SPECIAL REPORT

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FAILURE TO LAUNCH: CANADIAN EXPORTS AND STRUCTURAL HEADWINDS

Highlights

- The performance of Canadian non-energy exports have disappointed in recent years, failing to keep
 up with most measures of foreign activity despite a weakened currency.
- There is evidence to suggest that changes in the currency are taking longer to impact exports, suggesting that the largest impact of the depreciation has yet to be seen.
- However, the depreciation of the Canadian dollar relative to the U.S. dollar over the past year has not been an exclusive Canadian story. The greenback was appreciated widely against global currencies, resulting in a less significant boost to Canadian competitiveness. At the same time, it appears that exchange rates have become a less important driver of exports.
- Other structural factors appear to be at play, such as Canadian firms meeting export demand via foreign subsidiaries, thereby reducing the growth of exports.
- Canada has lost significant market share in the U.S., while China and Mexico have rapidly filled in the gap. However, in U.S. dollar terms, the prices of Canadian goods have become much more competitive in the most recent period.
- There are thus two trends impacting Canadian exports, one cyclical and one structural. The cyclical
 improvement in price competitiveness, alongside increased U.S. demand, and additional opportunities provided by trade agreements should help boost export growth in the near term. Over the longer
 term, structural issues, such as a lack of innovation, are likely to constrain export growth.

After an unquestionably disappointing performance in the first half of the year, the door is open for Canada's non-energy export sector to post a cyclical rebound over the near term, but perhaps not for the reasons you think. Historically, a 20% depreciation in the Canadian dollar over the past year would have boosted nonenergy exports by roughly 10% by now. Instead, the performance has been a roughly 5.0% gain. Competitive forces and a changing global landscape have both delayed and restrained the cyclical rebound. In a prior report (Canadian Export Sector Poised to Step on the Gas), we discussed how structural changes are causing a persistent underperformance in Canada's export sector relative to measures of foreign demand. This report dives deeper into those influences, identifying reduced sensitivity of exports to currency moves over the past decade, changes in supply chains, and longterm trends in relative prices. Competitiveness factors, such as innovation, may also be playing a role.







In the short term, the benefits to Canadian exports of rising U.S. demand are likely to mask these structural effects and set the stage for solid gains. Over the longer term, sustaining or growing export market share will depend on the ability of Canadian exporters to compete on value-add rather than price. Further, new trade agreements will provide opportunities through easier access to additional export markets, further supporting demand for Canadian products and services.

The dollar and export competitiveness: Canada has become cheaper, but so has everyone else

When thinking about export competitiveness, a logical place to start is the exchange rate. All else equal, a falling currency serves to make exports more competitive. By this measure, Canadian exports should have become much more competitive, at least in U.S. dollar terms.

Exchange rates are by definition driven by a combination of domestic and foreign factors, neither of which typically moves in isolation. Depreciation can be driven by (relative) weakening domestic economic conditions or by improvements in the foreign outlook. The latter appears to be the case for the recent period: the depreciation resulted from a general strengthening of the U.S. dollar, rather than Canadian-specific factors. Looking at the U.S. market (the destination for three quarters of Canadian exports), China, Mexico, and European countries (the combination of Germany, France, Italy and Ireland) command similar import market shares. As shown in Chart 1, against these competitor currencies, the moves in the Canadian dollar have been much more muted. As a result, Canadian export competitiveness has not improved as much as the drop in the Canada-U.S. bilateral exchange rate would suggest. While competitiveness has increased vis-à-vis China (as seen by the strengthening Chinese Yuan), the Canadian dollar / Mexican peso exchange rate has been effectively unchanged over this time.

