THE GROSS DOMESTIC PRODUCT AND ALTERNATIVE ECONOMIC AND SOCIAL INDICATORS

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INTRODUCTION

Although it has only been around for roughly 60 years, it is almost impossible to think of a time before the Gross Domestic Product (GDP) or its cousin, the Gross National Product (GNP). Its monthly release by Statistics Canada garners acres of reporting, commentary and analysis in the media. It underpins every business decision and guides general government policy.

As a measure of market activity and economic growth, the GDP is unparalleled. The U.S. Department of Commerce, which in 1999 named the creation of the System of National Accounts (SNA) its greatest achievement of the 20th century, made the following remarks:

> The national accounts have become the mainstay of modern macroeconomic analysis, allowing policymakers, economists, and the business community to analyze the impact of different tax and spending plans, the impact of oil and other price shocks, and the impact of monetary policy on the economy as a whole and on specific components of final demand, incomes, industries, and regions.(1)

In general, though, the GDP is treated as more than a positive macro-economic indicator. It is increasingly viewed as a normative indicator of economic and social well-being; Canadians look to the GDP as an indicator as to how well the country is doing.

The GDP's usefulness as a normative indicator of general social and economic well-being is a long-standing question in economics and policy circles. In a 1974 Statistics Canada paper on the possibilities of modifying the GNP, Oli Hawrylyshyn remarks that: "In the past, GNP has served well its 'management accounting purpose,' providing information on market activity to policy-makers, and the data on economic variables to use in the models of research analysts. Now it is being asked to tell the public how much better or worse off it is, hence the possibly increased deviation of GNP from welfare is of some importance."(2)

The desire to measure levels and changes in welfare has not abated. Literally hundreds of indicator programs exist at the municipal, regional, national and international levels, all of which attempt to quantify various definitions of well-being. Many of these programs attempt to address concerns that the GDP was never designed to cover, including sustainable development (which discriminates among different types of development) and environmental pollution and degradation, as well as quality of life. In the 2000 Budget, the federal government earmarked $9 million to develop environmental and sustainable-development indicators.

This publication examines the pros and cons of using GDP as a normative indicator of economic and social development. The first part of this paper defines the GDP, noting both its strengths and shortcomings. The second discusses the positive and negative aspects of alternative economic and social indicators, while the third discusses three programs in particular.

WHAT IS THE GDP?

A. Background

> While the GDP and the rest of the national income accounts may seem to be arcane concepts, they are truly among the great inventions of the twentieth century.

Paul A. Samuelson and William D. Nordhaus(3)

The Gross Domestic Product measures the total value, calculated in dollars, of all final production in a country. It can be calculated in three ways: by adding up income and profits received from production of goods and services; by adding up expenditures on goods and services (adding money spent on exports and subtracting money spent on imports); and by adding up the value added by labour and capital when inputs purchased from other producers are transformed into output. It measures flows through the economy – production – not stocks, such as wealth and already-existing capital equipment, and it does not measure financial transactions or gifts, where only money changes hands.

While GDP measures economic activity within a country's borders, the Gross National Product (GNP) measures the total income of a country's citizens. It adds rents, interest, profits and dividends flowing into the country to GDP, while subtracting rents, interest, profits and dividends paid out to foreigners. At present, GDP is preferred to GNP because policy-makers are usually interested in the level of economic activity within a country's borders. In most cases, GDP and GNP are roughly equivalent, although for some countries with a large foreign presence, such as Ireland, GNP is the preferred measure.

Real GDP per capita is often used as an indicator of the evolution of a population's standard of living. It is calculated as the real value of production of goods and services divided by the overall population.

B. History of the GDP

Although the collection of statistics seeking to describe national economies in the western world dates to at least 1665 England, the statistics underlying GDP and GNP – the System of National Accounts (SNA) – is a relatively recent invention.

