



Is Canada Suffering From Dutch Disease?

Policy Brief

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Introduction

You may have read or heard that Canada is suffering from “Dutch disease” and are wondering what now? Unlike “Dutch elm disease” – a fungal disease that is decimating the majestic elm trees in North America – Dutch disease refers to the hypothesis that large windfall revenues from natural resources give rise to real exchange rate appreciation which, in turn, makes other export sectors less competitive in world markets. The term was coined in 1977 by *The Economist* after the Netherlands experienced a vast increase in wealth following the 1959 discovery of large natural gas deposits, which drove up the Dutch guilder, wreaking havoc on the country’s traditional export-intensive manufacturing sector.¹

Canada has also experienced a resource boom sparked by the sharp rise in commodity prices that began in 2002. The price surge has been fuelled by soaring demand from



¹ Although “Dutch disease” is generally associated with a natural resource discovery, it can occur from any development that results in a large inflow of foreign currency, including a rise in commodity prices, foreign aid, remittances flows, and foreign direct investment.

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emerging-market economies. China's appetite for raw materials (especially oil and many base metals) has been particularly voracious because of the country's size and high investment rate. Those of you that have travelled to China can attest to the fact that industrial development has been unprecedented in its size, speed and breadth.

Although higher base metals prices also contributed to Canada's resource boom, the rise in the price of oil has been particularly important. Canada has a rich endowment of energy resources. In the early 2000s, extraction of Canadian oil was not generally commercially viable at a price below US\$25 per barrel, but as the price rose above this level, commercial production became profitable. At higher prices (US\$35–\$40 per barrel), extraction of oil from Canada's oil sands also became feasible.² This spurred substantial capital investment in the development of new and existing operations.

Canada's energy sector has become a major source of export revenue and foreign investment, increasing money flowing into Canada and putting upward pressure on the Canadian dollar.³

The appreciation of the Canadian dollar has created additional headwinds for manufacturers who export their products. The manufacturing sector shrank from its peak in 2000, both in terms of output and employment.

But is this Dutch disease?

While it's true that higher oil prices have elevated the Canadian dollar, intensifying pressures on the export-oriented manufacturing

sector, this is not evidence of Dutch disease. Other factors, besides oil, have contributed to the dollar's rise. Similarly, the appreciation in the Canadian dollar is not solely responsible for the contraction in the manufacturing sector, nor is the sector's decline unique to Canada. Across the industrialized world, the manufacturing sector's share of output and employment has been falling for the better part of the past three decades. At the same time, there has been a shift in employment and output toward services.

What we are seeing is an economy undergoing fundamental and ongoing structural change and transformation brought on by the rapid integration of Asia, notably China, into the global economy. While oil flows into resource-hungry China, pushing up its price, China's roaring factories ship relatively inexpensive manufactured goods to the rest of the world, grabbing export share from its export competitors. The most striking gains have come in the U.S.

The persistent strength of the Canadian dollar together with disappointing productivity growth have diminished Canada's competitiveness and contributed to its deteriorating export performance. Since the turn of the millennium, Canada has lost considerable market share in the U.S. — our largest trading partner — to China. A weak U.S. economic recovery has not helped. The export-oriented manufacturing sector's share of overall output and employment has steadily declined.

2 National Energy Board. "Canada's Oil Sands: Opportunities and Challenges to 2015." *An Energy Market Assessment*. May 2004. Project economics and supply costs have changed considerable since the early 2000s. The estimated supply costs for oil sands operations now range from approximately \$45 to \$60 per barrel, depending on the type of extraction technology used. New projects require oil prices in the \$60-\$80 per barrel range to break even. See Millington, Dinara, Carlos A. Murillo, Zoey Walden, and Jon Rozhon. "Canadian Oil Sands Supply Costs and Development Projects (2011-2045)." Study No. 128. Calgary: Canadian Energy Research Institute (CERI). March 22, 2012.

3 Canada is the world's sixth largest producer of crude oil and a net exporter of oil. In 2011, energy exports totaled \$112.1 billion and accounted for 24.5 per cent of Canada's total merchandise exports. Crude petroleum exports were valued at \$68.3 billion, natural gas at \$13.5 billion and other energy products at \$22.3 billion. In 2011, Canada delivered a trade surplus in energy products of \$60.1 billion, \$40.5 billion stemming from crude petroleum. Statistics Canada. CANSIM table 228-0043.

