# The Slowdown in Global Trade

*Michael Francis and Louis Morel, International Economic Analysis*

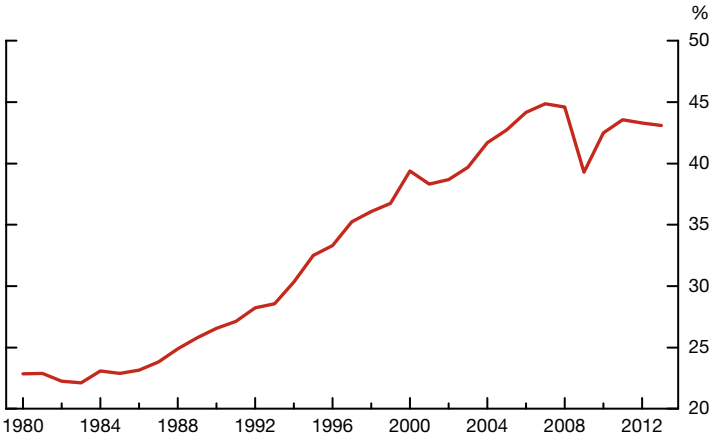
- Global trade has been disappointing following the 2007–09 financial crisis. After outpacing global GDP growth in the pre-crisis era, growth in global trade slowed and has barely matched the lacklustre pace of overall economic activity since 2010. As a result, the global propensity to trade (i.e., the ratio of trade to global GDP) has stopped rising.[1]
- This flattening of the global propensity to trade has important implications for the Canadian economy, given its dependence on trade. Understanding the reasons behind the slowdown and the prospects for the future helps to shape the Bank's outlook for the Canadian economy.
- There are a variety of factors beyond slow economic growth that explain the post-crisis slowdown in global trade. The most notable include diminished incentives to expand trade, the changing composition of global demand and increased protectionism.
- Some of these factors are likely to have only a temporary restraining effect on the global propensity to trade, but others could be more long-lasting. Overall, the findings suggest that the propensity to trade should resume its rise in the future, although at a slower pace than in the past.

Starting in the mid-1980s, the world economy entered a phase of rapid globalization. Lower tariffs negotiated as part of the Uruguay Round of multilateral trade negotiations and other trade agreements such as the North American Free Trade Agreement, the ability to break up the production process across geographic regions, lower transportation costs, and the integration of emerging markets like India and China into the global economy all helped to spur rapid trade growth. Between 1990 and 2008, the growth

1 In this article, the propensity to trade is an indicator of the tendency of economic activity to involve international trade. Although the ratio of trade to GDP is a widely accepted indicator of the overall importance of trade in economic activity, it is problematic because the value of trade is a gross measure while GDP is a value-added measure. As such, the value of trade is overstated because exports typically include some imported content, the value of which is included in gross statistics but excluded from value-added statistics. Even though trade-related activity is a subset of GDP, the value of trade could exceed GDP in extreme cases. For example, Singapore's trade recorded on a gross basis is 2.5 times larger than GDP. A better measure of the global propensity to trade would use value-added trade statistics. At present, however, value-added trade statistics are available for only a limited number of years and countries.

**Chart 1: The global propensity to trade, 1980–2013**

World merchandise trade volume (exports plus imports) as a percentage of world real GDP

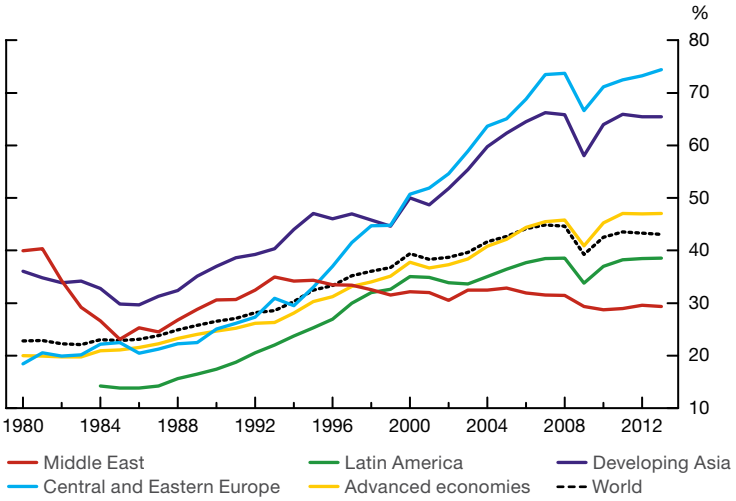



Sources: International Monetary Fund, *World Economic Outlook*, and Bank of Canada calculations

Last observation: 2013

**Chart 2: The propensity to trade by region, 1980–2013**

Merchandise trade volume (exports plus imports) as a percentage of real GDP




Note: Data for Latin America prior to 1984 are unavailable.
Sources: International Monetary Fund, *World Economic Outlook*, and Bank of Canada calculations

Last observation: 2013

in global trade outpaced growth in global output by a factor of two and, as a result, the volume of merchandise trade (exports plus imports) rose from around 25 per cent to 45 per cent of global GDP (**Chart 1**).[2]

*The global propensity to trade has levelled off since 2010*

This remarkable trend came to a sudden end following the onset of the global financial crisis. Starting in late 2008, the global propensity to trade fell sharply and, although it rebounded fairly quickly to pre-crisis levels, it has levelled off since 2010. The same story is broadly true across all regions of the globe (**Chart 2**).

