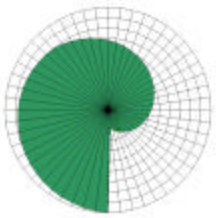

The Alberta GPI Accounts: Crime

Report # 14

by

Amy Taylor
Mark Anielski

October 2001

Pembina Institute
for Appropriate Development

About the Pembina Institute

The Pembina Institute is an independent, citizen-based organization involved in environmental education, research, public policy development and corporate environmental management services. Its mandate is to research, develop, and promote policies and programs that lead to environmental protection, resource conservation, and environmentally sound and sustainable resource management. Incorporated in 1985, the Institute's main office is in Drayton Valley, Alberta with additional offices in Calgary and Ottawa, and research associates in Edmonton, Toronto, Saskatoon, Vancouver and other locations across Canada. The Institute's mission is to implement holistic and practical solutions for a sustainable world.

The Green Economics Program is dedicated to designing and implementing practical, street-smart economic tools that would reorient society back to the original meaning of the word "economy"—the care and management of the wealth of the household. By developing new tools for measuring the true wealth or well-being of nations, we can help guide Canadians and Albertans to a sustainable future.

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About this Report

This is one of 28 reports that provide the background for the Genuine Progress Indicators (GPI) System of Sustainable Well-being Accounts. It explains how we derived the index that was earlier published in *"Sustainability Trends 2000: The Genuine Progress Statement for Alberta, 1961 to 1999."* The research for this report was completed near the end of 2000. The appendices provide further background and explanation of our methodology; additional details can be obtained by contacting the authors. Appendix A includes a list of all GPI background reports.

In this report we explore the nature and prevalence of crime in Alberta. The report answers the following questions:

1) How much crime is there in Alberta?
2) How much has the rate of crime changed since 1961 in Alberta?
3) What kind of crime is most prevalent in Alberta?
4) What is the estimated cost of crime in Alberta?

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About the Authors

Amy Taylor is a senior researcher with the Pembina Institute's Green Economics program. She works on establishing measurements of ecological well-being and community sustainability reflected in genuine progress indicators using time series analysis and valuation methods. Amy came to the Institute following contract work with the B.C. Ministry of Finance, where she was the lead author and researcher for the B.C. Government's 1999 discussion paper, "Environmental Tax Shift: A Discussion Paper for British Columbians." She has been a researcher, writer, and public speaker in this field for four years, and combines a background in economics, energy research, and environmental science. Her 1999 Masters in Resource Environmental Management focused on ecological tax reform. Her education includes MRM degree (Masters of Resource Environmental Management) from Simon Fraser University and B.Sc. Hon. (Economics and Environmental Science) from Trent University.

Mark Anielski is Director of the Green Economics team, and has considerable experience in public policy analysis including natural resource, energy, royalty and fiscal policy issues in both the public (Alberta Government) and private (GPC – Government Policy Consultants) sector. He also serves as Senior Fellow to the U.S. economic policy think-tank Redefining Progress in Oakland, California and authored the 1999 U.S. GPI report with journalist Jonathan Rowe. He currently advises the National Round Table on Economy and the Environment's Sustainable Development Indicator Steering Committee on the development of indicators for measuring sustainability in Canada. Mark teaches business and the environment in the University of Alberta's School of Business. His expertise is varied and broad including accounting for sustainable development, natural resource accounting, public policy analysis, business planning and performance measurement. Mark pioneered the development of natural capital accounts for Alberta's timber, oil, gas, coal and other natural capital as well as having experience in the development of performance measurement systems, land use planning and non-market resource valuation, royalty policy analysis (forestry, oil and gas), and analysis of subsidies for both government and private forestry, energy and financial service industries. He holds a Masters degree in forest economics, plus bachelor degrees in economics and forestry.

Acknowledgements and Disclaimer

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The high quality of the data compiled by Statistics Canada and the opportunity to use this data enabled us to undertake a much more thorough analysis than would otherwise have been possible. We would also like to acknowledge the important pioneering research and development work by Dr. Ronald Colman and his team at GPI Atlantic in Halifax, Nova Scotia. Their research into developing a methodology for the full costing of crime in Nova Scotia in *The Cost of Crime in Nova Scotia* served an important benchmark for our own research. We also thank Kim Sanderson for her editing assistance. Finally, the Pembina Institute appreciates the vision of Western Economic Diversification in supporting this project—the first of its kind for Alberta, if not internationally.

The contents of this report are the responsibility of the Pembina Institute and do not necessarily reflect the views and opinions of those who are acknowledged above or the opinions or positions of Western Economic Diversification who helped fund the research.

Contents

Figures and Tables

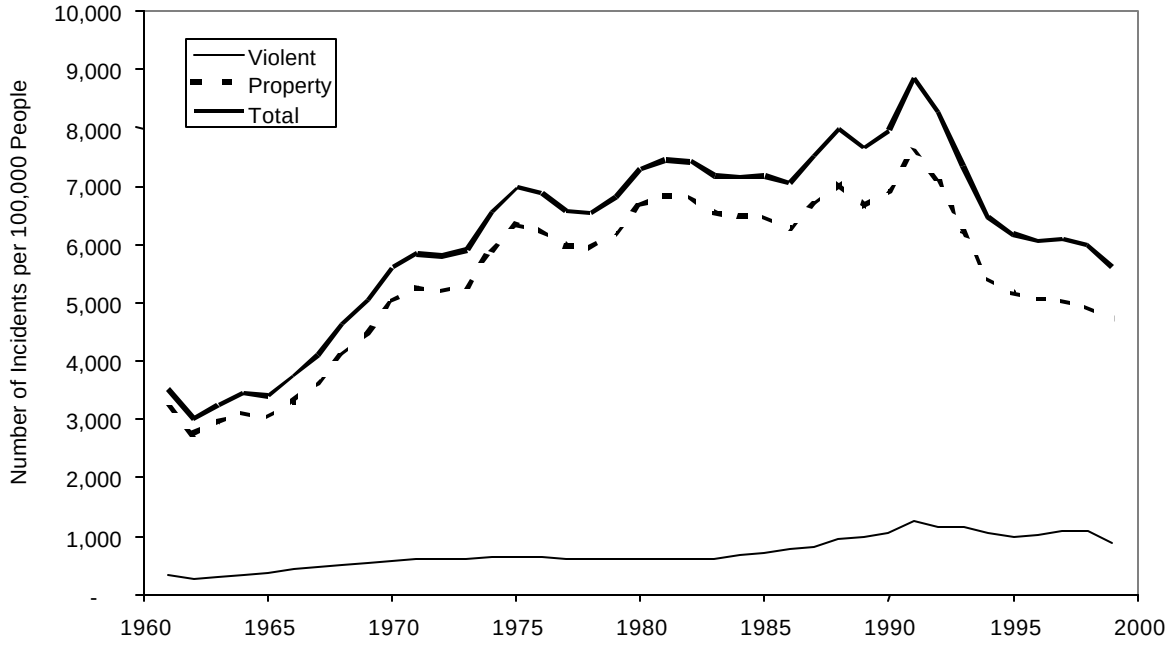
1. Executive Summary

Despite small reductions in crime in recent years, the crime rate in the 1990s was still substantially higher than it was in the 1960s. Our analysis shows that total crime in Alberta has increased by 254 percent since 1961—an increase of 230 percent for property crimes and 474 percent for violent crimes. In 1993 alone, 24 percent of adults in Canada were the victims of at least one criminal act within the preceding 12 months.[1] According to a 1993 survey by *Maclean's Magazine*, some 50 percent of Canadians felt less safe than they did five years earlier. The same survey found that 48 percent of women and 18 percent of men felt that there were areas close to their homes where they would be afraid to walk at night.[2] The figure below shows crime rates in Alberta from 1961 to 1999.

Noteworthy

- Crime in Alberta has increased by 264% since 1961.
- In 1993, 24% of adults in Canada were the victims of at least one criminal act within the preceding 12 months.
- The cost of crime in Alberta increased by 103% from 1961 to 1998.
- Albertans are spending more money on burglar alarms, home security systems, locks, security guards and private investigators.