The Appreciation in the Canadian Dollar Reflects the Interaction of Various Factors

On September 20, 2007, the Canadian dollar hit parity with the U.S. dollar for the first time since 1976. Less than two months later, on November 7, 2007, it set a modern-day record, surpassing US\$1.10. The ascent in the value of the dollar was spectacular by all measures and can be traced back to August 6, 2002, when the loonie stood at a low of US\$0.6246.

Crude oil prices were also rising over this period. Prices for both Brent (the benchmark for crude oil in Europe) and West Texas Intermediate (the benchmark for crude oil in North America) virtually quadrupled, from roughly US\$25 per barrel to US\$95 per barrel. Much of the increase in prices can be attributed to strong demand from emerging-market economies coupled with a sluggish supply response.⁴

In 2010, the Bank of Canada published a report explaining the connection between macroeconomic fundamentals and exchange rates. It concluded that commodity prices (which are essentially shaped by global forces and are beyond Canada's control) and Canada's relative better fiscal position explain more than 60 per cent of the appreciation in the Canadian dollar relative to the U.S. exchange rate between 2002 and 2007. Over the long-run, these two factors together explain about 46 per cent of the variance in the Canada-U.S. exchange rate.⁵ Thus, additional factors play a role in explaining the loonie's appreciation.

Interest rate differentials matter in the short-run. Higher interest rates in Canada make Canadian-dollar denominated assets more

attractive to foreign investors, boosting demand for the loonie and driving its value higher. Short-term capital flows also hoist the loonie's value as international investors diversify into Canadian-dollar assets to mitigate risk. The Canadian dollar has gained from both of these trends in recent years.

At times of global economic uncertainty and financial turmoil, international capital seeks a safe haven, usually in the U.S., leading to an appreciation of the U.S. dollar and a depreciation of the loonie. In 2008, for example, as the financial and economic crisis deepened and recession fears gripped markets, the U.S. dollar surged against all major currencies. The Canadian dollar tumbled from parity at the start of 2008 to below US\$0.80 by October of that year. Interestingly, oil prices were rising over most of this period, and quite significantly, with Brent and WTI hitting a record high of close to US\$145 per barrel in early July 2008.

Ongoing concerns over the global growth outlook and the sovereign debt challenges facing some euro-area countries continue to benefit the U.S. dollar thanks to its safe haven status.

Thus, while the evolution of commodity prices is the main driver of the external value of the Canadian dollar over time, movements in the loonie reflect the interaction of various factors, any one of which may play a dominant role at different points in time.⁶

4 Kilian, Lutz and Bruce Hicks. "Did Unexpectedly Strong Economic Growth Cause the Oil Price Shock of 2003–2008?" University of Michigan. 2009. See also, Gervais, Olivier and Ilan Kolet. "The Outlook for the Global Supply of Oil: Running on Faith?" *Discussion Paper No. 2009-9*. Ottawa: Bank of Canada. July 2009.

5 Caven, Jean-Philippe, Donald Coletti, René Lalonde and Philipp Maier. "What Drives Exchange Rates? New Evidence from a Panel of U.S. Dollar Bilateral Exchange Rates." *Working Paper 2010-5*. Ottawa: Bank of Canada. February 2010.

6 Bank of Canada. "The Exchange Rate". *Backgrounders*.

Manufacturing Contracts ...

The manufacturing sector's share of output (GDP) steadily declined – from a peak of 18.4 per cent in 2000 to 14.9 per cent in 2007 and continued to drop post-recession to 12.8 per cent in 2011.⁷ Similarly, the sector's share of employment fell from 15.2 per cent in 2000 to 12.1 per cent in 2007 and to 10.2 per cent in 2011.⁸

The services sector has seen its share of output increase from 66.1 per cent in 2000 to 69.6 per cent in 2007 and to 71.6 per cent in 2011. The services sector's share of employment also increased from 74.2 per cent in 2000 to 78.0 per cent in 2011.

The reorientation of economic activity toward services is consistent with the trends we have seen in other industrialized countries.