The exchange rate undoubtedly plays an important role in determining exports, but other factors are also important, including the relative prices of different goods and services, and growth in foreign investment. Foreign demand is relatively straightforward to analyze, and we benefit from using the TD Foreign Activity Index (FAI).¹

To examine the importance of the exchange rate and foreign demand factors to Canadian non-energy exports, we estimate a simple model of (contemporaneous) export sensitivity, subdividing the data into three periods.² The results are presented in Chart 2.³ Of note, in the most recent period, the estimated sensitivity of exports to a trade weighted index of Canadian exchange rates is much lower than in the past – approximately one quarter the level estimated for the 1985-1995 and 1995-2005 periods, with a very high estimated sensitivity during the 1995-2005 years. The lower sensitivity of exports to the exchange rates is not solely a Canadian phenomenon however – recent World Bank research has identified decreasing sensitivity across a number of global economies.⁴

There is also evidence that the relationship between exports and the exchange rate has become more 'lagged' – it now takes longer for movements in the exchange rate to impact exports. Additional regression analysis suggests that in the most recent period, it may take as long as 6 quarters for changes in the exchange rate to feed through, although the impact on exports is nevertheless much smaller than in the past.⁵ This is why Canada is poised for a cyclical rebound to make a strong showing in Q3, as the exchange rate depreciation only began in earnest in 2014 and the full impact has yet to be seen in the data.

It is difficult to say with certainty why the sensitivity of exports to the currency has declined in the post-2005 period. It is possible however, that the 1995 to 2005 period was an aberration. Over this time, Canadian exporters benefited from the expansion of NAFTA, strong U.S. demand, and a historically unprecedented, broad-based low level of the Canadian dollar. These conditions may have enabled marginal firms to maintain operations that would have been non-economic in other periods. As Bank of Canada research



has suggested, conditions changed and many of these firms closed operations.⁶ The remaining export firms should then be more efficient, and less likely to compete on price. This would result in exports becoming more sensitive to demand, and less sensitive to exchange rate effects, consistent with our findings.

Exports and foreign demand: another piece of the puzzle

It goes without saying that a key determinant of overall export performance is foreign demand. Indeed, unlike the exchange rate effect, our analysis (Chart 2) suggests that the sensitivity of non-energy exports to foreign activity has climbed markedly over time, particularly between the first and second samples (Although the relationship appears to have broken down since early 2012). This suggests that as the influence of the exchange rate has fallen, foreign demand has become a more important determinant of export growth, consistent with marginal producers leaving the export market. In the current context, the limited depreciation of the Canadian dollar on a broad country basis may not be as concerning for exporters.

Chart 3 provides reason for pause. Matching non-energy exports with the TD Foreign Activity Index shows that for most of the recent period, a relatively tight relationship held between exports and activity (Chart 3). Around the end of 2011 however, a gap emerged, and continued to widen.

The nature of this gap has been subject to much debate and analysis. A popular theory is that many large Canadian firms have been building up capacity abroad, investing outside of Canada. Such an approach provides a natural currency hedge (as production costs are in the local currency), and would explain the failure of exports to keep up with demand post-2011. This view is also supported by Bank of Canada research,⁷ which found that major Canadian manufacturing firms were increasingly choosing to invest beyond our borders. Indeed, to take just one example, Bombardier Recreational Products, has moved production of several key products to Mexican facilities, and plans to continue shifting operations this year.⁸ While firms may choose to utilize such a currency hedge, the hedge can work both ways: those firms (both domestic and foreign) with remaining Canadian-U.S. operations may choose to expand output at these facilities to take advantage of the weaker dollar. Although there has been limited evidence of this behaviour to date, it cannot be ruled out in light of the potentially more lagged relationship between exchange rates and exports.

What if it isn't trade: is the U.S. satisfying its own demand?

The largest driver of Canadian foreign demand is, unsurprisingly, the U.S. One explanation for the failure of Canadian exports to accelerate meaningfully may be firms in the U.S. are ramping up domestic production to substitute for more foreign goods and foreign production; so-called "on-shoring".⁹ If this is the case, it would suggest that when it comes to trade, our main competitor may be the U.S. itself, rather than emerging market rivals.

