12. CONCLUSION
Defining Values, Data Needs & Policy Issues

In order to turn statistics into useful policy tools and meaningful action, three basic steps are necessary in this and in each of the GPI components:

1) No index of progress is meaningful unless it clearly defines its goals. The question is always – progress towards what? Therefore every measure of progress has a normative basis, and requires a clear definition of social values. In this particular case, the GPI is quite explicit that a peaceful and harmonious society with a high degree of personal security and safety is a primary social goal as worthy of policy attention as market trends and growth rates.

   To define values and goals with clarity requires political and social will that no statistics can achieve. Yet that is a prerequisite for the meaningful use of the Genuine Progress Index. Each component of the GPI has such a normative basis, and it is made explicit both in the project design and throughout the presentation. Every attempt has been made, through observation and consultation, to base the index on what are assumed to be underlying and nonpartisan consensus values. It is now the function of the political and social leadership to turn these values into specific policy goals.

2) The second step is to make a commitment towards measuring progress towards the goals and values defined in the first step. At the very least such a commitment begins with a determination to cease counting the costs of crime as economic gain and as a contribution to well-being and prosperity, as is currently the case, and to begin counting them as a loss and cost to society. This is where the Genuine Progress Index can assist in providing a set of measuring tools and annual benchmarks to assess trends towards or away from agreed on goals. In this particular case, the costs of crime are used as an indicator of progress towards a peaceful and secure society.

   This first stage in establishing the methodologies, data sources and components of such an index is slow and laborious, particularly since historical trends to the present must be understood. But once established, the index is easy to maintain and update on an annual basis. Needless to say, methodologies and data sources will be continuously improved and refined as the index is maintained and used.

1) The third and final step is to use the data provided in step two as the basis for meaningful policy action. By measuring progress towards clearly defined goals, the GPI can point to issues worthy of policy attention in order to build on and strengthen existing social, economic and environmental assets and desirable trends, and to overcome weaknesses and liabilities and reverse unwanted trends.

> Too often, as New Zealand economist Marilyn Waring notes, there is a fatal gap between the statistician, the analyst, and the policy maker. The first simply crunches numbers in an assumed "neutral" and "objective" void that is questionable because it frequently accepts the priorities, assumption and values of the existing authority structure. The analyst, usually the academic, then pores over causes, correlations and historical trends, publishing the results in scholarly journals. The policy maker acts according to who exercises influence and represents the strongest stakeholder interests at the time, with little reference to the statistician and the analyst. No wonder a common observation is that policy drifts meaninglessly with little sense of direction or purpose, and is largely reactive rather than proactive.
>
> The goal here is to bridge that fatal gap, and to provide statistical data in such a way that they can provide a meaningful basis for coherent analysis and policy action. Good information should provide the first step in informed decision-making. The time seems ripe, on the cusp of the new millennium, to reexamine the legacy we are leaving our children, to ask what kind of society we want to create, and to initiate the policy actions required to create a decent society in the 21st century. Nova Scotia seems particularly well placed to take the lead in this effort, and to provide a model and example of what is possible.
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> The Nova Scotia GPI is specifically constructed and set up to be policy relevant and to draw attention to the policy implications of the data. Its purpose is to point towards potential cost-effective solutions to current problems, and to indicate how significant social savings in areas like crime, that currently drain our energy and resources, can provide the means for more productive and welfare-enhancing activities in other areas. The data in this and other GPI reports are intended to provide such clues to practical policy options.

Each of these three steps is defined in more detail below. *Section 12.1* examines the significance of the findings in this study in terms of underlying social goals and values, and the necessity of making choices between alternative models and paths of progress. *Section 12.2* discusses some of the data requirements needed to maintain these measures of crime costs over time, with particular emphasis on current data gaps and recommendations for improvements in the quality and type of information now available.

Section 12.3 points to some fruitful areas for policy attention, where direct correlations between particular social and demographic characteristics and high crime rates indicate potentially cost-effective investments in crime reduction. Three very brief examples are given of the use of basic cost-benefit analysis, as employed in the GPI, to evaluate the potential effectiveness of alternative crime reduction strategies. It is the very nature of "investment" that up-front costs are incurred with a view to improving the flow of benefits and services in the future. That in itself is a core principle of the GPI approach.

Needless to say, none of the recommendations, conclusions or viewpoints expressed here are intended as definitive policy prescriptions, but are designed only to stimulate a wide-

ranging discussion and debate on policy options that might be worthwhile investments in reducing crime. They are hopefully presented in such a way that non-experts will feel comfortable participating fully in this debate.

12.1 Defining Genuine Progress

A peaceful, harmonious and secure society is a profound social asset that directly benefits the economy and the quality of life of its citizens. Money not spent fighting crime and restoring damage to bodies and property can be invested in productive and welfare-enhancing activities. In the same way, a healthy citizenry is a human capital asset that requires less spending on hospitals and defensive health measures, and a clean environment is a natural capital asset that saves pollution clean up expenses.

Just like produced capital, social assets are subject to depreciation and deterioration, and require conscious protection and re-investment in order to protect the flow of beneficial services they produce. A rise in crime rates and crime costs is an important indicator of depreciation in value and deterioration in the peacefulness of society and the security of individuals, just as a reduced flow of goods and services may indicate that machinery is in need of repair.

Unfortunately this is not the signal that our current national and provincial accounting systems send to policy-makers, economists, journalists and to the general public. On the contrary, because they register rising crime costs as economic stimuli and GDP growth, they are taken as signs of social prosperity, thus blunting incentives for remedial action.

By contrast, the Genuine Progress Index registers crime costs as a loss to individuals and society, and signals the need for a reaffirmation of the value of peace and security, and for investments in overcoming the causes of crime. In this way, the GPI also demonstrates the inability of market statistics and materialist standards to provide adequate benchmarks of well-being and progress.

At a more profound level, the GPI also questions the doctrine of limitless quantitative growth irrespective of standards of quality, a doctrine embodied in the use of the GDP as a measure of social progress. Clearly there are some areas of the economy where growth is undesirable. More crime, gambling, divorce, toxic pollution, stress and drug use, overeating and obesity, sickness, war and arms production, accidents, and natural resource depletion all make the economy grow. But they exemplify areas where limits to growth may signify well-being, prosperity and progress more accurately than limitless growth.

Although Canadians often express envy at the “dynamism” of the U.S. economy and its “robust” growth rates, the social costs of that growth and the fact that it is driven in part by factors that signify an actual decline in quality of life, are not generally considered in the comparisons.

Crime costs are a poignant example. The U.S. imprisons 668 people for every 100,000 residents, the highest rate in the world except for Russia. And the rate of increase has been so dramatic that it will likely pass Russia's 685 per 100,000 within the next year to become the world's leading jailer. Black males have a 28.5% chance of landing in a federal or state prison in their lifetime, and about a 40% chance of being behind bars if local and county jails are included. Prisons are operating at 15-24% above capacity and are seriously overcrowded.

