work that could be replaced for pay, are not considered here. The dollar figures may be taken as a proxy for lost quality of life in the home and in the community due to crime, as experienced by the recipients of household services and of volunteer services.

#### 11.2.1 Lost Household Work

As noted in section 11.1 above, there were an estimated 35,383 work days lost to crime in Nova Scotia in 1997. At eight hours a day, this amounts to 283,064 hours of work lost. Based on Statistics Canada's time use and labour force surveys, the second GPI module on the *Economic Value of Unpaid Housework and Child Care in Nova Scotia* found that Nova Scotian adults put in an average of 25% more unpaid household work hours per year than paid work hours.<sup>240</sup> This would indicate 353,830 hours of lost unpaid household work.

Statistics Canada has determined that the market value replacement rate for household domestic services in Nova Scotia is \$9.20 an hour in 1997 dollars. For child care, the going rate is \$7.58 an hour. It should be noted that only "primary child care" is counted here, meaning time spent exclusively relating with children, such as feeding and washing them, changing diapers and putting them to bed. Time spent caring for children while doing other tasks is not counted. Apportioned among the actual hours spent doing household chores and primary child care, the average is \$9.02 an hour.<sup>241</sup> This signifies what it would cost to hire someone to do the equivalent work performed without pay in

<sup>&</sup>lt;sup>240</sup> Colman, Ronald, *The Economic Value of Unpaid Housework and Child Care in Nova Scotia*, GPI Atlantic, November, 1995, page 48. Unpaid work hours from Statistics Canada, *Households' Unpaid Work: Measurement and Valuation*, catalogue no. 13-603E, 1995; paid actual average work hours for all jobs, from Statistics Canada, *Labour Force Annual Averages, 1996*, catalogue no. 71-220-XPB, table 19, page B-47.

<sup>&</sup>lt;sup>241</sup> Replacement values from Statistics Canada, *Households' Unpaid Work*, catalogue no. 13-603E.

the household. On this basis, unpaid household work time lost due to crime in Nova Scotia is worth \$3.2 million a year.

Chapter 8 indicated that 452 person-years of work were lost to the Nova Scotia economy in 1997 due to homicide. Each Nova Scotian contributes an average of 1,230 hours per year of unpaid household work to the economy,<sup>242</sup> resulting in more than half a million hours of lost unpaid work time per year due to homicide, worth \$5 million in 1997. If impaired driving deaths were included the total would clearly be much higher.

Lest this calculation sound merely like an academic statistical exercise, it should be remembered that it reflects very real and experienced losses. The loss in unpaid work is actually the loss in child-rearing time experienced by the child of a murdered parent, or the necessity for the spouse of a homicide victim to manage all household duties alone or else to contract these lost services out for pay in the market economy. The assignment of dollar values is necessary only because market statistics so dominate our assessment of costs and benefits that these unpaid work costs would otherwise likely be overlooked and ignored.

Needless to say, there are many untested assumptions built into these calculations, including the fact that crime prevents the accomplishment of household tasks at the same proportional rate as it prevents the undertaking of paid work. On the other hand, a ransacked home or personal theft may require additional unpaid work time beyond the normal weekly quota, in order to repair the damage and replace lost articles. There is no way of testing these assumptions.

The monetary values should therefore be understood simply as a proxy for household quality of life lost due to crime. The reason for the inclusion of some estimate here is simply that it is more reasonable and accurate to acknowledge in some way the cost of crime as it affects household work rather than to ignore it entirely as market statistics, and the conservative estimate in chapters 7-10, do.

### 11.2.2 Lost Volunteer Work

The average Nova Scotian puts in 3.38 hours of volunteer work every week outside the home. This work provides direct benefit to the elderly, sick, disabled, children and youth, and other vulnerable groups, as well as to the environment, the local community, and society at large. Nova Scotians serve at food banks and soup kitchens, provide assistance to victims of abuse, lead scout groups, coach sporting teams, help out at hospitals and nursing homes, and provide countless other voluntary services for a cumulative total of

<sup>&</sup>lt;sup>242</sup> Colman, Ronald, *The Economic Value of Civic and Voluntary Work in Nova Scotia*, GPI Atlantic, Halifax, November, 1998.

about 134 million hours a year. Based on total hours contributed, Nova Scotians have the highest rate of voluntary activity in the country, 26% above the national average.<sup>243</sup>

As noted above, Nova Scotians missed an estimated 283,064 hours, or 147 person-years, of paid work due to crime in 1997. If Nova Scotians contributed 176 average hours per year of voluntary work, Nova Scotian crime victims would have missed nearly 26,000 hours of voluntary work a year due to crime, creating an substantial loss of services to recipients.

Statistics Canada has calculated the replacement rate for voluntary services in Nova Scotia at an average \$13.02 an hour. This signifies what it would cost to hire someone in the market economy to perform equivalent work. On this basis, voluntary services lost due to crime amount to more than \$340,000 a year in Nova Scotia.

If the voluntary services of homicide victims are included, on the basis of 452 lost person-years of work in 1997, as described in the previous section, an additional 80,000 additional hours of lost voluntary work worth must also be included. This is worth more than one million dollars, for a total of \$1.37 million a year.

These calculations do not include *either* the unpaid work losses of offenders *or* the community service work contributed by offenders as conditions of their sentence. While the latter is not strictly speaking "voluntary," it may be argued that it nevertheless makes a contribution to society and should therefore be counted as a benefit in this section on voluntary work.<sup>244</sup> Future updates of this report might include valuations of this work.

### 11.2.3 Volunteers for Law and Justice Organizations

Aside from the victim losses described above, the existence of volunteer organizations devoted to law and justice issues must be counted as a cost of crime by the criteria used in this study. The time actually spent on crime prevention and detection activities by volunteers for Neighbourhood Watch, the Crime Prevention Society, Block Parents and Crime Stoppers must be counted as a defensive expenditure in the same way as hiring security guards or investing in alarm and surveillance systems. The functions performed are similar and have the same purpose. – crime prevention. Lower crime rates would render such voluntary activity less necessary, and the time of these volunteers would correspondingly be freed up for more welfare-enhancing activities.

Legal aid volunteers, voluntary parole and probation officers, volunteers for Victim Services, and voluntary organizations like the John Howard Society and the Elizabeth Fry Society, which work with prisoners and ex-prisoners, do not perform preventive

<sup>&</sup>lt;sup>243</sup> Statistics Canada, *Initial Data Release from the 1992 General Social Survey on Time Use*, catalogue no. 11-612, #30, Table 1.

<sup>&</sup>lt;sup>244</sup> This insight is contributed by Kit Waters, Director of Policy Planning and Research, Nova Scotia Department of Justice, personal communication, 26 March, 1999.

defensive functions, but deal directly with the consequences of crime after the fact. Their activities are more similar to some of those described in chapter 9 on public justice costs. Nevertheless, they exist as a direct result of crime.

Again, if there were less crime, there would be correspondingly less need for this voluntary work. In the meantime, volunteer efforts that are the consequence of crime, should be valued. If paid legal aid services are counted as public justice costs, then voluntary legal aid services should also be counted in some way. If impaired driving costs were included in this study, the work done by volunteers for groups like Mothers Against Drunk Driving would also be included here.

According to Statistics Canada's volunteer surveys, law and justice volunteers account for about 1.2% of all volunteers. However, they put in the longest hours of any group of volunteers, six hours and 40 minutes a week on average, compared to a weekly average of 3 hours and 23 minutes a week for all volunteers. About 3,500 Nova Scotians volunteer their time for legal aid work, Neighbourhood Watch, Crime Stoppers and other crime prevention groups, and prisoner support networks, contributing more than 23,000 hours a week or 1.2 million hours a year to this voluntary work. Based on the volunteer replacement rate of \$13.02 an hour, their work is worth nearly \$16 million a year to the Nova Scotia economy and to society.<sup>245</sup>

### 11.2.4 Total Unpaid Work Costs

Adding together all three categories above, more than \$25 million worth of unpaid work per year in Nova Scotia is due to crime, partly as victim production losses, partly as defensive expenditures, and partly as contributions to the court and corrections systems.

## 11.3 "Shrinkage"

Shrinkage is the retail industry term for unexplained inventory losses which are primarily due to shoplifting and employee theft. It is the difference between the inventory recorded in business ledgers and that actually on the shelves. While some of the loss may be due to accounting errors, there is no reason to assume that such honest errors would err more on the side of inventory losses than gains, and these are therefore assumed to be neutral.

The retail industry reports annual average shrinkage of 1.56%. Based on 1997 annual retail sales of \$7.3 billion, the loss due to shrinkage was \$113.8 million in Nova Scotia. For earlier years, it has been assumed that shrinkage rates have changed in direct proportion to the changing incidence of reported theft in society at large. Shrinkage costs have therefore been derived in proportion to both retail sales and reported theft rates in

<sup>&</sup>lt;sup>245</sup> Average weekly hours and volunteer numbers for law and justice volunteers from Duchesne, Doreen, *Giving Freely: Volunteers in Canada*, Statistics Canada, Labour Analytic Report No. 4, catalogue no. 71-535, #4, Minister of Supply and Services, Canada, August, 1989.

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those years. On that basis, it is estimated that shrinkage cost Nova Scotians \$6.4 million in 1962, and \$50.8 million in 1975, compared to \$113.8 million in 1997 (all figures in constant 1997 dollars).