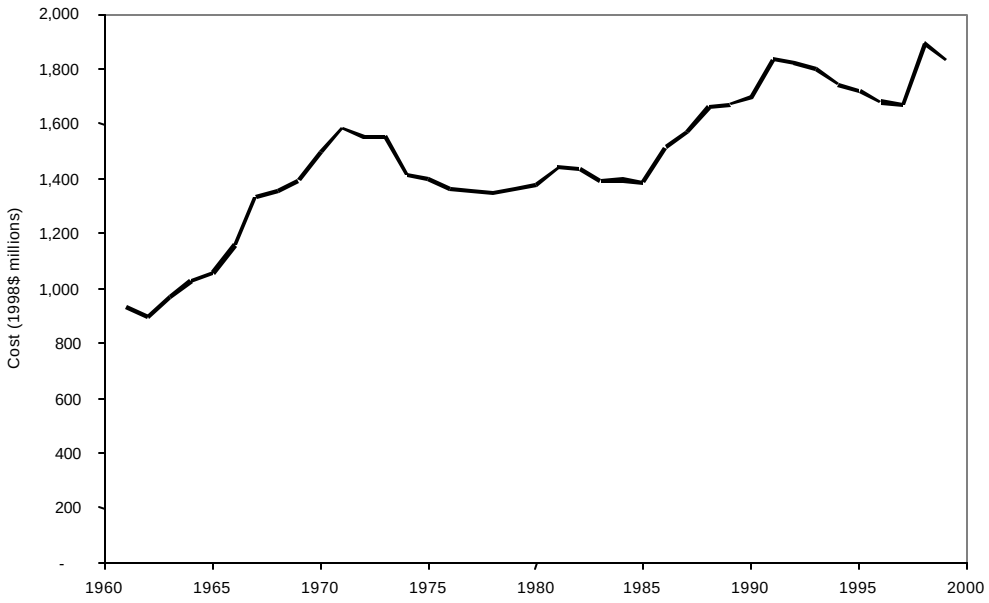
Crime in Alberta, Incidents per 100,000 people, 1961 to 1999



Source: Data from Canadian Center for Justice Statistics, Catalogue No. 85-205

This increase in crime is costing Albertans money. In fact, the cost of crime in Alberta increased by 97 percent from 1961 to 1999. Expenditures on crime in Alberta in 1999 were two percent of total provincial Gross Domestic Product (GDP). The figure below shows the estimated cost of crime in Alberta from 1961 to 1999.

The Cost of Crime in Alberta, 1961 to 1999

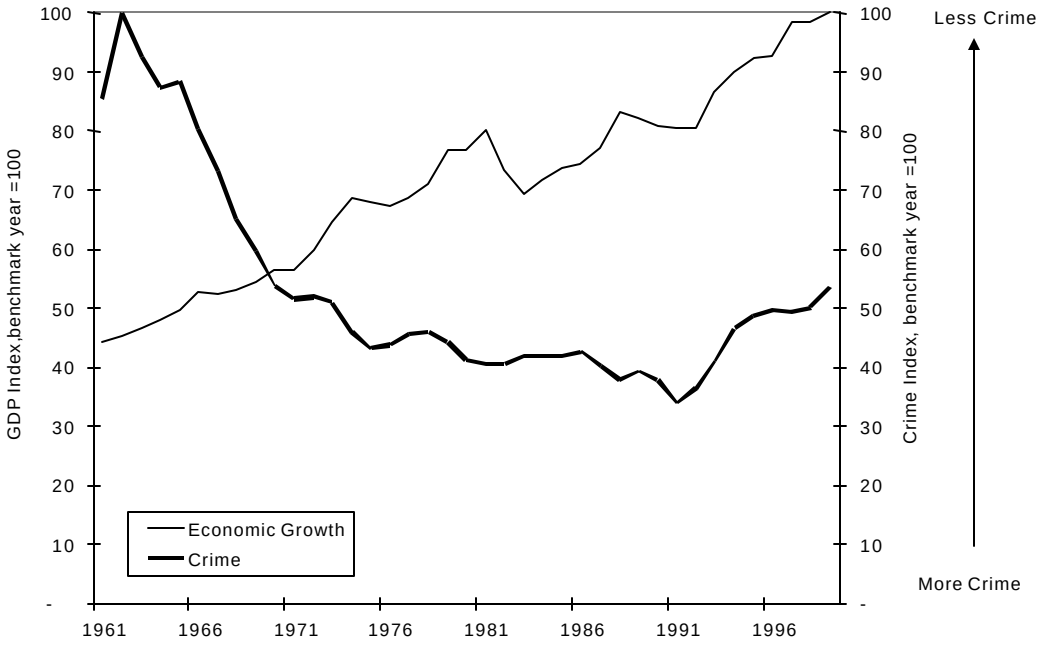


Albertans are spending more money on burglar alarms, home security systems, locks, security guards and private investigators. The more crime, the more we as a society spend on police officers, courts, corrections and legal aid. But is this expenditure contributing to the well-being of society in Alberta? According to our conventional system of economic accounting, namely the GDP, indeed it is. The GDP records all expenditures that take place in the market. Thus, the more money we spend the more our provincial GDP increases. In other words, the GDP tells us that the more crime there is and the more money society spends, the more prosperous our province is.

Because the GDP does not distinguish expenditure that contributes to societal well-being from expenditure that detracts from societal well-being—called "regrettable expenditure"—it does not recognize the benefit of limits to growth in some sectors of the economy. In contrast to the GDP, the Genuine Progress Indicator (GPI) does distinguish regrettable expenditure from other types of expenditure. The GPI recognizes that, with respect to crime, limitless growth is not good for society. The GPI tells us that the more crime there is and the more money society spends, the less prosperous our province becomes. By recognizing that crime does not contribute to societal well-being, and measuring progress accordingly, the GPI provides a much more comprehensive measure of well-being for society, policy makers, businesses and government.

The figure below shows the crime rate and GDP in Alberta as indices. In the index, the lowest crime rate in the study period is set equal to 100, and deviations from that benchmark year are measured as movement toward zero. Thus, as crime increases relative to the crime rate of the benchmark year, the index tends toward zero. While Alberta has boasted a steady increase in provincial GDP over the study period, the trend in the provincial crime rate is quite the opposite. As the figure indicates, while the GDP has continued to increase, crime in the province has worsened substantially.

GDP and Crime in Alberta as Indices, 1961 to 1999



2. Why Measure the Cost of Crime?

Despite small reductions in crime in recent years, the crime rate in the 1990s was still substantially higher than it was in the 1960s. Our analysis shows that total crime in Alberta has risen by 254 percent since 1961, with an increase of 230 percent for property crimes and 474 percent for violent crimes. In 1993 alone, 24 percent of adults in Canada were the victims of at least one criminal act within the preceding 12 months.[3] In a 1993 *Maclean's Magazine* survey, some 50 percent of Canadians said they felt less safe than they did five years earlier. The same survey found that 48 percent of women and 18 percent of men felt there were areas close to their homes where they would be afraid to walk at night.[4] This increase in crime is costing Alberta society money.

Albertans are spending more money on burglar alarms, home security systems, locks, security guards and private investigators, and the more crime that takes place, the more that society must spend on police officers, courts, corrections and legal aid.[a] But is this expenditure contributing to the well-being of society in Alberta? According to our conventional system of economic accounting, namely the Gross Domestic Product (GDP), it is. The GDP records all expenditure that takes place in the market. It tells us that the more crime there is and the more money society spends in response, the higher the GDP and the more prosperous our province. Because the GDP does not distinguish expenditure that contributes to societal well-being from expenditure that detracts from societal well-being (called "regrettable expenditure"), it does not recognize the benefit of limits to growth in some sectors of the economy. Because of these and other factors, the GDP as a measure of progress is vastly inadequate. Leading economists and some politicians acknowledge that we need new indicators of progress to guide our society.[5] Such indicators must recognize limits to growth and the implications of regrettable expenditure, which is what the Genuine Progress Indicator is designed to do.

The GPI distinguishes between expenditure that is regrettable and other types of expenditure, thus recognizing that, with respect to crime, limitless growth is not good for society. With the GPI, the more crime there is and the more money society spends,[b] the less prosperous our province. Unlike the GDP, expenditure on crime is subtracted from the GPI so that as crime goes up, the GPI goes down, and as crime goes down, the GPI goes up. By recognizing that crime does not contribute to societal well-being and measuring progress accordingly, the GPI provides a much more comprehensive measure of well-being than the GDP. The GPI as a measure of progress provides a more accurate picture of prosperity to society, policy makers, businesses and government alike.

This report considers both changes in crime rates over the study period as well as the economic cost of crime in Alberta. We define crime and crime expenditure in the context of this project and also describe the methods we used to measure crime and expenditure on crime. We then present the results of this analysis, showing changes in both crime and expenditure on crime in Alberta over the study period.

[a] Of course, to a certain extent an increase in the fear of crime could lead to an increase in expenditure as households spend more on locks and security systems whether the actual crime rate has increased or not. In this analysis, we assume that an increase in the fear of crime that results in increases in such types of expenditure is in response to an increase in the actual crime rate; i.e., it is a symptom of increased crime.

[b] Although we assume, in this analysis, that expenditure on crime is a direct result of the crime in an area and is thus a symptom of deteriorating peace and security, as in the case with dictatorships, it is possible to spend more money on crime (e.g., in the form of increased policing), while crime rates are dropping.

3. Crime Defined

For the purpose of this study, we defined crime as the violation of a law that prohibits a specific activity and provides for punishment of violators. In other words, a crime is an offence against any law that is currently in force.[6] In this analysis, we grouped criminal acts as either violent crimes or property crimes.

We examined the economic costs associated with crime in Alberta by measuring the direct costs of the crime as well as defensive expenditures. Direct costs include things like the value of a stolen car and the consequent public justice costs. Defensive expenditures are those incurred to guard against the potential for crime—like burglar alarms, locks and security systems. Such expenditures are included because they can be expected to increase in direct response to increases in the crime rate of an area. In this report, we grouped the costs of crime into: violent crimes; property crimes; police; courts; correctional services; legal aid; burglar alarms and security systems; and private investigators and security guards.

- The cost of **violent crime** includes productivity losses from the victim (days of output lost as a result of the crime), hospitalization costs associated with the victim and direct monetary losses. Data from the Solicitor General's report indicates that for every 100 criminal code incidents, victims spend 3.15 days in hospital and miss 25.3 days of work.[7]

- The economic cost of **property crime** includes direct monetary costs associated with theft, mischief, breaking and entering, motor vehicle theft, robbery and fraud.