An obvious starting point in determining if this is the case is to review how the importance of trade (imports specifically) has changed relative to other components of growth. On this measure, the evidence of a U.S. shift away from imports appears mixed at present – the process of shifting production can take time, and may not have yet manifested itself in the data. Whether measured against total GDP, investment, or other components of GDP, imports have been either constant or risen in relative importance since the great recession, suggesting that to the extent that on-shoring of manufacturing is occurring, it has not yet meaningfully impacted the demand for goods produced abroad.¹⁰

U.S. industrial production data further underscores the important role imports continue to play. Since the end of 2009, industrial production has risen by an average of approximately 3% per year, while goods imports have grown by between 8% and 9% per year over the same period. One notable exception is the production of rubber and plastics products, which grew by around 5% over the same period, with a marked acceleration in the most recent data. This



is undoubtedly related to the shale gas revolution in the United States, which has resulted in new feedstock that is both relatively affordable, and geographically approximate. Past TD reports have found that on-shoring is taking place in other industries, notably in capital-intensive industries such as machinery, electrical equipment, and fabricated metals; however there has not yet been an impact on U.S. imports in these categories.¹¹ While on-shoring is certainly taking place within the U.S., to date it has not meaningfully impacted import demand in absolute or relative terms. Indeed, perhaps a more likely explanation may be the trend towards "near-shoring", or locating production in close physical proximity to destination markets. We explore this possibility further in subsequent sections.

Overall then, while U.S. "on-shoring" is undoubtedly taking place, the evidence does not suggest that it is major factor in explaining the Canadian export weakness, with the potential exception of rubber and plastics products, and a few other sectors. Other factors, such as a more lagged relationship between exports and the exchange rate may be playing a larger role. There is also likely to be a competitiveness aspect, which we explore in the next section.

Beyond the dollar: how has competitiveness changed?

Maintaining our focus on the important U.S. market, we see that on the whole, Canada's share of U.S. non-energy imports has seen a continuous decline since the early 2000s (Chart 4). Although this decline is concerning, this does not mean that Canadian exports are declining as well – indeed, Canadian non-energy goods exports have risen more than

10% since 2000, or more than \$38 billion. Despite Canada's shrinking share of the market, as discussed previously, U.S. import demand has continued to grow, both in dollar terms, and as a share of GDP. At the same time, Canadian exports to other markets have also expanded modestly. Clearly however, export growth would have been much larger had Canada maintained its share of the U.S. market – as much as \$14 billion higher at current exchange rates.

This can be attributed to the U.S. conducting relatively less trade with advanced industrial countries, in favour of trade with emerging markets. Reduced barriers to trade, competitive labor costs, and lower costs of communication and transportation are likely to be the main reasons for this shift, with Mexico and China receiving most of the benefit. Indeed, as Chart 4 shows, Mexico and particularly China have rapidly expanded their share of U.S. imports, by 1.5 and 13 percentage points respectively, with much of the growth in Chinese share occurring between 2000 and 2008. Over the same time, the Canadian share fell by roughly 6 percentage points. After leveling off somewhat, Mexio and China both saw growth in market share between 2011 and 2014, roughly corresponding to the period in which Canadian exports began to underperform relative to foreign demand, although the gains in market share were much more muted relative to the past, particularly for China.

Changes in market share vary not only by country, but by major industry as well. Exhibit 1 provides a summary of how product shares within the U.S. market have changed by country for the 10 largest trading U.S. trading partners, relative to their past levels, for key industries.¹² A number of key Canadian industries stand out as underperformers:







motor vehicles – for which exports have been supplanted by Mexican and European products; machinery, where Canadian market share loss has been matched by gains for China, South Korea, and Mexico; electrical equipment, where the main beneficiary has been China; and plastics and rubber products, where falling Canadian market share has been filled by China, Germany, and Mexico.¹³

The story is not all negative, however, as Canada has seen significant gains relative to past levels in its market share for pharmaceutical products, primary metals, aerospace, and wood products. These gains have come as market share in these categories has fallen for China and Mexico, as well as others. On balance however, the story is unchanged: Canadian non-energy export market share losses have been matched by gains in Mexico, China, and many of the larger European economies.¹⁴