What these statistics signify about the state of civil liberties, civil rights and race relations in the United States is rarely discussed in analyses of the American economy, even as the drive to privatize and build more prisons adds momentum to the country's economic growth rates. In fact, imprisonment is one of the fastest and most consistent growth areas of the American economy, with a 6.2% average annual growth rate throughout the 1990s, significantly outpacing overall GDP growth. Every extra prison, guard, court case, lawyer and police officer helps drive the American economy, as does increased spending on security guards, burglar alarms, locks and electronic surveillance equipment.

While this module focuses on crime, GDP architect Simon Kuznets' warning that "the welfare of a nation can scarcely be inferred from a measurement of national income" can equally be applied to other areas of economic growth. It is questionable whether rapid economic growth signifies an enhancement of well-being, prosperity and quality of life if inequity, crime, stress, pollution and resource depletion are also growing in the process. Kuznets' dictum that "goals for 'more' growth should specify more growth *of what* and *for what"* seems more pertinent than ever.

Nova Scotia still has one-fifth the rate of robberies as the U.S., less than a third the rate of homicides, and less than half the rate of motor vehicle thefts. Nova Scotians spend only a quarter as much per capita on corrections as Americans, and imprison a much smaller fraction of their population.

While this lowers GDP per capita in relation to the U.S., the Genuine Progress Index recognizes this comparison as a significant quality of life advantage for Nova Scotia. In economic terms, the savings are available for more productive and welfare-enhancing activities. Recognizing the value of a peaceful and secure society, and comparing this advantage to the United States, cannot help but raise questions about the American economic model, which conventional economics holds in such high esteem and which has presently found such favour in this country.

The recent denunciation by the Nobel Peace Prize winning human rights organization, Amnesty International, of the 350 executions of criminals in the United States in recent years raises disturbing questions about the extent to which economic growth has been bought at the expense of a serious erosion of civil liberties in that country. Since crime rates may be lowered through repressive means, as many police states have demonstrated, the growing gap between crime rates and crime costs in the U.S., indicated by the incarceration data, argues for a serious testing of the proposition that a widening gap between crime rates and costs may signify movement towards a more repressive society.

Conversely, in the introduction to chapter 5, we advanced the hypothesis that civil liberties remain at the same level to the degree that crime costs remain proportional to crime rates.

In relation to the rest of Canada, Nova Scotia still has a lower overall crime rate, has just 82% of the national property crime rate, requires less police per capita to keep the peace, imprisons a smaller percentage of its population, and spends proportionately less on locks, alarms, electronic surveillance and other crime prevention and detection devices.

But the statistics show that the province is gradually losing its advantage and converging rapidly towards the national average. Twenty-five years ago, Nova Scotia had just two-thirds the national crime rate and needed only 70% as many police per 100,000 as the rest of the country to keep the peace. From a lower base, the provincial crime rate has increased faster than the national rate, so that Nova Scotia today has 98% of the national crime rate and needs 94% as many police to keep the peace as the rest of the country. The violent crime rate already exceeds the national average.

While part of the increase is undoubtedly due to increased reporting rates in some categories of crime, there is also no doubt that Nova Scotia today is a markedly less peaceful, harmonious and secure society than it was 35 years ago. Considering only police-reported crimes, the average Nova Scotian is today four times as likely to be a victim of crime as his parents and nearly five times as likely to be a victim of violent crime.

This erosion or deterioration in quality of life is reflected in higher economic costs. Even a conservative estimate, counting only direct economic losses and expenditures from police-reported crimes indicates that crime is costing Nova Scotians $557 million a year, $1,660 per household, or nearly $600 for every man, woman and child in the province. A truer, more comprehensive estimate of crime costs indicates that crime costs Nova Scotians about **$X** a year, or **$Y** per person. If crime were still at 1962 levels, Nova Scotians would save **$Z** annually, which could be invested in education, health and other productive activities.

In traditional economic terms, the Atlantic region has lagged significantly behind central Canada and the west for the past century, and "convergence" is conventionally regarded as desirable when measured in GDP per capita. From a larger quality of life perspective, such convergence is more questionable. While still below the national average, the three Maritime provinces have the fastest rates of growth in crime and are quickly approaching Canadian standards, though thankfully still falling considerably below American standards.

A powerful and valuable social asset, that has traditionally been a source of strength signifying a high quality of life, is eroding in the Maritimes. While this is not good news, and while the long-term trends described in this study are often unpleasant and difficult to face, doing so with courage is a necessary step in mobilizing a renewed commitment to restore the peaceful and secure society that existed here not so long ago.

In our relentless quest for material comfort, wealth and consumer goods and services, we have undoubtedly lost sight of vital non-material values and thus allowed profound social strengths to deteriorate. Recognizing this reality honestly can enable us to view the results of this report not with gloom and despair, but as an opportunity for positive change and commitment to social values that are still remarkably strong in this region and not temporally far removed in practice. The information in this study can be used to turn the disturbing trends around.

Personal security and a peaceful society must first be reaffirmed as core values in our measures of progress. With that fundamental commitment, progress towards those goals can then be monitored by means of the measuring tools developed in the Genuine Progress Index, and specific policy actions taken to attain these goals. The following sections address these next steps.

12.2 Data Requirements and Recommendations

For the reasons given in chapter 2, GPI Atlantic strongly recommends that the costs of crime be estimated on an annual basis, and counted as a loss rather than as a gain to the economy, as is currently the case. The Solicitor-General, in chapter 2.2, has eloquently stated some vital reasons to measure the costs of crime in economic terms. Doing so can also send more accurate signals to policy-makers about changes in the quality of life than a measure of progress based solely on market statistics and can provide a useful benchmark of social progress.

Above all measuring crime costs can demonstrate the actual costs of a declining social asset, and provide an impetus to build a more peaceful and harmonious society with a high degree of personal security and safety. At a later stage, the cost-benefit method used in the GPI can be applied to assess in economic terms the long-term cost-effectiveness of alternative investment strategies aimed at reducing the crime rate.

While laborious to construct initially, the costs of crime should not be difficult to maintain and update on an annual basis. This report, however, is only a preliminary first step in this direction. It contains many data gaps and extrapolations where more direct and accurate measurements would clearly be desirable. GPI Atlantic welcomes efforts to improve both the methodologies and data sources used in order to make the measurements more accurate and meaningful in the future.

To this end, this section lists briefly some of the difficulties encountered in gathering data, some important data requirements to measure crime costs, and some recommendations for new data that are not currently available.

1) Victim Property Losses

Monetary and property losses suffered by victims of crime are costs that have a negative economic impact on the quality of life of the victim and on society at large, and are a

necessary component of any assessment of crime costs. But the authors were unable to find current victim loss data, and this report therefore relies on a national victim survey that is nearly 20 years old. Only the average losses for motor vehicle theft, from the insurance industry, are more recent.

Further, since provincial data were unavailable, the average loss per crime used in this report is a national average. This probably inflates the value of losses in Nova Scotia where incomes are lower, consumption less, and cars older than the national average.

The Uniform Crime Reporting statistics appear to indicate that the actual dollar loss per reported theft is already available. However published data only reveal the number of reported thefts above and below $5000, making it impossible to calculate the gross economic loss due to theft. If such data are available, it would be most helpful if they could be made available to the public.

