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The Canadian economy, productivity, and our standard of living

Over the past couple of years, there has been considerable debate about productivity and our standard of living in Canada. For the most part, the discussion of these issues has been useful, but at times it has been somewhat confusing.

There are so many different facets to productivity and the standard of living that they cannot all be covered in one speech. My objective today is relatively modest—to try and clarify some of the basic ideas and measures and to explain where monetary policy fits in this debate.

I will start by focusing on the relationship between the standard of living and productivity. Next, I will talk about some of the different measures of productivity. I will finish with a few words on how monetary policy can contribute to rising productivity and rising standards of living.

The connection between the standard of living and productivity

A country's standard of living and its productivity are not the same thing, although over the long run they are closely linked. This distinction has not always been made clear in some of the commentary I have seen.

When we speak of a society's standard of living, we are typically referring to the individual well-being of its citizens. In principle, our standard of living should reflect both economic welfare and social ("quality of life") elements, such as a clean environment, a low crime rate, freedom of expression, etc. But because the social elements are difficult to assess and to weigh properly, the focus is usually on measures of our *economic* well-being.

There are a number of different indicators of our economic welfare. The most common one measures how much output is produced in our economy, on average, for every man, woman, and child in Canada (real gross domestic product per capita). There are also various measures of real income per person, before and after taxes (such as gross national income per capita and personal disposable income per capita).

If we look closely at any one of these measures, it is clear that productivity is a critical factor in the determination of our standard of living. But it is not the *only* factor. And when there are changes in any of the other elements that influence our economic welfare, our standard of living can, for periods of time, change in ways that appear to be disconnected from trends in the growth of productivity.

As an example, let us look at the simplest yardstick of living standards—output per capita. Clearly, this is closely related to the output produced per worker—which is the most common measure of productivity. But it also depends on the number of people employed relative to the total population.

Through the 1960s, 1970s, and 1980s, output per capita in Canada increased more rapidly than productivity. But over the past 10 years, it has fallen behind the growth in productivity.

Canada's lacklustre standard-of-living performance in the 1990s, which we have heard so much about, has less to do with slower productivity growth than with the fact that the proportion of the population that is actually employed has not been increasing. This is in contrast to the rising trend of the previous three decades, when an increasing number of women and baby boomers were entering the labour market.

During the 1990s, trends in employment rates in Canada also diverged significantly from those in the United States, contributing to an increased gap in living standards between the two countries. This weak employment growth in Canada partly reflects the extensive and difficult restructuring that our private and public sectors had to undergo in a relatively short time compared with the United States, where the process started earlier and was spread over a longer time period.

If we measure our standard of living in terms of how much of the national income goes to each and every Canadian, then we are not just talking about the *volume* of goods and services we produce. We are also talking about the world prices we receive for what we sell abroad relative to the prices we pay for imports—that is, our terms of trade.

During the 1970s, world prices for the primary commodities that Canada exports soared relative to prices in general. And they remained high through to the early 1980s. Since then, however, commodity prices have typically been on a downward trend. And, of course, they fell sharply in the wake of the Asian crisis in 1997-98, before partly recovering in 1999. We have to take this into account when we examine what happened to our standard of living in the 1990s compared with earlier decades.

We also need to look at what has happened to personal income after taxes. From the mid-1970s to the early 1990s, tax revenues did not cover government spending and we were getting deeper and deeper into debt. In other words, we were living beyond

our means. During the 1990s, taxes rose and government transfers and other expenditures were cut back relative to the size of our economy to reduce the burden of those large public debts that had accumulated during the previous two decades. Measures of after-tax income in the 1990s reflect that sobering reality.

So these are some of the factors that have weakened the link between productivity and living standards in recent years. In the long run, however, productivity is, without a doubt, *the* key element contributing to our prosperity. Productivity growth is the foundation for real income growth -- it allows businesses to pay higher real wages and still keep costs down and remain profitable.

There is one important difference between productivity and the other factors that influence our living standards. The difference is that there are no constraints on productivity and its ability to contribute to improvements in our welfare on a sustained basis. The other factors are constrained by physical, institutional, and legal limitations. For example, there is a limit to the proportion of the population that can, and will, engage in economic activity. Similarly, there are limits on the length of the work week. On the other hand, there does not seem to be an upper bound on capital accumulation over time or on the growth of human knowledge or on the degree to which both can result in higher productivity.

Productivity: the Canadian record

But I have been talking about productivity without defining it properly or describing how we measure it.

Measures of productivity tell us how much output we can produce from the effective use of various inputs—skilled workers, capital equipment, technological innovation, and managerial and entrepreneurial know-how. Increases in productivity trace improvements over time in our ability to boost output by finding new and more efficient ways to use these inputs.

The most commonly used, and best-understood, measure of productivity is labour productivity. It tells us how much output is produced per worker or per hour worked. Of course, labour productivity is affected by experience and education as well as by the amount of capital equipment (notably machinery and equipment) that is available to workers. So, ideally, we would prefer to use the measure that combines labour with all these other inputs—what we economists call *total factor productivity*.

In practice, however, it is very difficult to measure the amount of physical capital in the economy. Also, it is not clear how best to take account of improvements over time in the quality of the various inputs. And, of course, measurement problems are worse in the services sector, where output is also notoriously difficult to estimate.

Because of these difficulties, analysts usually focus on the more straightforward measures of labour productivity. This has the added advantage of being closer to measures of standards of living and more directly comparable across countries.

With that as background, let me now turn to the "facts" on productivity in Canada, as best we can measure them, and see how they compare with those for the United States. We should, of course, keep in mind that the relevant statistics for the two countries, while similar, are not always comparable. For example, there are differences in the way some prices are measured, particularly for high-tech equipment, as well as differences in adjusting for changes in the quality of inputs. Moreover, last month, the Americans revised their productivity figures upwards, following revisions to their national accounts going back to 1959. To a significant extent, these revisions reflect a definitional change that now treats computer software as an investment (instead of a business expense as before), and therefore as part of the country's gross domestic product.

