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Saving the environment

How Canada can abolish poverty and unemployment, even in a no-growth economy

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If the world is to escape environmental disaster now and in the future, its rate of economic growth will have to be greatly reduced. But the poorer less developed economies cannot be expected to adopt policies that reduce their rates of growth. They can reduce their pervasive poverty only by growth of material output per person. Moreover, most of the global discharge of pollutants and exhaustion of natural resources is caused by the richer, more developed economies. For both these reasons the onus of reducing the world rate of economic growth is on the rich countries. Canada is one of the richest developed countries, so we owe it to humanity to reduce our rate of economic growth.

But according to neoclassical macroeconomic analysis, if the rich countries reduce their rates of growth, their own levels of poverty and unemployment will increase. One hears and reads daily the proposition that the key to full employment and prosperity in Canada is growth, and that this requires an economic climate that will encourage foreigners to finance investment projects that "create jobs" in this country.

Macroeconomic theory based on the work of John Maynard Keynes tells us that this apparent dilemma is nonsense. The governments of developed economies can pursue policies that abolish poverty and maintain full employment even when their economies are not growing.

Is it realistic to advocate such policies for Canada? We have constructed a Keynesian economic model¹ to calculate what the macro dimensions of a no-growth economy with no unemployment, no poverty, and even no government deficit,

might look like for Canada. Are they sufficiently similar to what we have experienced to permit us to hope that such an economy is achievable? A "no growth" economy is chosen as the extreme case of a "low growth" economy. We will show that the answer to this question is "yes."

Why does world growth have to stop?

The Johannesburg "World Summit on Sustainable Development" has been a stage on which the actors, official and unofficial, have fought out major differences on what the world should do about the relation between economy and environment. All forecasts of how environment and economy interact are of course subject to great uncertainty. "Scientific" forecasts can therefore range from extreme optimism concerning the environmental impact of economic growth to extreme pessimism. All such forecasts use the term "sustainable development". Optimistic forecasts interpret "sustainable development" as "sustainable growth". Pessimistic forecasts interpret "development" as changes in techniques, institutions, health, and education, without increase in material production. Which is the more reasonable interpretation? Let us look at some of the trends on which informed specialists agree.

The rapid introduction of new technologies that we see to-day is a double-edged sword: On the one hand it has brought increases in living standards for many, and has given us better techniques for protecting the environment. On the other hand it has made it possible to use up the world's resources faster, and it constantly produces more varieties of

goods that a powerful and expensive propaganda machine persuades consumers to “demand”.

Hence the net results of technical innovation depend on the direction and goals of applied research, which in turn depend on who is in control. We must ask who gains and who loses when a new technology is introduced, and what are the limits of technology in dealing with environmental damage.

Various direct environmental impacts of economic growth interact to reinforce one another. For example global warming and destruction of the high ozone layer combine to reduce agricultural productivity, which interacts with population growth to produce local famines. Despite 50 years of concerted efforts at development, increasing numbers of people face the threat and reality of hunger, malnutrition, and death, in Africa and Asia

The Kyoto Protocol is an international agreement intended to address the problem of global warming by requiring the industrialised countries to reduce their emissions of greenhouse gases by an average of 5 percent below their 1990 levels. The failure of the United States and other countries to ratify this agreement is based on the expectation that implementation would lower the rates of economic growth in the implementing countries.

The increasing concentration of populations in giant urban centres, both a cause and an effect of economic growth, has already produced air and water pollution, crowding and traffic gridlock, crime, illness, homelessness, and other social ills, in both developed and developing regions.

Economic growth has also led to increased exposure to synthetic materials and risks from genetically modified organisms, Irreversible losses of habitats and species, destruction of indigenous environments and economies in both developing and developed countries, desertification, deforestation, warfare for control of increasingly scarce resources, trade in light weapons, disease and floods.

We already find declines in per capita and total stocks of many renewable resources such as fish, wood, clean fresh water, and biodiversity. The increased use of renewable and non-renewable resources has been matched by increased access to

reserves of lower quality. This process cannot continue for long.