2) Victim Surveys and Unreported Crime

In order to assess the full financial direct victim loss due to crime, the loss for unreported crime needs to be added to that of reported crime. Such data can be obtained through victimization surveys, which can provide a more accurate and comprehensive portrait of the effect crime has on societal well being than can the official Uniform Crime Reporting statistics. To provide accurate and timely data such surveys need to be expanded and conducted more frequently.

The United States conducts comprehensive victim surveys on an annual basis, while the United Kingdom does so biannually. Statistics Canada's General Social Survey currently conducts such surveys only once every five years and releases the results on a nationwide basis only. Since justice is administered provincially, it would be useful for victimization survey results to be released with provincial breakdowns so that provincial trends and comparisons can be made.

As noted in chapter 2, an important step in this direction has already been taken in Nova Scotia with annual victim surveys conducted since 1996 by Corporate Research Associates and commissioned by the N.S. Department of Justice. It will be desirable to expand these surveys in future years to include some of the data needs described here.

The current CRA surveys are confined to three questions: "How many times, if at all, have you yourself been a victim of crime in the past year?" For respondents who answered yes, they were asked to identify the most recent crime as a "violent crime", "property crime", or "other crime". Respondents were also asked: "How safe do you feel when walking alone in your neighbourhood after dark? Do you feel very safe, reasonably safe, somewhat unsafe or very unsafe?"

Clearly these questions alone do not suffice to supply the data necessary to ascertain the magnitude of loss sustained by victims, the days incapacitated or hospitalized, the precise nature of the crime, and other information necessary to sustain this index. Nevertheless,

the annual surveys are an important beginning, and may already serve to check changes in reporting trends for overall rates of violent and property crime.

3) Business Losses and Defensive Expenditures

Because they focus exclusively on individuals, victimization surveys exclude unreported losses suffered by business. Business loss due to fraud and theft is substantial, but there is currently no way of assessing the extent of the loss. In the interests of financial efficiency, it should be possible to "piggyback" questions on business losses due to crime onto existing business questionnaires administered by Statistics Canada. From inventory counts, shrinkage might also be estimated.

In addition, a few key questions can be added to existing Statistics Canada business surveys to assess business expenditures on security guards, electronic surveillance and other loss prevention and detection equipment. Businesses might also be asked directly to assess the extent to which shrinkage and crime prevention measures contributed to higher prices.

4) Provincial Justice Costs

Statistics on justice costs are currently maintained in disparate forms by different authorities. Statistics Canada gathers this information and produces aggregate national figures. It also combines municipal, provincial and federal expenditures to arrive at the total cost of government spending on police, courts and provincial corrections within each province. These justice expenditure data are very useful in their present form. In the past, provincial data, especially on penitentiaries, have frequently been combined into regional summaries. But these regional data have limited utility for provincial policy makers, who require provincial data as the basis for informed decision-making. The authors therefore recommend the continued presentation of provincial data on justice costs.

5) Federal Penitentiaries

The cost of incarceration in Nova Scotia cannot be based entirely on the operating costs of provincial jails. Since Nova Scotia taxpayers pay both federal and provincial taxes, they also pay for some of the costs of the federal prison system. But while provincial corrections costs are known, it is not currently possible to assess the Nova Scotian contribution to federal penitentiary costs.

Indeed, Nova Scotia sends a disproportionate number of offenders to federal penitentiaries, which means that incarceration costs are partially externalised, with the federal government paying the bill rather than the government of Nova Scotia. To assess the full cost of crime, the cost of incarcerating offenders sentenced in Nova Scotia, but housed in federal penitentiaries, must be known.

6) Social and Demographic Data on Offenders

In order to tackle crime effectively it is important to know more about who is committing the crimes. More data are therefore needed on the demographic background of offenders, in order to enable policy makers to target funds and programs at groups likely to offend or re-offend. Chapter 6 of this study indicates the types of correlations that need to be explored in greater depth.

7) Recidivism Data and Rehabilitation Programs

The most important data recommendation of this report is to keep and maintain accurate data over time on recidivism rates. This information is currently very inadequate, but is vitally important if we are to assess the value of alternative forms of corrections, rehabilitation programs, and new experiments in restorative justice.

Certainly the highest goal of any corrections program must be that the offender will re-enter society peacefully and not re-offend. It is ironic, as the discussion in chapter 9.3.6 on privatization of prisons in the United States demonstrates, that private prison profits benefit from a high incidence of recidivism. It might be interesting to make profits dependent on the degree of successful prisoner rehabilitation.

Those who have previously offended are more likely to re-offend than those who have never committed a crime. Education programmes that make prisoners more employable and socially acceptable may be a sound investment if the economic savings society gains from a lower recidivism rate exceeds the financial cost of rehabilitation. To assess the success of current rehabilitation programs, reliable recidivism data clearly need to be available.

As noted in chapter 6, it is likely that high rates of inmates with prior convictions tell us more about sentencing trends than about propensity to re-offend, since it generally takes a considerable criminal record to receive a prison sentence.[1] It is therefore important that recidivism data be presented according to number of offenders as well as number of prison inmates.

8) Crime Cost Data as a Social Investment

In sum, if only a tiny fraction of the resources currently devoted to maintaining the GDP and related market statistics were used for an annual victimization and cost of crime survey, and to provide the data mentioned above, it would provide comprehensive, timely and vital information on the effect of crime on the quality of life of Nova Scotians and Canadians. Even more importantly, it would focus attention on a peaceful and secure society as a critical social asset, provide an impetus for policy initiatives to bring that about, and assess progress towards an enhanced quality of life.

[1] Robert Roe, N.S. Department of Justice, personal communication, 18 March, 1999.

From a macro-economic perspective, the ready availability of such data would also send more accurate signals to policy-makers on the factors driving economic growth, and allow more precise distinctions between the types of economic activity that create social benefit and those that create harm. Such an analysis will suggest investment strategies designed to foster growth in the areas that produce long-term benefit, and to limit growth in the areas that carry heavy social costs. If, as in the United States, high rates of imprisonment are helping drive economic growth, this should be made explicit in the accounting mechanism, so that development models can be chosen that will enhance rather than diminish the quality of life.

For all these reasons, the very modest expense involved in generating such data and making it available, is an important investment in a valuable social asset. These data can help maintain this index over time as a useful policy tool reflecting our commitment to a peaceful and secure society.

12.3 Policy Options.

The Genuine Progress Index is intended as an integrative mechanism that elucidates the linkages between social, economic and environmental variables. By identifying the long-term economic impacts of social and environmental policies and by bringing social benefits and costs into the economic accounts, the GPI seeks to go beyond a narrow reliance on market statistics to construct a more comprehensive measure of progress that reflects changes in the quality of life.

But ultimately it is not intended as a macro-economic measurement alone. Its real goal is to provide a useful, practical tool for policy purposes. The authors acknowledge that we ourselves are not at that stage yet. But as the index is further developed, it should become increasingly possible to apply the GPI principles and methods to an evaluation of specific alternative investment strategies to ensure cost effective development programs that maximize long-term social, economic and environmental benefits, and minimize costs.

