Stephen S Poloz: From hewers of wood to hewers of code - Canada's expanding service economy

Remarks by Mr Stephen S Poloz, Governor of the Bank of Canada, at the CD Howe Institute, Toronto, Ontario, 28 November 2016.

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Introduction

Some clichés never die. The last time the number of Canadians employed in the goods sector exceeded those working in the service sector was the mid-1950s. For about 60 years now, growth in services employment has persistently outpaced employment in goods production. We have been much more than a nation of hewers of wood and drawers of water for a long time, yet the cliché lives on.

The same story of an expanding service sector has played out for all advanced economies. But that does little to allay an emerging sense of unease about the economic forces at work.

Here in Canada, this sense of unease has been compounded by two significant shocks to the economy. The first was a steady loss of export capacity in the years prior to—and in the wake of—the global financial crisis. Our export recovery since 2009 has been impressive but remains incomplete, as at least $30 billion worth of export capacity was lost in the process and competitiveness challenges continue. The second shock was the sudden drop in resource prices, particularly for oil, which represented a significant loss of income for the nation as a whole—something in the range of $50 billion to $60 billion per year.

Together, these two shocks have created an $80 billion to $90 billion hole in our economy, which is more than 4 per cent of GDP, and have set in motion a complex series of adjustments. It is natural to wonder: What will replace the economic losses due to these shocks? Where will the new jobs be created?

These are difficult questions, so it is no wonder that people are worried about the future, particularly those employed in the goods sector. In the circumstances, skepticism about the benefits of technological change, globalization and international trade is understandable.

We need a strong and open dialogue on these issues, and I hope to contribute to that conversation this evening. But let me start with my conclusion: I strongly believe that the continued expansion of our service sector is pointing the way toward full economic recovery and the return of sustained, natural growth.

The long-term rise of services

The phrase “hewers of wood and drawers of water” comes from the Bible, but it was the Canadian economist Harold Innis who used it in his 1930 book, *The Fur Trade in Canada*, to describe our traditional economic dependence on resource production.

Obviously, there has always been, and always will be, some truth behind the cliché. Resource production, particularly agriculture, dominated our economy in the years immediately after Confederation. But by the end of the 1920s, Canada had become primarily an urban, industrialized economy. By the mid-1950s, the share of manufacturing employment had reached about one-third of the workforce. This share has been declining ever since, while the service sector has continued to grow, both in absolute and relative terms.

Today, more than 80 per cent of working Canadians are employed in services, while fewer than 20 per cent produce goods. Manufacturing now makes up less than 10 per cent of the workforce. The question is: How far can these trends go?

Well, we shouldn't forget that Canada is fortunate to be endowed with a wide range of natural resources that represent an important source of future income. We all know that economic diversification is a good thing, but people sometimes seem to lose sight of the fact that it is much better for a diversified economy to have a significant endowment of natural resources than not.

The fact is there will always be global demand for our food products, our forest products, our energy, our metals and minerals, and so on. And there will always be a market for innovative, high-quality manufactured products from Canada. Canadians are, and will continue to be, competitive in these markets.

However, that leaves open the question of how many Canadians are likely to be working in the goods sector in the future. I am not sure we can forecast such things. Since 2001, total employment in goods production has fallen overall, even though output of goods has risen by 14 per cent within that time frame. Furthermore, for every job lost in the goods sector since January 2001, about 30 jobs have been created in the service sector. Here are the numbers: looking at the latest data, goods employment has dropped by about 100,000 since 2001, while service sector jobs have grown by nearly 3 million.

Now, it is at this point in the conversation when we often hear some other clichés. One is that the only workers who actually create value are those who produce tangible goods—things that hurt when you drop them on your foot. Another is that service jobs are generally low-skill and low-paying.

The reality, of course, is quite different. The service sector is widely diverse in both skills and pay, even though the average wage in services is lower than in goods production. It probably will not surprise you that the average wage in the finance and insurance industry is higher than that in manufacturing. But so is the average wage in the transportation and warehousing industry. And, together, those two industries employ more Canadians and produce more output than all of Canada's manufacturers.

Creative destruction at work

Economists' understanding of the evolution of economies is based on hundreds of years of history.

Advances in technology lead to higher productivity and greater production, which in turn permit the development of new economic activities and increased specialization in jobs. Over time, the lion's share of these new activities has arisen in the service sector. Joseph Schumpeter called this process "creative destruction," because improving how we do things destroys the old while creating the new. And the key facilitator of this growth process is trade, both domestic and international; otherwise, we would all have to be jacks-of-all-trades.