The figure is comparable to the estimate in chapter 10, based on the Retail Council of Canada's estimate that store theft costs retailers \$4 billion annually in Canada. Extrapolating for Nova Scotia on the basis of both population and comparative property crime rate, the cost of store theft to Nova Scotian retailers, and ultimately to consumers, is about \$118 million a year. The slightly more conservative figure of \$113.8 million is used here.

Since these costs are passed on to the consumer in higher prices, this means that the average Nova Scotia household paid \$340 more in 1997 due to in-store retail theft. If the same proportional cost of shrinkage were to apply to all consumption expenditures, the figure would be \$484 a year. For Canadian households nationwide, the comparable losses are \$370 for retail expenditures and \$530 for all consumption expenditures.

If these higher prices due to shrinkage are added to the costs of in-store crime prevention and detection equipment considered in Chapter 10, then the average Nova Scotian household is paying \$448 extra per year in higher prices for groceries and other retail goods due to crime. The loss is \$642 per year per household in higher prices for all consumption expenditures, if the same rates of in-house theft and electronic surveillance expenditures apply to non-retail business establishments.

If the \$53 million spent annually by business and government on private security guards is also passed on to the public in the form of higher prices and taxes, this translates into an additional \$158 per year per household. *In sum, Nova Scotian households are probably paying \$800 a year total in higher prices due to crime, amounting to 2.6% of their annual consumption budget.* Nationwide, the figure is closer to \$900 a year.

These hidden expenses are concealed in the everyday price tags of groceries and other consumption items. Although they constitute real losses for individuals, these additional expenses and higher prices are all currently counted as adding to the gross domestic product and contributing to economic growth. By contrast, the Genuine Progress Index considers these business crime costs and correspondingly higher consumer prices as losses that depress the index. If theft rates decrease, and shrinkage and defensive expenses diminish accordingly, the GPI regards the reduced expenditures and lower prices as savings that can be invested in more constructive and productive activities, and the index rises accordingly.

# 11.4 Insurance Fraud

Like shrinkage, insurance fraud leads to higher prices for consumers. According to Ann Walker of the Canadian Coalition Against Insurance Fraud, an industry-sponsored group, fraudulent claims against insurance companies add an average of 15% to the cost of insurance premiums for Canadians.<sup>246</sup>

Based on this 15% rate, higher premiums cost Nova Scotians \$25.5 million in property insurance and \$45.2 million in auto insurance in 1997, for a total of \$70.2 million in higher prices due to fraud. Since the \$25 million excess of premiums over claims for theft insurance in particular has already been counted as a defensive expenditure in chapter 10.5, it is necessary to deduct 15% of that amount here, or \$3.8 million, in order to avoid double-counting. Thus \$66.4 million annually should be added to the comprehensive costs of crime as a result of higher prices due to insurance fraud. Put another way, if individuals did not break the law by submitting fraudulent insurance claims, Nova Scotians would save \$200 per household every year in insurance payments.

### 11.5 "Shattered Lives"

In the words of the Solicitor-General, quoted in chapter 3.3:

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>247</sup>

A crime victim, if injured or disabled by a violent attack, may experience a severe curtailment of his activities for the rest of his life. Families of victims may suffer long-lasting trauma. Crime diminishes the quality of life in countless overt and subtle ways. Here only the grossest and most direct forms of pain, suffering and grief are considered in estimating the effect on lives actually "shattered" by crime. The term is taken from a Fraser Institute report, which in turn bases its cost estimates for "shattered lives" on a University of Ottawa Criminology Department study that examines court awards for victim suffering.<sup>248</sup> The awards were for suffering, disabilities and disamenities resulting

<sup>&</sup>lt;sup>246</sup> Jeffrey Simpson, "Insurance Claims Costly for Everyone", *The Chronicle-Herald*, Halifax, 21 December, 1998, pages A1 and A2.

<sup>&</sup>lt;sup>247</sup> Solicitor-General of Canada, "Cost of Crime to Victims", *Canadian Urban Victimization Survey*, no. 5, 1985, page 1.

<sup>&</sup>lt;sup>248</sup> Welsh, Brandon, and Irvin Waller, *Crime and its Prevention: Costs and Benefits*, Department of Criminology, University of Ottawa, April, 1995; Brantingham, Paul, and Stephen Easton, "The Crime Bill: Who Pays and How Much?", *Fraser Forum*, The Fraser Institute, 1996.

from crimes such as assault, rape and murder, and also includes additional costs of social services used by victims.

The GPI estimate for the cost of "shattered lives" due to crime is derived from these earlier studies. Using the University of Ottawa study, the Fraser Institute estimated that the cost of "shattered lives" due to crime added \$12.1 billion a year in Canada in 1993 dollars, or \$12.6 billion converted to 1997 dollars. This added 72.5%, to that study's conservative estimates of crime costs based on direct victim losses, economic production losses, public justice costs and spending on private security guards.

By population share alone, the Nova Scotia share of this federal total would be \$393 million a year. However, we have adjusted this total to account for the fact that serious violent crimes in Nova Scotia average 36.7% below the national average, on the assumption that the cost of "shattered lives" is directly proportional to the seriousness of violent crimes. Therefore, 63.3% of \$393 million is \$249 million, which is the estimate for the cost of "shattered lives" due to crime in Nova Scotia used in this report.<sup>249</sup>

It is rightly argued that the actual losses incurred due to suffering, disabilities and disamenities caused by crime cannot be compensated or valued in dollar terms. However, it also widely accepted that the insurance industry places dollar values on lives and limbs, and that courts grant monetary awards for grief and suffering in order to ensure that losses do not go entirely uncompensated and that there is at least some compensatory principle in effect.

The same principle should apply in our national and provincial accounting systems. While market values dominate the policy arena, the cost of ignoring non-market losses is likely to be their relegation to lower status in the policy agenda. For this reason, proxy monetary values for non-market factors are used in the Genuine Progress Index to ensure their adequate recognition at least until such time as environmental, social and quality of life variables are considered in their own right in all aspects of the policy process. As an interim measure, assigning dollar values is simply a communication tool to give these non-market values greater attention in the market economy that dominates our thinking. The monetary valuations are never intended as substitutes for the physical, human, time use and environmental quality values on which the dollar estimates are based and of which they will always be crude approximations.

In this case, the \$249 million estimate for shattered lives due to crime in Nova Scotia is intended simply to point to the true human and emotional reality underlying the actual cost of crime as experienced by the people of this province. The point is worth

<sup>&</sup>lt;sup>249</sup> It is recognized that court awards for grief and suffering may also include some of the factors considered in the estimation for the loss of unpaid work, and that there may therefore be an element of double-counting in using the Fraser Institute estimate. However, the valuation of unpaid work is based on production value only, and the discounting of the Fraser Institute estimate by 37% for Nova Scotia is considered a conservative step already. Therefore no further attempt has been made here to estimate whether a percentage of the shattered lives estimate is previously counted as unpaid work loss. Future updates of the report might fine-tune this estimate accordingly.
emphasizing here, as the same principle has already been applied to the monetary valuations of voluntary, community service and household work in the first two modules of the GPI released last year, and will appear again in the environmental and natural resource accounts to be issued later this year.

The GPI estimate for comprehensive crime costs is within the range of earlier studies estimating crime costs for Canada. The Fraser Institute estimated Canadian crime costs at \$37.3 billion in 1993 dollars; and the National Crime Prevention Council estimated the 1996 costs at \$46 billion. Converting to 1997 dollars, and estimating the Nova Scotia share of these costs on a population basis only, would indicate a Fraser Institute estimate of \$1.2 billion and a N.C.P.C. estimate of \$1.5 billion for the province. While some of the measurement methods and costs included differ, the results are broadly comparable.

# **12. CONCLUSION** Defining Values, Data Needs & Policy Issues

In order to turn statistics into useful policy tools and meaningful action, three basic steps are necessary in this and in each of the GPI components:

 No index of progress is meaningful unless it clearly defines its goals. The question is always – progress towards what? Therefore every measure of progress has a normative basis, and requires a clear definition of social values. In this particular case, the GPI is quite explicit that a peaceful and harmonious society with a high degree of personal security and safety is a primary social goal as worthy of policy attention as market trends and growth rates.

To define values and goals with clarity requires political and social will that no statistics can achieve. Yet that is a prerequisite for the meaningful use of the Genuine Progress Index. Each component of the GPI has such a normative basis, and it is made explicit both in the project design and throughout the presentation. Every attempt has been made, through observation and consultation, to base the index on what are assumed to be underlying and nonpartisan consensus values. It is now the function of the political and social leadership to turn these values into specific policy goals.

2) The second step is to make a commitment towards measuring progress towards the goals and values defined in the first step. At the very least such a commitment begins with a determination to cease counting the costs of crime as economic gain and as a contribution to well-being and prosperity, as is currently the case, and to begin counting them as a loss and cost to society. This is where the Genuine Progress Index can assist in providing a set of measuring tools and annual benchmarks to assess trends towards or away from agreed on goals. In this particular case, the costs of crime are used as an indicator of progress towards a peaceful and secure society.

This first stage in establishing the methodologies, data sources and components of such an index is slow and laborious, particularly since historical trends to the present must be understood. But once established, the index is easy to maintain and update on an annual basis. Needless to say, methodologies and data sources will be continuously improved and refined as the index is maintained and used.

3) The third and final step is to use the data provided in step two as the basis for meaningful policy action. By measuring progress towards clearly defined goals, the GPI can point to issues worthy of policy attention in order to build on and strengthen existing social, economic and environmental assets and desirable trends, and to overcome weaknesses and liabilities and reverse unwanted trends.