We know that crime is not separate from social, economic and demographic conditions, and that it cannot be tackled in an isolated way that deals only with symptoms after the fact. The fallacy of that approach is well illustrated by the rapid growth in incarceration rates in the United States, which has resulted in the imprisonment of 1.8 million Americans without any concerted initiative to ameliorate the causes of crime in that country. The world's leading economic power is also on the way to becoming the world's leading jailer. From the GPI perspective, that contradiction cannot last long. Eventually, the costs of crime will undermine economic strength.

We are far from understanding the causes of crime, and from knowing whether specific actions and social factors like job lay-offs, larger school class sizes or teenage drug use will eventually increase crime rates. But we can at least note in passing, as in chapter 6 of this study, that there are significant correlations between high crime rates and gender, employment status, educational attainment, substance abuse, recidivism, and age. We

have also noted that crime rates do tend to follow the business cycle, with noticeable peaks during the two most recent recessions

Harvard University epidemiologist Harvey Brenner noted that a 14.3% increase in the U.S. unemployment rate, from 4.9% to 5.6% between 1973 and 1974, was associated with 403 additional homicides, 7,000 additional assaults, 270 additional suicides, and 8,400 additional admissions to mental hospitals, with many of these effects spread out over a period of six years.[2].

We do not venture to make such specific quantitative associations in this study. But the social and demographic correlations in chapter 6 at least begin to identify the areas in which policy initiatives and social programs are the most likely to yield cost-effective investments that might reduce crime and improve living standards and quality of life at the same time. To illustrate such potential uses of the GPI in the future, three very brief examples are given here just to stimulate discussion, and without any prescriptive intent. Hopefully future studies will use full-cost accounting techniques to undertake more detailed cost-benefit analyses of alternative investment strategies that may have an effective crime prevention function.

12.3.1 Drug Treatment

It was noted in chapter 6 that 50-75% of offenders have drugs in their urine at the time of arrest, that 30% were actually under the influence when charged, and that 30-50% of prison inmates have drug-dependency problems.[3] On the positive side a residential drug treatment program in Montreal found a direct correlation between successful treatment and reduced crime recidivism. In economic terms it estimated that every one dollar invested in residential drug treatment programs yielded $7 in savings from reduced crime costs.

12.3.2 Education: The Perry Pre-School Program

It was noted in chapter 6 that crime is positively correlated with poor educational attainment. While only 19% of the population have less than a grade 10 education, 36% of all inmates and 46% of federal prisoners, who are guilty of the most serious crimes, have less than a grade 10 education. An example from the United States is given here for illustrative purposes only, to demonstrate the potential cost effectiveness of educational investments for crime reduction. A detailed analysis of the issues for Nova Scotia would clearly be necessary to make the example policy relevant.

[2] Brenner, Harvey, *Estimating the Effects of Economic Change on National and Social Well Being,* a study prepared for the Subcommittee on Economic Goals and Intergovernmental Policy of the Joint Economic Committee, Joint Committee Print 98-198, U.S. Government Printing Office, Washington D.C., 1984, cited in Cobb, Clifford, Ted Halstead and Jonathan Rowe, *The Genuine Progress Indicator: Summary of Data and Methodology,* Redefining Progress, San Francisco, September, 1995, page 23.
[3] Brochu, Serge, *Estimating the Costs of Drug-Related Crime,* http://www.ccsa.ca/brochu.htm

A long-term longitudinal study in the United States measured the economic value of investment in high quality pre-school education (the Perry program) in a low-income inner city area with high crime and unemployment rates against a control group in the same area in which no such educational investment was made. Since the program was instituted in the early 1960s, the Perry experimental group has regularly out-performed the control group, and demonstrated consistently lower crime rates.

A report by the Canadian Centre for Justice Statistics notes: "The Perry Pre School programme reduced crime among youth and adults, while improving success rates in school, higher rates of employment, higher earnings, and less reliance on social assistance. In this case, a $5,000 investment in early childhood education yielded an estimated $28,000 return in dividends to society."[4]

12.3.3 Punishment Alternatives

Public opinion polls indicate that the public favours spending money on crime prevention rather than on building new prisons.[5] In contrast to the United States, Canadian custom and practice has seen incarceration as a last resort. Section 718.2 of the Criminal Code actually instructs judges to use alternatives to incarceration where possible, and recommends increased use of conditional release programs. Indeed the Solicitor-General reported to the Parliamentary Standing Committee on Justice:

> *Threats to the safety and security of Canadians will not be abated by hiring more police officers and building more prisons*

Patti Pearcey, chairwoman of the National Crime Prevention Council's Economic Analysis Committee argues that crime prevention rather than incarceration is the key to reducing crime, and that it is not only "the right thing to do and the effective thing to do, but the cost-effective thing to do."

Hellman notes that the actual effectiveness in practice of each of the goals of imprisonment (deterrence, incapacitation, rehabilitation and retribution) must be evaluated in terms of benefit-cost analysis:

> *In choosing prison terms (for the purpose of deterrence), we should consider the marginal social costs of imprisonment (the cost of maintaining a prisoner) and compare these social costs with the social benefits of reducing the harm done by potential offenders. If the marginal costs of imprisonment exceed the marginal benefits, the prison term is too long….Incapacitation is useful if the marginal costs of imprisonment are less than the marginal benefits of a reduction in the amount of crime committed by that offender.*[6]

[4] Statistics Canada. Juristat. *Justice Spending in Canada.*Cat. No. 85-002, Vol. 17, No. 3, p.3.
[5] Julian Roberts. *Public Knowledge of crime and Justice: An Inventory of Canadian Findings.* A report for the Department of Justice, Canada, p.7.
[6] Hellman, op. cit., page 71

Using this criterion, it is probable that a 30-day sentence, costing the taxpayer $3,570, for non-payment of a fine or for a theft of $200, is not cost-effective. Hellman further concludes that retribution is not economically effective and that for minor offences in particular, it is clear that effective rehabilitation cannot occur in the space of a prison term of less than a month.[7]

By contrast, the evidence indicates that community superivision and parole are at least as effective in reducing recidivism rates as prison. Julian Roberts notes that only 12% of parolees in Canada committed new offences.[8] Assessments of recidivism risks by correctional services indicate that 44% of the Nova Scotia prison population has a "high risk of re-offending."[9] Alternatives to incarceration for the remaining 56% of prisoners are particularly likely to produce significant cost savings to the public, according to Hellman's criteria.

If these non-high-risk offenders were placed under community supervision rather than imprisoned, Nova Scotia taxpayers would save nearly $6 million per year.[10] This calculation assumes that offenders under community supervision are no more likely to re-offend than released short-term inmates. The issue illustrates the importance of reliable recidivism data as recommended in section 12.2 above.

Alternatives to imprisonment for minor offences are under consideration in other provinces. Orest Yereniuk, President of the Alberta Crown Attorneys Association noted major anomalies in sentencing and time served in Alberta prisons, and noted: "Maybe the solution is to reserve our jails for the most severe criminals."

In September, 1996, the federal government changed the criminal code to include "conditional sentences" as a direct alternative to incarceration for some crimes. At the judge's discretion, an offender sentenced to less than two years in prison can serve his time in the community instead, with conditions ranging from house arrest to a promise to keep the peace. For example, an offender might serve his sentence in his own home, with strict conditions attached that confine his freedom of movement. He might be permitted to go to work and return, or to exercise in prescribed areas, but not to leave his house for any other purpose.

