
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).¹

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.*²

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

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

² 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 production³, 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.⁴

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

³ 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).

⁴ 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.⁵

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.⁶

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 direction⁷.

⁵ 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.

⁶ Kennedy, Robert, "Recapturing America's Moral Vision", March 18, 1968, in *RFK: Collected Speeches*, Viking Press, 1993.

⁷ 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.⁸ 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.⁹ These indices also

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.

⁸ 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.

⁹ 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.

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.*¹⁰

¹⁰ 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.”¹¹

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.¹² 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 1998.¹³

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.

¹¹ Statistics Canada, *Econnections*, catalogue 16-515-GPE, page 10.

¹² 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

¹³ 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.¹⁴ 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.¹⁵

When that process is complete, the results will be arranged in a spread-sheet, double-counting 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

¹⁴ 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

¹⁵ 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 multi-dimensional 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.¹⁶

¹⁶ 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 21st 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.

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 \$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 12,¹⁷ 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 in-store 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

¹⁷ 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 in-store 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 21st century.

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

Conservative Estimate	
Victim Losses: Reported Crimes¹⁸	
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	
<i>Total Conservative Estimate (from above)</i>	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

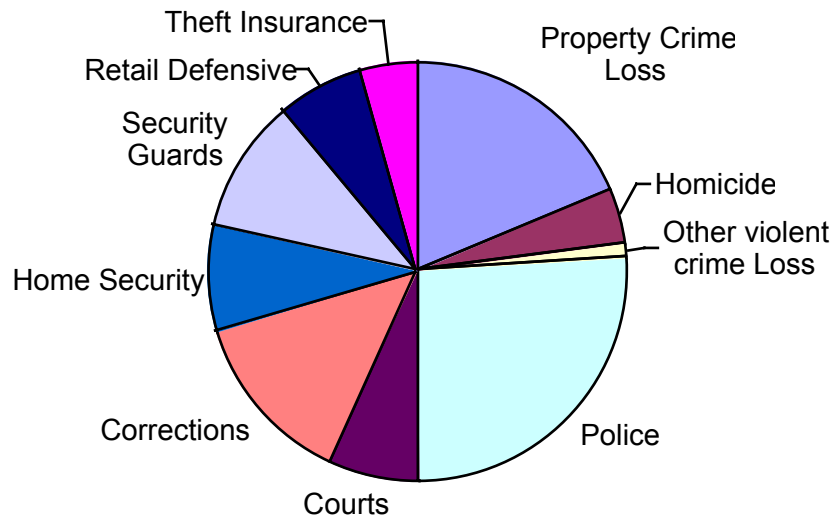
The following costs are not included:

- 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);

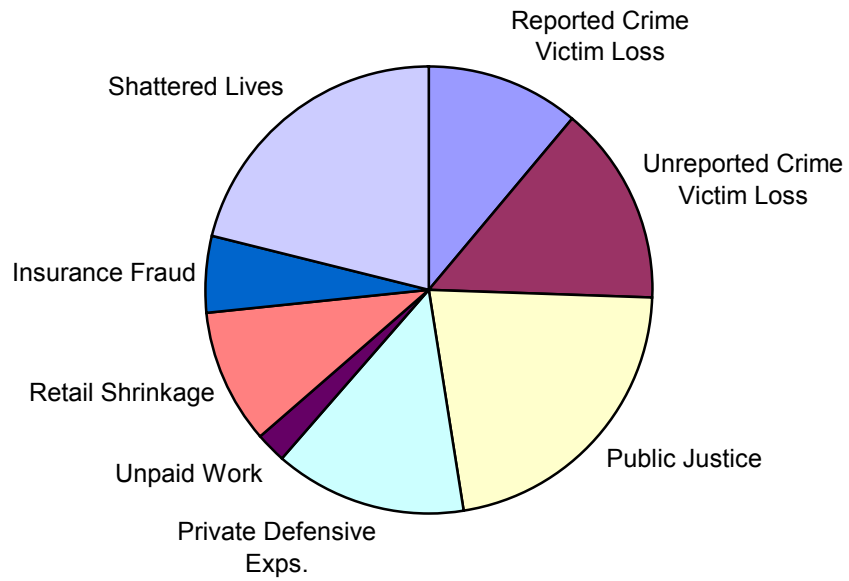
¹⁸ As noted in Chapters 7,8 and 11, average victim losses per crime category are derived from victim surveys, and therefore include both reported and unreported crimes. The same average loss per crime is applied to both reported and unreported crimes in this study, because separate estimates are not 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.¹⁹

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.²⁰ 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 our 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.”²¹

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

¹⁹ 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.

