

Presentation by Andrew Sharpe at the CSLS-Industry Canada Conference on Canada in the 21st Century on the Contribution of Productivity to Economic Well-being

The title of my presentation is The Contribution of Productivity to Economic Well-being in Canada. I want to lay out a framework for analyzing the impact of productivity growth on society. Now it's well known that productivity is the key driver of living standards, as measured by income per capita in the long run. But what I want to do is broaden the focus of the debate from productivity and income to productivity and economic well-being. And I will argue that productivity can be just as important for determining the economic well-being of Canadians as it can be for determining the income of Canadians.

My presentation is divided into 3 parts. First I just want to give very briefly some basic data on productivity trends, which I'm sure many of you are familiar with. Then I'm going to go into what is economic well being and I'll develop a framework using some research that the Centre for the Study of Living Standards has done in this area. And finally the main part of the presentation. I will look at the relationship between productivity and economic well being.

The first table represents basic data from Statistics Canada on productivity by industry over the last 40 years in Canada. The most important stylized fact in this table is that in the period up to 1973 productivity grew around 4% a year. With a 4% annual productivity growth, living standards can double every 18 years, using the rule of 72. However, after 1973 productivity growth fell off to about 1.2% per year. This is output per hour in the business sector, which is the best measure of productivity we have in terms of labour productivity. Now at, and at the rate of 1.2% per year it takes around 56 years for living standards to double. So we went from a period where we were doubling our living standards every generation to whether, to a period when it took 2 1/2-3 generations.

Now the key point is that since 1973 over cyclically neutral periods there hasn't been much variation in productivity growth. It's been pretty well the same around, around 1%. Now of course the key question is what's going to happen in the future. Robert Gordon will be talking tonight about whether the new economy has finally revived productivity growth. We know from recent data in the United States that there seems to be a turnaround in productivity, but this development has not yet affected Canada. That is an absolutely crucial question for the welfare of Canadians. If we can return to a world of 2% productivity growth instead of 1% everything changes in terms of what we can do with society. And I want to show today how that can happen.

Another point from the table is that it has been the service sector that in general has had lower rates of productivity growth than the goods sector, although within services there are certain areas like communications that have done quite well.

Turning to the next slide, again very basic data on what's been happening to productivity at the total economy level and in manufacturing in Canada relative to the United States. GDP per person employed is a much more important measure of productivity than manufacturing output per worker because it's productivity at the aggregate level that determines living standards. The slide shows that we have not really declined relative to the United States. But the key issue is though we're still way below the United States in terms of GDP per employed worker, around 80%. That's the problem. We haven't been growing at a slower pace. It's just that we have a lower level of productivity. If we could achieve U.S. productivity levels through catch up we'd be much better off.

In manufacturing, however, we have declined in terms of relative productivity levels. We've gone down quite dramatically and we appear to be here around 70% of the U.S. level in terms of output per worker in manufacturing. And this is a mystery, especially with free trade. We thought that was going to improve. I don't have anything to say on this at this time, but we will have something in several months. In January, in this hotel, the Centre for the Study of Living Standards will be holding a conference on the factors behind the Canada/United States manufacturing productivity gap. So at that time we'll hopefully be able to shed light on this issue of declining manufacturing productivity relative to the United States.

Let me return to the second part of my presentation on what constitutes economic well-being. Of course, there's no consensus in the literature on what constitutes economic well being. We do not have an official national measure of economic well-being. It's not like national income. There are different approaches to defining and measuring economic well-being.

The Centre for the Study of Living Standards has developed recently an index of economic well-being. It is based on conceptual work that Lars Osberg did in the 1980s for the McDonald Commission. Lars Osberg and I have used this work to develop and estimate an index of economic well-being for Canada. We've also estimated the index for the United States and are currently developing estimates for a number of OECD countries. The index is available on our website if you're interested in the details, which I will not get into today.

The index incorporates four key components of economic well-being. The first is consumption flows, the second stocks of wealth, the third inequality, and the fourth component economic security. The components in turn are based on many sub-components, as the overview shows. For example, within the consumption flows we include private consumption, public services and unpaid labour as part of consumption. For stocks of wealth, we include physical capital, research and development stocks, human capital stocks, net foreign indebtedness and depletion of the environment. For the inequality component, we include the poverty rate, which we define in relative terms as one half median income, and an overall measure of income distribution. For economic security, we have four sub-components covering the financial risk associated with unemployment (determined by the unemployment rate and, and EI coverage and benefits), the risk of poverty in old age, the financial of illness, and the risk of poverty for single parents.

A key aspect of the index is the weighting scheme that is applied to the four basic components. The weights we currently use in the index, reflecting the values of the authors, are the following: consumption (0.4), wealth (0.1) and income inequality and economic security (0.25 each). The results are sensitive to the weights, although whatever weighing scheme one uses one finds a decline, in absolute terms even, in economic well-being in the 1990s.