The SNA was created in the United States in 1930 to fill very pressing needs: to maximize production in a (soon-to-be) wartime economy, and to kickstart the economy out of the Great Depression. In stark contrast to the nuanced picture afforded by today's System of National Accounts, government officials prior to the mid-1930s only had access to incomplete and sporadic data on the economy. According to economist Richard T. Froyen, "One reads with dismay of Presidents Hoover and then Roosevelt designing policies to combat the Great Depression of the 1930's on the basis of such sketchy data as stock price indices, freight car loadings, and incomplete indices of industrial production."(4)

The first set of national accounts, prepared under Simon Kaznets (future

Nobel Laureate in Economics), was presented to the U.S. government in 1937. At the same time, British Economist John Maynard Keynes, whose ideas more than any others shaped the post-war economic order, was developing his *General Theory*, which called for a highly interventionist government economic policy. According to Nobel Prize-winning economist Robert Solow, Kuznets' work is the " 'anatomy' for Keynes' 'physiology.' "(5)

The SNA allowed government to allocate resources efficiently and effectively for the war effort. According to Wesley C. Mitchell, Director of National Bureau of Economic Research, "Only those who had a personal share in the economic mobilization for World War I could realize in how many ways and how much estimates of national income covering 20 years and classified in several ways facilitated the World War II effort."(6)

The SNA, the foundation of the GDP, has guided post-war economic policy, founded on Keynesianism. And it is hard to underestimate its success. William M. Daley, U.S. Secretary of Commerce, says that "since the end of World War II, when the GDP accounts were more fully developed and in wider use, the boom and bust swings are much less severe. … They have had a very positive effect on America's economic well-being, by providing a steady stream of very useful economic data."(7)

The success of the GDP and the SNA can be seen in their ubiquity. The SNA has become an international standard under the care of the United Nations, while the GDP has become the pre-eminent measure of economic and, to a large extent, social well-being.

C. Strengths of the GDP

1. Measure of Economic Activity

As the above section suggests, the GDP provides a better snapshot of an economy and – through its growth rate – changes in an economy than any existing measure. It summarizes a whole range of economic information in one number. A decomposed GDP can highlight the comparative strengths and weaknesses of various sectors. Tracking this number can thus give policy-makers and analysts an easy-to-use tool that helps steer economic policy.

The GDP is also an accurate barometer of the business climate. Technically, a recession may be simply two consecutive quarters of negative GDP growth, but to business and government it is a signal to adjust their policies.

2. Simple Proxy for Social and Economic Welfare

GDP growth – that is, economic growth writ large – is an important contributor to overall welfare. Generally speaking, economic growth increases both incomes and employment. The question then becomes, how well does GDP approximate levels and changes in social and economic welfare?

If we are interested in tracking changes in welfare, the GDP could serve as an adequate measure of changes in social welfare if other factors influencing welfare remain constant. Some economists argue that changes in the GDP, in fact, do mirror overall welfare close enough to make it a good measure of changes in welfare. In the early 1970s, William Nordhaus and James Tobin constructed a Measure of Economic Welfare using U.S. data from 1929-1965. This took personal consumption as its starting point, adjusting for items such as "regrettable expenses" (which included spending on commuting, banking and legal services), private education and health spending, and adding in items such as the value of leisure (measured as the opportunity cost of work) and government consumption deemed to generate economic welfare. While some of these items are debatable (is leisure really the opportunity cost of work? is spending on legal services or commuting really a completely "regrettable expense"?), Nordhaus and Tobin found that the MEW (Measure of Economic Welfare) correlated well to the GDP, and their sustainable MEW (MEW adjusted for capital stock and growth requirements) with Net National Product.

However, critics such as Redefining Progress (see below) claim that using these measures results in output and welfare measures seeming to have diverged in the 1970s, so that GDP no longer accurately measures our total utility.

Perhaps the best argument for using GDP as a proxy for overall welfare is that it is easily quantifiable. To the extent that GDP approximates overall economic and social welfare, having a one-number bottom line that is easy to calculate and track is an enormous benefit to policy-makers.