Too often, as New Zealand economist Marilyn Waring notes, there is a fatal gap between the statistician, the analyst, and the policy maker. The first simply crunches numbers in an assumed "neutral" and "objective" void that is questionable because it frequently accepts the priorities, assumption and values of the existing authority structure. The analyst, usually the academic, then pores over causes, correlations and historical trends, publishing the results in scholarly journals. The policy maker acts according to who exercises influence and represents the strongest stakeholder interests at the time, with little reference to the statistician and the analyst. No wonder a common observation is that policy drifts meaninglessly with little sense of direction or purpose, and is largely reactive rather than proactive.

The goal here is to bridge that fatal gap, and to provide statistical data in such a way that they can provide a meaningful basis for coherent analysis and policy action. Good information should provide the first step in informed decision-making. The time seems ripe, on the cusp of the new millennium, to reexamine the legacy we are leaving our children, to ask what kind of society we want to create, and to initiate the policy actions required to create a decent society in the 21<sup>st</sup> century. Nova Scotia seems particularly well placed to take the lead in this effort, and to provide a model and example of what is possible.

The Nova Scotia GPI is specifically constructed and set up to be policy relevant and to draw attention to the policy implications of the data. Its purpose is to point towards potential cost-effective solutions to current problems, and to indicate how significant social savings in areas like crime, that currently drain our energy and resources, can provide the means for more productive and welfare-enhancing activities in other areas. The data in this and other GPI reports are intended to provide such clues to practical policy options.

Each of these three steps is defined in more detail below. *Section 12.1* examines the significance of the findings in this study in terms of underlying social goals and values, and the necessity of making choices between alternative models and paths of progress. *Section 12.2* discusses some of the data requirements needed to maintain these measures of crime costs over time, with particular emphasis on current data gaps and recommendations for improvements in the quality and type of information now available.

*Section 12.3* points to some fruitful areas for policy attention, where direct correlations between particular social and demographic characteristics and high crime rates indicate potentially cost-effective investments in crime reduction. Three very brief examples are given of the use of basic cost-benefit analysis, as employed in the GPI, to evaluate the potential effectiveness of alternative crime reduction strategies. It is the very nature of "investment" that up-front costs are incurred with a view to improving the flow of benefits and services in the future. That in itself is a core principle of the GPI approach.

Needless to say, none of the recommendations, conclusions or viewpoints expressed here are intended as definitive policy prescriptions, but are designed only to stimulate a wide-ranging discussion and debate on policy options that might be worthwhile investments in reducing crime. They are hopefully presented in such a way that non-experts will feel comfortable participating fully in this debate.

# 12.1 Defining Genuine Progress

A peaceful, harmonious and secure society is a profound social asset that directly benefits the economy and the quality of life of its citizens. Money not spent fighting crime and restoring damage to bodies and property can be invested in productive and welfareenhancing activities. In the same way, a healthy citizenry is a human capital asset that requires less spending on hospitals and defensive health measures, and a clean environment is a natural capital asset that saves pollution clean up expenses.

Just like produced capital, social assets are subject to depreciation and deterioration, and require conscious protection and re-investment in order to protect the flow of beneficial services they produce. A rise in crime rates and crime costs is an important indicator of depreciation in value and deterioration in the peacefulness of society and the security of individuals, just as a reduced flow of goods and services may indicate that machinery is in need of repair.

Unfortunately this is not the signal that our current national and provincial accounting systems send to policy-makers, economists, journalists and to the general public. On the contrary, because they register rising crime costs as economic stimuli and GDP growth, they are taken as signs of social prosperity, thus blunting incentives for remedial action.

By contrast, the Genuine Progress Index registers crime costs as a loss to individuals and society, and signals the need for a reaffirmation of the value of peace and security, and for investments in overcoming the causes of crime. In this way, the GPI also demonstrates the inability of market statistics and materialist standards to provide adequate benchmarks of well-being and progress.

At a more profound level, the GPI also questions the doctrine of limitless quantitative growth irrespective of standards of quality, a doctrine embodied in the use of the GDP as a measure of social progress. Clearly there are some areas of the economy where growth is undesirable. More crime, gambling, divorce, toxic pollution, stress and drug use, overeating and obesity, sickness, war and arms production, accidents, and natural resource depletion all make the economy grow. But they exemplify areas where limits to growth may signify well-being, prosperity and progress more accurately than limitless growth.

Although Canadians often express envy at the "dynamism" of the U.S. economy and its "robust" growth rates, the social costs of that growth and the fact that it is driven in part

by factors that signify an actual decline in quality of life, are not generally considered in the comparisons.

Crime costs are a poignant example. The U.S. imprisons 668 people for every 100,000 residents, the highest rate in the world except for Russia. And the rate of increase has been so dramatic that it will likely pass Russia's 685 per 100,000 within the next year to become the world's leading jailer. Black males have a 28.5% chance of landing in a federal or state prison in their lifetime, and about a 40% chance of being behind bars if local and county jails are included. Prisons are operating at 15-24% above capacity and are seriously overcrowded.

What these statistics signify about the state of civil liberties, civil rights and race relations in the United States is rarely discussed in analyses of the American economy, even as the drive to privatize and build more prisons adds momentum to the country's economic growth rates. In fact, imprisonment is one of the fastest and most consistent growth areas of the American economy, with a 6.2% average annual growth rate throughout the 1990s, significantly outpacing overall GDP growth. Every extra prison, guard, court case, lawyer and police officer helps drive the American economy, as does increased spending on security guards, burglar alarms, locks and electronic surveillance equipment.

While this module focuses on crime, GDP architect Simon Kuznets' warning that "the welfare of a nation can scarcely be inferred from a measurement of national income" can equally be applied to other areas of economic growth. It is questionable whether rapid economic growth signifies an enhancement of well-being, prosperity and quality of life if inequity, crime, stress, pollution and resource depletion are also growing in the process. Kuznets' dictum that "goals for 'more' growth should specify more growth *of what* and *for what*" seems more pertinent than ever.

Nova Scotia still has one-fifth the rate of robberies as the U.S., less than a third the rate of homicides, and less than half the rate of motor vehicle thefts. Nova Scotians spend only a quarter as much per capita on corrections as Americans, and imprison a much smaller fraction of their population.

While this lowers GDP per capita in relation to the U.S., the Genuine Progress Index recognizes this comparison as a significant quality of life advantage for Nova Scotia. In economic terms, the savings are available for more productive and welfare-enhancing activities. Recognizing the value of a peaceful and secure society, and comparing this advantage to the United States, cannot help but raise questions about the American economic model, which conventional economics holds in such high esteem and which has presently found such favour in this country.

The recent denunciation by the Nobel Peace Prize winning human rights organization, Amnesty International, of the 350 executions of criminals in the United States in recent years raises disturbing questions about the extent to which economic growth has been bought at the expense of a serious erosion of civil liberties in that country. Since crime rates may be lowered through repressive means, as many police states have demonstrated,

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the growing gap between crime rates and crime costs in the U.S., indicated by the incarceration data, argues for a serious testing of the proposition that a widening gap between crime rates and costs may signify movement towards a more repressive society. Conversely, in the introduction to chapter 5, we advanced the hypothesis that civil liberties remain at the same level to the degree that crime costs remain proportional to crime rates.

In relation to the rest of Canada, Nova Scotia still has a lower overall crime rate, has just 82% of the national property crime rate, requires less police per capita to keep the peace, imprisons a smaller percentage of its population, and spends proportionately less on locks, alarms, electronic surveillance and other crime prevention and detection devices.

But the statistics show that the province is gradually losing its advantage and converging rapidly towards the national average. Twenty-five years ago, Nova Scotia had just two-thirds the national crime rate and needed only 70% as many police per 100,000 as the rest of the country to keep the peace. From a lower base, the provincial crime rate has increased faster than the national rate, so that Nova Scotia today has 98% of the national crime rate and needs 94% as many police to keep the peace as the rest of the country. The violent crime rate already exceeds the national average.

While part of the increase is undoubtedly due to increased reporting rates in some categories of crime, there is also no doubt that Nova Scotia today is a markedly less peaceful, harmonious and secure society than it was 35 years ago. Considering only police-reported crimes, the average Nova Scotian is today four times as likely to be a victim of crime as his parents and nearly five times as likely to be a victim of violent crime.

This erosion or deterioration in quality of life is reflected in higher economic costs. Even a conservative estimate, counting only direct economic losses and expenditures from police-reported crimes indicates that crime is costing Nova Scotians \$557 million a year, \$1,660 per household, or nearly \$600 for every man, woman and child in the province. A truer, more comprehensive estimate of crime costs indicates that crime costs Nova Scotians about **\$X** a year, or **\$Y** per person. If crime were still at 1962 levels, Nova Scotians would save **\$Z** annually, which could be invested in education, health and other productive activities.

In traditional economic terms, the Atlantic region has lagged significantly behind central Canada and the west for the past century, and "convergence" is conventionally regarded as desirable when measured in GDP per capita. From a larger quality of life perspective, such convergence is more questionable. While still below the national average, the three Maritime provinces have the fastest rates of growth in crime and are quickly approaching Canadian standards, though thankfully still falling considerably below American standards.

A powerful and valuable social asset, that has traditionally been a source of strength signifying a high quality of life, is eroding in the Maritimes. While this is not good news,

and while the long-term trends described in this study are often unpleasant and difficult to face, doing so with courage is a necessary step in mobilizing a renewed commitment to restore the peaceful and secure society that existed here not so long ago.

