

## Prospects for Global Trade

Prepared by the IMF and World Bank<sup>1</sup>

May 2015

*After recovery from the global financial crisis, international trade growth has been sluggish. This note looks at the salient characteristics of the global trade slowdown, examining its cyclical and structural determinants. Current projections indicate that world trade may continue to be sluggish in the medium term. However, trade growth could be revived if G20 countries cooperate to implement deeper and wider trade reforms.*

### A. Introduction: The global trade slowdown

**After the recovery from the global financial crisis, trade growth has so far been sluggish.** The rate of growth of world trade (total trade volumes) slowed to 2.8 percent in 2012 and 3.4 percent in 2013 from 6.8 percent in 2011. These growth rates of world trade are well below the pre-crisis average of 7 percent (1987-2007) and are slightly below the growth rate of world GDP in real terms, which has hovered around 3 percent in recent years (Figure 1).

**Latest estimates and preliminary data indicate that the global trade slowdown persisted in 2014.** Latest WEO estimates for 2014 confirm this trend, with world output growth at 3.3 percent and trade volumes growing at 3.1 percent. That trade growth in 2014 remains subdued is also corroborated by preliminary data for merchandise trade, compiled monthly by CPB Netherlands Bureau of Economic Policy Analysis. Based on this source, the growth rate of world merchandise trade was 3.3 percent in 2014 (Appendix); WTO estimates for 2014 are even lower, at 2.8 percent in volume and about 1 percent in value.

**Trade growth in recent years has been weak in advanced economies, particularly in the Euro Area, and moderate in emerging markets and developing economies.** Imports in the Euro Area declined by 1.4 percent in 2012 and increased by 0.9 percent in 2013, with improvements towards the later quarters of 2013 (Figure 2). Imports of emerging economies increased by 5.5 percent in 2013, with higher growth concentrated in Asia and Africa. Export growth varied more across regions, but follows the pattern of stronger growth in emerging and developing economies relative to advanced economies (Figure 3). As for 2014, both WEO estimates and CPB preliminary data indicate a slight pick-up in advanced economies and continued moderation in emerging markets and developing economies.

### B. The causes of the global trade slowdown

#### 1. Cyclical versus structural determinants

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<sup>1</sup> This paper has benefited from comments and inputs from staff of the OECD and the WTO. Special thanks are due to the WTO for providing, and verifying accuracy of, data.

**Cyclical factors, notably weak demand in advanced economies, have contributed significantly to the global trade slowdown.** Historically, the negative effect of a crisis on trade performance has not been limited to the crisis period, but has persisted through the medium term (Freund 2009; Abiad, Mishra and Topalova, 2014). The weakness in import demand is symptomatic of overall weakness in aggregate demand. Global GDP is about 4.5 percentage points below what it would have been had post-crisis growth rates been equivalent to the pre-crisis long-term average. Not surprisingly, trade weakness has been most pronounced at the epicenter of the crisis – in advanced economies, notably the United States and the Eurozone where GDP levels are, respectively, 8 and 13 percentage points below levels that would be suggested by historical average growth rates resulting in a deviation from trend by over 20 percent in import volumes for both areas (World Bank, 2015). With high-income countries accounting for over 60 percent of global imports, their lingering weakness inevitably affects the recovery in global trade.

**However, available evidence suggests that cyclical factors while important may not fully explain the trade slowdown.** A recent study by Boz, Bussiere and Marsilli (2014) assesses the importance of cyclical factors using a model that accounts for both the weakness in aggregate demand and crisis-induced shifts in expenditures toward less-import-intensive components. This model, focusing only on advanced economies, finds that these cyclical factors explain about half of the gap between observed import growth and the growth that could have been expected in the absence of the crisis.

**Another reason for the trade slowdown may be changes in the long-run relationship between world trade and income.** Constantinescu, Mattoo and Ruta (2015) estimate the relationship between world trade and GDP in the last four decades and find that the long-term trade elasticity (the association between trade and GDP, which is the measure  $e_i$  in Box 1) rose significantly in the 1990s but declined in the 2000s. For the period 1986-2000, dubbed the “long 1990s”, a 1 percent increase in world real GDP is associated with a 2.2 percent increase in the volume of world trade (Figure 4). This elasticity is nearly double that in the preceding (1970-1985) and subsequent (2001-2013) years.<sup>2</sup> Statistical analysis confirms that there was a significant structural break in the trade-income relationship in the period 1986-2000, relative to the preceding and to the subsequent period.