D. Weaknesses of GDP as a Normative Measure

> Economists will be quick to point out that GDP doesn't pretend to be any more than it is – a simple measure of production, but over time the idea has evolved that a growing GDP means a stronger economy and societal improvement.
>
> Hans Messinger, Director, Industry Measures and Analysis Division, Statistics Canada(8)

Most economists – from Simon Kuznets, creator of the SNA, to U.S. Federal Reserve Chairman Alan Greenspan – caution against using GDP as a measure

of social welfare. According to Greenspan, the GDP "is still the best measure of market value of goods and services, (though) it is not necessarily a measure of welfare or even a significant measure of standards of living."(9) Kuznets told the U.S. Congress in 1934 that "Goals for more growth should specify more growth of what and for what."(10)

These cautions have largely gone unheeded. In 1972, William Nordhaus and James Tobin remarked that: "GNP is not a measure of welfare. Maximization of GNP is not a proper objective of policy. Economists all know that, and yet their everyday use of GNP as the standard measure of economic performance apparently conveys the impression that they are evangelistic worshippers of GNP."(11)

More than 400 U.S. economists, including Nobel Laureate Professor Herbert Simon and Professor Robert Eisner, a former president of the American Economics Association, have gone on record saying that GDP ignores social and environmental costs and is thus "inadequate and misleading as a measure of true prosperity."(12)

By its nature, the GDP does not measure several factors of interest to those who wish to determine the level and changes in sustainable economic welfare. The more these factors change at a rate different from GDP, the less reliable GDP and GDP growth become as a measure of economic welfare. As well, some technical issues underline the fact that despite its usefulness as a measure of economic activity, the GDP's form is not carved in stone.

1. GDP Excludes Non-market Activities

All non-market activities are based on production and consumption that occur outside the market economy. Unpaid housework, childcare and most volunteer services can, with few exceptions, be purchased in the market economy. To a certain extent, leisure represents an individual choice in offering one's labour services in the market economy.

The GDP is a measure of market activity; as such it excludes anything that does not have a price attached, as well as black-market activity. Unpaid housework, volunteer work, child care, barter and the illegal drug trade are only a few contributors to the economy that are not included in the GDP, even though most of these could be purchased theoretically in a market setting.

Ronald Colman, director of the Halifax-based GPI Atlantic (which is developing a series of indicators for Nova Scotia) points out that any shifts between market and non-market provision of these services and goods will be registered in the GDP, even though overall levels may not have changed:

> Because it excludes nonmonetary production, the GDP records some

> shifts in productive activity (from parenting to child-care, home cooking to eating out, unpaid to paid housework) as economic growth, even though these shifts may not alter total production. Conversely, recessionary times generally produce a shift of activity to the informal economy, which the GDP would register as a decline in production.(13)

On a macro level, the important variable is the total level of goods and services provided, whether in the GDP-measured marketplace or not. In this sense, the GDP provides only a partial picture of reality.

2. Some GDP-measured Expenditures Do Not Contribute to Economic Welfare

In some cases, looking at rises and falls in GDP does not provide an accurate, or complete, picture of overall welfare. If one were to use GDP alone as a normative indicator, then externalities, i.e., outside events over which we have no control – such as war, natural disasters and disease, and which lead to increased spending would be considered to be unambiguously positive inasmuch they increase economic activity. However, the GDP does not account for any welfare loss that results from an event such as a natural disaster or a toxic-waste spill, even though an environmental cleanup or reconstruction effort contributes both to welfare and the GDP. Relying solely on GDP as a normative indicator under such conditions will result in a "mismeasurement" of changes to social welfare because it does not take into account the negative events that triggered the economic activity: "Though 'natural' and 'man-made' disasters, crime and accidents all contribute to GDP in a positive way since these activities generate production "but they do not add to the well being of society."(14)

If one were to use the GDP as the sole benchmark of progress, any increase in GDP would lead one to consider that *overall* well-being has increased. This leads to the following perverse situation:

> By the curious standard of the GDP, the nation's economic hero is a terminal cancer patient who is going through a costly divorce. The happiest event is an earthquake or a hurricane. The most desirable habitat is a multibillion-dollar Superfund site. All these add to the GDP, because they cause money to change hands. It is as if a business kept a balance sheet by merely adding up all 'transactions,' without distinguishing between income and expenses, or between assets and liabilities.(15)

Other times, individuals undertake "defensive" expenditures that may reduce their quality of life. Some examples cited in the literature includecosts of commuting to work, and costs related to crime and accidents. Again, where

these are involuntary (e.g., accidents), their positive contribution to GDP should be treated as described above. In voluntary cases, a judgement is required as to the degree – and even whether – something is a "negative" expense. For instance, long commuting times might be bothersome but could be redeemed either by a personal preference for living away from the city core or for listening to music during the drive. Or it might be a large annoyance bought on by a lack of available housing anywhere near one's work. The point being, it is often difficult to claim such a factor is completely "negative" or "positive."