In our relentless quest for material comfort, wealth and consumer goods and services, we have undoubtedly lost sight of vital non-material values and thus allowed profound social strengths to deteriorate. Recognizing this reality honestly can enable us to view the results of this report not with gloom and despair, but as an opportunity for positive change and commitment to social values that are still remarkably strong in this region and not temporally far removed in practice. The information in this study can be used to turn the disturbing trends around.

Personal security and a peaceful society must first be reaffirmed as core values in our measures of progress. With that fundamental commitment, progress towards those goals can then be monitored by means of the measuring tools developed in the Genuine Progress Index, and specific policy actions taken to attain these goals. The following sections address these next steps.

# 12.2 Data Requirements and Recommendations

For the reasons given in chapter 2, GPI Atlantic strongly recommends that the costs of crime be estimated on an annual basis, and counted as a loss rather than as a gain to the economy, as is currently the case. The Solicitor-General, in chapter 2.2, has eloquently stated some vital reasons to measure the costs of crime in economic terms. Doing so can also send more accurate signals to policy-makers about changes in the quality of life than a measure of progress based solely on market statistics and can provide a useful benchmark of social progress.

Above all measuring crime costs can demonstrate the actual costs of a declining social asset, and provide an impetus to build a more peaceful and harmonious society with a high degree of personal security and safety. At a later stage, the cost-benefit method used in the GPI can be applied to assess in economic terms the long-term cost-effectiveness of alternative investment strategies aimed at reducing the crime rate.

While laborious to construct initially, the costs of crime should not be difficult to maintain and update on an annual basis. This report, however, is only a preliminary first step in this direction. It contains many data gaps and extrapolations where more direct and accurate measurements would clearly be desirable. GPI Atlantic welcomes efforts to improve both the methodologies and data sources used in order to make the measurements more accurate and meaningful in the future.

To this end, this section lists briefly some of the difficulties encountered in gathering data, some important data requirements to measure crime costs, and some recommendations for new data that are not currently available.

# 1) Victim Property Losses

Monetary and property losses suffered by victims of crime are costs that have a negative economic impact on the quality of life of the victim and on society at large, and are a necessary component of any assessment of crime costs. But the authors were unable to find current victim loss data, and this report therefore relies on a national victim survey that is nearly 20 years old. Only the average losses for motor vehicle theft, from the insurance industry, are more recent.

Further, since provincial data were unavailable, the average loss per crime used in this report is a national average. This probably inflates the value of losses in Nova Scotia where incomes are lower, consumption less, and cars older than the national average.

The Uniform Crime Reporting statistics appear to indicate that the actual dollar loss per reported theft is already available. However published data only reveal the number of reported thefts above and below \$5000, making it impossible to calculate the gross economic loss due to theft. If such data are available, it would be most helpful if they could be made available to the public.

# 2) Victim Surveys and Unreported Crime

In order to assess the full financial direct victim loss due to crime, the loss for unreported crime needs to be added to that of reported crime. Such data can be obtained through victimization surveys, which can provide a more accurate and comprehensive portrait of the effect crime has on societal well being than can the official Uniform Crime Reporting statistics. To provide accurate and timely data such surveys need to be expanded and conducted more frequently.

The United States conducts comprehensive victim surveys on an annual basis, while the United Kingdom does so biannually. Statistics Canada's General Social Survey currently conducts such surveys only once every five years and releases the results on a nationwide basis only. Since justice is administered provincially, it would be useful for victimization survey results to be released with provincial breakdowns so that provincial trends and comparisons can be made.

As noted in chapter 2, an important step in this direction has already been taken in Nova Scotia with annual victim surveys conducted since 1996 by Corporate Research Associates and commissioned by the N.S. Department of Justice. It will be desirable to expand these surveys in future years to include some of the data needs described here.

The current CRA surveys are confined to three questions: "How many times, if at all, have you yourself been a victim of crime in the past year?" For respondents who answered yes, they were asked to identify the most recent crime as a "violent crime", "property crime", or "other crime". Respondents were also asked: "How safe do you feel when walking alone in your neighbourhood after dark? Do you feel very safe, reasonably safe, somewhat unsafe or very unsafe?"

Clearly these questions alone do not suffice to supply the data necessary to ascertain the magnitude of loss sustained by victims, the days incapacitated or hospitalized, the precise nature of the crime, and other information necessary to sustain this index. Nevertheless, the annual surveys are an important beginning, and may already serve to check changes in reporting trends for overall rates of violent and property crime.

#### 3) Business Losses and Defensive Expenditures

Because they focus exclusively on individuals, victimization surveys exclude unreported losses suffered by business. Business loss due to fraud and theft is substantial, but there is currently no way of assessing the extent of the loss. In the interests of financial efficiency, it should be possible to "piggyback" questions on business losses due to crime onto existing business questionnaires administered by Statistics Canada. From inventory counts, shrinkage might also be estimated.

In addition, a few key questions can be added to existing Statistics Canada business surveys to assess business expenditures on security guards, electronic surveillance and other loss prevention and detection equipment. Businesses might also be asked directly to assess the extent to which shrinkage and crime prevention measures contributed to higher prices.

#### 4) Provincial Justice Costs

Statistics on justice costs are currently maintained in disparate forms by different authorities. Statistics Canada gathers this information and produces aggregate national figures. It also combines municipal, provincial and federal expenditures to arrive at the total cost of government spending on police, courts and provincial corrections within each province. These justice expenditure data are very useful in their present form. In the past, provincial data, especially on penitentiaries, have frequently been combined into regional summaries. But these regional data have limited utility for provincial policy makers, who require provincial data as the basis for informed decision-making. The authors therefore recommend the continued presentation of provincial data on justice costs.

#### 5) Federal Penitentiaries

The cost of incarceration in Nova Scotia cannot be based entirely on the operating costs of provincial jails. Since Nova Scotia taxpayers pay both federal and provincial taxes, they also pay for some of the costs of the federal prison system. But while provincial corrections costs are known, it is not currently possible to assess the Nova Scotian contribution to federal penitentiary costs.

Indeed, Nova Scotia sends a disproportionate number of offenders to federal penitentiaries, which means that incarceration costs are partially externalised, with the federal government paying the bill rather than the government of Nova Scotia. To assess

the full cost of crime, the cost of incarcerating offenders sentenced in Nova Scotia, but housed in federal penitentiaries, must be known.

## 6) Social and Demographic Data on Offenders

In order to tackle crime effectively it is important to know more about who is committing the crimes. More data are therefore needed on the demographic background of offenders, in order to enable policy makers to target funds and programs at groups likely to offend or re-offend. Chapter 6 of this study indicates the types of correlations that need to be explored in greater depth.

# 7) Recidivism Data and Rehabilitation Programs

The most important data recommendation of this report is to keep and maintain accurate data over time on recidivism rates. This information is currently very inadequate, but is vitally important if we are to assess the value of alternative forms of corrections, rehabilitation programs, and new experiments in restorative justice.

Certainly the highest goal of any corrections program must be that the offender will reenter society peacefully and not re-offend. It is ironic, as the discussion in chapter 9.3.6 on privatization of prisons in the United States demonstrates, that private prison profits benefit from a high incidence of recidivism. It might be interesting to make profits dependent on the degree of successful prisoner rehabilitation.

Those who have previously offended are more likely to re-offend than those who have never committed a crime. Education programmes that make prisoners more employable and socially acceptable may be a sound investment if the economic savings society gains from a lower recidivism rate exceeds the financial cost of rehabilitation. To assess the success of current rehabilitation programs, reliable recidivism data clearly need to be available.

As noted in chapter 6, it is likely that high rates of inmates with prior convictions tell us more about sentencing trends than about propensity to re-offend, since it generally takes a considerable criminal record to receive a prison sentence.<sup>250</sup> It is therefore important that recidivism data be presented according to number of offenders as well as number of prison inmates.

#### 8) Crime Cost Data as a Social Investment

In sum, if only a tiny fraction of the resources currently devoted to maintaining the GDP and related market statistics were used for an annual victimization and cost of crime survey, and to provide the data mentioned above, it would provide comprehensive, timely and vital information on the effect of crime on the quality of life of Nova Scotians and Canadians. Even more importantly, it would focus attention on a peaceful and secure

<sup>&</sup>lt;sup>250</sup> Robert Roe, N.S. Department of Justice, personal communication, 18 March, 1999.

society as a critical social asset, provide an impetus for policy initiatives to bring that about, and assess progress towards an enhanced quality of life.

From a macro-economic perspective, the ready availability of such data would also send more accurate signals to policy-makers on the factors driving economic growth, and allow more precise distinctions between the types of economic activity that create social benefit and those that create harm. Such an analysis will suggest investment strategies designed to foster growth in the areas that produce long-term benefit, and to limit growth in the areas that carry heavy social costs. If, as in the United States, high rates of imprisonment are helping drive economic growth, this should be made explicit in the accounting mechanism, so that development models can be chosen that will enhance rather than diminish the quality of life.

For all these reasons, the very modest expense involved in generating such data and making it available, is an important investment in a valuable social asset. These data can help maintain this index over time as a useful policy tool reflecting our commitment to a peaceful and secure society.

# 12.3 Policy Options.

The Genuine Progress Index is intended as an integrative mechanism that elucidates the linkages between social, economic and environmental variables. By identifying the long-term economic impacts of social and environmental policies and by bringing social benefits and costs into the economic accounts, the GPI seeks to go beyond a narrow reliance on market statistics to construct a more comprehensive measure of progress that reflects changes in the quality of life.