- Expenditure on **police** includes all operating costs (wages, salaries, benefits and administrative expenses) but excludes capital costs with the exception of motor vehicle purchases. By including all expenditure associated with police, we are overestimating the cost of crime in Alberta because not all police work relates to crime. The costs of these other tasks are included here nevertheless, to maintain the integrity of the data set used to estimate the cost of police services. This is consistent with research by the Atlantic GPI on the economic cost of crime in Nova Scotia.

- The economic costs of the **courts** include the cost of all staff working for and expenditure incurred by local court services divisions. They also include the salaries, benefits and operational costs related to superior court judges appointed federally in Alberta.[8]

- The provision of **correctional services** in Canada is the shared responsibility of federal and provincial governments. Offenders sentenced to incarceration of less than two years are housed within provincial correctional facilities, while offenders sentenced to more than two years are federal responsibility.[9] Thus, in this analysis, expenditure on correctional services includes federal and provincial expenditure on corrections in Alberta.[c] Specifically, it includes custodial services, community supervision services, headquarters and central service administration costs, and parole board expenditures. Employee salaries and benefits account for approximately 75 percent of the total provincial expenditures.[10] Total federal expenditure on corrections is allotted to Alberta according to the share of Canada's population in Alberta.

[c] Note that in this analysis, we include only expenditure related to adult correctional services because of a lack of access to data pertaining to youth corrections. Thus the estimate for correctional expenditure is considered conservative.

- In the case of **legal aid**, we measure the cost of administering legal aid in Alberta. We include 50 percent of the total cost of legal aid, as this is the portion of total expenditure that relates to criminal cases.[11] This is consistent with research by the Atlantic GPI on the economic cost of crime in Nova Scotia.

- Expenditure on home **security devices** includes expenditure on special door locks and burglar alarms.

- Expenditure on **private investigators and security guards** is measured as the cost of the salaries, wages and benefits of private investigators and security guards only. Because of lack of data we have not included the cost of administrative expenses related to private investigators and security guards. Section 7, "Comprehensive Estimates for the Cost of Crime," speculates as to the increase in cost if such expenditures were included.

4. How Do We Measure the Cost of Crime in Alberta?

The cost of each of the categories mentioned above was estimated over the study period, as described below.

- Alberta specific data for the number of **property and violent crimes** in the province for 1988 to 1998 come from Canadian Centre for Justice Statistics, Catalogue No. 85-205. For years prior to 1988, the data are from Brantingham and Easton (1998),[12] who used Canadian Centre for Justice Statistics, Catalogue No. 85-205 data to calculate crimes per 100,000 people in Canada for 1962 to 1996. A portion of these crimes was allotted to Alberta according to the number of crimes in Alberta in 1996 for each category of crime (property or violent). The expenditure associated with these crimes comes from estimates by Brantingham and Easton (1998). These figures are assumed to be the same for Alberta, and the cost per incident is assumed to remain the same over the study period. This data set includes only the crimes that are reported to police; as discussed later in this report, many crimes in Canada and Alberta are in fact not reported to police.

- Data for the cost of **policing** in Alberta come from Statistics Canada's *Juristat* publications.[13] From these publications, we were able to obtain estimates of the number of full-time police officers in Alberta from 1962 to 1998. We were also able to obtain data on expenditure on police for selected years, 1986 to 1988, and 1990, 1991 and 1994. From this, we calculated the cost per police officer for 1986 and 1994. We used expenditure per police officer in 1986 to estimate expenditure on police for all years prior to 1986 by multiplying this value by the number of full-time police officers in Alberta. This assumes that the expenditure per police officer remained constant over that period (1961 to 1985). We used the same technique to estimate expenditure on years after 1994. Specifically, we used the expenditure per police officer in 1994 to estimate expenditure for all years after 1994 by multiplying this value by the number of full-time police officers in Alberta. Again, this assumes that expenditure per police officer remained constant over that period (1995 to 1999). These estimates include the provincial share of RCMP expenditure.

- Data on the cost of **courts** in Alberta are from various Statistics Canada *Juristat* publications.[14] From these publications we obtained estimates for expenditure on courts in Alberta for 1987, 1988, 1990, 1994, 1996 and 1997. To extrapolate the expenditure data over the study period, we related expenditure on courts to the number of criminal incidents in the province. Specifically, we calculated expenditure on courts per crime incident in Alberta for years for which we had known expenditure data then extrapolated this information over the study period. To do this, we used expenditure per criminal incident in 1987 to estimate expenditure for years prior to 1987 (expenditure per incident multiplied by the number of incidents). We used expenditure per incident in 1997 to estimate expenditure for 1998 and 1999. Expenditure for years between known data points (1989, 1991, 1992, 1993 and 1995) was estimated assuming a constant growth rate between these points.

- Data on the cost of adult **corrections** also come from various Statistics Canada *Juristat* publications.[15] From these publications we obtained estimates for expenditure by provincial agencies on the corrections system for several years (1978-1982, 1987-1994 and 1996-1997). We related this information to the number of incidents of crime in Alberta for the same years to get estimates of cost of corrections per incident in Alberta. For each year for which we did not have prior estimates for the cost of corrections, we multiplied the cost per incident for

each year by the number of incidents in that year to get estimates for cost of corrections to Alberta. Because the corrections system in Canada is shared between the provincial and federal governments, we had to add a portion of federal expenditures on corrections to the provincial estimates that we had derived. We assigned a portion of the federal expenditure to Alberta according to Alberta's percentage of the Canadian population.

- According to Brantingham and Easton (1998), roughly one-half of all **legal aid** cases in Canada are civil rather than criminal cases. For this reason, we have included 50 percent of expenditure on legal aid as regrettable expenditure related to crime in Alberta.[d] Data on the cost of legal aid in Alberta are from various Statistics Canada *Juristat* publications. From *Juristat*, we obtained estimates for per capita expenditure on legal aid in Alberta for 1983, 1987, 1990, 1994, 1996 and 1997. We extrapolated this information over the study period using regression analysis. We then multiplied the estimates for per capita expenditure by the population in Alberta to get total expenditure on legal aid in Alberta from 1961 to 1999. Finally we multiplied total expenditure in each year by 50 percent to account for criminal cases only.

- To calculate household expenditure on **locks and alarms** in Alberta; we used the same methodology as Colman in estimating the cost of crime in Nova Scotia. The estimate for household expenditure on locks and alarms is based on a per capita expenditure of $61 that was derived from U.S. data.[16] Because the estimate of $61 per capita is based on U.S. experience, we adjusted it to account for the fact that 78 percent of Canadian households have at least one security measure, compared to 84 percent of U.S. households. This brought the estimate for per capita expenditure on locks and alarms to $57 for Canada. Thus we calculated expenditure for each year as $57 times the population in Alberta in that year. We adjusted this figure again to account for the number of "break and enters" (property crimes) in Alberta relative to Canada as a whole for each year in the study period. We found that in 1961, for example, Alberta had 69 percent of the number of break and enters that occurred in Canada as a whole. By 1999 that number had increased to 92 percent, and we adjusted the expenditure estimates accordingly.

- Expenditure on **security guards and private investigators** was estimated from the data on expenditure on police. Specifically, we know that 80 percent of police expenditure is wages, salaries and benefits. As well, we know that in 1995, private investigators made 71 percent of the income that police officers did and security guards made 41 percent of the income that police officers did.[17] Brantingham and Easton (1998) presented data on the rate of pay of security guards and private investigators relative to police officers for 1971, 1981, 1991 and 1996 for Canada.[18] To estimate expenditure on private investigators therefore, we first multiplied police expenditure in each year by 80 percent to get only expenditure on police salaries, wages and benefits. We then multiplied by 71 percent to account for the fact that the income of a private investigator is 71 percent of that of a police officer. This was done for each year in the study period. Finally we adjusted these figures to account for the number of private investigators in Alberta using an estimate for private investigators per 100,000 people in Canada for each year from 1961 to 1999. We used the same procedure for estimating expenditure on security guards. We multiplied police expenditure by 80 percent then by 41 percent and adjusted for the relative number of security guards in Alberta (again using a national estimate of number of security guards per 100,000 population in Canada from Brantingham and Easton) for each year in the study period.