3. Stocks Versus Flows

Because the GDP measures only flows, not stocks, the consumption of non-renewable natural resources such as oil counts as an addition to GDP, while the remaining stock of oil reserves is not valued as a stock. Natural resources should properly be treated as stocks that are drawn down when they are extracted and used. This would result in a clearer picture: when resources are discovered, they would be added to the "wealth" of the country, and subtracted as they are drawn down.

Although this does not show up in the GDP, the SNA does provide for some satellite accounts dealing with resource stocks, the reasoning being that – along with physical capital and labour – they comprise a nation's stock of wealth.

4. GDP Ignores Distribution of Income and Consumption

The degree to which individuals and different groups share in a country's prosperity is another indicator of economic and social well-being. GDP per capita, which divides the GDP by the country's population, provides a rough estimate of each person's "share" of the market economy. However, in reality, some people's share of the economy is greater than others. This level and changes in inequality in the distribution of incomes and consumption, and the incidence of poverty, cannot be determined by tracking the GDP.

5. Not All Contributors to Welfare are Economic

Because the GDP measures only those items that can be priced, it automatically excludes things that are not in the economic sphere, such as a low crime rate, family stability and clean air. At the same time, "negative" costs such as pollution control, spending on burglar alarms and daycare costs show up as an addition to GDP even as they arguably contribute little, if anything, to overall welfare. GDP also does not capture investments in social capital, such as investments in communities or social institutions.

6. Technical Issues

Revisions to the GDP as a measure of market activity are ongoing, as our understanding of the economy changes. For instance, the differences between a capital investment and consumption remain a continuing debate – on the expenditure side, both are included as the same kind of activity. A capital investment, however, generates benefits into the future whereas consumption generates benefits only immediately. According to Alan Greenspan,

> in today's world it has become very much more difficult to figure out whether a particular outlay is expensed and not included in the measure of the GDP, or whether it is capitalized and it is. It's an all-or-nothing operation. And as a consequence of that, having moved to capitalizing the software that is not embodied in the hardware, a major shift in the process of how one evaluates what we're producing is occurring.(16)

Furthermore, several items contain elements both of consumption and investment, such as education. As Hawrylyshyn remarks, in this case, "One easy way out is to draw the line at either end: current GNP does so in favour of consumption NT and the JNNW (two other measures) do so in favour of investment."(17)

TOWARDS AN INDICATOR OF SOCIAL AND ECONOMIC WELFARE

All alternative economic and social indicators are designed to: address some or all of the above issues; empirically study and track social issues such as sustainable development and environmental degradation; and address the problems encountered in the use of GDP as a normative indicator. Although many groups have put forward indicators to rival or complement the GDP, no one indicator has achieved widespread acceptance or even come close to overshadowing the GDP. The following section outlines the efforts of three groups – those behind the SNA, as well as Redefining Progress and GPI Atlantic, based in Nova Scotia – while the first section details some general criticisms of social indicators.

A. Troubles in Developing a New Indicator

1. Definitional Problems

By sticking to the prices attached to market transactions, the Gross Domestic Product is able to construct an inclusive index with an agreed-upon bottom line. Social indicators do not share these characteristics. Although most people could come to a general consensus on several items as they relate to quality of life (clean water is good, crime is bad) or what is "negative growth," there will always be disagreement regarding both the exhaustiveness of measurements (something will always be left off the list) and their relative

weighting.

Consequently, reaching agreement on the composition of an overall indicator of social welfare is very difficult; by nature, they are loaded with value judgements. Although constructing an indicator of sustainable economic and social welfare is not impossible, its relevance will depend on its acceptance.