But ultimately it is not intended as a macro-economic measurement alone. Its real goal is to provide a useful, practical tool for policy purposes. The authors acknowledge that we ourselves are not at that stage yet. But as the index is further developed, it should become increasingly possible to apply the GPI principles and methods to an evaluation of specific alternative investment strategies to ensure cost effective development programs that maximize long-term social, economic and environmental benefits, and minimize costs.

We know that crime is not separate from social, economic and demographic conditions, and that it cannot be tackled in an isolated way that deals only with symptoms after the fact. The fallacy of that approach is well illustrated by the rapid growth in incarceration rates in the United States, which has resulted in the imprisonment of 1.8 million Americans without any concerted initiative to ameliorate the causes of crime in that country. The world's leading economic power is also on the way to becoming the world's leading jailer. From the GPI perspective, that contradiction cannot last long. Eventually, the costs of crime will undermine economic strength.

We are far from understanding the causes of crime, and from knowing whether specific actions and social factors like job lay-offs, larger school class sizes or teenage drug use

will eventually increase crime rates. But we can at least note in passing, as in chapter 6 of this study, that there are significant correlations between high crime rates and gender, employment status, educational attainment, substance abuse, recidivism, and age. We have also noted that crime rates do tend to follow the business cycle, with noticeable peaks during the two most recent recessions

Harvard University epidemiologist Harvey Brenner noted that a 14.3% increase in the U.S. unemployment rate, from 4.9% to 5.6% between 1973 and 1974, was associated with 403 additional homicides, 7,000 additional assaults, 270 additional suicides, and 8,400 additional admissions to mental hospitals, with many of these effects spread out over a period of six years.<sup>251</sup>.

We do not venture to make such specific quantitative associations in this study. But the social and demographic correlations in chapter 6 at least begin to identify the areas in which policy initiatives and social programs are the most likely to yield cost-effective investments that might reduce crime and improve living standards and quality of life at the same time. To illustrate such potential uses of the GPI in the future, three very brief examples are given here just to stimulate discussion, and without any prescriptive intent. Hopefully future studies will use full-cost accounting techniques to undertake more detailed cost-benefit analyses of alternative investment strategies that may have an effective crime prevention function.

# 12.3.1 Drug Treatment

It was noted in chapter 6 that 50-75% of offenders have drugs in their urine at the time of arrest, that 30% were actually under the influence when charged, and that 30-50% of prison inmates have drug-dependency problems.<sup>252</sup> On the positive side a residential drug treatment program in Montreal found a direct correlation between successful treatment and reduced crime recidivism. In economic terms it estimated that every one dollar invested in residential drug treatment programs yielded \$7 in savings from reduced crime costs.

# 12.3.2 Education: The Perry Pre-School Program

It was noted in chapter 6 that crime is positively correlated with poor educational attainment. While only 19% of the population have less than a grade 10 education, 36%

 <sup>&</sup>lt;sup>251</sup> Brenner, Harvey, *Estimating the Effects of Economic Change on National and Social Well Being*, a study prepared for the Subcommittee on Economic Goals and Intergovernmental Policy of the Joint Economic Committee, Joint Committee Print 98-198, U.S. Government Printing Office, Washington D.C., 1984, cited in Cobb, Clifford, Ted Halstead and Jonathan Rowe, *The Genuine Progress Indicator: Summary of Data and Methodology*, Redefining Progress, San Francisco, September, 1995, page 23.
<sup>252</sup> Brochu, Serge, *Estimating the Costs of Drug-Related Crime*, http://www.ccsa.ca/brochu.htm

of all inmates and 46% of federal prisoners, who are guilty of the most serious crimes, have less than a grade 10 education. An example from the United States is given here for illustrative purposes only, to demonstrate the potential cost effectiveness of educational investments for crime reduction. A detailed analysis of the issues for Nova Scotia would clearly be necessary to make the example policy relevant.

A long-term longitudinal study in the United States measured the economic value of investment in high quality pre-school education (the Perry program) in a low-income inner city area with high crime and unemployment rates against a control group in the same area in which no such educational investment was made. Since the program was instituted in the early 1960s, the Perry experimental group has regularly out-performed the control group, and demonstrated consistently lower crime rates.

A report by the Canadian Centre for Justice Statistics notes: "The Perry Pre School programme reduced crime among youth and adults, while improving success rates in school, higher rates of employment, higher earnings, and less reliance on social assistance. In this case, a \$5,000 investment in early childhood education yielded an estimated \$28,000 return in dividends to society."<sup>253</sup>

# 12.3.3 Punishment Alternatives

Public opinion polls indicate that the public favours spending money on crime prevention rather than on building new prisons.<sup>254</sup> In contrast to the United States, Canadian custom and practice has seen incarceration as a last resort. Section 718.2 of the Criminal Code actually instructs judges to use alternatives to incarceration where possible, and recommends increased use of conditional release programs. Indeed the Solicitor-General reported to the Parliamentary Standing Committee on Justice:

Threats to the safety and security of Canadians will not be abated by hiring more police officers and building more prisons

Patti Pearcey, chairwoman of the National Crime Prevention Council's Economic Analysis Committee argues that crime prevention rather than incarceration is the key to reducing crime, and that it is not only "the right thing to do and the effective thing to do, but the cost-effective thing to do."

Hellman notes that the actual effectiveness in practice of each of the goals of imprisonment (deterrence, incapacitation, rehabilitation and retribution) must be evaluated in terms of benefit-cost analysis:

In choosing prison terms (for the purpose of deterrence), we should consider the marginal social costs of imprisonment (the cost of maintaining a prisoner) and compare these social costs with the social benefits of reducing the harm done by

<sup>&</sup>lt;sup>253</sup> Statistics Canada. Juristat. Justice Spending in Canada.Cat. No. 85-002, Vol. 17, No. 3, p.3.

<sup>&</sup>lt;sup>254</sup> Julian Roberts. *Public Knowledge of crime and Justice: An Inventory of Canadian Findings*. A report for the Department of Justice, Canada, p.7.

potential offenders. If the marginal costs of imprisonment exceed the marginal benefits, the prison term is too long....Incapacitation is useful if the marginal costs of imprisonment are less than the marginal benefits of a reduction in the amount of crime committed by that offender.<sup>255</sup>

Using this criterion, it is probable that a 30-day sentence, costing the taxpayer \$3,570, for non-payment of a fine or for a theft of \$200, is not cost-effective. Hellman further concludes that retribution is not economically effective and that for minor offences in particular, it is clear that effective rehabilitation cannot occur in the space of a prison term of less than a month.<sup>256</sup>

By contrast, the evidence indicates that community superivision and parole are at least as effective in reducing recidivism rates as prison. Julian Roberts notes that only 12% of parolees in Canada committed new offences.<sup>257</sup> Assessments of recidivism risks by correctional services indicate that 44% of the Nova Scotia prison population has a "high risk of re-offending."<sup>258</sup> Alternatives to incarceration for the remaining 56% of prisoners are particularly likely to produce significant cost savings to the public, according to Hellman's criteria.

If these non-high-risk offenders were placed under community supervision rather than imprisoned, Nova Scotia taxpayers would save nearly \$6 million per year.<sup>259</sup> This calculation assumes that offenders under community supervision are no more likely to re-offend than released short-term inmates. The issue illustrates the importance of reliable recidivism data as recommended in section 12.2 above.

Alternatives to imprisonment for minor offences are under consideration in other provinces. Orest Yereniuk, President of the Alberta Crown Attorneys Association noted major anomalies in sentencing and time served in Alberta prisons, and noted: "Maybe the solution is to reserve our jails for the most severe criminals."

In September, 1996, the federal government changed the criminal code to include "conditional sentences" as a direct alternative to incarceration for some crimes. At the judge's discretion, an offender sentenced to less than two years in prison can serve his time in the community instead, with conditions ranging from house arrest to a promise to keep the peace. For example, an offender might serve his sentence in his own home, with strict conditions attached that confine his freedom of movement. He might be permitted to go to work and return, or to exercise in prescribed areas, but not to leave his house for any other purpose.

<sup>&</sup>lt;sup>255</sup> Hellman, op. cit., page 71

<sup>&</sup>lt;sup>256</sup> op. cit., page 72.

<sup>&</sup>lt;sup>257</sup> Roberts, op. cit., page 39.

<sup>&</sup>lt;sup>258</sup> Statistics Canada, *Juristat*, catalogue no. 85-002, volume 18, no. 8, page 9, figure 9.

<sup>&</sup>lt;sup>259</sup> Figure derived by subtracting annual community supervision cost (\$9,145) from annual prison incarceration cost (\$43,282), and multiplying by 56% of the adult inmate population in Nova Scotia.

The province's "adult diversion" program goes a step further by circumventing the whole court process for non-serious offenders and in keeping public justice costs down even more by avoiding a criminal trial altogether. Whereas conditional sentencing first requires a trial and conviction, adult diversion creates alternative options for minor offences that allow an offender to be diverted from the court system at the pre-charge stage. Analogous to programs that previously existed for minor youth offences, adult diversion gives police officers alternative options to laying charges for minor offences that would have required a court appearance.