... But Is This Dutch Disease?

The decline in the manufacturing sector's share of output and employment over the past decade is part of an ongoing process that has been a feature of this sector for the past 30 years or so. The trend is not unique to Canada. Across the industrialized world, manufacturing's share of output and employment has been dwindling for the better part of the past three decades. Possible causes include high rates of productivity growth relative to other sectors of the economy (which means firms can produce the same quantity of goods with fewer workers); relatively slow growth in demand for manufacturing products

as demand for services is growing more rapidly; the growth of manufacturing capacity in emerging-market economies, notably China; and, the loss of markets to imports.⁹ China is now the world's largest manufacturing power and accounts for a fifth of global manufacturing.¹⁰

Within manufacturing, industrialized nations (including Canada) have witnessed a long-trending shift toward durable goods production and away from non-durable manufacturing, where competition from emerging-market economies is particularly strong.¹¹

7 At a sub-sectoral level, the decline in output share has generally been broadly based, though the decline (in percentage terms) since 2000 has been particularly pronounced in the textiles and clothing, computer and electronic, furniture, electrical equipment, beverage and tobacco, and paper products sub-sectors.

8 Statistics Canada. CANSIM Tables 282-0008 and 379-0027.

9 Pilat, Dirk, Agnès Cimper, Karsten Olsen and Colin Webb. "The Changing Nature of Manufacturing in OECD Economies." *STI Working Paper 2006/9*. Paris: Organisation for Economic Co-operation and Development. October 27, 2006.

10 The Economist. "The End of Cheap China" March 10, 2012.

11 The distinction between durable and non-durable goods is based on whether the goods can be used once only for purposes of production or consumption, or whether they can be used repeatably or continuously over a year or more. The goods in question must also retain a considerable part of their original value after the one year time period to be classified as durable.

To some extent, the declining share of manufacturing in value added in the OECD is due to price effects. “Since much of the manufacturing sector is characterised by relatively high productivity growth, prices of manufacturing products tend to increase only little over time and may even fall. This contrasts with the experience of the many parts of the services sector, where productivity growth has been slower and prices tend to go up more strongly over time. This price effect contributes to the declining share of manufacturing in value added.”¹²

The strength in the Canadian dollar added another significant dimension to the dynamics of Canada’s manufacturing sector. TD Economics found that a one per cent appreciation in the Canada-U.S. exchange rate is associated with a 0.045-percentage point decline in manufacturing sector output share over the long-run and a 0.016-percentage point drop in employment share.¹³ While the exchange rate played a role, empirical evidence suggests the difficulties faced by the sector go well beyond the surge in the value of the Canadian dollar.

Between 2000 and 2007, unit labour costs (i.e. the average cost of labour per unit of output) in Canada rose by roughly 65 per cent relative to our major trading partner – the U.S. The majority of this increase reflected the appreciation of the Canadian dollar vis-à-vis the U.S. dollar, although lower productivity growth in Canada than the U.S. also played a significant role and led to a decline in the competitiveness of Canada’s manufacturing sector in the U.S. market.¹⁴

Since 2000, Canada’s share of the world export market has dropped from about 4.5 per cent to about 2.5 per cent, and our manufactured-goods export market share has been cut in half. Consistent with this drop, nearly half a million jobs have been lost in Canada’s manufacturing sector, more than half lost before the onset of the recession.¹⁵ Canadian exporters have lost one-quarter of their market share in the U.S. while China has more than doubled its market share, displacing Canada as the largest supplier of merchandise imports to the U.S. While the large rise in China’s share is also affecting other nations, a number of countries have fared relatively better than Canada.

In a recent speech¹⁶ to the Greater Kitchener Chamber of Commerce, Bank of Canada Governor Mark Carney said that Canada’s poor export performance has less to do with competitiveness challenges stemming from the persistent strength of the Canadian dollar (and lower productivity growth in Canada than the U.S.) and more to do with market structure.

Canada’s exports are concentrated in slow-growing advanced economies, particularly the U.S., rather than fast-growing emerging markets. In 2011, only 3.8 per cent of Canada’s merchandise exports were destined for China, accounting for just 1.1 per cent of Chinese goods imports. Similarly, just 0.6 per cent of Canada’s merchandise exports were headed for India, supplying only 0.8 per cent of India’s import demand.