The GDP faces a somewhat different problem. Although it is an objective, positive measure of economic growth, its use as a proxy for social welfare represents a judgement as to the importance of market activity and economic growth. Relying solely on GDP automatically excludes using other indicators, which is itself a value judgement (that, for example, income inequality and the value of unpaid housework are not important measures of social welfare in the one case, and that GDP is an accurate measure of welfare).

2. Aggregation Problems

It is difficult, if not impossible, to aggregate such undeniably quality-of-life issues such as crime level, leisure time and traffic congestion: they all have different bases. The preferred solution – putting a price on all these concerns – is fraught with measurement problems. Although pricing some non-market activities, such as unpaid housework, is slowly gaining acceptance, pricing everything from leisure time and time stuck in traffic (one suggestion: foregone wages) to resource depletion represents a value judgement on behalf of the indicator's creator both in terms of inclusion and, as discussed earlier, the weight given. Aggregation, as mentioned earlier, also opens an index to the problems of subjective weighting.

The simplest solution to aggregation problems is possibly to avoid it completely. No one number – GDP or otherwise – can offer the kind of nuanced view of the world needed to make policy decisions. Therefore, although a one-stop number might be desirable for simplicity's sake, a "Dashboard Model" – suggested by the Winnipeg-based International Institute for Sustainable Development (www.iisd.ca) – might be more practical. In the same way that a car's dashboard features a speedometer, an odometer and a tachometer, along with several warning lights, Dashboard Model indicators would feature several indicators – for instance GDP, pollution measures, resource accounts and crime levels – that provide a clearer picture of how the country is doing. This allows for a more complete presentation of social welfare and avoiding the oversimplification inherent in depending on a single number.

3. International Accords and Political Pressures

National and international inertia also weigh against the widespread use of an

alternative indicator. For more than 50 years, the System of National Accounts has been used, quoted and refined around the world. Every country has accepted GDP as a measure of economic activity; furthermore, increasing it has become a universal goal, from Canada to China. Consequently, radical modifications to the GDP are unlikely because of the importance of international comparability. However, as Statistics Canada's Hans Messinger remarks, the importance of international comparability "does not preclude ourselves putting out alternative measures to (GDP)."(18)

B. What Makes a Good Indicator?

According to the Winnipeg-based International Institute of Sustainable Development, a good alternative economic indicator is characterized by the following factors:

- policy relevance;
- simplicity;
- validity;
- time-series data;
- availability of affordable data;
- ability to aggregate information;
- sensitivity; and
- reliability.

In some cases, constructing indices requires creating new data sets; in others, data must be reused in new ways. Probably the most difficult criterion to fulfil is that it be "scientifically valid" (this covers issues such as measurement and definitional problems). Again, it should be noted that these issues apply equally to the GDP when it is used as an indicator of social welfare.

ADAPTING THE GDP: SOME ONGOING PROJECTS

A. SNA Satellite Accounts

The rise of environmentalism has been one of the main forces behind the alternative-indicators movement. In response, the 1993 revisions to the SNA by the United Nations, World Bank, International Monetary Fund, Organisation for Economic Co-operation and Development (OECD), and the Commission of the European Communities incorporated guidelines to allow for a "satellite system for integrated environmental and economic accounting, to make explicit environmental protection expenditures, to link resource use and waste production to economic data and to calculate an environmentally adjusted Net Domestic Product to account for natural resource depletion and environmental degradation.

> In accordance with this goal, the World Bank in 1997 published *Expanding the Measure of Wealth: Indicators of Environmentally Sustainable Development*, and Statistics Canada released on December 4, 1997, the new Canadian System of Environmental and Resource Accounts, which will be incorporated into the country's national balance sheets and input-output accounts. In fact, a major goal of Statistics Canada's new Environmental Protection Expenditure Accounts is 'to provide those who might be interested in calculating an environmentally-adjusted GDP along these lines with the information necessary to do so.'
>
> (from GPI Atlantic's *Measuring Sustainable Development*)

Incorporating natural resources into balance sheet accounts provides a statement of national wealth (value of capital from which a nation can derive future income). Currently, this includes machines that harvest timber, but not the timber itself. Both are capital assets, but unlike the situation of a nation losing all its capital (as currently defined), a nation could exhaust a natural resource and it would not show up in the calculation of the national accounts. The reason for this is the fact that man-made capital is taken into account when it is created; however, "discovered" natural capital is never accounted for on a balance sheet.