**Structural factors may explain as much as half of the current global trade slowdown.** A decomposition analysis based on the model estimates of Constantinescu, Mattoo and Ruta (2015) suggests that while short-term determinants (including weak global demand) were dominant during the financial crisis and the first year of the recovery, the contribution of these factors has subsided in recent years (see Figure 5). The contribution of the long-term component to global trade growth over

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<sup>2</sup> The approach in Constantinescu, Mattoo and Ruta (2015) follows the methodology in the existing literature (e.g., Irwin, 2002, and Escaith, Lindenberg and Miroudot, 2010). Ollivaud and Schwellnus (2015) estimate the same elasticity using a different measure of world GDP from Constantinescu, Mattoo and Ruta (2015) (i.e. GDP at market exchange rates rather than the conventional purchasing power parity-based measure). Using the alternative measure, they find long-run elasticities of 1.3, 2.4 and 1.8 for the periods 1970-85, 1986-2000 and 2001-14, respectively (Table 1 on page 16 of their paper). Even though the final period elasticity is a little higher than the estimate presented here, the basic inverted-U pattern remains. Escaith and Miroudot (2015) use official exchange rates to compute a measure of long-term elasticity based on 10-year rolling period from 1960-70 to 2004-2014 and confirm a steep increase in elasticities until 2000 and a steep fall thereafter.

2012-2013 may explain as much as half of the trade slowdown. These results suggest that trade after the financial crisis is growing more slowly not only because global GDP growth is lower, but also because trade itself has become less responsive to GDP.

## 2. The possible structural determinants of the global trade slowdown

**Several factors may have contributed to the global trade slowdown, such as the changing degree of economic convergence and the slowing pace of trade liberalization.** The relationship between trade and income changes over time; a number of factors sometimes bring them closer together and sometimes push them farther apart. There are several possible explanations for the lower association of trade to GDP:

- *Changes in the pace of income convergence across countries and the associate impact on trade patterns and growth.* Escaith and Miroudot (2015) argue that the long-term evolution of world trade-income elasticity observed in the past 25 years can be partially explained by the relative evolution of advanced and emerging and developing economies. In particular, the faster income convergence observed after 2000 may explain the rapid expansion of world trade, and the slowdown of this convergence after the 2008-2009 crisis is likely to have deprived world trade of this structural driver. These insights are relevant to the post-crisis slowdown but do not explain the observed lower elasticities after 2000.
- *Changes in the composition of world income, such as the relative importance of investment and consumption.* The changing composition of GDP can explain the lower trade growth after the financial crisis, particularly due to the decline in investment which is the more trade-intensive component of GDP (Boz et al. 2014), but not its historical decline since the early 2000s as the investment share in GDP surged before the crisis.
- *Changes in the composition of world trade.* Changes in the composition of trade in terms of the relative importance of goods and services cannot fully explain the lower trade elasticity in the 2000s, because their measured share has been remarkably stable in recent years. Changes in composition along other dimensions, such as between durable and non-durable goods, may have contributed to the slowdown of trade, as discussed in Section C below.
- *Changes in the trade regime, including the rise of protectionism.* Traditional protectionism seems to have increased only modestly, though we have more limited data on the extent of recourse to relatively opaque non-tariff measures. The available information suggests that new measures are a combination of trade restrictions and trade promotion whose ultimate effect on trade growth is ambiguous (Evenett, 2014). However, the slower pace of trade liberalization in the 2000s relative to previous period could plausibly have contributed to the lower trade elasticity, as discussed in Section F below.
- *Changes in the structure of trade associated with the expansion or contraction of global supply chains.* There is evidence that these changes are playing a role in the trade slowdown, as we now elaborate.

**The slower pace of expansion of Global Value Chains (GVCs) may be a cause of the trade slowdown.** There is evidence to suggest that changes in international vertical specialization underlie the slowdown in world trade. The long-run trade elasticity increased during the long 1990s as production fragmented internationally into GVCs, leading to a rapid surge in parts and components,

and decreased in the 2000s as this process matured. Figure 6 illustrates this by comparing the elasticity of world trade in value added, i.e. exports net of imported inputs, with trade measured in conventional gross terms. Intuitively, if the slower pace of GVCs' expansion is a contributing factor of the trade slowdown, one would expect the gap between the gross and value added trade elasticities to close over time, with the first converging to the value of the latter. Figure 6 shows broadly this pattern, with the elasticity of gross trade to GDP decreasing over time and approaching the lower and more stable estimates of the trade elasticity in value added terms.

### **Box 1. The Trade Elasticity**

The “elasticity” measure is widely used in this note. Economists use the elasticity as a measure of how responsive an economic variable is to a change in another. Thus, income elasticity of demand measures the responsiveness of the demand for a good to a change in the income of the people demanding the good. The elasticity is quantified as the ratio of the percentage change in one variable (say, demand for a good) to the percentage change in another variable (say, income).

Usually implicit in the use of elasticity is the notion that one variable (say, income) has a causal influence on the other (say, demand for a good). Given the complex interactions between variables considered in this note, the implied causality requires strong assumptions and should be viewed with caution.

The *elasticity of imports with respect to own GDP* ( $e_i$ ) measures how imports of a country (or group of countries) change when its (their) own GDP changes. The underlying idea is that the demand for imported goods and services largely depends on the income of the country (or a group of countries) of which GDP is a good measure. We compute this measure at both the global level and the national level.