The province's "adult diversion" program goes a step further by circumventing the whole court process for non-serious offenders and in keeping public justice costs down even more by avoiding a criminal trial altogether. Whereas conditional sentencing first requires a trial and conviction, adult diversion creates alternative options for minor offences that allow an offender to be diverted from the court system at the pre-charge stage. Analogous to programs that previously existed for minor youth offences, adult

[7] op. cit., page 72.
[8] Roberts, op. cit., page 39.
[9] Statistics Canada, *Juristat,* catalogue no. 85-002, volume 18, no. 8, page 9, figure 9.
[10] Figure derived by subtracting annual community supervision cost ($9,145) from annual prison incarceration cost ($43,282), and multiplying by 56% of the adult inmate population in Nova Scotia.

diversion gives police officers alternative options to laying charges for minor offences that would have required a court appearance.

Among the possible alternatives to trial are community service work, restitution, an apology or personal service to the victim, a written essay taking responsibility for the offence, or charitable donation and work. Authorized by the federal government in 1995 in Bill C-41, the province experimented with the program in Dartmouth and North Sydney for more than a year before adopting it on a province-wide basis in 1997. It has been judged as highly successful to date.[11]

12.3.4 Restorative Justice: Model for the Future?

The Nova Scotia Justice Department is in the process of instituting a restorative justice program, which could become a model for the country. This program intends to bring together the offender, the victim and justice officials to determine appropriate forms of restitution to the victim and to the larger community for harm done by the offender. Restorative justice may divert an offender from the normal judicial system at any point in the process – from the time of arrest through the prosecution and court process to the corrections stage.

The program is a radical alternative to the existing adversarial system and "the general fixation on punishment as the principal tool for correcting behaviour," which, according to the Justice Department, "drives offender responsibility underground. If the only option available for offenders is a potentially harmful period of incarceration, non-acceptance of responsibility will be the standard response." [12]The new program is also driven by the recognition that imprisonment has not succeeded in reducing recidivism rates among offenders and that these rates are still too high.

"Restorative justice is only available when offenders are prepared to accept responsibility for their actions," says the Justice Department. "Restorative justice places a high value on a face-to-face meeting between the victim, offender and community. During the course of that meeting, each party is given an opportunity to tell the story of the crime from their own perspective, and talk about their concerns and feelings."[13] The community may be represented by relevant volunteer groups.

That initial forum might produce a range of possible outcomes quite similar to those currently being explored in the adult diversion program, including community service work by the offender, direct restitution or personal service to the victim, counselling and participation in educational programs, public letters of apology or an essay taking responsibility, expressing remorse and undertaking not to re-offend.

[11] Information from Dr. Don Clairmont, Department of Sociology, Dalhousie University, personal communication, 1 April, 1999.
[12] Nova Scotia Department of Justice, *Restorative Justice: A Program for Nova Scotia*, Halifax, June, 1998, page 3.
[13] Idem.

Unlike adult diversion, however, restorative justice procedures may be used at any stage of the judicial process and for serious as well as minor offences. For serious offences, the offender may still be required to serve a prison term after participating in a restorative justice forum, and the restorative justice mechanisms may be employed even after an offender has already served part of a prison term.

The scope of restorative justice models is far broader than that of the conventional adversarial system, since it emphasizes direct offender accountability, victim healing, offender re-integration, and repairing the harm caused by the offence. It is intended to reduce recidivism, increase victim satisfaction, strengthen communities, and increase public confidence in the justice system.

Instead of dealing with crime only as a symptom, restorative justice has the capacity to delve into underlying causal factors and social problems. In this way, it "enhances a community's sense of safety by identifying circumstances in the community which contributed to the offence, and determining what can be done to avoid a similar situation in the future."[14]

The first phase of the restorative justice initiative will target youth between the ages of 12 and 17 in the Halifax Regional Municipality and the Cape Breton Regional Municipality, and in rural areas of the Annapolis Valley and Cumberland County. Efforts are currently under way to create an effective monitoring and evaluation system to measure the initiative's success in achieving its goals of reducing recidivism, increasing victim satisfaction and improving the cost effectiveness of the public justice system.

According to the Justice Department,

> *An important evaluation component of the initiative will involve an assessment of whether restorative justice programs lead to direct and indirect financial savings. An evaluation of the broader financial issues associated with restorative justice is essential for the continued growth of the initiative.*[15]

In sum, restorative justice holds the promise of reducing crime and its associated costs by linking the causes and effects of crime, and accords well with the GPI approach that favours linking social and economic variables in a more complete accounting process. It has a potentially transformative capacity that may be a model for the future.

The brief examples in this section illustrate the types of social investment that might be also be cost-effective crime reduction strategies when evaluated in terms of full economic and social costs and benefits. Similarly, social programs geared to the well-being of Aboriginal communities, to youth employment, and to other high-risk groups may help reduce crime and save significant social costs, while improving the quality of life and raising the standard of living.

[14] Op. cit., page 4
[15] Op. cit., pages 19-20

The examples demonstrate the specific uses to which the GPI can be put once a strong political and social commitment to peace and security is in place, and once clear benchmarks of progress that explicitly value quality of life take their rightful place alongside the market statistics that currently dominate our thinking. It is hoped that the cost accounting procedures described in this study can help focus attention on and give priority to the goal of creating a more peaceful and secure society in the new millennium.

Appendix I: Methodology and Data Sources

One of the major goals of this study is to develop an accounting framework for estimating crime costs, and it is therefore essential to make the methodologies as transparent as possible. Many of the dollar amounts quoted as crime costs have been extrapolated and derived from a variety of sources, and are not direct measurements. It is our hope that over time new data sources will allow the gradual substitution of direct measurements for many of the derived results in this study, and that methodologies will be gradually improved.

General Note: Replicating Valuations for other Provinces

Because of Statistics Canada's interest in the Nova Scotia GPI as a pilot project, efforts have been made to use standard official published sources that are readily available across Canada, and which provide some basis for comparability between jurisdictions. Thus, 1962 has been taken as the starting date for timelines in this report, simply because the Uniform Crime Reporting (UCR) statistics date from that year, allowing provincial comparisons of relative changes in the crime rate over time. Statistics Canada Cansim database has been used so that provincial data are comparable spatially and longitudinally.

We have noted in Chapter 4 and throughout the report, the serious limitations that exist in using official crime statistics, since they cannot account for major changes in reporting rates. There is evidence that reporting rates for assault and sexual assault have gone up significantly, and that domestic violence is far more often the subject of police intervention that 30 years ago. Nevertheless, since these are cultural changes not likely to vary significantly across the country, the official crime statistics are still useful to assess comparative rates of change between the provinces, even if they must be qualified in terms of actual numbers of reported incidents.

To simplify replication by other provinces, therefore, data sources that are readily available across Canada have been used wherever possible. The starting point for every section has been Statistics Canada Canadian Centre for Justice Statistics (CCJS) publications. Free CCJS data are available at all regional offices of Statistics Canada, at a number of universities across the country, and electronically via the Internet. Until good annual standard victimization survey data are readily available, the authors recommend that the CCJS data be used as the basis for other provincial crime cost estimates to ensure comparability.