2 In this article, we focus on trade in goods because of data limitations on services trade. We also use the volume-based propensity to trade because it is less sensitive to swings in commodity prices. The ratio of nominal global trade to nominal world GDP nonetheless shows a similar trend to that in Chart 1.

This article investigates two main explanations for why the global propensity to trade has stopped rising. The first is that cyclically induced changes have lowered the global propensity to trade since the crisis but have not affected its long-run growth rate. Hence, the recent flattening in trade relative to GDP is only a temporary phenomenon, and the upward trend should resume at some point in the future.

The second explanation is that the plateauing of the global propensity to trade reflects a long-term secular trend, with trade now growing at a slower pace relative to GDP than it had in the past. According to this view, trade reforms and technological innovations that lowered trade costs during the 1990s had a substantial effect on global trade by encouraging emerging markets to integrate into the global economy and by making global value chains economically viable. As a result, global trade rose relative to GDP. However, since this process is largely complete, the underlying incentives to expand trade are likely weaker now than they were in previous decades, leaving the world in a state where trade is neither rising nor falling relative to GDP.

The article finds evidence supporting both explanations, suggesting that the upward trend in the global propensity to trade should resume over time as cyclically induced headwinds dissipate, although the rate of increase will be more moderate than in the past.[3]

## The Case for a Temporary Slowdown in Global Trade

*A temporary pause in the rise of the global propensity to trade may be explained by changes in the composition of global demand or by a rise in protectionism*

We start by considering the hypothesis that there has been a temporary pause in the upward trend of the global propensity to trade. Two main explanations are consistent with this view. First, the propensity to trade has been temporarily reduced by changes in the composition of global demand. Second, it has been reduced because of a rise in protectionism. We consider each of these in turn.

### Changes in the composition of global demand

At the global level, a change in the composition of GDP away from import-intensive components of demand (such as investment) and toward components that have higher degrees of local or non-traded content (such as consumption or government spending) would decrease the global propensity to trade.[4]

Morel (2015) estimates a model to explain the historical behaviour of exports in countries in the Organisation for Economic Co-operation and Development (OECD) using changes in the level and composition of global demand and relative prices.[5] His results shed some light on how these factors have affected the global propensity to trade.

In the years leading up to the crisis, advanced-economy exports were growing quickly, reflecting not only the vigour of global demand but also the robust performance of investment relative to other demand components (**Chart 3**). The

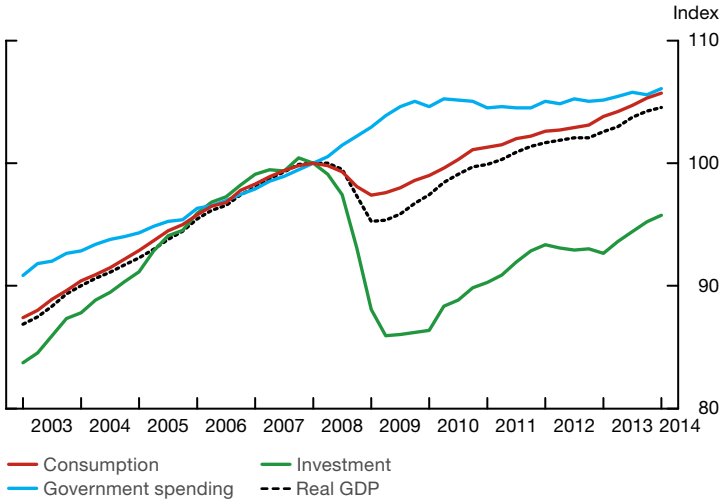
3 Other researchers have recently come to a similar conclusion. See, for example, World Bank (2015).

4 According to Bussière et al. (2013), the average import content of investment across countries in the Organisation for Economic Co-operation and Development was 32 per cent in 2005, compared with 25 and 10 per cent for private consumption and government spending, respectively.

5 Morel (2015) provides a new measure of foreign demand for exports by aggregating the demand for real imports in a country's trading partners. In turn, the demand for imports abroad depends on the relative strength and import content of domestic demand components (that is, consumption, investment and government spending) in these foreign countries. Using these country-specific foreign demand measures along with relative export prices, he estimates export demand equations for 18 OECD member countries.