12 Pilat, Dirk, Agnès Cimper, Karsten Olsen and Colin Webb. “The Changing Nature of Manufacturing in OECD Economies.” *STI Working Paper 2006/9*. Paris: Organisation for Economic Co-operation and Development. October 27, 2006. See also, Baldwin, John R. and Ryan Macdonald. “The Canadian Manufacturing Sector: Adapting to Challenges.” *Economic Analysis Research Paper Series*. Ottawa: Statistics Canada. July 28, 2009. Baldwin and Macdonald show that between 1961 and 2005, manufacturing prices rose at an average annual rate of 3.5 per cent, compared with 4.0 per cent for services and 4.5 per cent for goods. These price trends led to decreases in the share of nominal GDP accounted for by manufacturing.

13 Mulraine, Millan. What’s Behind the Canadian Manufacturing Sector Recession? *Special Report*. TD Economics. March 5, 2008.

14 Remarks by Mark Carney, Governor of the Bank of Canada, to the Greater Kitchener-Waterloo Chamber of Commerce. “Exporting in a Post-Crisis World.” Waterloo, Ontario. April 2, 2012.

15 Ibid.

16 Ibid.

Canadian Manufacturers Are Adapting to Changing Circumstances

Canadian manufacturers are remarkably resilient. Of those in export markets, some stayed while others exited. “While exit may signal failure, it may also be precursor to regenerative activities that follow.”¹⁷ Of those that exited, some took advantage of new opportunities in Canada by entering new domestic markets in other provinces/territories. Others simply retrenched to their existing domestic markets. Some found new export markets despite the appreciation of the Canadian dollar. Expansion into new markets “is suggestive of a flexibility that is associated more with growth than with long-term decline.”¹⁸

Many Canadian exporters are looking beyond the traditional U.S. market and are expanding internationally. In 2011, countries other than

the U.S. were the destination for 26.3 per cent of Canada’s merchandise exports, up from 16.2 per cent in 2005. The Asia-Pacific region now accounts for about 11 per cent of Canadian exports, up from 6.5 per cent in 2005. Europe now takes in about 10 per cent of Canadian exports, up from 6.6 per cent in 2005.

Plants of manufacturing firms “that take the risks associated with expanding into new markets, whether domestic or foreign, have a superior productivity performance.”¹⁹ Plants with the worst productivity performance are those that maintain the status quo – i.e. they continue to serve the same markets they have always been serving.

Canada’s Terms of Trade Significantly Improve

Lower prices for imported goods and the substantial rise in prices since 2002 for many of the commodities Canada exports have resulted in a significant improvement in Canada’s terms of trade (i.e. the prices we get for our exports relative to the prices we pay for our imports) and have generated large gains in real income and wealth. This has fuelled spending by consumers, businesses and governments.

“Canada’s natural resources are a tremendous gift. They have brought us enormous material benefits – higher incomes and greater economic security than in many other countries. Most other countries would gladly trade places with us, should we ever grow tired of our rich resource endowment.”²⁰

17 Baldwin, John R. and Beiling Yan. “Market Expansion and Productivity Growth: Do New Domestic Markets Matter as Much as New International Markets?” *Economic Analysis Research Paper Series*. Ottawa: Statistics Canada. March 10, 2012.

18 Ibid.

19 Ibid.

Machinery and equipment – most of which is imported from the U.S. – has become less expensive for all firms, not just those in the resource sector, as the appreciation of the dollar drove down prices. The surge in investment in machinery and equipment across the economy in recent years suggests that businesses are taking advantage of the stronger dollar to improve their productivity and enhance their competitiveness.

Additionally, many Canadian businesses use imported inputs (supplies, parts and raw materials, for example) in the production process. Falling prices have enabled them to cut expenses. Thus, the loss in export competitiveness stemming from currency appreciation can be offset somewhat from falling prices for imported inputs. The businesses that are most vulnerable to a rising dollar are those with a large export dependency but little offset from imported inputs.