Now let us turn to the relationship between productivity and economic well-being. I want to relate productivity to the different components of our index and how increases in productivity result in improvement of economic well-being for Canadians. So let's go through the different components. If we had higher productivity, we would have higher incomes and that would lead to greater private consumption. Also higher incomes lead to higher tax revenues and that in turn can lead to greater public consumption of health and education services. So there's a direct link between higher productivity and higher consumption flows for Canadians.

Turning to the stocks of, of wealth, again there are a number of direct linkages between productivity and economic well-being and also a number of indirect linkages. Higher productivity of course leads to higher national income, which leads to higher profits. Profits are a key determinant of investment, which results in higher levels of capital stock. In addition, profits can lead to increased research and development and that can build up the stock of research and development. Higher productivity and incomes have two effects on human capital. First, if people have additional income they may use that to personally accumulate human capital through their own expenditure. Second, higher productivity and incomes lead to higher tax revenues, giving the government more

means to invest in human capital through investments in the education system.

In terms of natural resources, one might think that there is no link between productivity and natural resources stocks, or even a negative link. With higher productivity and incomes, we'll consume more and consequently run down our stock of natural resources. And certainly that can happen. But the stock of natural resources is linked to the price of natural resources. And we all know if the price goes up, there's likely to be more exploration, which leads to greater stocks of natural resources. In addition, productivity gains in the natural resource sector can increase the stock of resources by lowering production costs and making previously non-economically viable reserves economically viable. So productivity growth can actually have a positive effect on the overall sustainability of our environment by reducing the cost of extraction and therefore increasing the economic supply of natural resources. Productivity growth can have a positive effect on the environment. If we are richer, we're more willing to trade off some income for pollution controls or we're willing to pay for cleaning up pollution.

There are feedback mechanisms between productivity gains and wealth stocks. We can create virtuous circles or spirals where higher productivity leads to more investment and stocks of wealth, which in turn leads to higher productivity, which in turn leads to more investment. So again it's very possible to create and sustain an upward virtuous spiral linking productivity and wealth stocks.

Let us turn to the link between productivity and income inequality. One issue is how one measures poverty or inequality. If one uses an absolute concept of poverty, then increased incomes through productivity gains will put fewer people below the poverty line. So there's a direct link between productivity and poverty both through the market income people earn and through increased government transfers for people who are unable to participate in market activities.

When one uses a relative definition of poverty, such as those with less than one half median income, there's possibly less of a link because productivity and poverty. If everyone has the same percentage increase in income, there would be no change in the relative distribution of income and hence in the poverty rate. But one could argue that if Canadians were richer, there might be more political will to help the people at the bottom of the income scale through redistribution policies.

Let us turn now to the final component of economic well-being, that is economic security. In terms of the financial risk arising from

unemployment, many people in the past have believed that productivity gains would lead to higher unemployment. I was very pleased that Frank Graves showed today that three quarters of Canadians do not think that productivity gains are synonymous with job losses and that in the long run productivity actually can have a positive effect on unemployment, or at least not have a negative effect on unemployment. It's aggregate demand and demographic structures that in the long run determine employment levels, not productivity. In addition, with greater productivity, incomes and tax revenues, we can choose to have a more generous social welfare system, including greater EI coverage and benefits. Higher levels of economic well-being would result from this greater generosity because the financial risks associated with unemployment would be reduced.

In terms of the financial risks associated with sickness, greater productivity gains and higher income again result in a greater possibility of both private and public expenditure on health and reduces the financial risk of sickness.

In terms of single parent poverty, the impact of productivity depends somewhat on whether one adopts a relative or absolute approach to poverty. But even with a relative poverty approach productivity gains can result in reductions in the rate of poverty for single parents through more generosity of transfers and through providing more services to single parents so they can become self-reliant.

In terms of poverty in old age, again there is the same relationship, with greater productivity, income, and tax revenues resulting in greater means to assist the elderly poor..

Finally, there can be positive feedback mechanisms between economic security, and poverty and productivity. If people feel that more secure, they may be willing to make more investments in human capital. They will become more productive and have a better attitude towards life. So there are positive feedback mechanisms running from productivity to economic security and then from economic security back to productivity.

To conclude, productivity is an important legitimate issue for all Canadians to be interested in. The productivity issue spans the political spectrum. People on the left think it's important, people in the middle think it's important, people on the right think it's important. So it really in that sense is a rallying cry for all Canadians. Even though interests of certain groups diverge in many areas, the interest of all Canadians come together on the productivity issue. The goal of this presentation has been to show the positive link between productivity and economic well-being. What really is difficult is to show what determines productivity growth. That is a much greater challenge than identifying the linkages between

productivity and economic well-being. What policy levers do we need to employ to go from a 1% productivity world to a 2% productivity world? If we can do that, then we're going to see not just increases in income, but also increases in all facets of our economic well-being.