If, after an exhaustive search of CCJS data, we have not been able to collect sufficient data to construct a particular table, chart or time series, alternative Statistics Canada publications have been consulted, as described in the text, footnotes and bibliography.

These two sets of Statistics Canada sources provide most of the data in this study. In several cases, however, provincial justice departments have important additional data, either in published or unpublished form, not accessible in Statistics Canada publications,. Many vital missing data pieces were kindly provided to us through the good services of Paul Smith and Robert Roe of the N.S. Department of Justice. The authors therefore strongly recommend that efforts to replicate this study in other provinces be undertaken in cooperation with provincial justice departments.

It should be noted that provincial justice departments are in fact the source for much of the data published by Statistics Canada, and may frequently be able to provide more detailed, accurate and reliable data reflecting the particular legal and organizational norms that are peculiar to the province under investigation. This is particularly true in areas like sentencing, where the provinces have widely differing policies and legislation. Court structures also vary, and policy considerations affect police discretion and thus reporting rates. Nevertheless, in the interests of comparability among provinces, and for ease of replication by other jurisdictions, the standard CCJS data have been the data source of first priority in this study, though the cost of obscuring certain important provincial peculiarities is recognized and acknowledged.

In addition, reference has also been made to other government publications, as described in the footnotes and bibliography. Private sources of data, such as statistics from insurance companies and from surveys conducted by the Retail Council of Canada, have also been used, especially for some victim loss data, for estimates of business defensive expenditures, for data on theft insurance premiums, and for estimates of inventory "shrinkage" due to shoplifting and employee theft. If impaired driving costs are included in future updates of the report, as they should be, insurance company claim data will be vital.

In addition, the authors have used data presented both in academic articles and news reports, and in some cases, as noted, have extrapolated provincial data for Nova Scotia from earlier national studies of crime costs. In particular we recommend the published reports on crime costs, as noted in the references, by the Fraser Institute and by the National Crime Prevention Council, and by Welsh and Waller of the University of Ottawa's Criminology Department.

Sources have been utilized in the order described for the purposes of data collection. However, the framework for collecting the particular data published in this report and the subsequent interpretation of data relied on an extensive literature review, based primarily on academic articles and consultations with criminologists. These academic sources, which were the first step for the authors in undertaking this study, are listed in the bibliography.

In sum, to encourage comparability of results, the authors recommend that provincial crime cost analyses in other jurisdictions collect data in the following priority sequence:
1. Canadian Centre for Justice Statistics
2. Other Statistics Canada data

3. Federal Justice Department
4. Provincial Justice Department
5. Other federal and provincial government data
6. Non-government and private sector organizations, including insurance and retail industry sources
7. Academic and independent research articles
8. News reports

As noted in chapter 4, this report is certainly not intended as a definitive method for calculating the cost of crime, nor is calculating crime in economic terms the only means for assessing the extent to which crime effects quality of life. Many obvious improvements in methodology and data sources are necessary, and it is hoped that this study will stimulate attempts to revise and refine the measurement techniques and sources over time. Some recommendations for future recommendations are included in chapter 12.

The estimation of crime costs is essential at the present time in order to overcome the misleading signals sent both to policy-makers and the public by the use of the GDP as a measure of social progress and well being. At the very least, crime costs should no longer be taken as economic "gain" and as a contribution to economic prosperity. Ultimately, however, physical trends in crime can be incorporated into a comprehensive index of social progress without reference to the economic valuations. The latter are only necessary so long as market statistics dominate the policy arena and determine assessments of social well being. we strongly encourage further research that might result in improvements in methodology.

Selected detailed examples of methodologies and sources used in this report follow:

Chapter 5: Crime Rates

Table 5.1: The number of criminal code incidents for Canada and Nova Scotia are from *StatCan: Cansim Disc, 1998-2*, Cat. No. 10F0007XCB, Matrix 2200, *Crimes by Actual Offences, Canada, Provinces and Territories, by Year.* Canada, D9501, Nova Scotia D9567. The population data for 1996 and 1997 are from Statistics Canada publication *The Daily*, September 24, 1998. Population data from 1962 to 1995 are from *StatCan: Cansim Disc, 1998-2,* Cat. No. 10F0007XCB, Matrix 599. The crime rate in this table is derived by dividing the number of criminal code incidents by the population and then multiplying by 100,000 to get the number of criminal code offences per 100,000 population.

The columns *Canada 1962=100* and *Nova Scotia 1962=100* are the respective crime rates in relation to the base year 1962, which is given as 100.
The 1962 Nova Scotia crime rate was 2036 incidents per 100,000 population..
100 divided by 2036 = 0.049116
Therefore, (2036 multiplied by 0.049116 = 100) expresses the 1962 crime rate as 100.

For the years 1963 to 1997 the crime rate has been multiplied by 0.049116 so that the crime rate for the period is expressed in relation to the base year of 1962, which has the base figure of 100. The same process has been used for the Canadian data.

Measuring the Nova Scotia and the Canada crime rates against a base year of 100 is useful in that it makes a comparison between the two jurisdictions easier to comprehend, while also showing the rate of increase for each of the jurisdictions in simple terms.

The column *NS as a % of Can. Crime Rate* is the Nova Scotia crime rate as a percentage of the Canada crime rate. The Nova Scotia crime rate has been divided by the Canada crime rate and then multiplied by 100 to get a percentage figure. From the perspective of quality of life, the results demonstrate a decline in comparative advantage for Nova Scotia in relation to the rest of Canada over the last four decades.

Table 5.2: The number of criminal code incidents for Canada and Nova Scotia is from *StatCan: Cansim Disc, 1998-2*, Cat. No. 10F0007XCB, Matrix 2200, *Crimes by Actual Offences, Canada, Provinces and Territories, by Year.* Canada, D9502, Nova Scotia D9568. The population data for 1996 and 1997 are from Statistics Canada publication *The Daily*, September 24, 1998. Population data from 1962 to 1995 is from *StatCan: Cansim Disc, 1998-2*, Cat. No. 10F0007XCB, Matrix 599. The crime rate in this table is derived by dividing the number of criminal code incidents by the population and then multiplying by 100,000 to get the number of criminal code offences per 100,000 population.

The columns *Canada 1962=100* and *Nova Scotia 1962=100* are the respective violent crime rates in relation to the base year 1962, which is given as 100.
The 1962 violent crime rate in Nova Scotia was 242 incidents per 100,000 population..
100 divided by 242 = .41322
Therefore, 242 multiplied by 0.41322 = 100 expresses the 1962 crime rate as 100.
For the years 1963 to 1997 the crime rate has been multiplied by 0.41322 so that the violent crime rate for the period is expressed in relation to the base year of 1962, which has the base figure of 100. The same process has been used for the Canada data.

Measuring the Nova Scotia and the Canada violent crime rates against a base year of 100 is useful in that it makes comparison between the two jurisdictions easier to comprehend, while also showing the rate of increase for each of the jurisdictions in simple terms.

The column *NS as a % of Can Crime Rate* is the Nova Scotia violent crime rate as a percentage of the Canada violent crime rate. The Nova Scotia violent crime rate has been divided by the Canada violent crime rate then multiplied by 100 to get a percentage figure.