The satellite system reorganizes the SNA framework to better serve environmental analysis to make explicit spending on environmental protection activities, and to present the value of natural resource asset stocks and the yearly change in these stocks. It also describes the environment/economy interaction in physical terms, linking data on resource use and waste production to economic data from SNA. The result is an environmentally adjusted Net Domestic Product.

B. Redefining Progress' Genuine Progress Indicator (GPI)

Redefining Progress, a San Francisco-based policy organization (www.rprogress.org), is at the forefront of the alternative economic/social indicator movement. Their Genuine Progress Indicator (GPI) adjusts the GDP to account for "negative" growth (such as resource depletion and spending for crime prevention) versus "positive" growth. Its goal is to create a single-number indicator that will supplant GDP as a measure of economic and social welfare.

The GPI is designed to measure economic welfare and sustainable economic development. It begins with consumer spending adjusted for income inequality, to which it adds and subtracts various factors deemed to contribute or hamper sustainable economic development and social welfare (see Table 1).

Its greatest value is that it allows policy-makers to ask questions about the quality of economic growth that cannot be answered by traditional economic measures such as GDP. Once these adjustments are made, the GPI's picture of the U.S. economy over the past two decades is less than rosy; although U.S. GDP has increased substantially over this period, the GPI has charted a 45% decline in the U.S. economy.

Again, much of the criticism surrounding the GPI centres on how it handles its component parts. To list only a few of its critiques, it excludes most government spending (not all of which is intermediate or defensive), non-renewable metallic and non-metallic minerals, and renewable resources such as forestry and fishing, and it does not deal with human capital.

Furthermore, many of the prices (e.g., the value of unused resources) are inherently subjective. For instance, it places an equal value on unemployment and underemployment. As well, its list of adjustments can be considered either too restrictive or not restrictive enough. Finally, it possesses the above-stated problem of aggregating many diverse factors into a monetary bottom line.

Table 1: Summary of the valuation methods for each GPI component

+/-	GPI Contributions	Calculation Method
	Personal Consumption	Largest component of both GDP and GPI
	Income Distribution	Gini coefficient of distribution of income among households used as index number
	Weighted Personal Consumption	**Consumption divided by income distribution index**
+	Value of Housework and Parenting	Estimated number of hours per year times fixed dollar amount
+	Value of Volunteer Work	Estimated number of hours per year times fixed dollar amount
+	Services of Consumer Durables	Stock of cars, furniture, etc. times fixed percentage
+	Services of Highways and Streets	Stock of highways times fixed percentage
-	Cost of Crime	Direct cost to households plus defensive expenditures to avoid crime
-	Cost of Family Breakdown	Divorce costs (lawyers plus effect on children) plus imputed cost of TV watching
-	Loss of Leisure Time	Difference between hours of leisure in 1969 and in other years times $11.20 per hour times labour force
-	Cost of Underemployment	Members of labour force working fewer hours than they want times the number of

		constrained hours per year they aren't working times $11.20
-	Cost of Consumer Durables	Spending on cars, furniture, etc. (offsets Services of Consumer Durables)
-	Cost of Commuting	Out-of-pocket cost plus value of time spent commuting
-	Cost of Household Pollution Abatement	Spending by households on pollution abatement equipment –mostly for vehicles
-	Cost of Automobile Accidents	Vehicle damage and hospital costs
-	Cost of Water Pollution	Loss of water quality plus siltation
-	Cost of Air Pollution	Damage to vegetation, structures and aesthetics, soiling of cloth materials, acid rain, loss of urban property values (not health or mortality cost)
-	Cost of Noise Pollution	Reduced quality of human environment
-	Loss of Wetlands	Annualized value of the cumulative loss of services (purification, flood control, wildlife habitat) with value increasing exponentially as a result of scarcity value
-	Loss of Farmland	Annualized value of the cumulative loss of soil productivity based on assumption that inherent soil fertility will have greater value in the future as fertilizer and other inputs become more costly (soil erosion, soil compaction, urbanization)
-	Depletion of Nonrenewable Resources	Annualized value of the cumulative loss of potential services of resources that have been permanently lost (measured as increasing cost of what would be required to replace the cumulative quantity of energy resources produced domestically)
-	Cost of Long-term Environmental Damage	Current value of the cumulative expected costs of future damage from climate change and nuclear waste management (fossil fuel and nuclear energy consumption times fixed dollar value per unit)
-	Cost of Ozone Depletion	Cumulative world production of CFC-11 and CFC-12 times fixed dollar amount per unit
-	Loss of Old-Growth Forests	Cumulative value of the loss of ecological services from old-growth forest plus damage from forest roads
+	Net Capital Investment	Change in stock of fixed capital minus change in stock of capital required for new