Moreover, major projects designed to supply more natural resources to the economy have already destroyed local environments and displaced people. For example the Three Gorges Dam project in China has displaced more than a million people and flooded a unique part of the Yangtze river.

Prominent economist Ian Tinbergen and leading environmental statistician Roefie Hueting conclude a 1992 essay on the requirements for sustainable development with this paragraph:

“In order to achieve sustainable use of the environment, we conclude that the highest priority should be accorded to . . . policies that (1) accelerate development of new technologies, such as flow energy and recycling; (2) permit no further production growth in rich countries; (3) stabilize the global population as soon as possible; and (4) improve international income distribution.” (Goodland et al. 1992, p.61).

This essay appeared in a volume of studies by leading economists and other experts prepared for the International Bank for Reconstruction and Development and UNESCO. Goodland and Daly write in their conclusions from these essays:

“The North should stabilize its rate of resource consumption to free resources for the South and to free up ecological space . . . The North has to reduce its overuse of global commons . . . Environmental sink capacity has been preempted by the North . . . The North can continue to develop but must cease increasing throughput use. . . The North should get its own house in order by transforming its present-day consumerism and borrowing economy into a more sustainable model. An accelerated transition to renewable energy for a stable population is the major element” (ibid. pp 130,139).

We find these studies convincing.

A Keynesian model of the Canadian economy

Our Keynesian model of the Canadian economy uses statistics published by Statistics Canada for the years 1999 and 2000 and we use it to compare the macro dimensions of the Canadian economy in year



2000 with those that could have given us no unemployment, poverty, or government deficit, even in the absence of overall growth.

We take “no growth” to mean a constant population, labour force, and gross domestic product, as well as zero net investment in industrial plant, machinery, and inventory, so that the demand for new investment goods is confined to replacement, taken as measured by Statistics Canada’s estimate of capital cost allowances. The objectives of full employment, poverty abolition, and government budget balance are represented as achieved by policy-induced changes to certain of the variables and parameters of the model. The model is described and discussed in a separate paper (Rosenbluth and Victor, 2002).

What did we find?

In year 2000 Canada’s unemployment rate averaged 6.8 percent, and the Gross Domestic Product is estimated by Statistics Canada at \$1057 billion. We estimate that if the unemployment rate had been 4 percent (our estimate of minimal frictional unemployment) the Gross Domestic Product would have been \$30 billion higher, at \$1087 billion. We take that as the full employment level of output in year 2000.

To work out how the demand for goods and services could have been raised to that level, we first deal with poverty. We calculate by how much transfer payments to low income families and individuals (such as income assistance benefits, old age security benefits, child benefits) would have had to be raised to leave no-one below Statistics Canada’s “Low Income Cutoff” (the “LICO”), a level widely regarded as defining the upper limit of poverty. That sum is \$11.3 billion (based on 1998 statistics), and our model assumes that this transfer is made, and the money is all spent by the recipients on household goods and services in the same year.

We then explore a number of ways in which the various components of the total demand for goods and services can be adjusted to achieve the full employment level, with no deficit for the combined

account of all Canadian governments. We now outline our preferred route.

Our objective can be attained by the following changes in the model: raise the marginal propensity to consume² one percentage point (from 0.57 to 0.58), and the marginal tax rate³ by 2 percentage points (from 0.37 to 0.39). Lower the marginal rate of transfer payments from governments to persons and businesses⁴ by one point (from 0.06 to 0.05), and the marginal propensity to import⁵ by one point (from 0.50 to 0.49). Government expenditure on goods and services (including investment in physical capital) would have to be 33 percent higher than in year 2000. The resulting differences in the main variables are shown in the table.

This exercise shows that a Canadian economy with macroeconomic relations not very different from those we have experienced can give us full employment with no growth, no poverty, and no government deficit, even when the economy is not growing.

It is interesting and important to note that the increase in incomes and output due to full employment (\$30 billion) would exceed the increase in low incomes required to abolish poverty (\$11.3 billion). This means that “in theory” poverty could be abolished in Canada without making anybody worse off than before.

Road Blocks.