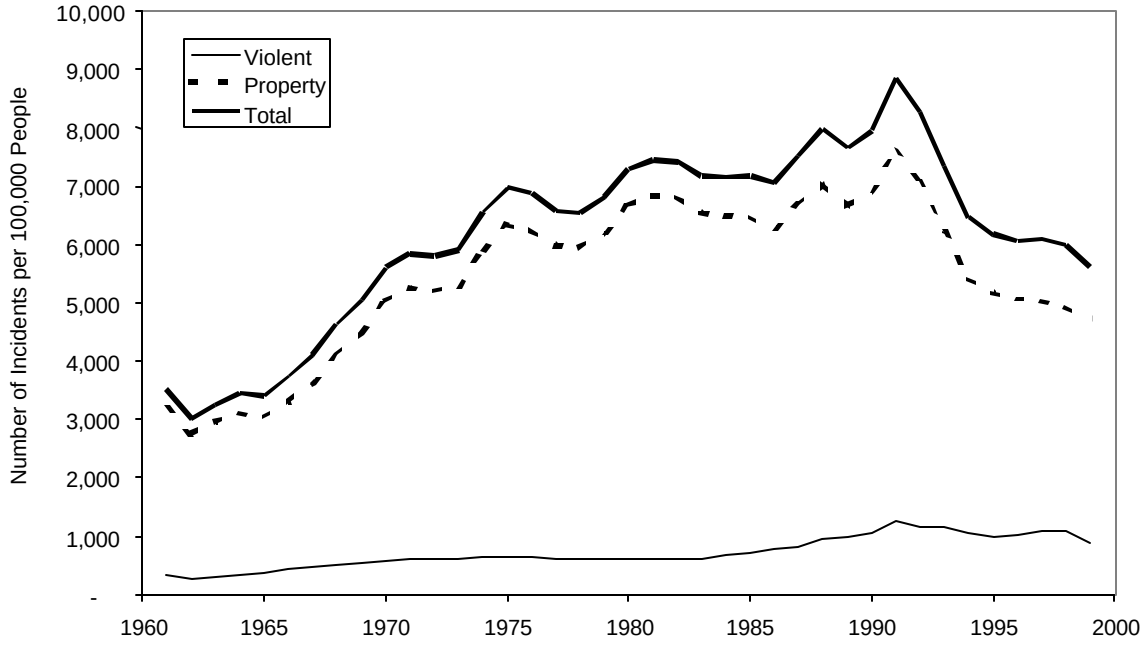
[d] This method is in keeping with the method that Colman used in the Atlantic GPI work for Nova Scotia.

5. Crime in Alberta

5.1 How Much?

Crime in Alberta increased substantially over the study period. Between 1961 and 1999, total crime in Alberta increased by 254 percent while violent crime rose by 474 percent and property crime by 230 percent. Figure 1 shows trends in crime per capita in Alberta from 1961 to 1999. Despite recent small reductions, crime in Alberta is still significantly higher than it was three decades ago.

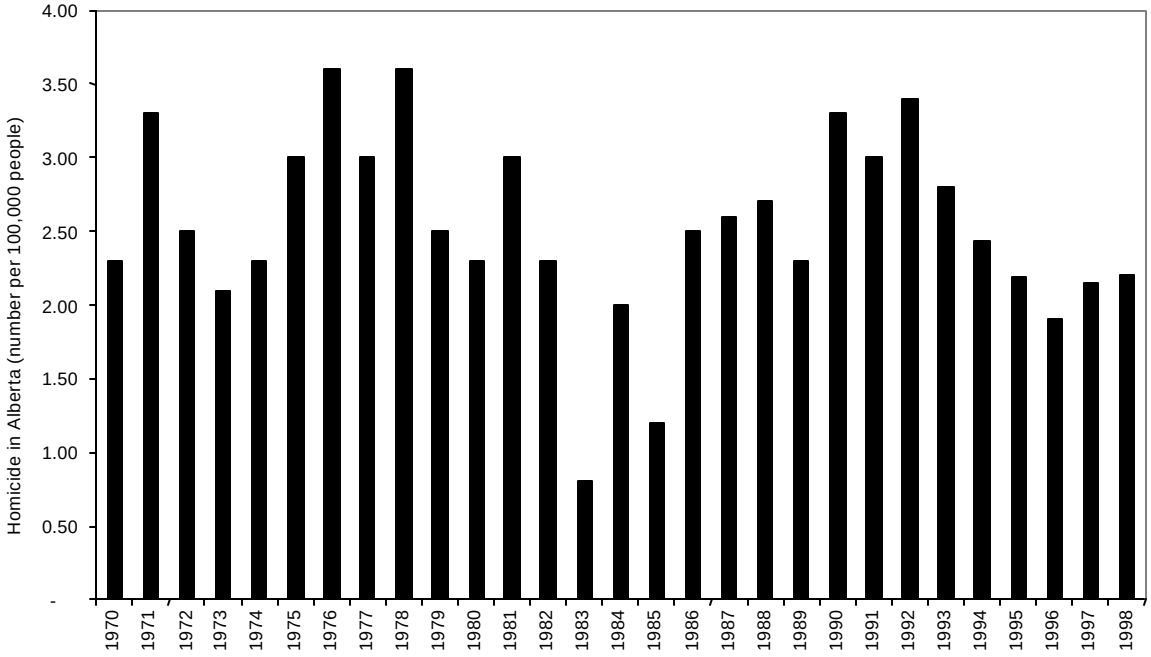
Figure 1: Crime in Alberta, 1961 to 1999



Source: Data from Canadian Center for Justice Statistics, Catalogue No. 85-205

Dodds and Colman (2000) investigated trends in violent crime in Canada.[19] They found that the homicide rate increased in Canada from 1.2 per 100,000 to 1.9 per 100,000 from 1962-1967 to 1992-1997, a 60 percent increase. Figure 2 shows homicide figures for Alberta for 1971 to 1998. Homicides in Alberta peaked in 1978 at 3.6 per 100,000 people and again in 1992 at 3.4 per 100,000. Although the homicide rate in Alberta was four percent lower in 1998 than in 1971, there is no reason to think that the trend in Alberta from 1961 to 1999 is different from the national trend reported by Dodds and Colman (2000). In other words, it is likely that homicides in Alberta are higher today than they were in 1961.

Figure 2: Homicide in Alberta, 1971 to 1998



Source: Brink, Satya and Allen Zeesman. Measuring Social Well-Being: An Index of Social Health for Canada R-97-9E, June 1997, Applied Research Branch, Strategic Policy, Human Resources Development Canada.

Sadly, Alberta has one of the highest rates of domestic violence against both women and men. Data from Statistics Canada's 1989 survey of violence in households indicate that 11 percent of the population 15 years and over is made up of women who experience spousal violence while nine percent of the total population 15 years and over is made up of men who experience spousal violence.[20] In 1998, 4,923 women and 6,002 children were admitted to women's shelters in Alberta. An additional 68,817 women contacted shelters through crisis lines. It is estimated that 20,168 women and children were turned away from shelters in 1998 because the shelters were already full.[21] Spousal violence is a serious problem, especially when children are involved. Children who witness abuse exhibit the same symptoms as children who are direct victims of abuse. Such symptoms include low self esteem, lack of self confidence, feelings of guilt and responsibility for their mothers' suffering, poor academic performance and difficulty concentrating. Furthermore, children who have grown up as witnesses or victims of abuse are 10 times more likely to live in a violent relationship when they are adults.[22]

A significant portion of the increase in total violent crime shown in Figure 1 is likely due to increases in violent crime among youths. Indeed as Brantingham and Easton (1998) report, violent crime among youth is increasing twice as fast as among adults, and has more than doubled since 1986.[23] A study by the Canadian Research Institute for Law and the Family (2000) on the extent of youth victimization, crime and delinquency in Alberta found that Grade 9 students were more likely than any other group to report that they had engaged in delinquency for all violence-related behaviours.[24] The same study found that males were more likely than females to engage in delinquent behaviour and that both family functioning and parental monitoring were strongly associated with reports of delinquency.

What Figure 1 does not reveal however, is the significant portion of criminal acts that go unreported every year. According to the Solicitor General of Canada, in the early 1980s, 58 percent of victims failed to report crimes to the police and in 1996 that figure was 48 percent.[25] Thus, it is probable that at least a portion of the increase seen in Figure 1 is due not to higher crime rates per se, but rather to higher reporting rates.