Let me illustrate with the Canadian experience. At the time of Confederation, about half of working Canadians were employed in agriculture in one form or another. Of course, technological advances led to enormous increases in productivity, creating opportunities for people to move away from farms and into cities. New technologies, coupled with the newly available workforce, sparked the creation of whole new activities, both in manufacturing and in services.

By the 1920s, only one-third of Canadians were still involved in agriculture. By the 1950s, that figure was down to 15 per cent and, today, it is less than 2 per cent. And, yet, agricultural output today is more than three times what it was 80 years ago.

Clearly, agricultural employment fell because technological advances and scale economies allowed for greater output with fewer employees. And this freed up the labour that allowed for the industrialization of Canada and fuelled the development of the service sector.

The same process is continuing today with the decline in employment in goods production. New technologies, automation and robotics are allowing for higher productivity and output with fewer workers. Canadian factories are about five times more productive today than they were in 1955. This means more output per worker, not necessarily fewer workers. Indeed, improved productivity is essential to compete internationally, which is itself essential to maintaining or growing a business. In other words, without increases in productivity, the business itself and all of the associated jobs can be lost.

This is the creative destruction process at work. Specific jobs lost to automation are gone. Exporting companies who closed their doors in the wake of the global recession in 2007–09 are unlikely to return. Rather, surviving companies will expand, and other, new companies will grow in their place.

Naturally, I am oversimplifying the matter. The real world is far more complex than our economic models suggest. Even the distinction between goods and services is a blurry one. Consider the smartphone in your pocket. Yes, its manufacturer used circuits, wire, plastics and other materials. But it also needed research and development, engineering, design, software, transportation, trade, finance, legal, sales and accounting services. And certainly your phone would be totally useless without telecommunications services, not to mention after-sales service, including a call centre to help with problems.

Rather than a dichotomy between goods and services, it is much more useful to think of a spectrum—from raw commodities at one end to pure services at the other. In general, the further up the value-added chain the manufactured product, the more services are embedded in it.

There is reason to believe that the Canadian economy has a comparative advantage in some of the service categories I just mentioned, as well as others, such as tourism. We have the necessary ingredients: a highly educated labour force supported by strong universities and colleges; entrepreneurs with access to business incubators; a beautiful and interesting country that many would like to visit; a multicultural workforce that helps us to serve domestic and international markets. And, that comparative advantage has been strengthened by the decline in the Canadian dollar in the past couple of years—a symptom of falling resource prices, and a facilitator of the rotation of growth from resource production to other sectors.

Filling the hole

So, how can we fill the economic hole I spoke of earlier? Of course, monetary and fiscal policies are doing their part to support the recovery. But can growth in the service sector play a role? It already is, and we can expect its contribution to grow in the years ahead.

Since the onset of the global financial crisis, growth in Canada's service sector has been stronger on average than in the goods sector. Most of the employment growth seen in Canada since late 2014 has been in service industries that pay above-average wages, helping to support national income.

Services are also a bright spot in the export picture. Exports of services have continued to grow, both relative to goods and in absolute terms. In the first half of 2016, Canada was on pace to export more than $100 billion in services, almost $25 billion more than five years earlier. At a time of sluggish trade growth worldwide, exports of Canadian commercial services such as engineering, research and development, and financial services have grown by more than five per cent annually since 2000. And tourism exports are now generating about $17 billion per year, over $2 billion more than five years ago.

We're particularly excited by recent developments in information technology (IT) services. We are seeing increasing numbers of foreign companies locating the IT service components of their supply chains in Canada. The publication *fDi Markets* reported that during 2015 and the first half of this year, 65 projects were announced or launched by foreign companies employed in knowledge-intensive services such as smartphone applications and custom computer programming. It is worth noting that last year, the average wage across highly digitalized industries, which includes IT services, was 17 per cent higher than the average Canadian wage.

The Bank recently conducted an in-depth survey of about 50 exporting companies and industry associations in the IT service sector. Bank staff asked many of the same questions we ask in our *Business Outlook Survey*. They found that IT service exporters were more optimistic than the average Canadian company. Many of these firms, which are located right across the country, reported double-digit sales growth.

Most of them said they expected sales growth to continue to be strong, particularly export sales, and fully three-quarters of them are expecting to hire more people. None said they are looking to cut employees. A large majority said they are looking to invest in research and development. And nearly half said they are planning to boost spending on physical investment. But the companies are not typically planning to invest in what one would traditionally think of as industrial machinery; rather, they are investing in equipment such as computers and software.