**Chart 3: Domestic demand components in OECD countries**

OECD aggregates, 2008Q1 = 100

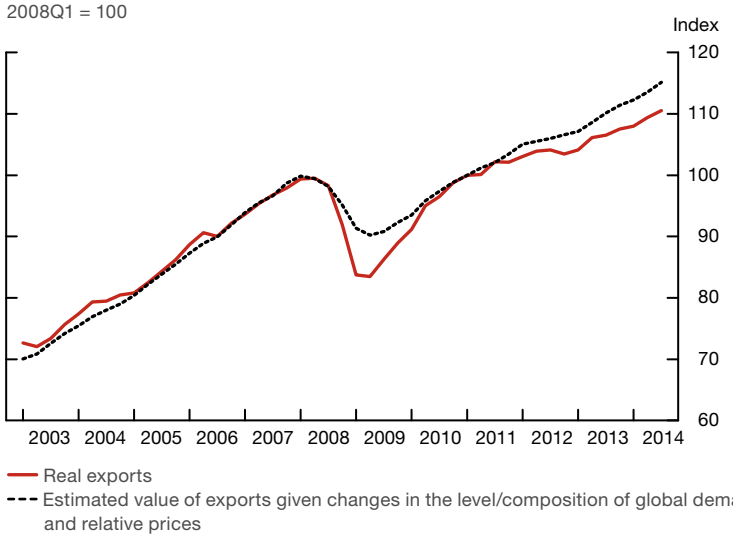



Note: Investment is gross fixed capital formation and comprises business, residential and government investment.
Source: Organisation for Economic Co-operation and Development *Main Economic Indicators*

Last observation: 2014Q1

**Chart 4: Real exports in OECD countries**

Export-weighted average of 18 OECD countries' real exports and their fitted values, 2008Q1 = 100




Source: Morel (2015)

Last observation: 2014Q3

behaviour of exports during this period is explained well by the model (**Chart 4**), implying that the increase in the global propensity to trade before the crisis was largely due to the favourable shift in the composition of global demand.

In the post-crisis period, exports were sluggish. Weak global demand and the relatively poor performance of investment (especially in the euro area) can explain over half of this sluggishness.[6,7] This suggests that other factors, in addition to the less-favourable composition of global demand, may have

6 The euro area (including intra-euro trade) accounts for about 40 per cent of the demand for advanced economies' exports.

7 This finding is consistent with those of Boz, Bussière and Marsilli (2014).

played a role in the flattening of the global propensity to trade since 2011. Similar findings apply to Canada: the slowdown in exports is only partly explained by the model and some unexplained weakness remains.

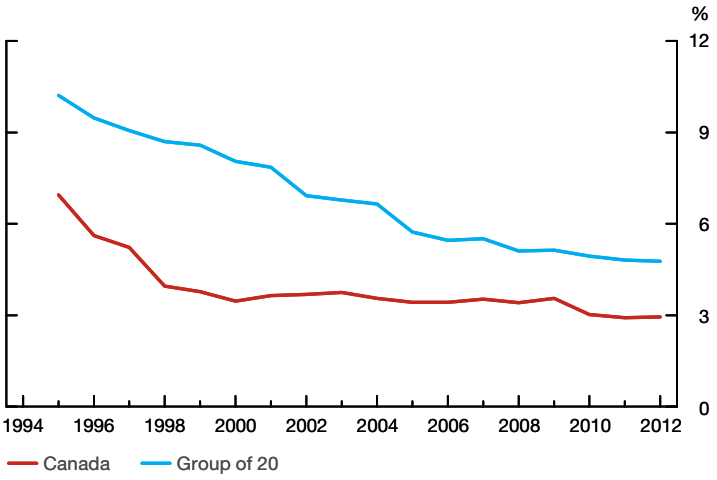
## Protectionism

Often, when we think of protectionism, we think of tariffs. **Chart 5** shows the most-favoured-nation (MFN) tariff averaged across all product groups and all G-20 countries.[8] On average, tariffs have not risen across the G-20 (or in Canada) following the crisis. If anything, they have continued to fall, albeit at a slower pace than in the pre-crisis period. One would therefore expect the trend increase in the global propensity to trade to be largely unaffected by changes to tariffs around the crisis years.

While tariffs have generally fallen since the crisis, additional non-tariff measures have been introduced. For example, the total number of restrictive measures introduced by G-20 members since 2008 had reached almost 1,000 by the end of 2014 (**Chart 6**), affecting about 5 per cent of G-20 trade.[9] Of the various restrictive measures, it appears that the largest increase has been in the use of technical barriers to trade (such as labelling and safety regulations) (**Chart 7**).[10] Although there is often merit to these types of measures, the costs of complying with them can be high, creating an impediment to trade.

**Chart 5: Tariff rates in G-20 countries since the mid-1990s**

Average of most-favoured-nation tariff rates




Sources: World Bank, World Integrated Trade Solution, and Bank of Canada calculations Last observation: 2012

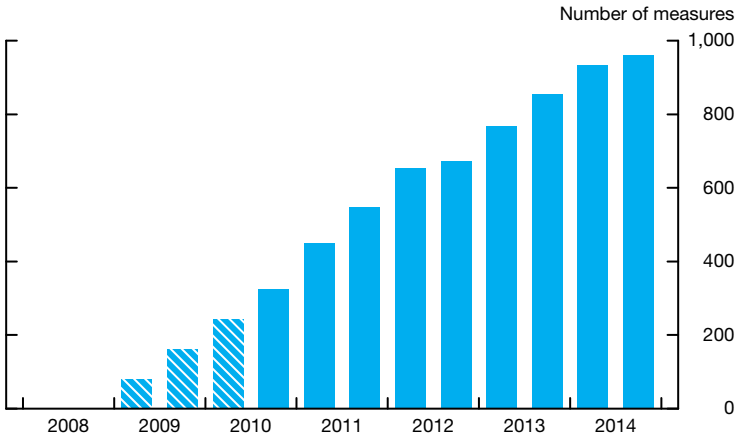
8 The MFN tariff is the tariff rate that a country applies to imports from all members of the World Trade Organization (WTO). With some exceptions, it is equal to the lowest tariff offered by the country to any WTO member.