That's what happened - now, why did it happen

It can be difficult to disentangle the factors and changes in the international landscape that affect export market shares. Some changes, such as barriers to trade, are not easily identified or measured. Prices and costs, however, are easily observable. Embedded in the cost of an exported good are many sub-costs, such as the wages paid to employees, the cost of raw materials, electricity, transportation costs, and others. These costs, along with the exchange rate, are key determinants of the import price in the destination country. Within the U.S. market, on a pure price basis, Canadian manufactured goods exports saw a steady erosion of competitiveness beginning around 2009, with significant improvement occurring only recently, corresponding to Canadian dollar weakness (Chart 5).¹⁵

A key factor in this development was shifts the cost of labour, which can account for as much as 25% to 30% of a products cost. But, wages are only part of the story. Companies focus on the bang for the buck by comparing unit labour costs – the amount that a worker is paid per unit of output. Within China, unit labour costs have shown no sign of slowing down (Chart 6). A tripling of wages over the past decade was not matched by productivity. The competitive erosion was further compounded by the gradual strengthening of the RMB against the U.S. dollar. As a result, China's manufacturing cost advantage against the U.S. has shrunk 10 percentage points since 2004.¹⁶ At the same time that cost



competitiveness has been eroding, China has steadily gained market share, suggesting that Chinese exports are moving up the value chain, increasing pressure on Canadian exporters.

While Chinese costs have continued to rise, Mexico has become the proverbial wunderkind in terms of cost competitiveness; manufacturing labor costs in Mexico are now almost 20% lower than China, a reversal of traditional patterns.¹⁷ Mexican manufacturing wages have increased by 67% over the past decade –much of this has been offset by productivity gains in the industrial sector and the peso's depreciation against the U.S. dollar. This geographic proximity of Mexican production (which largely occurs in northern states) to the faster-growing southern U.S. provides a further advantage, and may be benefitting from "near-shoring".¹⁸ This increase in geographic competitiveness has come at the expense of Canadian (and other) exporters.

Cost competitiveness within the U.S. has improved greatly over the past decade – as with Canada, U.S. unit labour costs are back near their 2007 levels (Chart 6). The U.S. has one of the developed world's most flexible labor markets, a key factor in its growing competitiveness. The United States has by far the highest worker productivity among the world's 25 largest manufacturing good countries, and when adjusted for productivity these costs are an estimated 20 to 54 percent lower than those in Western Europe and Japan for many goods.¹⁹ Another big factor in the U.S. becoming more cost competitive is the low domestic price of natural gas, providing significant savings in input costs.

Unit labour costs, while useful for gauging changes in competitiveness through time, unfortunately cannot tell us anything about the absolute (or relative) level of production costs. Fortunately, a number of studies and reports have focused on this topic. Among these is KPMG, who produces a 'Competitive Alternatives' report, focused on the costs of doing business in various countries.²⁰ The report found that despite the many advances in the U.S. manufacturing industry, on many metrics, it still costs less to manufacture in Canada relative to the U.S. – this competitiveness will be further buoyed by recent declines in the Canadian dollar.²¹

Indeed, a 2014 study by the Boston Consulting Group found that it cost roughly 15% more to manufacture goods in Canada compared with the United States (using a different methodology from KPMG). However, recent changes in exchange rates will have effectively closed this cost gap in U.S. dollar terms. Further, there are additional factors which make Canada relatively attractive for businesses – the effective corporate tax rate of approximately 14% (in the Toronto area) is substantially lower than combined tax rates in most U.S. states.