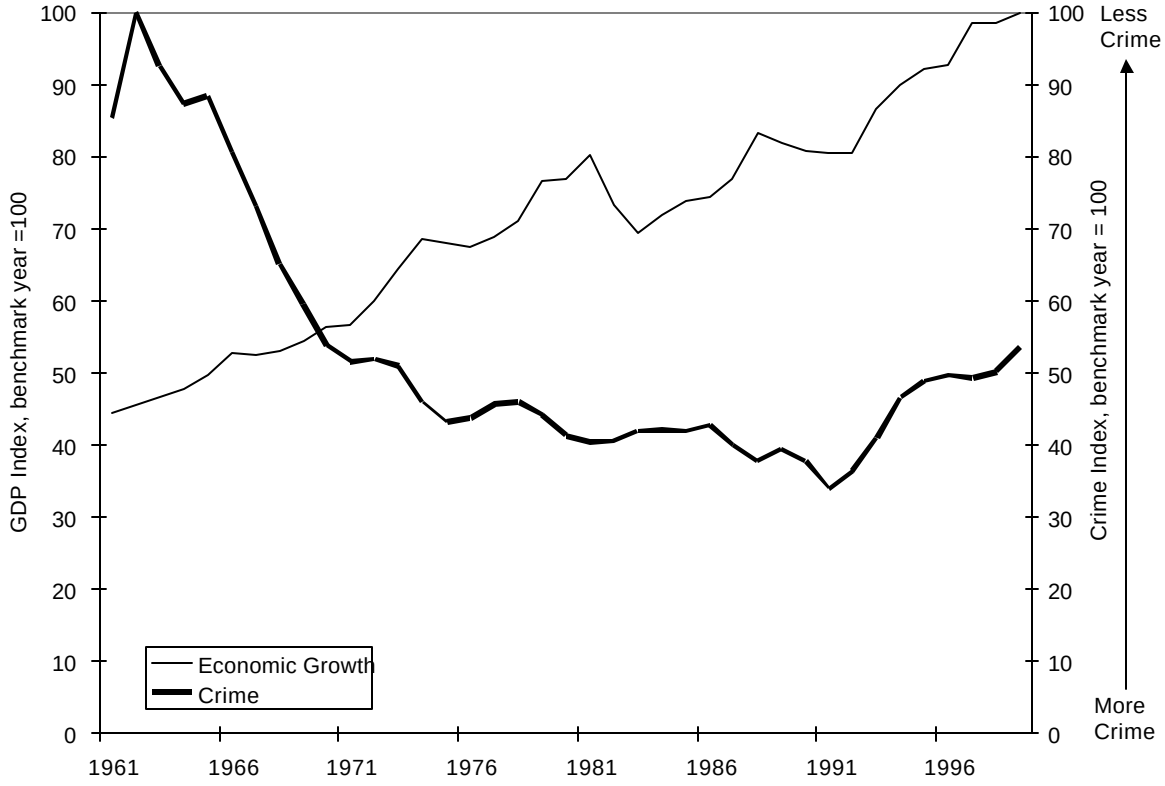
Considerable research on crime in Canada and other countries has shown relationships between crime and several socio-demographic conditions. Specifically, crime is correlated with such factors as unemployment, gender, substance abuse, recidivism, low education and age. Poorly educated, unemployed, young single males are the most likely socio-demographic group to commit crimes. A drug habit and a prior conviction further increase the likelihood.[26] A recent study by Correctional Services Canada, cited in Brantingham and Easton (1998), found that 49 percent of offenders released in 1983/1984 returned to prison within three years for committing the same offence for which they were originally convicted and imprisoned. Figure 1 shows that crime rates in Alberta, particularly property crime, rose in the early 1980s and the early 1990s. During both periods, Canada was in economic recessions and unemployment also increased during these periods. Specifically, the unemployment rate in Alberta went from 3.8 percent in 1980 to 11.1 percent in 1984. Similarly, but not as extreme, in 1990 the unemployment rate in the province was 7.1 percent and in just three years it increased by 9.7 percent. Indeed, Gilligan (1996) reports a finding that a one-percent increase in unemployment in the United States was regularly followed by an increased mortality of 37,000 deaths per year (both "natural," such as heart attacks, and "violent"). This figure includes almost 2,000 more suicides and homicides than otherwise occur.[27]

5.2 Crime in Alberta as an Index

Figure 3 shows the crime rate in Alberta as an index and compares it with provincial GDP. In the index, the lowest crime rate in the study period is set equal to 100, and deviations from that benchmark year are measured as movement toward zero. Thus, as crime increases relative to the crime rate of the benchmark year, the index tends toward zero. While Alberta boasted a steady increase in provincial GDP over the study period—from $21,887-million (1998$) in 1961 to $109,708-million (1998$) in 1999—the trend in the provincial crime rate is quite the opposite. As Figure 3 indicates, while the GDP has continued to increase, crime in the province has worsened substantially.

According to the 1997 Canadian Criminal Justice Crisis Index, Alberta had the third highest degree of crisis in Canada.[28] Saskatchewan and Manitoba ranked first and second. This index accounts for a number of factors related to criminal justice in various provinces, including crime rates, rate of imprisonment, cost of prisons and community corrections. In 1997, Alberta had the fourth highest total crime rate in Canada, the second highest rate of imprisonment, the fifth highest cost of imprisonment, and the third highest spending on community corrections.

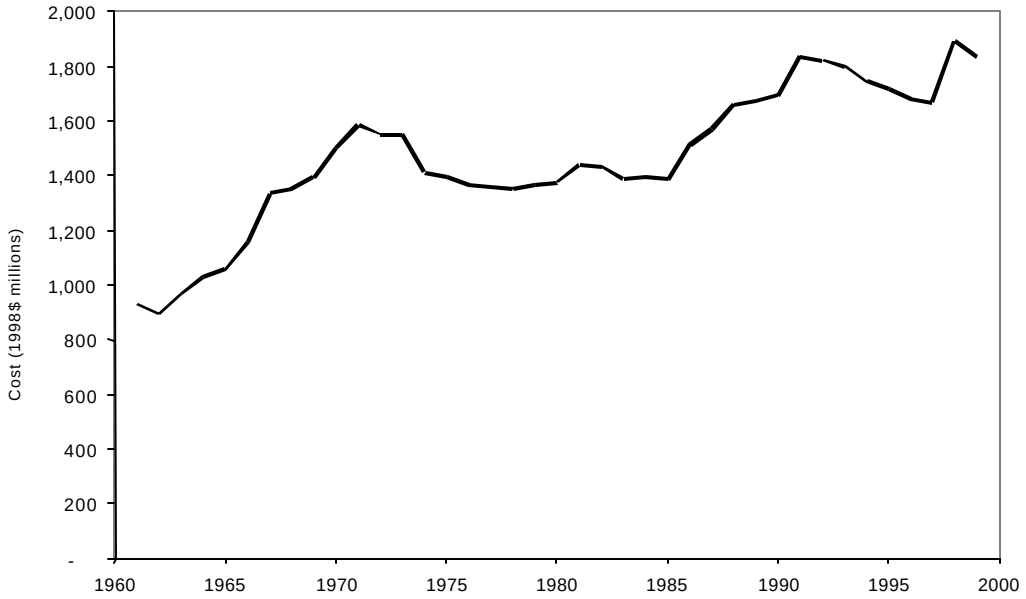
Figure 3: Crime in Alberta as an Index, 1961 to 1999



6. The Economic Cost of Crime in Alberta

Figure 4 shows the estimated total economic cost of crime in Alberta in constant 1998$. The cost of crime in Alberta rose steadily over the study period, increasing by 97 percent from 1961 to 1999.[e] In 1999, it amounted to two percent of total provincial GDP.

Figure 4: Total Economic Cost of Crime in Alberta, 1961 to 1999



Research by Brantingham and Easton (1998) suggests the cost of crime to Canada in 1996 was between 2.3 and 5.2 percent of Canada's GDP. This is the same amount that Canada spends on its public school system, which services five million children. The same study revealed that on average, crime costs between $560 and $1,240 per year for every man, woman and child in Canada. These authors estimate the national total cost of crime to be as much as $42.4-billion, which is in line with figures presented by the National Crime Prevention Center (between $35- and $46-billion).[29] Data from the Canadian Tax Foundation indicate that crime consumes more money than the Canadian government dedicates to old age pensions ($15.8-billion), the Child Tax Benefit ($5-billion), the Canada Assistance Plan ($7.4-billion), and child care ($5.5-billion) combined. The cost of crime in Canada is twice as much as is spent to support unemployed people through the Employment Insurance program ($18.1-billion).[30]

Part of the cost of crime is attributable to defensive expenditures. Statistics Canada's victimization surveys reveal that households in Canada are spending more money on home security systems than ever before. While 12 percent of households in Canada had burglar alarms in 1992, by 1996 that number had increased to 19 percent. Likewise, the use of special door locks and watchdogs increased from 42 percent to 52 percent and from 23 percent to 27 percent respectively.[31] In addition to these items, the 1996 International Crime Victimization Survey found that 20 percent of Canadians have special door or window grills, 19 percent have a high

[e] Some of this increase is due to the increase in reported crimes over the same period, which means that estimates for the cost of crime for earlier years are likely underestimates.

fence, 12 percent employ a caretaker or security guard and 34 percent participate in a Neighbourhood Watch Program.[32]

Household use of locks, alarms and watch dogs are not the only signs of an eroding sense of peace and security. Brantingham and Easton (1998) note that the number of security firms has increased substantially in the last several decades. Table 1 shows the trend in police personnel, private investigators and security guards in Canada. While the number of police officers per 100,000 people in Canada has increased by only five percent, the numbers of private investigators and security guards have increased significantly, by 35 percent and 83 percent respectively.