9 The series shown in Chart 6 is the number of measures currently in force, i.e., the number of measures introduced minus those that have been withdrawn. The data are compiled by the WTO from official and public sources.

10 The data in Chart 7 cover a different set of trade restrictions and are not directly comparable with those in Chart 6. For Chart 7, we use data on measures that G-20 countries are obliged to report to the WTO on actions they intend to implement each year. They do not take into account measures that have been withdrawn.

**Chart 6: Restrictive trade measures**

Cumulative number of restrictive measures introduced by G-20 countries since October 2008

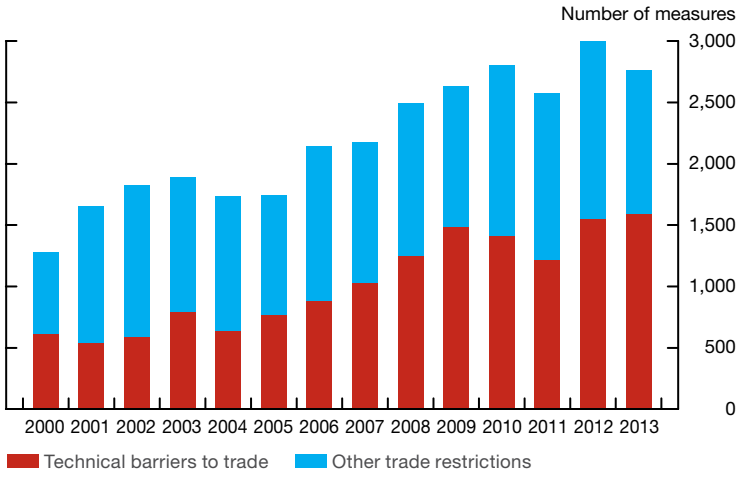



Note: The two observations per year take place in May and October/November. These data were not collected before October 2008 and have been published as a biannual time series only since November 2010; therefore, the dashed bars between October 2008 and November 2010 represent a linear interpolation.

Source: World Trade Organization Last observation: October 2014

**Chart 7: The use of technical barriers to trade and other trade restrictions**

Number of restrictive measures that G-20 countries intended to implement each year




Source: World Trade Organization Last observation: 2013

*Increased protectionism took the form of a greater use of non-tariff barriers*

The non-tariff barriers introduced since 2008 have likely contributed to a modest reduction in the global propensity to trade. However, unless the pace at which restrictive measures are introduced picks up again in the future, the global propensity to trade should resume its upward trend, all else being equal.[11]

To sum up, the 2007–09 global financial crisis induced a number of changes that seem to have paused the rise in the global propensity to trade: it altered the composition of global demand away from trade-intensive demand components, such as investment, and may have prompted countries to introduce more non-tariff barriers to trade.

11 The WTO (2014) notes that between May and October 2014, G-20 economies applied import-liberalizing measures, accounting for 2.6 per cent of the value of G-20 merchandise imports. More liberalizing measures are likely in coming years as planned trade agreements come into effect.

## The Case for a Secular Slowdown in Global Trade

*The stabilization in the ratio of trade to global GDP may be permanent, or at least long-lasting, possibly reflecting a weakening in the underlying incentives to expand trade*

We now turn our attention to the hypothesis that the slowdown in global trade reflects a secular trend, i.e., that the stabilization in the ratio of trade to global GDP may be permanent, or at least long-lasting. To this end, we take a high-level approach and explore how the underlying incentives to engage in international trade have changed over time. As discussed, to support this hypothesis, we expect to find evidence that the incentives to expand trade were strongest following the introduction of trade reforms in the 1990s, but have gradually diminished as value chains and emerging markets such as China have gradually become more fully integrated into the global economy.

Broadly speaking, international trade is divided into two types. The first, often referred to as horizontal intra-industry trade (HIIT) (or two-way trade in goods at the same stage of production), involves a country exporting and importing different varieties of the same type of good. This type of trade reflects the cost advantages from exploiting economies of scale combined with a general preference for variety. A country that exports one car model, while importing a different one, is a good example of HIIT.[12]

The second type of trade, called inter-industry trade, involves trade between countries in goods that are produced by different industries. Generally, this type of trade is thought to be driven by the principle of comparative advantage, which is simply the ability to produce a good at lower cost, relative to other goods, than another country could. Differences in productivity, labour costs and endowments of natural resources are usually important determinants of comparative advantage.[13] The export of aircraft to finance the import of clothing is a good example of this type of trade. Trade that results from countries specializing in the different stages of a global supply chain, such as the production of computer parts versus computer assembly, is another example of inter-industry trade.