These definitional changes probably make the U.S. productivity figures less comparable with ours than before. So one should be careful not to draw strong conclusions from comparisons that focus too narrowly on these data. Nevertheless, we can still comment on the broad trends.

Through the 1950s and 1960s and into the early 1970s, labour productivity in the overall business sector in Canada grew rapidly. It averaged close to 4 per cent per year—somewhat higher than in the United States. From the early 1970s to the mid-1990s, productivity growth slowed sharply in both countries—to less than half that rate. It has picked up in the latter half of the 1990s, especially in the United States, where an investment boom has given U.S. workers substantially greater amounts of capital equipment to work with.

Some commentators have paid particular attention to productivity growth in the manufacturing sector, even though manufacturing accounts for less than 20 per cent of total economic activity in both countries. They believe that the measures for this particular sector are more reliable and more relevant for international competitiveness.

Since the 1980s, labour productivity in the Canadian manufacturing sector has risen at a significantly slower pace than in the United States. To a large extent, this stronger showing by the U.S. manufacturing sector reflects the remarkable performance of two industries—electrical and electronic products and commercial and industrial machinery. These industries have benefited the most from dramatic advances in computer technology, and they have a much larger weight in the U.S. economy than here in Canada.

As a last comment on the facts about our productivity performance, I would like to stress the need to distinguish clearly between the *rate of growth* and the

level of productivity. While this may seem self-evident, there has been a certain confusion on this score in some of the recent public commentary.

The rate of growth in our productivity has certainly slowed since the early 1970s, as it has in most industrial countries, for reasons that are still not fully understood. But the *level* of our productivity has been rising, not falling. And it cannot be blamed for the decline in some measures of our living standards during the 1990s.

However, there is a significant gap in levels of productivity between Canada and the United States—ours is below theirs. Since access to ideas and technology is international, we would have expected that gap to narrow, as it did during the 1950s and 1960s. But it hasn't. For this to happen, productivity in Canada has to grow at a faster pace than in the United States. This is the challenge we Canadians face if we are to bring our standard of living closer to that of our southern neighbours.

How can monetary policy support productivity growth?

Economists have not been particularly successful in explaining differences in rates of productivity growth over time or across countries. As a result, there is no widespread agreement on what can be done to bring about faster productivity growth on a sustained basis.

Nonetheless, I would like to make some comments on what would be helpful in this regard. And I would certainly emphasize that we should always scrutinize our economic policies for any potential impact on productivity.

When it comes to monetary policy, there is an increasing international consensus that the contribution central banks can make to encourage growing productivity and higher standards of living is to provide a low-inflation environment.

Low and stable inflation reduces uncertainty about future price movements, lowers the incidence of boom-and-bust cycles in the economy, and helps to keep interest rates down. All of this encourages investments in equipment and new technology that should lead to productivity gains. When I look at the impressive productivity record of the United States over the past couple of years, I am struck by the exceptionally large investments in machinery, equipment, and technology that have taken place there.

I know that the depreciation of the Canadian dollar through late 1997 and 1998 has kindled some concerns that a weak currency blunts the incentives for export industries to improve productivity. And that has led to some suggestions that Canadian

monetary policy, rather than targeting low inflation, should set targets for the Canadian dollar. Or that perhaps our currency should be pegged to the U.S. dollar.

It is true that in a period of high, and potentially rising, inflation, a depreciating currency adds to the confusion about what is happening to relative prices and contributes to an attitude that any cost increases can be passed on. Thus, businesses may not be as concerned about improving productivity as a cost-cutting measure. But that is not the case in Canada today—inflation is low and stable, and the Bank is committed to keeping it that way. Businesses know that they will generally not be able to pass on cost increases, and so they focus on cost control.

The argument that a depreciated currency tends to discourage productivity improvements also ignores today's powerful global competitive forces and the strong drive of businesses to increase their market share and their profits as well as raise the prices of their stock.

In my judgment, our floating exchange rate works well. It absorbs the impact of, and facilitates the adjustment to, extraordinary shocks that hit our economy from time to time, such as the sharp drop in primary commodity prices in 1997-98. As part of that adjustment, the low Canadian dollar has encouraged businesses outside the primary industries to expand their presence in foreign markets. But they can maintain those gains only if they continue to work hard to increase productivity and to ensure that they stay competitive as our currency regains strength.

Concluding thoughts

To conclude, it is almost impossible to overemphasize the importance of rising productivity as the fundamental long-term factor contributing to healthy economic performance and prosperity. Over time, gains in productivity are the basis for growing incomes and rising standards of living.

Compared with the strong performance of the 1950s and 1960s, Canada's productivity record since the early 1970s has been rather disappointing. Even though the level of our productivity has been rising, we have not made any headway in bringing it closer to that of the United States.

Recent developments in Canada, however, offer some promise of improvement. Productivity growth has picked up in the past couple of years in response to the cyclical recovery and the structural changes in our economy. And investment in machinery, equipment, and technology has increased sharply in the past three years, much the same way as it did in the United States some years earlier.

But there is no room for complacency. Increases in productivity do not just happen. These days, good productivity performance seems to be related to changing technology—an openness to adopting it and a flexibility in adapting to it. That is what we must strive for in Canada.

We will also need to maintain a stable macroeconomic environment that combines low inflation and a prudent fiscal policy. This will help foster a climate conducive to initiatives in innovation, risk-taking, and investment that can contribute to sustained productivity gains. I can assure you that the Bank of Canada will continue to do its part, by keeping inflation low and stable.