And, of course, the other place where these companies are planning to invest is in people. The companies in the survey who said they would have difficulty meeting an unexpected increase in demand almost unanimously cited a shortage of skilled workers. In fact, the idea of physical capacity is almost irrelevant in this industry. To increase sales, these firms need to hire, and possibly train, sales and support staff, programmers, developers and computer engineers.

The data are limited, but evidence suggests firm creation in this industry is above the average of the rest of the economy. Output has grown by more than 15 per cent since the start of 2011—a faster pace than the rest of the service sector and more than double the pace of the goods sector. In the past five years, the industry has grown by close to $8 billion and now represents more than 3 per cent of our economy. This is the kind of creation that follows the destruction.

These are just some of the channels of growth that we expect will replace what we have lost in the past few years. There will also be contributions from our more traditional exports. Agricultural exports, for example, have grown by more than 13 per cent in the past five years, including $2.4 billion in canola and pulse crops. Pharmaceutical exports have grown by $7 billion; machinery and equipment, $3 billion; furniture, $2 billion. Even the "other" export category is more than $1 billion higher than it was five years ago. When you put all of these examples together, you can see that we are making real progress in filling that hole I talked about earlier.

This process has been gradual, more gradual than we would like, but based on the progress recorded to date, we have every confidence that the economy will find its way back to full output. As these new sources of growth add up, we will gradually absorb our excess capacity sometime around mid-2018, and inflation will converge on our 2 per cent target from below.

Implications for policy-makers

Now, I'm not suggesting that this complex adjustment process is automatic, and that there's no role for policy-makers to facilitate the adjustment—on the contrary.

The conduct of monetary policy must manage uncertainty as a matter of routine—uncertainty about the economic outlook, about unobservable variables such as potential output, and so on. It is the nature of economics and economic models that we should always express our expectations in probabilistic terms—that is, a number surrounded by a margin of error—and make policy decisions that carefully weigh and manage those risks. In short, monetary policy is not like engineering.

It is the job of the central bank to understand and monitor these new growth channels very carefully. Doing so is essential to providing a stable and low-inflation environment in which new businesses can thrive.

The evolution of our economy poses issues for both economists and statisticians. The American economist Robert Gordon has written extensively about the challenges involved in measuring concepts such as output and productivity after advances in technology change the nature of work. Statistics Canada is devoting a great deal of effort and resources to these challenges, and I have no doubt that we will have the best data possible.

In terms of economic models, it is worth considering whether the relationship between inflation and economic growth could change as the economy evolves. Certainly, the concept of an output gap is gradually changing, as services capacity depends mainly on people and skills rather than industrial capacity, while some parts of our old industrial capacity could become redundant in the face of major structural changes. The concept of investment is shifting away from plants and machinery toward human capital. Even the concept of inventories is changing.

Economic models are just that—highly simplified constructs meant to capture the broad behavioural linkages in the economy. At the Bank, we are in a constant state of model redevelopment, adapting to evolution in the economy. The economics profession needs to be thinking hard about what the next generation of economic models will look like because it can take a long time to make a new model operational.

From a broader policy perspective, we need to develop new ways to help people cope with technological and structural change in order to improve our economic performance over time and to allay the economic fear and skepticism we are seeing across the advanced economies. Historically, technological advances have always meant disruption as well as progress—creative destruction, as Schumpeter put it. And while the benefits of the advances are spread widely throughout the economy, the costs of the disruption are concentrated among relatively few people.

These issues lie beyond the remit of the central bank. But our policy framework does help to put such issues into context. Policies that improve the ability of people to adjust to the demands of the new economy will help raise our economic capacity, our long-term potential growth rate and our productivity, and will make the job of maintaining our inflation targets easier. From the macroeconomic point of view, I can say that our economy is far more adaptable today than it has been in the past. But that performance can be enhanced by finding ways to ensure that our various educational, apprenticeship, immigration and employment insurance programs all work well together with the on-the-job training commitments of employers.

Conclusion

Allow me to conclude. The rise of the new economy in Canada represents the latest chapter in a long story—the ascent of the service sector. Over time, this has been a good news story, with technological advances leading to rising incomes and higher standards of living.

Every generation of Canadians has faced similar stresses—and similar opportunities. It is obviously the role of policy-makers like me to help people understand the economic forces they face and the importance of technology and international trade to their well-being. But no one understands the importance of these things to a typical Canadian worker better than their employer.

I cannot think of an audience that understands these issues better than those who are here tonight. I ask you to join with me in helping explain these forces to your employees and the public at large. And I ask that you consider innovative ways of matching good people with good job opportunities. These are some of the ingredients of the confident future that Canadians all deserve.