Among the possible alternatives to trial are community service work, restitution, an apology or personal service to the victim, a written essay taking responsibility for the offence, or charitable donation and work. Authorized by the federal government in 1995 in Bill C-41, the province experimented with the program in Dartmouth and North Sydney for more than a year before adopting it on a province-wide basis in 1997. It has been judged as highly successful to date.<sup>260</sup>

# 12.3.4 Restorative Justice: Model for the Future?

The Nova Scotia Justice Department is in the process of instituting a restorative justice program, which could become a model for the country. This program intends to bring together the offender, the victim and justice officials to determine appropriate forms of restitution to the victim and to the larger community for harm done by the offender. Restorative justice may divert an offender from the normal judicial system at any point in the process – from the time of arrest through the prosecution and court process to the corrections stage.

The program is a radical alternative to the existing adversarial system and "the general fixation on punishment as the principal tool for correcting behaviour," which, according to the Justice Department, "drives offender responsibility underground. If the only option available for offenders is a potentially harmful period of incarceration, non-acceptance of responsibility will be the standard response."<sup>261</sup>The new program is also driven by the recognition that imprisonment has not succeeded in reducing recidivism rates among offenders and that these rates are still too high.

"Restorative justice is only available when offenders are prepared to accept responsibility for their actions," says the Justice Department. "Restorative justice places a high value on a face-to-face meeting between the victim, offender and community. During the course of that meeting, each party is given an opportunity to tell the story of the crime from their own perspective, and talk about their concerns and feelings."<sup>262</sup> The community may be represented by relevant volunteer groups.

<sup>&</sup>lt;sup>260</sup> Information from Dr. Don Clairmont, Department of Sociology, Dalhousie University, personal communication, 1 April, 1999.

<sup>&</sup>lt;sup>261</sup> Nova Scotia Department of Justice, Restorative Justice: A Program for Nova Scotia, Halifax, June, 1998, page 3. <sup>262</sup> Idem.

That initial forum might produce a range of possible outcomes quite similar to those currently being explored in the adult diversion program, including community service work by the offender, direct restitution or personal service to the victim, counselling and participation in educational programs, public letters of apology or an essay taking responsibility, expressing remorse and undertaking not to re-offend.

Unlike adult diversion, however, restorative justice procedures may be used at any stage of the judicial process and for serious as well as minor offences. For serious offences, the offender may still be required to serve a prison term after participating in a restorative justice forum, and the restorative justice mechanisms may be employed even after an offender has already served part of a prison term.

The scope of restorative justice models is far broader than that of the conventional adversarial system, since it emphasizes direct offender accountability, victim healing, offender re-integration, and repairing the harm caused by the offence. It is intended to reduce recidivism, increase victim satisfaction, strengthen communities, and increase public confidence in the justice system.

Instead of dealing with crime only as a symptom, restorative justice has the capacity to delve into underlying causal factors and social problems. In this way, it "enhances a community's sense of safety by identifying circumstances in the community which contributed to the offence, and determining what can be done to avoid a similar situation in the future."<sup>263</sup>

The first phase of the restorative justice initiative will target youth between the ages of 12 and 17 in the Halifax Regional Municipality and the Cape Breton Regional Municipality, and in rural areas of the Annapolis Valley and Cumberland County. Efforts are currently under way to create an effective monitoring and evaluation system to measure the initiative's success in achieving its goals of reducing recidivism, increasing victim satisfaction and improving the cost effectiveness of the public justice system.

According to the Justice Department,

An important evaluation component of the initiative will involve an assessment of whether restorative justice programs lead to direct and indirect financial savings. An evaluation of the broader financial issues associated with restorative justice is essential for the continued growth of the initiative.<sup>264</sup>

In sum, restorative justice holds the promise of reducing crime and its associated costs by linking the causes and effects of crime, and accords well with the GPI approach that favours linking social and economic variables in a more complete accounting process. It has a potentially transformative capacity that may be a model for the future.

<sup>&</sup>lt;sup>263</sup> Op. cit., page 4

<sup>&</sup>lt;sup>264</sup> Op. cit., pages 19-20

The brief examples in this section illustrate the types of social investment that might be also be cost-effective crime reduction strategies when evaluated in terms of full economic and social costs and benefits. Similarly, social programs geared to the well-being of Aboriginal communities, to youth employment, and to other high-risk groups may help reduce crime and save significant social costs, while improving the quality of life and raising the standard of living.

The examples demonstrate the specific uses to which the GPI can be put once a strong political and social commitment to peace and security is in place, and once clear benchmarks of progress that explicitly value quality of life take their rightful place alongside the market statistics that currently dominate our thinking. It is hoped that the cost accounting procedures described in this study can help focus attention on and give priority to the goal of creating a more peaceful and secure society in the new millennium.

# Appendix I: Methodology and Data Sources

One of the major goals of this study is to develop an accounting framework for estimating crime costs, and it is therefore essential to make the methodologies as transparent as possible. Many of the dollar amounts quoted as crime costs have been extrapolated and derived from a variety of sources, and are not direct measurements. It is our hope that over time new data sources will allow the gradual substitution of direct measurements for many of the derived results in this study, and that methodologies will be gradually improved.

# General Note: Replicating Valuations for other Provinces

Because of Statistics Canada's interest in the Nova Scotia GPI as a pilot project, efforts have been made to use standard official published sources that are readily available across Canada, and which provide some basis for comparability between jurisdictions. Thus, 1962 has been taken as the starting date for timelines in this report, simply because the Uniform Crime Reporting (UCR) statistics date from that year, allowing provincial comparisons of relative changes in the crime rate over time. Statistics Canada Cansim database has been used so that provincial data are comparable spatially and longitudinally.

We have noted in Chapter 4 and throughout the report, the serious limitations that exist in using official crime statistics, since they cannot account for major changes in reporting rates. There is evidence that reporting rates for assault and sexual assault have gone up significantly, and that domestic violence is far more often the subject of police intervention that 30 years ago. Nevertheless, since these are cultural changes not likely to vary significantly across the country, the official crime statistics are still useful to assess comparative rates of change between the provinces, even if they must be qualified in terms of actual numbers of reported incidents.

To simplify replication by other provinces, therefore, data sources that are readily available across Canada have been used wherever possible. The starting point for every section has been Statistics Canada Canadian Centre for Justice Statistics (CCJS) publications. Free CCJS data are available at all regional offices of Statistics Canada, at a number of universities across the country, and electronically via the Internet. Until good annual standard victimization survey data are readily available, the authors recommend that the CCJS data be used as the basis for other provincial crime cost estimates to ensure comparability.

If, after an exhaustive search of CCJS data, we have not been able to collect sufficient data to construct a particular table, chart or time series, alternative Statistics Canada publications have been consulted, as described in the text, footnotes and bibliography.

These two sets of Statistics Canada sources provide most of the data in this study. In several cases, however, provincial justice departments have important additional data, either in published or unpublished form, not accessible in Statistics Canada publications,. Many vital missing data pieces were kindly provided to us through the good services of Paul Smith and Robert Roe of the N.S. Department of Justice. The authors therefore strongly recommend that efforts to replicate this study in other provinces be undertaken in cooperation with provincial justice departments.

It should be noted that provincial justice departments are in fact the source for much of the data published by Statistics Canada, and may frequently be able to provide more detailed, accurate and reliable data reflecting the particular legal and organizational norms that are peculiar to the province under investigation. This is particularly true in areas like sentencing, where the provinces have widely differing policies and legislation. Court structures also vary, and policy considerations affect police discretion and thus reporting rates. Nevertheless, in the interests of comparability among provinces, and for ease of replication by other jurisdictions, the standard CCJS data have been the data source of first priority in this study, though the cost of obscuring certain important provincial peculiarities is recognized and acknowledged.

In addition, reference has also been made to other government publications, as described in the footnotes and bibliography. Private sources of data, such as statistics from insurance companies and from surveys conducted by the Retail Council of Canada, have also been used, especially for some victim loss data, for estimates of business defensive expenditures, for data on theft insurance premiums, and for estimates of inventory "shrinkage" due to shoplifting and employee theft. If impaired driving costs are included in future updates of the report, as they should be, insurance company claim data will be vital.

In addition, the authors have used data presented both in academic articles and news reports, and in some cases, as noted, have extrapolated provincial data for Nova Scotia from earlier national studies of crime costs. In particular we recommend the published reports on crime costs, as noted in the references, by the Fraser Institute and by the National Crime Prevention Council, and by Welsh and Waller of the University of Ottawa's Criminology Department.

Sources have been utilized in the order described for the purposes of data collection. However, the framework for collecting the particular data published in this report and the subsequent interpretation of data relied on an extensive literature review, based primarily on academic articles and consultations with criminologists. These academic sources, which were the first step for the authors in undertaking this study, are listed in the bibliography.

In sum, to encourage comparability of results, the authors recommend that provincial crime cost analyses in other jurisdictions collect data in the following priority sequence:

- 1. Canadian Centre for Justice Statistics
- 2. Other Statistics Canada data

- 3. Federal Justice Department
- 4. Provincial Justice Department
- 5. Other federal and provincial government data
- 6. Non-government and private sector organizations, including insurance and retail industry sources
- 7. Academic and independent research articles
- 8. News reports

As noted in chapter 4, this report is certainly not intended as a definitive method for calculating the cost of crime, nor is calculating crime in economic terms the only means for assessing the extent to which crime effects quality of life. Many obvious improvements in methodology and data sources are necessary, and it is hoped that this study will stimulate attempts to revise and refine the measurement techniques and sources over time. Some recommendations for future recommendations are included in chapter 12.

The estimation of crime costs is essential at the present time in order to overcome the misleading signals sent both to policy-makers and the public by the use of the GDP as a measure of social progress and well being. At the very least, crime costs should no longer be taken as economic "gain" and as a contribution to economic prosperity. Ultimately, however, physical trends in crime can be incorporated into a comprehensive index of social progress without reference to the economic valuations. The latter are only necessary so long as market statistics dominate the policy arena and determine assessments of social well being. we strongly encourage further research that might result in improvements in methodology.