Canadian Oil Sands Generate Economic Benefits Across the Country

TD Economics estimates increased exports of Canadian oil and investment in machinery and equipment and in infrastructure in the Canadian oil sands accounted for one-third of the economic growth in Canada in 2010 and 2011. This estimate does not include indirect effects from increased employment and income gains.²¹

High levels of investment in the resource sector have led to strong demand for parts, machinery and equipment, fabricated metal and other durable goods, as well as for services – professional, technical and in finance and transportation, for example. Businesses across the country have benefitted from this increased demand, not just those in Western Canada. For example, one out of 12 oil sands manufacturers and suppliers are from the Kitchener-Waterloo

region, and Ontario's exports to Alberta of mining-related services have increased substantially in recent years.²² The Canadian Association of Petroleum Producers counted 255 Ontario-based companies, most of them manufacturers, as suppliers to the oil sands.

According to the Canadian Energy Research Institute (CERI), between 2010 and 2035, new oil sands projects are expected to contribute \$63 billion to Ontario's GDP. Employment in Canada (direct, indirect and induced) as a result of new oil sands investments is projected to grow from 75,000 jobs in 2010 to 905,000 jobs in 2035. Roughly 14 per cent of the 905,000 jobs in 2035 (i.e. 126,000 jobs) are anticipated to be created and preserved in provinces other than Alberta – 66,000 in Ontario.²³

20 Remarks by John Murray, Deputy Governor of the Bank of Canada, presented to the University of Alberta Institute for Public Economics and the C.D. Howe Institute. "Is There a Commodity Curse? Lessons from the Past." Edmonton, Alberta. May 6, 2010.

21 Burleton, Derek and Diana Petramala. "Oil's Well Below a Certain Threshold: Examining the Impact of Crude Oil Price Movements on Canada's Economy." *Observation*. TD Economics. May 16, 2012.

22 Remarks by Mark Carney, Governor of the Bank of Canada, to the Greater Kitchener Waterloo Chamber of Commerce. "Exporting in a Post-Crisis World." Waterloo, Ontario. April 2, 2012.

23 Honarvar, Afshin, Jon Rozhon, Dinara Millington, Thorn Walden, Carlos A. Murillo and Zoey Walden. "Economic Impacts of New Oil Sands Projects in Alberta (2010-2035)." Study No. 124. Calgary: Canadian Energy Research Institute (CERI). May 2011.

In Summary

Driven by strong demand from emerging markets, oil and other commodity prices shot up dramatically between 2002 and 2007 (and again since 2009), hastening a resource boom in Canada and helping to push the Canadian dollar higher. While it's tempting to conclude that the strong loonie is solely responsible for the manufacturing sector's steadily diminishing role in output and employment, there are other factors at play.

A complex transition is taking place in the economy, only part of which is driven by the resources boom and the high dollar. The transition is also driven by shifts in household spending patterns towards services, by broader competitive pressures at home and in key export markets and by technological change.

These forces are being reflected in significant shifts in the sectoral composition of growth and employment. While growth in the resources part of the economy has been exceptional in recent years, there has also been growth in the services sector. As in other advanced countries, manufacturing activity in Canada has been declining as a share of the total output during the past three decades. Similarly, manufacturing's employment share has been falling in line with the experience of other industrialized nations. These trends are even evident in countries that are not resource-rich.

This is not to suggest that we should ignore or downplay the difficulties experienced by the manufacturing sector, but neither should

we claim a clear and strong causality between the resource boom, the Canadian dollar and the decline in manufacturing employment and output over the past decade.

"From a macroeconomic point of view, the reallocation of resources is a sign of health, not disease – it is the sign of a vibrant, dynamic economy adjusting to significant shifts in demand by putting resources to their most profitable use."²⁴

As for the Netherlands, where the term "Dutch disease" was originally applied, "very little systematic and long-term net adverse consequences of natural gas development on the manufacturing sector were found."²⁵



²⁴ Remarks by Pierre Duguay, Deputy Governor of the Bank of Canada, to the Canadian Association for Business Economics. "Productivity, Terms of Trade, and Economic Adjustment." Kingston, Ontario. August 28, 2006.

²⁵ Hutchinson, Michael. "Manufacturing Sector Resiliency to Energy Booms: Empirical Evidence from Norway, the Netherlands, and the United Kingdom." *Oxford Economic Papers*, 46(2) 311-329. April 1994.

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