		workers equals net additional stock available for all workers (swings modified by use of rolling averages)
+	Net Foreign Lending or Borrowing	Change in the net international position (corresponds to change in current trade balance) smoothed by using a five-year rolling average
	Genuine Progress Indicator	**Sum of above calculations**

Note: +/- indicates whether a GPI section is to be added or subtracted.

Source: Redefining Progress, *Why Bigger Isn't Better: The Genuine Progress Indicator – 1999 Update*, www.rprogress.org/pubs/gpi1999/gpi1999.html

C. GPI Atlantic

The Halifax-based GPI Atlantic (www.gpiatlantic.org) takes a different approach than that taken by Redefining Progress. Instead of starting with a fully constructed bottom-line measure or indicator, GPI Atlantic – a non-profit research group founded in 1997 – is creating a series of accounts for Nova Scotia that eventually will be integrated into one overlying to develop an index of sustainable development and well-being. In contrast to Redefining Progress, its GPI is a Genuine Progress Index, not a bottom-line indicator: "twenty well-regarded and acceptable sets of indicators to produce one well-regarded and acceptable general index" that will help monitor various issues. It hopes to build consensus on its individual indicators, through an extensive review process by Statistics Canada staff, and by government, academic and independent experts.

Statistics Canada has designated GPI Atlantic (the GPI stands for Genuine Progress Index) as a pilot project for Canada. Statistics Canada is providing in-kind support in the form of data access, ongoing advice and consultation, and review of drafts.

The GPI accounts are divided into five groups with related subcomponents: Time Use (e.g., value of unpaid housework and childcare); Natural Resources (e.g., fisheries); Environment; Socioeconomic (e.g., income distribution); and Social Capital (e.g., cost of crime, health care). Some of the accounts have already been completed, with the rest targeted for completion by 2000-2001.

CONCLUSION

In the field of alternative economic and social indicators, human ingenuity is not a problem. The IISD website alone lists more than 100 local, national and

international indicator programs. Instead, the current problem is one of consensus and acceptance. Government support is a major reason why the GDP was accepted, becoming the most widely used indicator. Only government can give an indicator program the recognition, the resources and the data base needed to make an indicator anything more than a semi-authoritative number designed to fit the needs – ideological, financial or otherwise – of its creator.

In the end, the value of all of these indicator programs will be based on their usefulness. In this sense, GDP has already proven itself as a guide to economic policy. In other areas, other indicators are required. As Clifford Cobb, Ted Halstead and Jonathan Rowe remark, "An approximation of social and habitat costs would be less distorting and perverse than the GDP is now; a conservative estimate of, say, the costs of family breakdown and crime would produce a more accurate picture of economic progress than does ignoring such costs entirely."(19) Much as the evolution of the System of National Accounts has allowed policy-makers an increasingly nuanced view of the market economy, so can the use of well-designed alternative economic and social indicators help frame questions that place the economy in a larger social context.

SOURCES AND FURTHER INFORMATION

Alternative economic indicators do not lack for champions. A wealth of information on the subject is available, both on the Internet and in the library. The following sources were used or consulted in the preparation of this paper.

A. Websites

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- Redefining Progress: www.rprogress.org
- International Institute for Sustainable Development: www.iisd.ca (many links to various social and economic indicator projects)
- Canadian Council on Social Development Social Indicators Repository: www.ccsd.ca/repos.html
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