Selected detailed examples of methodologies and sources used in this report follow:

# Chapter 5: Crime Rates

**Table 5.1:** The number of criminal code incidents for Canada and Nova Scotia are from *StatCan: Cansim Disc, 1998-2*, Cat. No. 10F0007XCB, Matrix 2200, *Crimes by Actual Offences, Canada, Provinces and Territories, by Year*. Canada, D9501, Nova Scotia D9567. The population data for 1996 and 1997 are from Statistics Canada publication *The Daily*, September 24, 1998. Population data from 1962 to 1995 are from *StatCan: Cansim Disc, 1998-2*, Cat. No. 10F0007XCB, Matrix 599. The crime rate in this table is derived by dividing the number of criminal code incidents by the population and then multiplying by 100,000 to get the number of criminal code offences per 100,000 population.

The columns *Canada 1962=100* and *Nova Scotia 1962=100* are the respective crime rates in relation to the base year 1962, which is given as 100. The 1962 Nova Scotia crime rate was 2036 incidents per 100,000 population.. 100 divided by 2036 = 0.049116Therefore, (2036 multiplied by 0.049116 = 100) expresses the 1962 crime rate as 100. For the years 1963 to 1997 the crime rate has been multiplied by 0.049116 so that the crime rate for the period is expressed in relation to the base year of 1962, which has the base figure of 100. The same process has been used for the Canadian data.

Measuring the Nova Scotia and the Canada crime rates against a base year of 100 is useful in that it makes a comparison between the two jurisdictions easier to comprehend, while also showing the rate of increase for each of the jurisdictions in simple terms.

The column *NS as a % of Can. Crime Rate* is the Nova Scotia crime rate as a percentage of the Canada crime rate. The Nova Scotia crime rate has been divided by the Canada crime rate and then multiplied by 100 to get a percentage figure. From the perspective of quality of life, the results demonstrate a decline in comparative advantage for Nova Scotia in relation to the rest of Canada over the last four decades.

**Table 5.2:** The number of criminal code incidents for Canada and Nova Scotia is from *StatCan: Cansim Disc, 1998-2*, Cat. No. 10F0007XCB, Matrix 2200, *Crimes by Actual Offences, Canada, Provinces and Territories, by Year.* Canada, D9502, Nova Scotia D9568. The population data for 1996 and 1997 are from Statistics Canada publication *The Daily*, September 24, 1998. Population data from 1962 to 1995 is from *StatCan: Cansim Disc, 1998-2*, Cat. No. 10F0007XCB, Matrix 599. The crime rate in this table is derived by dividing the number of criminal code incidents by the population and then multiplying by 100,000 to get the number of criminal code offences per 100,000 population.

The columns *Canada 1962=100* and *Nova Scotia 1962=100* are the respective violent crime rates in relation to the base year 1962, which is given as 100. The 1962 violent crime rate in Nova Scotia was 242 incidents per 100,000 population.. 100 divided by 242 = .41322

Therefore, 242 multiplied by 0.41322 = 100 expresses the 1962 crime rate as 100. For the years 1963 to 1997 the crime rate has been multiplied by 0.41322 so that the violent crime rate for the period is expressed in relation to the base year of 1962, which has the base figure of 100. The same process has been used for the Canada data.

Measuring the Nova Scotia and the Canada violent crime rates against a base year of 100 is useful in that it makes comparison between the two jurisdictions easier to comprehend, while also showing the rate of increase for each of the jurisdictions in simple terms.

The column *NS as a % of Can Crime Rate* is the Nova Scotia violent crime rate as a percentage of the Canada violent crime rate. The Nova Scotia violent crime rate has been divided by the Canada violent crime rate then multiplied by 100 to get a percentage figure.

**Table 5.3**: The methodology and sources are the same as Table 5.1 and are applied to the number of property crime incidents for both jurisdictions. For Canada the source for

property crime incidents is *Cansim Disc 1998-2*, 10F0007XCB, Matrix 2200, D9508; for Nova Scotia: *Cansim Disc 1998-2*, 10F0007XCB, Matrix 2200, D9574.

# Chapter 6: Victim Costs (Property Crime)

#### Direct Victim Losses in Nova Scotia.

This table refers to the economic loss suffered by victims of property crime at the time of the incident – the value of goods stolen by a criminal from a victim. Unfortunately, other than the number of thefts above and below \$5000, there are no specific annual financial victim loss data either for Nova Scotia<sup>265</sup> or for Canada. Because of the dearth of relevant data we have had to rely on average losses for selected property violations as estimated by the Solicitor General of Canada.<sup>266</sup> Translated into 1997 dollars, using the Consumer Price Index, the average loss per violation is:

- Theft: \$2,188
- Vandalism: \$655
- Break and Enter: \$2,370
- Motor Vehicle Theft: \$3,728
- Robbery: \$2,934
- Fraud: \$3,625

In order to arrive at an approximation for the total direct financial losses per property crime category in Nova Scotia the average financial loss per incident has been multiplied by the number of incidents. For example:

In 1962 there were 5,201 reported thefts in Nova Scotia. By 1997 the annual number of reported thefts in the province had risen to 21,568. Therefore, the direct victim losses in 1962 as opposed to 1997 are:

1962 - 5,201 multiplied by \$2,188 = \$11.4 million

1997 – 21, 568 multiplied by \$2,188 = \$47.2 million.

The same procedure is used for all named crime categories and all intervening years. The total direct victim losses per year are the total losses for each crime category combined.

The *Potential Savings* columns show the money that could be saved if the number of criminal incidents in the Province were reduced to 1962 or 1975 levels. While the ultimate goal must be to eradicate crime altogether, interim targets that demonstrate the economic benefit of reducing crime are also useful. The methodology used is quite simply to subtract the 1962 and 1975 annual total from the subsequent annual total, the result being the potential saving.

<sup>&</sup>lt;sup>265</sup> Personal telephone conversation with media officer, Halifax Police Department. The Halifax police department does not keep data on the loss of property due to criminal activity. The media officer for the department is also unaware of any police department that might keep such statistics.

<sup>&</sup>lt;sup>266</sup> Brantingham and Easton, op. cit., *The Fraser Forum*, also use these estimates which are from Solicitor-General of Canada, *Canadian Urban Victimization Survey*, *Bulletin 5: Cost of Crime to Victims*, 1985.

# Chapter 7: Victimization (Violent Crime)

#### **Direct Monetary Losses due to Assault**

The mean net dollar losses for sexual assault and assault are from the Canadian Urban Victimization Survey (CUVS), No. 5, p.3, table 4. Difficulty was experienced constructing a time line for assault and sexual assault due to changes in definition. Because of these problems recent data for the two categories have been extrapolated back to 1962 using the ratio to violent crime. The CUVS survey found that a monetary loss occurred in 32% of sexual assault incidents, 56% of robberies, and 18% of assaults.

No distinction is made between reported and unreported crime in the CUVS report. If criminal incidents of a more serious nature are the ones more likely to be reported to the police, then the official crime statistics represent incidents where a financial loss is more likely to occur than in unreported incidents. It is therefore also be expected that reported crimes are more likely to incur a larger financial loss. Therefore, because this report uses the CUVS data, which reflects the average loss for reported and unreported crime combined, we are probably underestimating the average loss for reported crimes alone.

The Solicitor-General estimated that the mean net loss (after recovery of lost property) in 1981 for incidents where an economic loss occurred, was \$266 in cases of sexual assault, and \$224 in cases of assault. Translated into 1997 dollars using the Consumer Price Index, the average losses are \$372 for sexual assault and \$314 for assault.<sup>267</sup> No more recent figures are currently available.

However the same report also indicates that an economic loss took place in 32% of sexual asault incidents and in 18% of assaults. Therefore the dollar loss per incident has been estimated at ( $372 \times 32\% =$ ) \$119 per sexual assault and ( $314 \times 18\% =$ ) \$56 per assault.

Because definitions and reporting rates has changed over time for the crimes of sexual assault and assault, the two crime categories have been combined here so that aggregate losses for both categories of violent crime can be estimated back to 1962 using the above formula. Because of the changing definitions and reporting rates, it would be misleading to assume that the *relative* losses for *each* categories at least avoids the definitional problem.

#### Table 7.1: Cost of Hospitalization due to Crime in Nova Scotia

The Canadian Solicitor General's report, *Canadian Urban Victimization Survey: Cost of Crime to Victims*, p.4, states that interviewed victims spent 50,500 nights in hospital due to injuries incurred during 1,600,000 criminal incidents. These figures translate to 3.15% of criminal incidents resulting in a day of hospitalization.

<sup>&</sup>lt;sup>267</sup> Solicitor-General of Canada, *Canadian Urban Vicitmization Survey, Bulletin 5: Cost of Crime to Vicitms*, 1985, page 3.

The number of days spent in hospital due to criminal injuries in Nova Scotia has been calculated using this ratio. In 1997 there were 77,696 criminal code incidents in Nova Scotia. 77,696 multiplied by 3.15% gives 2,447 days of hospitalization. The cost of a day in hospital is from Statistics Canada catalogues 83-246 and 83-217. Data were not available for the years 1962-69, 1977, 1989, 1995-97. Estimates have been made for the missing years using the adjacent year's data.