²⁰ 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.

²¹ 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.²²

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.²³

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*

²² Cobb, Clifford, Ted Halstead and Jonathan Rowe, “If the GDP is Up, Why is American Down?”, *The Atlantic Monthly*, October, 1995, page 67.

²³ *Ibid.*, page 65.

*Progress Index to Nova Scotia.*²⁴ 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.²⁵ “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.²⁶ 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 11th and 12th in that survey.²⁷

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.²⁸ 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.

²⁴ 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

²⁵ *op. cit.*, pages 22-23.

²⁶ Roberts, Julian. *Public Knowledge of Crime and Justice: An Inventory of Canadian Findings*. A report prepared for the Department of Justice, 1994, page 7.

²⁷ 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.

²⁸ 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.²⁹ 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.*³⁰

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 non-market 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.

²⁹ *Maclean's*, December 30, 1996.

³⁰ Full list of signatories available from Redefining Progress, One Kearney Street, 4th 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.³¹

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.

³¹ 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

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.³² 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.³³

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:

³² Gabor, Thomas, *Everybody Does It! Crime by the Public*, University of Toronto Press, Toronto, 1994, pages 91, 93, 94, 118.

³³ *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.³⁴

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.”³⁵ 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.

³⁴ Carriere, Denyse, *Adult Criminal Court Statistics, 1996-97*, in Statistics Canada, *Juristat*, volume 18, no.7, page 3, box 1.

³⁵ 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.³⁶

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

³⁶ 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.

³⁷ Solicitor General of Canada. *Canadian Urban Victimization survey, Bulletin 5: Cost of Crime to Victims, 1985*, page 1.

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.³⁸ 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.³⁹

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.”⁴⁰ 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.⁴¹

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.”⁴²

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 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.)

³⁸ Statistics Canada, *Violence Against Women Survey*, 1993, catalogue no. 85-002, volume 14, no. 9, pages 10-11.

³⁹ Welsh, Brandon and Irvin Waller, *Crime and Its Prevention: Costs and Benefits*, Department of Criminology, University of Ottawa, April 1995.

⁴⁰ Hellman, Daryl A. *The Economics of Crime*, New York: St. Martin’s press, 1980, Page 23.

⁴¹ Op. cit., page 26.

⁴² Idem.

- “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 well-being, 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 welfare-enhancing 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.⁴³ By 1996 that figure was down to 48%.⁴⁴ 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.⁴⁵ 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.⁴⁶

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

⁴³ Solicitor-General of Canada, “Reported and Unreported Crimes,” in Silverman, R.A. and J.J. Teevan, (eds.) *Crimes in Canadian Society*, Toronto, 1986.

⁴⁴ Statistics Canada, Canadian Centre for Justice Statistics, “Criminal Victimization: An International Perspective”, *Juristat*, catalogue no. 85-002-XPE, volume 18, no. 6, 1996.

⁴⁵ Nova Scotia Department of Justice, Policy, Planning and Research Division, personal communication, 26 March, 1999.

⁴⁶ 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.⁴⁷ 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 1997.⁴⁸ 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.⁴⁹ 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.⁵⁰

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.⁵¹

⁴⁷ The authors wish to thank the Policy, 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.

⁴⁸ The analysis used was a Two Stage Least Squares Regression.

⁴⁹ N.S. Department of Justice, PPR Division, personal communication, 17 March, 1999.

⁵⁰ N.S. Department of Justice, PPR Division, personal communication, 17 March, 1999.

⁵¹ 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.⁵²

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.”⁵³

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.⁵⁴

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.

⁵² Paul Smith, personal communication, 26 March, 1999.

⁵³ Hackler and Don, *op. cit.*, page 254.

⁵⁴ 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.⁵⁵

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.⁵⁶

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

⁵⁵ See Chapter 5.3.1 for more details on motor vehicle theft trends.

⁵⁶ 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.”⁵⁷

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

⁵⁷ Nova Scotia Department of Justice, Policy, Planning and Research Division, personal communication, March 17, 1999.

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 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 well-being, 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.⁵⁸ 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

⁵⁸ 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 well-being 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.⁵⁹ 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

⁵⁹ 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 1996.⁶⁰ 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.⁶¹ 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

⁶⁰ *The Chronicle-Herald*, 20 March, 1999, page A8.

⁶¹ *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.