Table 5.3: The methodology and sources are the same as Table 5.1 and are applied to the number of property crime incidents for both jurisdictions. For Canada the source for

property crime incidents is *Cansim Disc 1998-2*, 10F0007XCB, Matrix 2200, D9508; for Nova Scotia: *Cansim Disc 1998-2*, 10F0007XCB, Matrix 2200, D9574.

Chapter 6: Victim Costs (Property Crime)

Direct Victim Losses in Nova Scotia.

This table refers to the economic loss suffered by victims of property crime at the time of the incident – the value of goods stolen by a criminal from a victim. Unfortunately, other than the number of thefts above and below $5000, there are no specific annual financial victim loss data either for Nova Scotia[16] or for Canada. Because of the dearth of relevant data we have had to rely on average losses for selected property violations as estimated by the Solicitor General of Canada.[17] Translated into 1997 dollars, using the Consumer Price Index, the average loss per violation is:

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

In order to arrive at an approximation for the total direct financial losses per property crime category in Nova Scotia the average financial loss per incident has been multiplied by the number of incidents. For example:
In 1962 there were 5,201 reported thefts in Nova Scotia. By 1997 the annual number of reported thefts in the province had risen to 21,568. Therefore, the direct victim losses in 1962 as opposed to 1997 are:
1962 - 5,201 multiplied by $2,188 = $11.4 million
1997 – 21, 568 multiplied by $2,188 = $47.2 million.
The same procedure is used for all named crime categories and all intervening years. The total direct victim losses per year are the total losses for each crime category combined.

The *Potential Savings* columns show the money that could be saved if the number of criminal incidents in the Province were reduced to 1962 or 1975 levels. While the ultimate goal must be to eradicate crime altogether, interim targets that demonstrate the economic benefit of reducing crime are also useful. The methodology used is quite simply to subtract the 1962 and 1975 annual total from the subsequent annual total, the result being the potential saving.

[16] Personal telephone conversation with media officer, Halifax Police Department. The Halifax police department does not keep data on the loss of property due to criminal activity. The media officer for the department is also unaware of any police department that might keep such statistics.
[17] Brantingham and Easton, op. cit., *The Fraser Forum,* also use these estimates which are from Solicitor-General of Canada, *Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims,* 1985.

Chapter 7: Victimization (Violent Crime)

Direct Monetary Losses due to Assault

The mean net dollar losses for sexual assault and assault are from the Canadian Urban Victimization Survey (CUVS), No. 5, p.3, table 4. Difficulty was experienced constructing a time line for assault and sexual assault due to changes in definition. Because of these problems recent data for the two categories have been extrapolated back to 1962 using the ratio to violent crime. The CUVS survey found that a monetary loss occurred in 32% of sexual assault incidents, 56% of robberies, and 18% of assaults.

No distinction is made between reported and unreported crime in the CUVS report. If criminal incidents of a more serious nature are the ones more likely to be reported to the police, then the official crime statistics represent incidents where a financial loss is more likely to occur than in unreported incidents. It is therefore also be expected that reported crimes are more likely to incur a larger financial loss. Therefore, because this report uses the CUVS data, which reflects the average loss for reported and unreported crime combined, we are probably underestimating the average loss for reported crimes alone.

The Solicitor-General estimated that the mean net loss (after recovery of lost property) in 1981 for incidents where an economic loss occurred, was $266 in cases of sexual assault, and $224 in cases of assault. Translated into 1997 dollars using the Consumer Price Index, the average losses are $372 for sexual assault and $314 for assault.[18] No more recent figures are currently available.

However the same report also indicates that an economic loss took place in 32% of sexual asault incidents and in 18% of assaults. Therefore the dollar loss per incident has been estimated at ($372 x 32% =) $119 per sexual assault and ($314 x 18% =) $56 per assault.

Because definitions and reporting rates has changed over time for the crimes of sexual assault and assault, the two crime categories have been combined here so that aggregate losses for both categories of violent crime can be estimated back to 1962 using the above formula. Because of the changing definitions and reporting rates, it would be misleading to assume that the *relative* losses for *each* category reflected the same reality in 1962, 1975 and 1997. The composite total for both categories at least avoids the definitional problem.

Table 7.1: Cost of Hospitalization due to Crime in Nova Scotia

The Canadian Solicitor General's report, *Canadian Urban Victimization Survey: Cost of Crime to Victims,* p.4, states that interviewed victims spent 50,500 nights in hospital due to injuries incurred during 1,600,000 criminal incidents. These figures translate to 3.15% of criminal incidents resulting in a day of hospitalization.

[18] Solicitor-General of Canada, *Canadian Urban Vicitmization Survey, Bulletin 5: Cost of Crime to Victims,* 1985, page 3.

The number of days spent in hospital due to criminal injuries in Nova Scotia has been calculated using this ratio. In 1997 there were 77,696 criminal code incidents in Nova Scotia. 77,696 multiplied by 3.15% gives 2,447 days of hospitalization. The cost of a day in hospital is from Statistics Canada catalogues 83-246 and 83-217. Data were not available for the years 1962-69, 1977, 1989, 1995-97. Estimates have been made for the missing years using the adjacent year's data.

The Solicitor General estimated that the average loss in 1981 for sexual assault was $266 and for assault $224. Translated into 1997 dollars using the Consumer Price Index for Nova Scotia the average losses are $471 for sexual assault and $396 for assault.[19]

Homicide Measures

The number of homicide victims who would have been in the workforce in 1997 has been calculated from the following data:

- Age and number of homicide victims 1921-44, 1946-49, and 1976-85.
- Number of homicide victims 1962-1997.

For the years where the number of victims is not known, the average age of victims from preceding years has been used as proxy. For years where the age of the victim is unknown the percentage of victims per age cohort has been calculated using averages from available data.

Chapter 9: Public Justice Costs

Cost of Corrections in Nova Scotia. For the period 1962-1983 the total cost of Corrections for Nova Scotia is derived from the expenditures of the three levels of government in the province. Municipal costs for the same period are for courts and corrections. From 1962-70 municipal data for police, courts and corrections are only available under the composite heading *Justice.*

Federal expenditures for corrections for the period 1962-83 are only available at the national level and are not broken down by province. Since federal corrections expenditures come from general taxpayers revenues, we have simply based the share of federal corrections expenditures attributable to Nova Scotia to the province's share of the national population. Therefore, if three per cent of the Canadian population resides in Nova Scotia, Nova Scotia is responsible for three per cent of federal corrections expenditures in these estimates. Strictly speaking, this proportion should be adjusted to account for regional income disparities, but this has not been done in this report.

In other respects too, the methodology is flawed. Ideally the Nova Scotia share of federal corrections costs should be based on the percentage of penitentiary inmates who were

[19] Solicitor General, *Canadian Urban Victimization Survey, Bulletin 5: Cost of Crime to Victims, 1985, page 3.*

sentenced in the province. Unfortunately the home province of penitentiary inmates is unavailable so the Nova Scotia share of penitentiary inmates cannot be calculated.