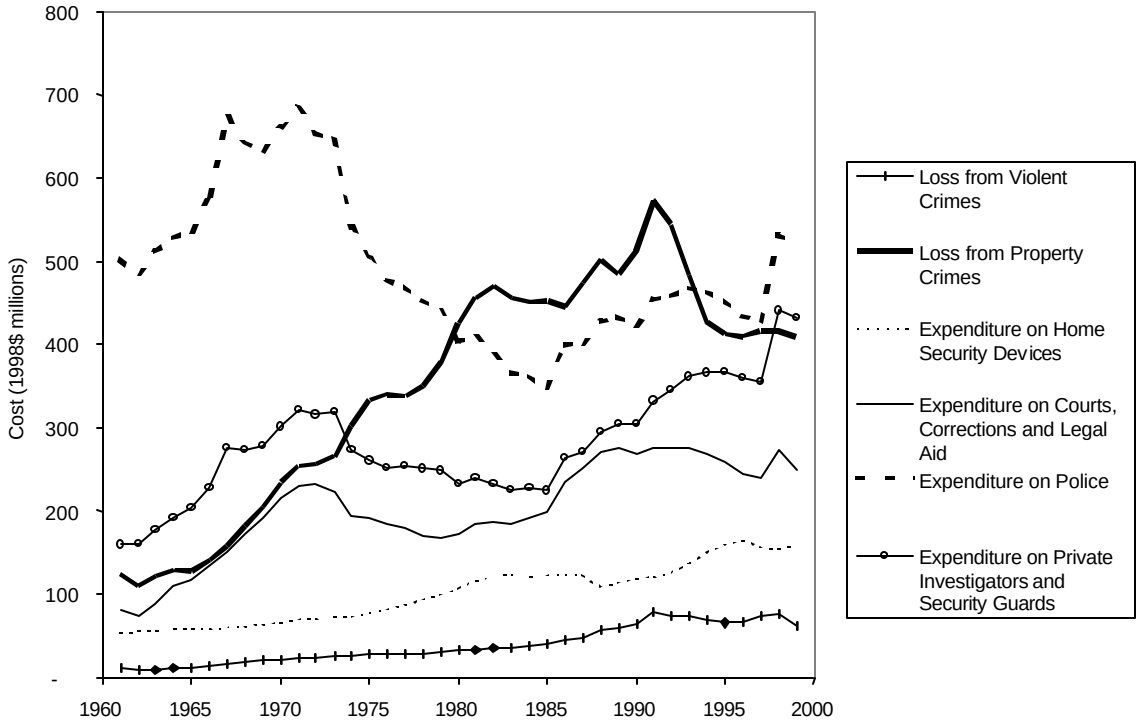
Table 1: Number of Private and Public Security Employees in Canada (per 100,000 population in Canada), various years

Year	Private Investigators	Security Guards	Police Officers
1971	16.0	233	182
1981	18.0	334	203
1991	21.0	411	202
1996	21.7	427	191
% Change, 1971-1996	35%	83%	5%

Source: Brantingham and Easton, 1998

Figure 5 shows the estimated total cost of crime in Alberta broken down by category, in constant 1998$. The figure shows a general increase in the cost of crime for all categories with the exception of expenditure on police, which has remained relatively steady since the mid-1970s after peaking in 1971.

Figure 5: The Economic Cost of Crime in Alberta, 1961 to 1999



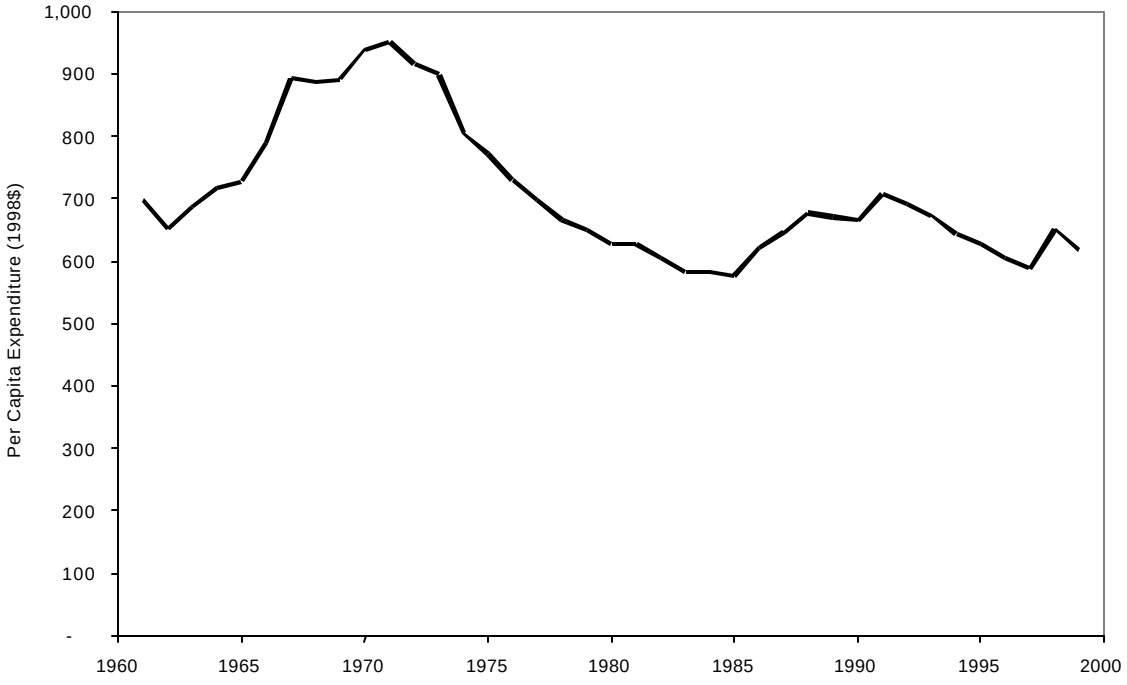
The increase in loss from property crimes is not surprising given the substantial increase in such criminal acts over the study period. Expenditure on private investigators and security guards and courts, corrections and legal aid all increased steadily over the study period. Although loss from violent crimes contributes the least to the total cost of crime it too shows a steady increase. Table 2 shows the percentage of cost attributable to each of the categories used in this analysis for various years of the study period.

Table 2: The Cost of Crime in Alberta, various years

Year	Loss from Violent Crimes	Loss from Property Crimes	Expenditure on Home Security Devices	Expenditure on Courts, Corrections and Legal Aid	Expenditure on Police	Expenditure on Private Investigators and Security Guards
1961	1%	13%	6%	9%	54%	17%
1971	2%	16%	4%	15%	43%	20%
1981	2%	32%	8%	13%	28%	17%
1991	4%	31%	7%	15%	25%	18%
1998	4%	22%	8%	15%	28%	23%

It is useful to consider the cost of crime on a per capita basis as well. Figure 6 shows that the per capita cost of crime in Alberta declined slightly over the study period.

Figure 6: Per Capita Cost of Crime in Alberta, 1961 to 1999



Although total per capita costs are declining, this decline is not spread across all cost categories. As Figure 7 demonstrates, the per capita costs of all categories other than police are increasing.

Figure 7: Per Capita Cost of Crime in Alberta, 1961 to 1999

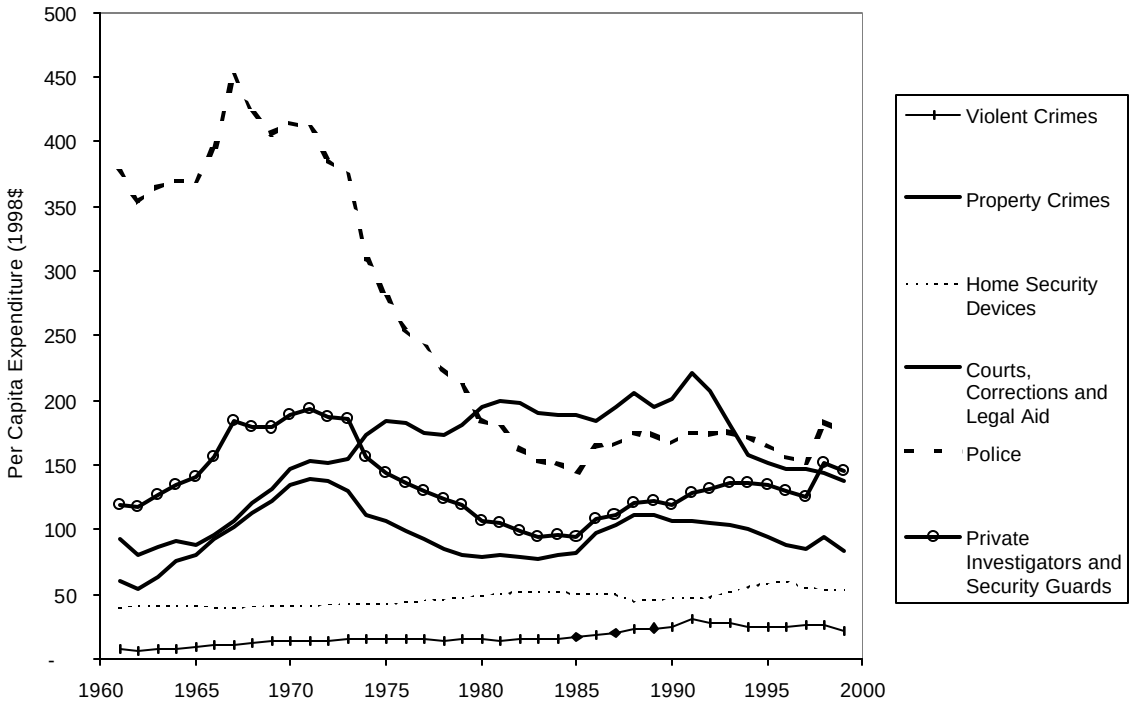


Table 3 shows the percentage change in cost by expenditure category from 1961 to 1998. The seven percent decline in total per capita cost is clearly heavily influenced by the 51 percent decline in the per capita expenditure on police.