This section provides a discussion of how these two types of trade have changed since the mid-1990s, which may help to explain how the incentives to expand trade have changed over time.[14] At the end of this section, we explore the changing nature of global supply chains and its possible effects on trade.

### Horizontal intra-industry trade

To measure the underlying incentives to expand global trade arising from economies of scale and a preference for variety, we calculate a simple index of the degree of horizontal intra-industry trade, which we denote IHIIT. For a particular product, this measure is calculated by determining the share of a country's trade (imports and exports) that consists of two-way trade.[15] For example, Canadian exports of passenger cars in 2012 amounted to about US$45 billion, while Canadian imports amounted to US$25 billion. Canada

12 The concept of intra-industry trade was introduced by Balassa (1963), while the empirical methods used in this paper to measure it were introduced by Grubel (1967) and Grubel and Lloyd (1971).

13 However, other factors, including, *inter alia*, the quality of a country's institutions (see, for example, Nunn and Trefler 2014), technology differences (Trefler 1995) and the dispersion of skills within the workforce (Bombardini, Gallipoli and Pupato 2012), could also affect comparative advantage.

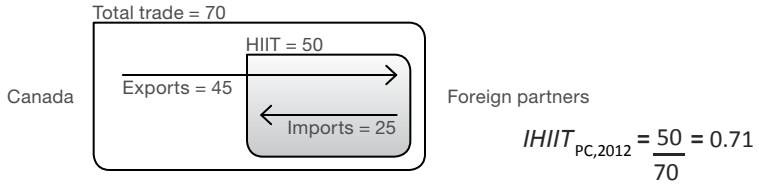
14 To abstract from the effect of commodity cycles, this section focuses on trade in manufactured goods, which accounts for roughly 60 per cent of global merchandise trade.

15 This measure is based on the standard Grubel-Lloyd (1971) index of HIIT:

$$IHIIT_{ij} = 1 - \frac{|x_{ij} - m_{ij}|}{x_{ij} + m_{ij}},$$

where $x$ denotes to exports, $m$ imports, $i$ the type of good and $j$ the specific country of interest.

**Figure 1: Canada's trade in passenger cars (2012, US$ billion)**

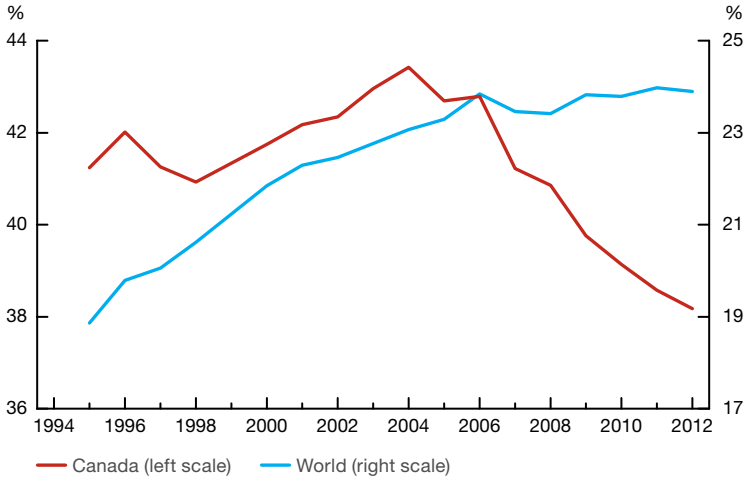



$$IHIIT_{PC,2012} = \frac{50}{70} = 0.71$$

Sources: United Nations Comtrade Database and Bank of Canada calculations

**Chart 8: Horizontal intra-industry trade**

Share of horizontal intra-industry trade in total trade, average across all sectors and countries




Sources: United Nations Comtrade Database and Bank of Canada calculations

Last observation: 2012

thus had a trade surplus in cars of about 30 per cent of total car trade (US$20 billion out of a total of US$70 billion). The remaining 70 per cent (US$50 billion) is the share of HIIT trade in cars (**Figure 1**). To obtain a global index of HIIT, the IHIIT score is calculated for about 2,500 different non-commodity products for almost 100 countries and then averaged across all observations.[16]

*Horizontal intra-industry trade has weakened as a driver of global trade growth since 2006*

The importance of global HIIT had been rising until around 2006 (**Chart 8**).[17] Given that trade had been growing quickly relative to global GDP, it appears as if HIIT was contributing positively to the global propensity to trade during this period. However, since 2006, the importance of HIIT has weakened.[18] This reflects a weakening in the importance of HIIT in many advanced economies (including Canada, Germany and Japan), offset by a strengthening in HIIT in some middle-income countries. Some large sectors, such as automobiles and electronics, also began to experience noticeable declines in HIIT before the crisis. The fact that HIIT seems to have started weakening before the crisis suggests that secular forces may have played a role in the slowdown.