The problem this raises is that Nova Scotia may have a disproportionate share of inmates in federal corrections programmes. If, for instance, ten per cent of penitentiary inmates were sentenced in Nova Scotia, and the Nova Scotia share of the general population were three per cent, the methodology used in this report would only apportion three per cent of penitentiary expenditures to the province when in fact ten per cent of costs should be the responsibility of Nova Scotia. Conversely, if Nova Scotia had a lower share of federal corrections inmates than its share of the general population, then the share of federal costs would be overstated.

Despite these methodological difficulties, the Nova Scotia portion of federal corrections cannot be omitted. It may save the Nova Scotia government money when it sentences offenders to a federal penitentiary term, but provincial taxpayers still pay the bill in their federal taxes. Even when the federal government pays for federal corrections, such expenditures are still a cost of crime for Nova Scotians, as are all expenditures incurred because of crime in Nova Scotia.

Future updates of this report might improve the accuracy of this estimate by using data on the home province of penitentiary inmates to calculate how much Nova Scotia *should* be paying towards federal corrections expenditures, if these expenditures were a direct consequence of crime actually committed in the province. For this study the Nova Scotia share is derived as follows:

In 1997 the Nova Scotia population was 3.13 per cent of the Canadian population.[20] With no adjustments for income disparities, it is simply assumed that Nova Scotia taxpayers paid 3.13 per cent of the $967,864,000 total federal operating expenditures for federal corrections in 1997.[21] 3.13 per cent of $967,867,000 equals $30,294,237.

Cost of Probation in Nova Scotia

The average offender count on probation in Nova Scotia in 1995-96 was 4339. The total cost of probation for Nova Scotia was $5,832,000.
The cost per participant is the total cost divided by the number of participants; therefore, $5,832,000 divided by 4339 = $1,344.

Calculation of US Corrections expenditures

- The latest expenditure data on corrections in the US are for 1992.[22]
- Inmate counts for federal and state prisons are for 1997, though the text refers to some recently released 1998 data.[23]

[20] Statistics Canada. Cansim CD Rom Matrix 1.
[21] Statistics Canada. March 1997. *Adult Correctional Services in Canada, 1995-96.* Cat. No. 85-211, p.76.
[22] U.S. Department of Commerce. Statistical Abstract of the United States, 1997. 17th edition, p. 213.

- The number of inmates in local jails in 1997 has been estimated by updating the latest available data, from 1995[24], by multiplying by the rate of increase in federal and state inmate populations for the same period.
- Because the total cost of corrections and the average number of inmates are known for 1992 we can calculate the cost per inmate for that year.
- The number of inmates in state, federal and local corrections in 1997 is then multiplied by the cost per inmate to get the total cost of incarceration in 1997 in 1992 dollars.
- The cost of corrections in 1997 dollars then estimated using the US Consumer Price Index[25].

Cases Heard in Youth Court: Rate per 10,000 Population

The rate per 10,000 youth of a particular age is derived from court and population data. For example, to arrive at the rate of court cases for 16 year olds the number of cases in youth court involving 16 year olds is divided by the number of 16 year olds in the general population to get the per capita figure; this number is then multiplied by 10,000 to get the rate per 10,000 16-year-olds.

Chapter 10: Defensive Expenditures

The Cost of Security Guards & Private Investigators Operating in Nova Scotia

Data on the number of people employed in either profession are from the Census and also from the Solicitor-General's Department, which licenses private security guards and investigators. Since the authors obtained the latter source only for the most recent years,[26] approximations for years between national censuses have been derived by extrapolating forward from each census point to the next, dividing the difference in census totals by the number of years in between.

Business Defensive Expenditures

Retail sales are not readily available for the period 1962-71. It has therefore been assumed that the rate of increase in retail sales for 1962-71 was similar to that of the following ten years for which figures are available. The average yearly rate of increase in retail sales for the ten years following 1962-71 was 11.7%. Consequently we have discounted the 1972 retail sales figures by 11.7% to get an approximation for 1971 retail

[23] U.S. Department of Justice Website: http://www.ojp.usdoj.gov On June 30, 1997 1,218,256 prisoners were under federal or state jurisdiction.
[24] U.S. Department of Commerce. Statistical Abstract of the United States, 1997. 17th edition, p. 213.
[25] Statistics Canada. StatCan: Cansim Disc 1998-2. Cat. No. 10F0007XCB, Cansim Matrix 348.
[26] Paul Smith, N.S. Department of Justice, kindly supplied the data from the Solicitor-General's Department.

sales. The approximated 1971 value was then discounted by 11.7% to get a proxy figure for 1970. This process was repeated back to 1962.

No separate provincial data on business defensive expenditures for electronic article surveillance and other forms of "target hardening" and crime loss prevention are available for Nova Scotia. The percentage of retail sales due to defensive expenditures is therefore derived from national data provided by the Retail Council of Canada.

It has further been assumed that the defensive expenditure rate of 0.51% of retail sales in 1997 is not constant on an annual basis, but varies in direct proportion to the incidence of shoplifting. This is in accord with the basic definition of defensive spending as a response to a decline in welfare, whether in the form of compensation for harm done or attempt to prevent further decline. Since shoplifting is not separately reported in the official crime statistics, it is also assumed that shoplifting incidents have changed in direct proportion to incidents of theft. Needless to say, these assumptions could be eliminated by direct provincial victimization survey data, as recommended in chapter 12.

The rate of defensive spending, therefore, has been extrapolated back to 1962 on the basis of two variables – changes in retail sales, and changes in the number of thefts as reported in the official crime statistics. For example, the 1990 expenditures are calculated in this way: the number of thefts in 1990 = 27087, the number of thefts in 1997 = 21568. 27087 divided by 21568 equals 1.26. The 1997 rate of business defensive expenditures (0.51%) as a proportion of retail sales, is then multiplied by 1.26 to get the 1990 estimated rate of expenditures (0.64% of retail sales for that year). The total retail sales for 1990 ($6.2 billion) are then multiplied by 0.64% to derive an estimate for the total sum spent on defensive expenditures in 1990, namely $45.8 million.

Chapter 11: Comprehensive Cost Estimates

Methodologies are explained in the body of the chapter. For more details on methods of valuation of unpaid work, please see the first two modules of the Genuine Progress Index on the economic value of voluntary work and household work in Nova Scotia.

Appendix II: Components of the Nova Scotia Genuine Progress Index

A. Time Use Variables

Economic Value of Civic and Voluntary Work
Economic Value of Unpaid Housework and Child-Care
Unpaid Overtime and Costs of Underemployment
Valuation of Leisure Time

B. Natural Resource Accounts

Soils and Agriculture
Forestry
Fisheries
Nonrenewable Subsoil Assets

C. Other Social and Economic Modules

Costs of Crime
Income Distribution
Valuations of Durability
Debt, External Borrowing, and Capital Movements
Health Care
Educational Attainment
Composite Livelihood Security Index
Human Freedom Index

D. Other Environmental Components

Greenhouse Gas Emissions
Sustainable Transportation
Ecological Footprint Analysis
Air and Water Quality

E. Aggregate Genuine Progress Index

Construction of a composite index of sustainable development based on the 20 modules is scheduled for the year 2000.

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