Table 3: Per Capita Expenditure for Various Years, 1998$

Year	Loss from Violent Crimes	Loss from Property Crimes	Expenditure on Home Security Devices	Expenditure on Courts, Corrections and Legal Aid	Expenditure on Police	Expenditure on Private Investigators and Security Guards	Total
1961	8	93	40	61	376	120	698
1971	14	153	41	139	411	193	951
1981	15	199	50	80	178	105	628
1991	30	221	47	106	175	128	708
1998	26	143	53	94	183	152	651
% Change, 1961-1998	216%	55%	33%	55%	-51%	27%	-7%

7. Comprehensive Estimates for the Cost of Crime

The figures for the estimated cost of crime in Alberta over the study period should be viewed as conservative because many costs associated with crime were not quantified in this analysis. This was due largely to methodological uncertainties and lack of substantial data sources. For example, when convicted criminals are employed at the time of incarceration, society will experience a productivity loss associated with the reduced employment. The economic cost of the lost productivity would be equal to the daily income of the criminal multiplied by the number of days of lost work due to the conviction. In other words, it would vary depending on the wage rate of the individual, the type of the employment term (full-time versus part-time) and the expected length of the employment term (permanent versus seasonal). We have not measured the productivity losses associated with incarceration in this analysis.

To the extent that theft from stores results in higher consumer prices to cover the cost of the stolen goods or pay for theft insurance for the store, we have not included estimates for these higher prices. According to the Retail Council of Canada, store theft costs Canadian retailers $4-billion a year in increased prices.[33]

Cost of surveillance equipment at stores and businesses and forgone economic activity due to fear were also not included in this analysis, nor did we capture costs associated with crimes like tax evasion and fraud. This analysis says nothing of the psychological costs associated with being the victim of a crime or the associated non-hospitalization medical costs. Welsh and Waller (1995) attempted to measure the cost of "shattered lives" associated with crimes such as assault, rape and murder,[34] but we have not attempted to estimate such costs in this analysis.

Finally, the costs of crimes not reported to the police are not included in this analysis. As Statistics Canada's 1993 General Social Survey (GSS) indicates, a large portion of criminal activity in Canada goes unreported: only two-thirds of the break and enter offences, one-half of the vehicle thefts, one-third of all assaults and one-tenth of all sexual assaults were reported to police. A more comprehensive estimate of the cost of crime in Alberta would include not only crimes reported to police but unreported crimes as well. We estimated the cost of these additional crimes by increasing our estimates for the cost of both violent and property crimes to account for the number of unreported crimes estimated in the 1993 GSS. Including one-third more break and enters, 50 percent more vehicle thefts, two-thirds more assaults and 90 percent more sexual assaults would increase our estimate for the cost of crime in Alberta by 15 percent in 1999, for a total of more than $2,109-million (1998$).

8. Conclusion

Despite small declines in the last few years, Alberta is experiencing substantially more crime than in the 1960s. More crime means greater costs for Albertans, who spent two percent of provincial GDP on crime in 1999. The National Crime Prevention Council cites a study that found that for each youth who embarks on a life of crime, society faces a total cost of at least $200,000.[35] This is especially disturbing given the trend to increasing youth crime in Canada and Alberta in the last several decades. Put another way, it would cost less to support one person through four years of university than it costs to incarcerate one criminal for just one year.[36] The Genuine Progress Indicator explicitly recognizes that expenditure on crime does not contribute to the well-being of the province. It takes such expenditure as a proxy for the cost of crime, albeit limited to those costs that are readily measurable, and a sign that the peace and security of the province are deteriorating.

Substantial research has correlated criminal activity and socio-demographic characteristics; for example, crime is correlated with such factors as unemployment, gender, substance abuse, recidivism, low education, and age. It is important to recognize these linkages as part of a strategy to reduce crime. While the current strategy is largely to spend money reacting to and dealing with the aftermath of crime,[37] crime prevention through social development explicitly recognizes the social, economic and cultural factors that contribute to crime. Crime prevention through social development focuses on changing those factors as a means of reducing crime in an area. Thus, this policy approach would allocate resources to education, job creation and drug rehabilitation as a means of reducing crime and the costs associated with it.

A significant body of research indicates that financial investments in such programs can be a cost-effective way to reduce crime in an area. The Perry Preschool program in Michigan is one such example. Research on this program has revealed that for every $5,000 (US) invested in early childhood education through the Perry Preschool program, society reaped dividends of over $28,000.[38] Other long-term studies from the United States suggest that for every $1 invested in good quality preschool child care, society saves $7 in costs of welfare, policing, social services and prisons in the future.[39] Finally, a Montreal study found that every dollar invested in residential drug treatment programs yielded a $7 return in the form of reduced cost of crime.[40]

Another aspect of crime prevention through social development is what is called restorative justice. In contrast to the conventional system of dealing with offenders, restorative justice is based on the premise that true justice repairs the harm done by crime, holds offenders accountable for their actions and protects society.[41] Such a system focuses less on punishing offenders and more on serving justice. Through restorative justice, the offender, the victim and relevant justice officials are brought together to establish appropriate restitution to the victim and the community for harm done by the offender. According to Dodds and Colman (2000) "[t]he 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."[42] In January of 1998, a pilot restorative justice project began in Edmonton. Since the implementation of that project, both trial lead times and the number of cases going to trial have decreased. Furthermore, the rate of resolution in the mediation cases was 66 to 70 percent. In an evaluation, the Strategic Planning and Operational Coordinating Court Services (1999) found that the pilot project successfully met its objectives and recommended that the program be made permanent.[43] Other studies find that over 95 percent of mediated cases result in an agreement, and that victim and

offender satisfaction rates with the process and outcomes of mediation are substantially higher than with courts.[44] And it seems that the value of such programs is increasingly being recognized. The Nova Scotia Justice Department is in the process of instituting a restorative justice program. This program will initially target youth between the ages of 12 and 17 in selected regions of Nova Scotia. Ultimately, we need to "search for solutions that enhance public safety, repair the harm caused to victims and communities affected by crime, and rehabilitate and reintegrate offenders. Prison has been unable to provide these solutions."[45]

Appendix A. List of Alberta GPI Background Reports

A series of Alberta GPI background reports accompanies the *Alberta Sustainability Trends 2000* report and this report. These documents are being released in late 2001 and early 2002 and will be available on the Pembina Institute's website at www.pembina.org.

Alberta GPI Background Reports and Sustainability Indicators

GPI Background Reports	GPI Accounts Covered by Report
1. Economy, GDP, and Trade	• Economic growth (GDP) • Economic diversity • Trade
2. Personal Consumption Expenditures, Disposable Income and Savings	• Disposable income • Personal expenditures • Taxes • Savings rate
3. Money, Debt, Assets and Net Worth	• Household debt
4. Income Inequality, Poverty and Living Wages	• Income distribution • Poverty
5. Household and Public Infrastructure	• Public infrastructure • Household infrastructure
6. Employment	• Weekly wage rate • Unemployment • Underemployment
7. Transportation	• Transportation expenditures
8. Time Use	• Paid work time • Household work • Parenting and eldercare • Free time • Volunteerism • Commuting time
9. Human Health and Wellness	• Life expectancy • Premature mortality • Infant mortality • Obesity
10. Suicide	• Suicide
11. Substance Abuse; Alcohol, Drugs and Tobacco	• Drug use (youth)
12. Auto Crashes and Injuries	• Auto crashes
13. Family Breakdown	• Divorce
14. Crime	• Crime
15. Gambling	• Problem gambling
16. Democracy	• Voter participation
17. Intellectual Capital and Educational Attainment	• Educational attainment
18. Energy (Oil, Gas, Coal and Renewable)	• Oil and gas reserve life • Oilsands reserve life
19. Agriculture	• Agricultural sustainability
20. Forests	• Timber sustainability • Forest fragmentation

GPI Background Reports	GPI Accounts Covered by Report
21. Parks and Wilderness	• Parks and wilderness
22. Fish and Wildlife	• Fish and wildlife
23. Wetlands and Peatlands	• Wetlands • Peatlands
24. Water Resource and Quality	• Water quality
25. Energy Use Intensity, Greenhouse Gas Emissions and Air Quality	• Energy use intensity • Air quality-related emissions • Greenhouse gas emissions
26. Carbon Budget	• Carbon budget deficit
27. Municipal and Hazardous Waste	• Hazardous waste • Landfill waste
28. Ecological Footprint	• Ecological footprint

Appendix B. Crime Incidence Data

Incidents of Crime in Alberta, crimes per 100,000 people and Crime Index, where minimum crime rate per 100,000 is benchmark for best.

Year	Total Violent	Total Property	Total	Crime Index
1961	343	3,185	3,528	85
1962	264	2,748	3,012	100
1963	295	2,960	3,255	93
1964	345	3,105	3,450	87
1965	368	3,037	3,405	88
1966	436	3,307	3,743	80
1967	474	3,640	4,113	73
1968	520	4,112	4,633	65
1969	546	4,507	5,054	60
1970	570	5,037	5,607	54
1971	594	5,250	5,843	52
1972	595	5,209	5,804	52
1973	620	5,290	5,910	51
1974	636	5,920	6,556	46
1975	645	6,329	6,974	43
1976	639	6,244	6,884	44
1977	610	5,974	6,584	46
1978	603	5,949	6,552	46
1979	617	6,201	6,817	44
1980	612	6,681	7,293	41
1981	606	6,838	7,444	40
1982	611	6,813	7,424	41
1983	626	6,547	7,172	42
1984	668	6,491	7,159	42
1985	712	6,465	7,177	42
1986	767	6,283	7,050	43
1987	832	6,681	7,513	40
1988	956	7,026	7,982	38
1989	989	6,662	7,651	39
1990	1,042	6,919	7,961	38
1991	1,262	7,603	8,865	34
1992	1,171	7,094	8,265	36
1993	1,141	6,218	7,359	41
1994	1,050	5,417	6,467	47
1995	999	5,177	6,176	49
1996	1,002	5,059	6,061	50
1997	1,071	5,033	6,104	49
1998	1,084	4,922	6,006	50
1999	885	4,739	5,624	54

Source: Canadian Centre for Justice Statistics, Catalogue No. 85-205, and Brantingham and Easton (1998)

Appendix C. U.S. GPI Cost of Crime Methodology

Data Sources

Department of Justice. 1994. *Criminal Victimization in the U.S*. (1994). Department of Justice, Table 82.