16 The data are from the United Nations Comtrade Database. We use annual export and import data for 96 economies. Sectors are disaggregated based on the five-digit Standard International Trade Classification (Revision 3).

17 The importance of HIIT in global trade is well documented (see, for example, Grubel 1967).

18 Brülhart's (2009) results are somewhat consistent with this observation, showing that HIIT started to moderate in the early 2000s.

As an advanced economy, Canada has an elevated level of HIIT and, like the global measure, Canada's IHIIT was rising in the period before 2006; however, it has declined consistently since. The smaller relative importance of HIIT in recent years likely reflects a displacement of Canadian production toward emerging-market economies, such as China or Mexico, in manufacturing sectors, such as clothing, furniture and motor vehicles.

## Inter-industry trade

To understand how underlying incentives to expand trade arising from comparative advantage may have affected global trade, we develop an inter-industry trade specialization index (TSI) that measures how different a country's exports and imports are compared with the rest of the world. A simple example illustrates how the TSI is calculated. Newsprint paper represents around 0.5 per cent of Canada's exports, which is about 12 times the share of newsprint in global exports. At the same time, the share of newsprint in Canada's overall imports is about one fifth of the world average. Since Canadian trade consists of relatively large amounts of newsprint exports (compared with the rest of the world) and relatively few imports, Canada's trade is viewed as specialized in newsprint and therefore receives a high TSI score for this product.[19]

Using the same data set as for the IHIIT, a global TSI is calculated by computing a TSI score for every country-product observation and then taking the average. A large number means that countries are highly specialized and global trade patterns are very heterogeneous. This high degree of specialization implies that each country needs to import relatively more goods to supply a given amount of domestic demand, leading to more trade among countries for a given level of GDP. Conversely, a low TSI indicates that countries and trade patterns are more homogeneous, which should result in a low level of trade relative to global GDP. Thus, the TSI provides a different way of looking at how global trade may have been affected by the changing incentives to expand trade.

**Chart 9** shows that the global measure of inter-industry specialization was rising from the mid-1990s to the early 2000s. Although the share of HIIT in total trade was rising during this time, the simultaneous rise in the TSI suggests that incentives related to comparative advantage strengthened as well and therefore explain part of the increase in the global propensity to trade over this period. This is not surprising, given the rapid integration of labour-abundant emerging markets, such as China and India, into the global economy at the time.

*Global incentives to expand trade arising from comparative advantage start to diminish in the early 2000s*

Starting in the early 2000s, however, the global measure of specialization began to fall, indicating that countries' trading patterns were becoming more homogeneous and therefore the incentives to expand trade arising from comparative advantage were diminishing. A variety of factors could explain this trend. For example, it could be that the spread of technology from advanced to emerging markets made it increasingly possible for emerging

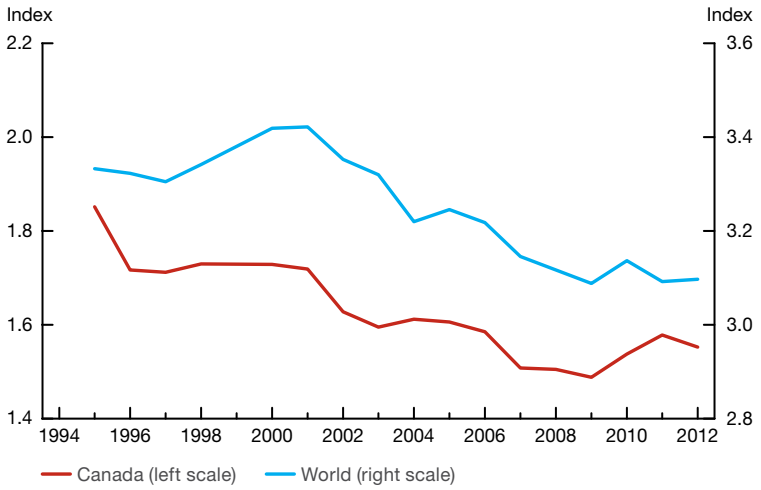
19 The precise formula for our measure of inter-industry specialization is

$$TSI_{ij} = \left| ln\left[\left(\frac{x_{ij}}{x_{Tj}}\right)\Big/\left(\frac{x_{iW}}{x_{TW}}\right)\right] - ln\left[\left(\frac{m_{ij}}{m_{Tj}}\right)\Big/\left(\frac{m_{iW}}{m_{TW}}\right)\right]\right|,$$

where $x$ denotes exports, $m$ imports, $i$ the specific good of interest, $j$ the specific country of interest, $T$ total exports/imports and $W$ the world as a whole. By looking at the absolute difference between relative export and import shares, this measure abstracts from two-way trade (i.e., exporting and importing the same good) and treats countries that are dependent on imports of a good the same as countries that are specialized exporters of that good. This measure is adapted from Balassa (1965).