Price indices, the absolute level of wages, and other costs are by their nature an imprecise way of looking at competitiveness – export prices may be rising for a given country because the mix of goods is shifting to higher value-added, higher priced goods. Similarly, workers producing high value goods may require more technical skills, and thus command higher wages. Such changes would not mean the country is becoming less competitive – rather, they may be becoming more competitive in a new higher-value market – the evidence would suggest that this is likely the case for Chinese, and to a lesser extent, Mexican goods, placing further pressure on Canadian firms. Competitiveness, at a high level, depends on many factors – the skill and education of





Box 1. Canada slipping on some competitiveness measures, but still ranks high

Summarizing all of the influences on a country's overall competitiveness can be challenging task. Fortunately, each year the World Economic Forum releases its Global Competitiveness Report, which ranks the major economies of the world based on a number of different factors.²² In the most recent overall ranking, Canada was listed 15th, behind the U.S., but ahead of Mexico and China. This was a decline of 5 spots from the 2010/2011 rankings. Much of the decline can be attributed to a falling ranking in innovation and sophistication factors. Over the same period, Mexico advanced 5 places in the rankings (to 61st), with gains concentrated in innovation categories.

Beyond innovation, more concrete factors can affect competitiveness. Within Canada, the Canadian Chamber of Commerce has identified 10 barriers to competiveness, with two barriers particularly germane to export competitiveness. The first is that Canadian trade is constrained by infrastructure deficiencies. There are clear links between infrastructure investment and productivity- an annual 10% increase in infrastructure investment has the potential to decrease manufacturing costs by 5%.²³

The second is that Canadian exporters clearly cannot compete on price alone; renewed strength in Canada's manufacturing sector will need to come from investment in innovative technologies that are beginning to revolutionize manufacturing globally, as well as ensuring that there are not undue barriers in bringing products to market.

the workforce, the strength of legal institutions, overhead costs (such as registration fees, electricity costs, etc.), cost and ease of transportation, and many other factors. A fulsome discussion of all factors that affect a country's broad competitiveness is beyond the scope of this report; however, we provide a brief overview of some of these factors in Box $1.^{24}$

Bringing it all together

Since the early 2000s, we have seen Canada's share of imports to the United States slowly erode, while other countries have been growing their share- most notably China and Mexico. Reduced trade barriers, competitive labor costs, and lower costs of transportation are all contributing factors in the U.S.'s shift away from Canadian goods towards emerging markets. This trend also reflects ongoing structural issues, as Canada continues to underperform in terms of efficiency, innovation, and other fundamental determinants of competitiveness. While competitiveness continues to improve in other parts of the world – notably Mexico and the southern U.S. states.

That said, our analysis has been largely backwardslooking by necessity. Although our analysis captures much of the Canadian dollar depreciation that has taken place since late 2014, the effects of the declining Canadian dollar may not yet be fully captured in the data, as invoice prices may have been agreed in advance, and it takes time for producers to adjust prices, particularly if there are concerns about the permanence of currency moves. TD Economics expects a cyclical rebound in exports in the order of 6% to 8% percent (quarterly, annualized) over the next 12-18 months. As a result, net exports are expected to be an important driver of growth, particularly in 2016 (Chart 7).

Beyond expected near-term cyclical recovery, upcoming trade agreements will provide additional support for exports, helping offset some of the structural factors identified in this report. Both the Trans-Pacific Partnership (TPP) and the Comprehensive Economic and Trade Agreement (CETA) will provide enhanced market access for Canadian goods in countries representing more than half of global GDP. CETA in particular represents an opportunity for further geographic diversification of Canadian exports, with access to the large European Union market. At present, these countries represent a modest fraction (8%) of Canadian exports, but have significant growth potential, particularly for services trade. The size of the market should not be underestimated, as the European Union represents a potential market more than twice the size of that created by the TPP, once the U.S. and Mexico are removed (Chart 8). Both CETA and the TPP should help both support export growth and further reduce reliance on the North American market

Moreover, as discussed earlier in this paper, it appears that strength in foreign demand is becoming more important in determining export growth, while the role of the currency is declining. With U.S. growth poised to accelerate (see our most recent <u>outlook</u>), this bodes well for Canadian exporters, providing a cyclical driver for exports. While the share of the U.S. 'pie' captured by Canadian firms is unlikely to return to past levels, a growing pie means more demand for goods from all countries. Many of the factors expected to help drive this cyclical recovery are discussed in our report "<u>Canadian Export Sector Poised to Step on the Gas</u>". With increased and easier access to more markets via recent trade agreements, Canadian exports should help carry overall growth in the coming quarters and beyond, despite many of the hurdles identified in this report.