While the superior economic performance we have sketched is not utopian, we have not discussed “how to get there”. We now discuss major road blocks that have to be overcome or circumvented.

According to the model its superior economic performance requires much greater government expenditure on goods and services than we have seen in the recent past, a policy not favoured by politicians in power at present, nor by leading business men and leading media. The government sector can prevent this greater expenditure from causing a deficit in its aggregate account by various policies, including higher tax rates, policies that induce lower imports, and policies that induce greater spending by households. Again, such

policies are not currently popular among Canadian politicians, business leaders, and media.

The attitudes of politicians, business leaders, and media reflect more basic social forces. The dominant form of private business, the business corporation, is designed to seek growing profit through growing output. It is therefore bound to oppose policies that would set limits to the rate of expansion of its profits. It must exert what influence it can on governments and the public in the service of that opposition. The dedication of the business corporation to economic growth has been a major topic in modern economic literature.⁶

Opposition to reduced economic growth finds ideological support in the work of "optimistic" economists and other social scientists who express confidence that technological innovation can give us unlimited increased output with reduced environmental impact.

Divided power and responsibility among federal, provincial, and local authorities are major problems. Economists and statisticians understand that "there is only one tax payer", and that to study the economic impact of government expenditures, revenues, and budget balances, all levels of government have to be examined. But there are no

institutions for coordinating the fiscal policies of the different Canadian governments on a day-to-day basis. Although Statistics Canada produces exceptionally good statistics on the revenues and expenditures of the combined government sector, there is no such thing as, for example, a plan to balance the combined government budget.

The third major obstacle to the achievement of our macroeconomic goals is the imperfect regional and occupational mobility of labour and physical capital. This is the root cause of structural unemployment and regional concentrations of poverty.

Canada's greatest successes in overcoming this problem were achieved in the 1940s when the economy converted from peace to war and back to peace. That experience made it clear that mobility is greatest when the total demand for goods and services is kept high, and when costs of acquiring information, retraining, and relocation do not have to be borne by the unemployed and the poor.

There is a large literature on the problems of designing and implementing policies that promote mobility in industrialized economies. At present the development of effective policies is obstructed by divided responsibility for income support between federal and provincial governments, divided juris-

Year 2000 Macroeconomic Variables, Actual and "Full Employment"

	Year 2000 \$ Billion	Full Employment \$ Billion	Difference \$ Billion	Difference Percent
Gross Domestic Product	1057	1087	30	3%
Household Expenditure	593	613	20	3%
Private Investment	191	134	-57	-30%
Government Spending on Goods & Services	219	291	72	33%
Exports	479	479	0	0
Imports	426	431	5	1%
Taxes	39	424	33	8%
Transfer Payments	125	123	-2	-2%
Government Sector Surplus	38	1	-37	-97%

diction over education and training, and the preference shown by governments at all levels for cutting back on real per capita expenditure and taxes.

What can we conclude?

Canada can do its bit to ensure a future for our grandchildren by joining the world's fight against environmental destruction. It can do this while abolishing unemployment, poverty, and even deficits for the government sector, but it's not going to be easy. For a start it requires the abandonment of conservative theories of macroeconomics and government finance.

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Notes

¹ An economic model is a set of equations describing the relations between economic variables. An econometric model uses numerical equations, the numbers being estimated from statistical information.

² The additional household expenditure on goods and services per dollar of additional (gross domestic product plus transfer payments from governments to households and businesses less taxes).

³ The additional tax revenue for the government sector per dollar of additional gross domestic product.

⁴ The additional transfer payments per dollar of additional gross domestic product.

⁵ The additional imports of goods and services per dollar of additional gross domestic product.

⁶ See, for example, Heilbroner (1985), Marris (1964)

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An electronic version of this piece is available from the CCPA webpage at: www.policyalternatives.ca

*A longer version of this paper entitled **The Canadian Economy With Full Employment, No Growth, No Poverty, And No Government Deficit: A Keynesian Exercise** can be found on the website of the Progressive Economics Forum at: www.web.net/~pef/papers.html*

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