**Chart 9: Global incentives to expand trade on the basis of comparative advantage**

Trade specialization index




Sources: United Nations Comtrade Database and Bank of Canada calculations

Last observation: 2012

markets to compete in industries that were traditionally the domain of advanced economies. Canada also appeared to be subject to some of the same forces, as seen in a similar pre-crisis downward trend (although from a lower level of specialization than the global index).[20]

## The changing nature of global value chains

*The emergence of global value chains likely contributed to fast trade growth in the 1990s*

As the underlying incentives to expand trade (falling transportation costs, lower tariffs, etc.) strengthened during the 1990s, they helped redefine the way global production takes place; in particular, they contributed to the emergence of global value chains.[21] Because the process of breaking up the production chain across different locations necessitates trade in intermediate goods, the rise of global value chains likely contributed to the increase in the global propensity to trade during the 1990s. Over time, however, as the underlying incentives to expand trade weakened, the impetus to further break up the supply chain likely diminished, thus restraining the rise in the global propensity to trade.

China's capital-goods-producing sector provides a useful illustration of how China became heavily integrated into the global value chain, and how its participation in the global value chain has moderated in recent years. The red line in **Chart 10** shows the share of China's exports of final (i.e., finished) capital goods in its total exports relative to that of an average country. This is China's revealed comparative advantage (RCA) in exports of capital goods.[22] In 1995, the share

20 With their large industrial base, advanced economies, such as Canada, tend to exhibit a lesser degree of specialization than smaller, less-developed countries that often specialize in a few key industries and rely on trade to meet their domestic needs.

21 The production of any good typically occurs in stages. During each stage, value is added to the input from previous stages in a manner that progressively transforms raw materials into a final good. Together, these stages of production form a supply chain. Value is added at each stage, often in different countries, thus the term "global value chain."

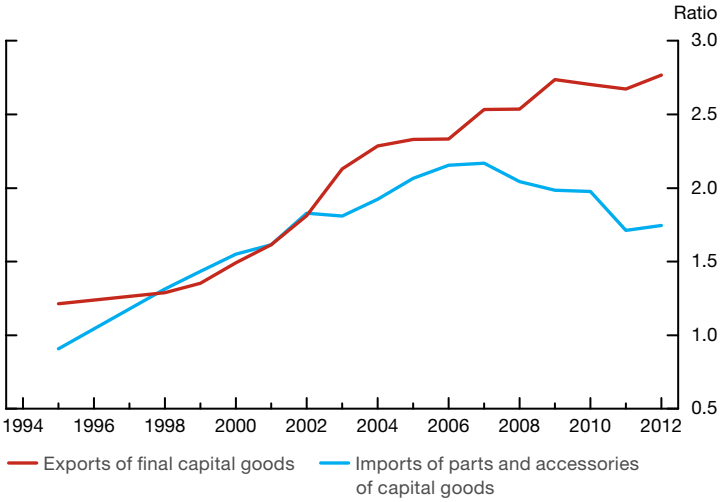
22 The formulas for revealed comparative advantage in exports ($RCA_x$) and imports ($RCA_m$) are given by

$$RCAx_{ij} = \left[\left(\frac{x_{ij}}{x_{Tj}}\right)\Big/\left(\frac{x_{iW}}{x_{TW}}\right)\right] \text{ and } RCAm_{ij} = \left[\left(\frac{m_{ij}}{m_{Tj}}\right)\Big/\left(\frac{m_{iW}}{m_{TW}}\right)\right].$$

The denotation is the same as in footnote 19. The RCA measure allows for a separate analysis of a country's export and import performance relative to the world's.

**Chart 10: China's revealed comparative advantage in the trade of capital goods**

Share of China's trade taken by capital goods relative to that for an average country




Sources: United Nations Comtrade Database and Bank of Canada calculations

Last observation: 2012

of capital goods in China's total exports was about equal to that of other countries, on average, with an RCA score of around 1.

The importance of capital goods in China's overall exports quickly increased, becoming nearly twice as large as in other countries by about 2002. One reason China was able to achieve such rapid growth in exports of capital goods was that it relied heavily on imported parts.[23] This is shown by the blue line in **Chart 10**. In 1995, parts and accessories of capital goods as a share of China's total imports were about the same as in other countries, but grew rapidly, largely matching the rise in its exports of final capital goods. By 2002, this import share was about twice that of other countries.[24] Starting as early as 2003, however, the relationship between the relative importance of exports of final capital goods and imports of parts began to weaken. Nevertheless, the process largely continued until 2007, at which point China started to reduce its dependence on imported parts and increasingly used domestic sources.[25]

More broadly, China appears to have gradually reduced its dependence on foreign-produced inputs across a range of industries, as seen in the declining share of its total imports accounted for by imports used for processing into exports (from over 40 per cent in 2006 to less than 30 per cent in 2014). Given the importance of China to the global economy, and its

◀ *As China's experience shows, it is possible that global value chains are not the driver of the global propensity to trade that they once were*

23 The use of imported intermediate goods to produce goods for export is often referred to as processing trade. It is thought that China's processing trade expanded in response to economic reforms introduced during the 1990s, particularly the combination of (a) China's "grasp the large, let go of the small" reforms, which resulted in the privatization of many small to medium-sized state-owned enterprises, mostly in downstream sectors (i.e., those sectors involved in the final stages of production, such as product assembly); and (b) trade liberalization measures introduced in preparation for China's accession to the WTO in 2001.