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ENDNOTES

- 1 For more information on this index, see "Canadian Export Sector Poised to Step on the Gas"
- 2 To be specific, export *elasticities* are estimated. We model growth in quarterly exports as a function of the Canadian Effective Exchange Rate Index, a trade weighted index of Canadian exchange rates, and growth in foreign activity as measured by the TD FAI.
- 3 It is important that the results from the model be interpreted through time within category. We are unable to make statements regarding the importance of the factors relative to one another.
- 4 The World Bank report uses a different estimation approach, and suggests that increased supply chain linkages may be a factor. See <u>http://www-wds.</u> worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/08/11/090224b08306790b/1_0/Rendered/PDF/Depreciations00lasticity0of-<u>0exports.pdf</u>
- 5 Of course, a more lagged relationship would also imply that recent moves in the Canadian dollar have not yet had an effect on exports, and so the effect is not yet captured in the data, biasing the estimated impact down. The strong August export data may support this view.
- 6 See http://www.banqueducanada.ca/wp-content/uploads/2014/12/dp2014-7.pdf
- 7 Ibid.
- 8 See http://www.cbc.ca/news/canada/montreal/brp-spending-55m-to-build-3rd-manufacturing-plant-in-mexico-1.2634183
- 9 The case for on-shoring goes beyond price factors. The decision to produce goods domestically may be the result of concerns over intellectual property protection, shipping delays, quality issues, and other factors. See <u>"Offshoring, Onshoring, and the Rebirth of American Manufacturing"</u>
- 10 It is of course possible that import demand would have been even higher absent on-shoring. It is also possible that the composition of imports has changed as a result of on-shoring, with U.S. importing more inputs to production, rather than finished products. However, this effect is likely to vary by industry, and may result in a lower dollar value of imports, which has not been observed.
- 11 See note 9.
- 12 We've chosen industries identified by the Bank of Canada as being poised for growth. For more information on the selection criteria, see http://www.bankofcanada.ca/2014/04/discussion-paper-2014-1/
- 13 As previously discussed, there is also likely U.S. import substitution occurring within this category.
- 14 It is important to remember that scoring in Exhibit 1 is relative to a country and products *own* share thus a theoretical doubling of a very small market share would show up as a significant gain here, despite being inconsequential in overall level terms. This is particularly important for countries such as Saudi Arabia, where non-energy exports are a very small share of overall trade.
- 15 An import price index for manufactured goods only is not available for China, however, the series should be broadly comparable as non-manufactured goods represent a small share of Chinese exports.
- 16 See https://www.bcgperspectives.com/content/articles/lean_manufacturing_globalization_shifting_economics_global_manufacturing/
- 17 See https://www.stratfor.com/sample/analysis/mexicos-manufacturing-sector-continues-grow. On a non-productivity adjusted basis, Mexican wages are as much as 30% lower than China's as a recently as 2007 Mexican wages were more than 75% higher.
- 19 Near-shoring refers to the movement of production to relatively lower-cost jurisdictions (though not always when compared to off-shoring destinations) that are geographically closer to a target market. Mexico's low costs, close proximity to the U.S. make it an idea candidate.
- 19 See note 17.
- 20 For full details, see http://www.competitivealternatives.com/. Other price measures come from BCG see note 16.
- 21 These comparisons are on an aggregate basis it is likely that regions within the U.S., notably the southern states, are likely to be much more cost competitive.
- 22 For further detail on how the rankings are constructed, see http://www.weforum.org/reports/global-competitiveness-report-2014-2015
- 23 See http://www.chamber.ca/advocacy/top-10-barriers-to-competitiveness/150205_Barrier_6.pdf
- 24 A recent Bank of Canada report also suggests that much of the decline in market share has been the result of loss in competitiveness, although they are unable to identify specific factors driving competitiveness (With the exception of the auto sector). See http://www.bankofcanada.ca/wp-content/uploads/2015/08/dp2015-5.pdf



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