Contact: Patsy Klaus, Bureau of Justice Statistics, Department of Justice; ph: 202-307-0776

Klaus, Patsy A. 1994. *The Costs of Crime to Victims*. (Bureau of Justice Statistics Crime Data Brief). Washington, D.C.: Department of Justice.

Laband, David N. and John P. Sophocleus. 1992. "An Estimate of Resource Expenditures on Transfer Activity in the United States." *Quarterly Journal of Economics* (August): 959-83.

Parr, Gary L. 1995. $12.5 Billion Targeted for 1995. *Security Distribution and Marketing* (January): 76-80.

Shenk, Frederick J. and Patsy A. Klaus. 1984. *The Economic Cost of Crime to Victims.* (Bureau of Justice Statistics: Special Report.) Washington, D.C.: Department of Justice.

Whitehurst, Susan A. 1986. "Forecast 1986," *Security Distributing and Marketing* (January): 70-73.

Calculations

Data

Estimates of the direct costs of crime to victims for the years 1975, 1980, 1981 are from Shenk and Klaus 1984. The estimate for 1992 is from Klaus 1994.

1975 is the first real data point. According to the Bureau of Justice statistics in "The Economic Cost of Crime to Victims," the total economic loss, in 1981 dollars, is $9.409-billion for 1975. For 1980, it is $11.113-billion, and for 1981, it is $10.911-billion.

The estimate for 1992 was published in 1992 dollars.

Data for 1994, 1995, 1996 are actual estimates by Klaus in current dollars: $19.587-billion, $18.218-billion, and $17.571-billion, respectively. (The 1995 and 1996 estimates were unpublished at the time of this writing). The 1997 figures (in current dollars) are estimated based on the annual percentage change in cost of crime from 1994 to 1996 (-5.29 percent/annum), equating to $16.6-billion.

The data come from the National Crime Survey. The data for the cost of all crime to households includes the losses of property theft or damage, cash losses, medical expenses, value of stolen property, estimated or actual cost of replacing property, or amount of pay lost due to work stoppage because of injury, court activity, police activity, injury, time to repair or replace property. Estimates do not subtract insurance payouts given that when the survey is done (every six-month period), it asks participants to recount the past six months of experience, thus assuming that any insurance payout has not yet occurred.

The number of crimes (involving losses of $1 or more) for 1994 to 1996 were:

1994 – 25,689,990
1995 – 29, 313,180 (unpublished)
1996 – 26, 807,320 (unpublished)

Deflator

The original GPI estimates (expressed in 1982$) are first converted to current dollars, using the 1982=100 CPI index.

These figures are then converted to 1992 chained dollars using the 1992=100 chain-type personal consumption price index.

Interpolation and Extrapolation

Between these years, we estimated data points by assuming a constant growth rate. Prior to 1975 we assumed the growth to be the same as from 1975 to 1980. We also estimated the 1997 figure.

Cost of Locks

Data

More current data on the costs of locks were not available, thus we defer to the original 1995 GPI value estimates. Here we have only a single data point. Laband and Sophocleus estimate the expenditures on locks and safe deposit boxes as $4.6-billion dollars (1985$).

Deflator

We convert the 1995 GPI figures to current dollars then deflate current dollars to 1992 chained dollars using the 1992 chain-type price index for personal consumption. The original 1985 dollar estimate for expenditures on locks was converted to 1982 dollars.

Interpolation and Extrapolation:

In the absence of new information, we assume a constant growth rate of 2.8 percent both before and after 1985.

Cost of Alarms

Data

Data are primarily from Security Distributing and Marketing (SDM), which estimates annual expenditures of home and commercial property security and alarm systems.

Security Distributing and Marketing (SDM) January 1995, showed total industry revenue in 1989 as being $8.8-billion, about 40 percent of which was the residential market (in 1994), which explains our use of a 0.4 multiplier. The current dollar value estimates for security system sales from SDM are converted to 1992 chained dollars using the personal consumption expenditure (PCE) chain-type price index.

All other figures for 1988 to 1997 are from *Security Distributing and Marketing* total electronic security industry revenues for both residential and non-residential. Contact: Bill Zalud, Editor, *Security Distributing and Marketing Magazine*, ph: 847-390-2371. Total industry revenues were $11.9-billion (1994), $12.9-billion (1995), $13.19-billion (1996), and $14.05-billion (1997) in current dollars.

Estimates for the years 1987 to 1994 are based on data published in Parr 1995. Data from 1991 to 1994 are published estimates of expenditures on residential security systems. Data from 1995 to 1997 are directly from *Security Distributing and Marketing Magazine*. Data from 1987 to 1990

are 40 percent of the industry total, based on the assumption that residential systems account for around 40 percent of the security systems industry's annual revenue.

Data for 1983 to 1986 are based on annual growth rates for the industry as published in Whitehurst 1986 (p. 70). We then extrapolated from the estimate of residential spending in 1987 to determine expenditures for those years.

Deflator

We use the 1992 chain-type price index for personal consumption expenditures to convert to 1992 chained dollars.

Extrapolation

We assume that household spending on electronic security systems rose from 1970 to 1981 at the same annual rate as the average growth from 1987 to 1991 (about 7.25 percent). From 1950 to 1969, we assume a growth rate of five percent per year.

Total

To calculate the cost of crime, add columns c (victim costs), d (locks and safe deposit boxes), and e (alarms) to equal column f.

Rationale

Crime takes a large economic toll on society. Some of these costs are obvious, such as medical expenses and lost property. But others are more elusive, because they are psychological (the trauma of being violated) or are incurred in the form of lost opportunities, such as activities that do not occur because people fear the possibility of theft or violence. Any valuation of the costs of victimization that excludes the psychological costs will inevitably amount to a gross underestimate. Perhaps it would be possible to estimate these intangible costs by comparing the cost of housing in safe neighbourhoods compared with high crime areas. One estimate of the cost of crime including intangible costs is $450-billion (Miller et al. 1996).

In the GPI, only the direct costs of victimization and out-of-pocket defensive expenditures are included. Estimates of out-of-pocket defensive expenditures by households to prevent crime include spending on locks, safe deposit boxes and alarm systems. Few buy such products for aesthetics or pleasure; they serve defensive purposes almost entirely. Thus, we have subtracted expenditures on crime prevention because they do not add to well-being but merely prevent deterioration.

Much of the increase in the cost of crime has been borne by business and government in the form of security guards and city police. We have not included those expenditures, however. Business expenses are intermediate costs and therefore show up ultimately in the price of products and services sold to consumers. Similarly, we left out public spending on police and other security measures because our baseline—personal consumption—does not include government spending.

Comments

The reduction in the estimated costs of crime to victims has been decreasing, presumably due to the decrease in crime rates across the U.S. since 1994, according to Patsy Klaus of the Department of Justice.

Appendix D. Australia GPI Costs of Crime Methodology

The costs of crime are various. They include property loss, medical expenses, pain and suffering, feelings of insecurity, and lost opportunities to undertake various activities because of risks of exposure to criminal acts. There are also considerable resources devoted to defending persons and property against crime—locks, alarms and security guards.

Some of these costs, notably medical costs, have been deducted elsewhere in the GPI or are reflected in lower economic growth (such as the lost income of victims of violent crime). Property loss is a "transfer" and might be thought to confer as much benefit on the thief as on the legal owner. However it is more accurate to regard stolen property as invalid contributions to well-being because society deems them so. Alternatively, we might use the proceeds of crime as a proxy (perhaps a lower bound) for the pain and suffering caused by crime, a factor that is undoubtedly large but not accounted for in estimates of the costs of crime.

Walker (1995) has made the most comprehensive estimates of the costs of crime in Australia. The total for 1994-95 is around $19-billion, but some of these costs have been counted elsewhere in the GPI. Thus we deduct from this total the expenditure on the criminal justice system (police, courts and prisons) ($6.4-billion) and the costs of violent crime ($1.25-billion) since the latter are mostly in the form of medical expenses and lost income. We also deduct half of the costs attributed to drug offences ($1.0-billion) as these too are medical expenses. The remainder, $10.3-billion, includes property losses, insurance costs, and the costs of crime prevention and "target hardening" (mostly non-government). The latter are thought to be seriously under-estimated, so the figure of $10.3-billion, or 2.3 percent of GDP in 1994-95, should be seen as a lower bound.

How have these costs changed over time? No time series data are available for the costs of crime. It is not possible to say whether the costs of crime as a proportion of GDP have changed over time, although it is possible that the scope for fraud involving very large sums of money has increased in more recent years (John Walker, pers. comm.). Therefore we assume that the costs of crime have been 2.3 percent of GDP over the whole study period. Using this approach, the costs of crime stood at $11.74-billion in 2000.

Endnotes

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