24 Since we use imports to calculate this RCA measure, it provides an indication of China's revealed comparative disadvantage in parts of capital goods.

25 Kee and Tang (2013) document the rise in domestic value-added content in Chinese exports during the pre-crisis period. They find that tariff reductions introduced after China's accession to the WTO on inputs used by upstream industries (i.e., those industries that produce intermediate goods as inputs into the final stages of production) helped reduce the cost of producing intermediate goods in China. This made it more profitable for China's downstream producers to rely on domestic inputs rather than imported ones.

apparent diminished participation in global value chains, it is possible that global value chains are not the driver of the global propensity to trade that they once were.

Taken together, the IHIIT and TSI, along with evidence from China, suggest that the incentives for a rapid expansion in trade, which arose from economic reforms and trade liberalization during the 1990s, have now dissipated. Consequently, the post-crisis slowdown in global trade is likely to also have a secular component.[26]

*The incentives for a rapid expansion in trade, which arose from economic reforms and trade liberalization during the 1990s, have now dissipated*

## Conclusion

The post-crisis slowdown in global trade has received considerable attention, reflecting the ongoing debate on whether the slowdown is cyclical or structural, as well as on the reasons for the slowdown. In this article, we find that the slowdown seems to be related to both cyclically induced and structural factors. On the cyclical side, the changing composition of global demand (and particularly the weakness in post-crisis investment expenditures) accounts for a significant amount of the weakness in the global propensity to trade. We also find that the crisis appears to have spurred the introduction of additional restrictive non-tariff measures during the post-crisis period that may have also constrained the increase in the global propensity to trade, though the effect has most likely been modest. On the structural side, we find that the incentives to expand trade related to the underlying determinants of trade, which previously brought on a phase of rapid globalization, appear to have weakened in the years before the crisis. This partly reflects the rapid industrialization of emerging-market economies, such as China, where participation in global supply chains seems to have diminished in relative importance over the past decade. As a result, these structural factors have caused the rate of increase in the ratio of global trade to GDP to gradually decline and approach zero over time. Thus, overall, the evidence suggests that while global trade growth should pick up as cyclically induced headwinds dissipate, its growth rate could be lower and more in line with global GDP growth than in the past. Given that a large share of Canada's economy depends on trade, a resumption of global trade growth would bode well for the Canadian economy and the well-being of Canadians.

26 While the underlying secular trend was likely weakening before the crisis, as noted previously, the global propensity to trade continued to rise as a result of the cyclical upswing in trade-intensive global investment growth during that time.

## Literature Cited

Balassa, B. 1963. "European Integration: Problems and Issues." *American Economic Review* 53 (2): 175–84.

———. 1965. "Trade Liberalisation and 'Revealed' Comparative Advantage." *The Manchester School* 33 (2): 99–123.

Bombardini, M., G. Gallipoli and G. Pupato. 2012. "Skills Dispersion and Trade Flows." *American Economic Review* 102 (5): 2,327–48.

Boz, E., M. Bussière and C. Marsilli. 2014. "Recent Slowdown in Global Trade: Cyclical or Structural." VOX, CEPR's Policy Portal, 12 November.

Brülhart, M. 2009. "An Account of Global Intra-Industry Trade, 1962–2006." *World Economy* 32 (3): 401–59.

Bussière, M., G. Callegari, F. Ghironi, G. Sestieri and N. Yamano. 2013. "Estimating Trade Elasticities: Demand Composition and the Trade Collapse of 2008–2009." *American Economic Journal: Macroeconomics* 5 (3): 118–51.

Grubel, H. G. 1967. "Intra-Industry Specialization and the Pattern of Trade." *Canadian Journal of Economics and Political Science* 33 (3): 374–88.

Grubel, H. G. and P. J. Lloyd. 1971. "The Empirical Measurement of Intra-Industry Trade." *Economic Record* 47 (4): 494–517.

Kee, H. L. and H. Tang. 2013. "Domestic Value Added in Exports: Theory and Firm Evidence from China." Johns Hopkins School of Advanced International Studies Working Paper.

Morel, L. 2015. "Sluggish Exports in Advanced Economies: How Much Is Due to Demand?" Bank of Canada Discussion Paper No. 2015-3.

Nunn, N. and D. Trefler. 2014. "Domestic Institutions as a Source of Comparative Advantage." In *Handbook of International Economics*, Volume 4, edited by G. Gopinath, E. Helpman and K. Rogoff, 263–315. Amsterdam: Elsevier.

Trefler, D. 1995. "The Case of the Missing Trade and Other Mysteries." *American Economic Review* 85 (5): 1,029–46.

World Bank. 2015. "What Lies Behind the Global Trade Slowdown?" *Global Economic Prospects*, Chapter 4 (January): 169–77.

World Trade Organization (WTO). 2014. "Report on G-20 Trade Measures." 5 November.