The Solicitor General estimated that the average loss in 1981 for sexual assault was \$266 and for assault \$224. Translated into 1997 dollars using the Consumer Price Index for Nova Scotia the average losses are \$471 for sexual assault and \$396 for assault.<sup>268</sup>

#### **Homicide Measures**

The number of homicide victims who would have been in the workforce in 1997 has been calculated from the following data:

- Age and number of homicide victims 1921-44, 1946-49, and 1976-85.
- Number of homicide victims 1962-1997.

For the years where the number of victims is not known, the average age of victims from preceding years has been used as proxy. For years where the age of the victim is unknown the percentage of victims per age cohort has been calculated using averages from available data.

# **Chapter 9: Public Justice Costs**

Cost of Corrections in Nova Scotia. For the period 1962-1983 the total cost of Corrections for Nova Scotia is derived from the expenditures of the three levels of government in the province. Municipal costs for the same period are for courts and corrections. From 1962-70 municipal data for police, courts and corrections are only available under the composite heading *Justice*.

Federal expenditures for corrections for the period 1962-83 are only available at the national level and are not broken down by province. Since federal corrections expenditures come from general taxpayers revenues, we have simply based the share of federal corrections expenditures attributable to Nova Scotia to the province's share of the national population. Therefore, if three per cent of the Canadian population resides in Nova Scotia, Nova Scotia is responsible for three per cent of federal corrections expenditures in these estimates. Strictly speaking, this proportion should be adjusted to account for regional income disparities, but this has not been done in this report.

In other respects too, the methodology is flawed. Ideally the Nova Scotia share of federal corrections costs should be based on the percentage of penitentiary inmates who were

<sup>&</sup>lt;sup>268</sup> Solicitor General, *Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims, 1985, page 3.* 

sentenced in the province. Unfortunately the home province of penitentiary inmates is unavailable so the Nova Scotia share of penitentiary inmates cannot be calculated.

The problem this raises is that Nova Scotia may have a disproportionate share of inmates in federal corrections programmes. If, for instance, ten per cent of penitentiary inmates were sentenced in Nova Scotia, and the Nova Scotia share of the general population were three per cent, the methodology used in this report would only apportion three per cent of penitentiary expenditures to the province when in fact ten per cent of costs should be the responsibility of Nova Scotia. Conversely, if Nova Scotia had a lower share of federal corrections inmates than its share of the general population, then the share of federal costs would be overstated.

Despite these methodological difficulties, the Nova Scotia portion of federal corrections cannot be omitted. It may save the Nova Scotia government money when it sentences offenders to a federal penitentiary term, but provincial taxpayers still pay the bill in their federal taxes. Even when the federal government pays for federal corrections, such expenditures are still a cost of crime for Nova Scotians, as are all expenditures incurred because of crime in Nova Scotia.

Future updates of this report might improve the accuracy of this estimate by using data on the home province of penitentiary inmates to calculate how much Nova Scotia *should* be paying towards federal corrections expenditures, if these expenditures were a direct consequence of crime actually committed in the province. For this study the Nova Scotia share is derived as follows:

In 1997 the Nova Scotia population was 3.13 per cent of the Canadian population.<sup>269</sup> With no adjustments for income disparities, it is simply assumed that Nova Scotia taxpayers paid 3.13 per cent of the \$967,864,000 total federal operating expenditures for federal corrections in 1997.<sup>270</sup> 3.13 per cent of \$967,867,000 equals \$30,294,237.

#### **Cost of Probation in Nova Scotia**

The average offender count on probation in Nova Scotia in 1995-96 was 4339. The total cost of probation for Nova Scotia was \$5,832,000. The cost per participant is the total cost divided by the number of participants; therefore, \$5,832,000 divided by 4339 = \$1,344.

#### **Calculation of US Corrections expenditures**

- The latest expenditure data on corrections in the US are for 1992.<sup>271</sup>
- Inmate counts for federal and state prisons are for 1997, though the text refers to some recently released 1998 data.<sup>272</sup>

<sup>&</sup>lt;sup>269</sup> Statistics Canada. Cansim CD Rom Matrix 1.

<sup>&</sup>lt;sup>270</sup> Statistics Canada. March 1997. Adult Correctional Services in Canada, 1995-96. Cat. No. 85-211, p.76.

<sup>&</sup>lt;sup>271</sup> U.S. Department of Commerce. <u>Statistical Abstract of the United States</u>, 1997. 17<sup>th</sup> edition, p. 213.

- The number of inmates in local jails in 1997 has been estimated by updating the latest available data, from 1995<sup>273</sup>, by multiplying by the rate of increase in federal and state inmate populations for the same period.
- Because the total cost of corrections and the average number of inmates are known for 1992 we can calculate the cost per inmate for that year.
- The number of inmates in state, federal and local corrections in 1997 is then multiplied by the cost per inmate to get the total cost of incarceration in 1997 in 1992 dollars.
- The cost of corrections in 1997 dollars then estimated using the US Consumer Price Index<sup>274</sup>.

## Cases Heard in Youth Court: Rate per 10,000 Population

The rate per 10,000 youth of a particular age is derived from court and population data. For example, to arrive at the rate of court cases for 16 year olds the number of cases in youth court involving 16 year olds is divided by the number of 16 year olds in the general population to get the per capita figure; this number is then multiplied by 10,000 to get the rate per 10,000 16-year-olds.

# Chapter 10: Defensive Expenditures

## The Cost of Security Guards & Private Investigators Operating in Nova Scotia

Data on the number of people employed in either profession are from the Census and also from the Solicitor-General's Department, which licenses private security guards and investigators. Since the authors obtained the latter source only for the most recent years,<sup>275</sup> approximations for years between national censuses have been derived by extrapolating forward from each census point to the next, dividing the difference in census totals by the number of years in between.

#### **Business Defensive Expenditures**

Retail sales are not readily available for the period 1962-71. It has therefore been assumed that the rate of increase in retail sales for 1962-71 was similar to that of the following ten years for which figures are available. The average yearly rate of increase in retail sales for the ten years following 1962-71 was 11.7%. Consequently we have discounted the 1972 retail sales figures by 11.7% to get an approximation for 1971 retail

<sup>&</sup>lt;sup>272</sup> U.S. Department of Justice Website: http://www.ojp.usdoj.gov On June 30, 1997 1,218,256 prisoners were under federal or state jurisdiction.

<sup>&</sup>lt;sup>273</sup> U.S. Department of Commerce. <u>Statistical Abstract of the United States</u>, 1997. 17<sup>th</sup> edition, p. 213.

<sup>&</sup>lt;sup>274</sup> Statistics Canada. StatCan: Cansim Disc 1998-2. Cat. No. 10F0007XCB, Cansim Matrix 348.

<sup>&</sup>lt;sup>275</sup> Paul Smith, N.S. Department of Justice, kindly supplied the data from the Solicitor-General's Department.

sales. The approximated 1971 value was then discounted by 11.7% to get a proxy figure for 1970. This process was repeated back to 1962.

No separate provincial data on business defensive expenditures for electronic article surveillance and other forms of "target hardening" and crime loss prevention are available for Nova Scotia. The percentage of retail sales due to defensive expenditures is therefore derived from national data provided by the Retail Council of Canada.

It has further been assumed that the defensive expenditure rate of 0.51% of retail sales in 1997 is not constant on an annual basis, but varies in direct proportion to the incidence of shoplifting. This is in accord with the basic definition of defensive spending as a response to a decline in welfare, whether in the form of compensation for harm done or attempt to prevent further decline. Since shoplifting is not separately reported in the official crime statistics, it is also assumed that shoplifting incidents have changed in direct proportion to incidents of theft. Needless to say, these assumptions could be eliminated by direct provincial victimization survey data, as recommended in chapter 12.

The rate of defensive spending, therefore, has been extrapolated back to 1962 on the basis of two variables – changes in retail sales, and changes in the number of thefts as reported in the official crime statistics. For example, the 1990 expenditures are calculated in this way: the number of thefts in 1990 = 27087, the number of thefts in 1997 = 21568. 27087 divided by 21568 equals 1.26. The 1997 rate of business defensive expenditures (0.51%) as a proportion of retail sales, is then multiplied by 1.26 to get the 1990 estimated rate of expenditures (0.64% of retail sales for that year). The total retail sales for 1990 (\$6.2 billion) are then multiplied by 0.64% to derive an estimate for the total sum spent on defensive expenditures in 1990, namely \$45.8 million.

# Chapter 11: Comprehensive Cost Estimates

Methodologies are explained in the body of the chapter. For more details on methods of valuation of unpaid work, please see the first two modules of the Genuine Progress Index on the economic value of voluntary work and household work in Nova Scotia.

# **Appendix II:** Components of the Nova Scotia Genuine Progress Index

# A. Time Use Variables

Economic Value of Civic and Voluntary Work Economic Value of Unpaid Housework and Child-Care Unpaid Overtime and Costs of Underemployment Valuation of Leisure Time

# **B.** Natural Resource Accounts

Soils and Agriculture Forestry Fisheries Nonrenewable Subsoil Assets

# C. Other Social and Economic Modules

Costs of Crime Income Distribution Valuations of Durability Debt, External Borrowing, and Capital Movements Health Care Educational Attainment Composite Livelihood Security Index Human Freedom Index

# **D.** Other Environmental Components

Greenhouse Gas Emissions Sustainable Transportation Ecological Footprint Analysis Air and Water Quality

# E. Aggregate Genuine Progress Index

Construction of a composite index of sustainable development based on the 20 modules is scheduled for the year 2000.

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