### **C. Sectoral characteristics of the global trade slowdown**

**The slowdown in global trade is concentrated in the manufacturing sector.** Figure 7a shows the rapid growth in world trade in volume terms in the long 1990s and that the subsequent slowdown in the 2000s was driven by goods rather than services. Figures 7b and 7c reveal that within goods, the significant deceleration of trade growth was concentrated in the manufacturing sector. This slowdown in manufacturing trade had both cyclical and structural determinants. The weakness in demand in recent years has particularly affected import demand for durable manufactured goods. A breakdown of the different components of world trade elasticity to world GDP suggests that structural factors have also played a role. At the world level, the long-run elasticity of manufacturing trade to GDP was 2.6 in the 1990s and fell to 0.8 in the 2000s (Table 1). The services trade elasticity and the commodity trade elasticity actually increased in the more recent period, possibly because of the increasing tradability of services and the growing demand for commodities in emerging markets. This pattern confirms that developments within the manufacturing sector are key to understanding the global trade slowdown.

**Manufacturing sub-sectors witnessing the largest declines in growth are those with greater vertical specialization.** Consistent with the evidence produced in Section B, a disaggregated analysis of the manufacturing sector indicates that the lower pace of trade growth is likely to have been driven

by changes in GVCs. Figure 8 shows the relationship between the average growth rates of world trade of industrial manufacturing sub-sectors and their degree of international vertical specialization (measured by the share of parts and components in total trade of the sub-sector). In the 1990s, there is a strongly positive relationship between the two, with trade in the most vertically specialized sub-sectors seeing much faster rates of growth than sub-sectors where GVCs are less developed. Then in the 2000s, while trade growth fell across the board, the largest declines were in precisely the sub-sectors with higher degrees of vertical specialization, such as the manufacture of radio, televisions and communication equipment (-10 percent) and manufacture of electrical industrial machinery (-6 percent). Smaller drops in world trade growth were recorded in sub-sectors where GVCs are less developed, such as manufacture of watches and clocks (-0.7 percent).

#### **D. Projections of global trade**

**In coming years, world trade is projected to grow but not at pre-crisis levels.** As the global economy continues to recover, global trade growth can be expected to pick up. However, given the still weak recovery projected, the contribution of demand to the pick-up in global trade is not likely to be substantial over the short- to medium-term. Moreover, structural factors may also influence trade performance. Table 2 and Figure 9 present two separate scenarios for world trade using estimates of world trade elasticities from a regression analysis for the periods 2000-2013 and 2008-2013, respectively. In the first scenario, world trade will grow in the medium term at an average of less than 5 percent per year. The latter set of projections portrays a picture with world trade growing at only about 2 percent on average per year. Formal tests indicate that there is a structural break in the pre- and post-crisis trade-income relationship, lending support to the view that there was a further decline in trade elasticities. However, the estimates for 2008-2013 are based on a period that may be too short to rule out cyclical factors (albeit a long cycle) and to properly capture changes in the long-term association between trade and income.

#### **E. Consequences of the global trade slowdown**

**Since G20 economies are more open today than they were in the 1990s, trade can be expected to continue to contribute to countries' growth.** Figure 10 shows that the ratio of imports of goods and services to GDP, a measure of openness to trade, increased from less than 20 percent in the early 1990s to over 30 percent right before the crisis for advanced countries as well as emerging and developing economies. In spite of a dip during the crisis, the ratio has returned to the pre-crisis level in recent years. Thus, the level of openness is as high as it has ever been. In so far as openness per se is associated with dynamic benefits, trade will continue to foster growth.

**Nevertheless, more analysis is needed to understand the implications for growth of the structural shifts identified in this paper.** There are two main channels through which slower trade growth may translate into slower GDP growth that merit further investigation. On the demand side, sluggish world imports may limit opportunities for individual countries' exports. However, as shown in Figure 6, the elasticity of world value-added exports to world GDP has been more stable over time than the elasticity of world trade measured in gross terms. While this finding is consistent with the presumption that changes in global value chains (i.e. in measured rather than value-added trade) contribute to explain the global trade slowdown, it does suggest that the contribution of world trade to

generating world income has remained fairly constant. On the supply side, slower trade diminishes in principle the scope for productivity growth through increasing international specialization and diffusion of technologies. In particular, a slower pace of GVC expansion may imply diminishing scope for productivity growth through a more efficient international division of labor and knowledge spillovers. A body of microeconomic literature links increases in productivity growth at the firm level to various aspects of GVC participation, such as imports of parts and components (e.g., Amiti and Konings, 2007; Goldberg et al., 2010) and knowledge spillovers through the production chain (e.g., Atkin et al., 2014). In general, since a finer international division of labor is isomorphic to factor-augmenting technical change (Grossman and Rossi-Hansberg, 2008), a slower pace of its expansion could indicate that world trade is contributing less to global growth today than it did in the long 1990s. However, three considerations suggest that a pessimistic conclusion may not be warranted. First, as noted above, even though the trade to GDP ratio has stopped increasing, it is historically at its highest level. As long as some countries remain far from the global technology frontier, the high level of openness may continue to deliver benefits in terms of diffusion of knowledge and hence productivity even when the level of openness is not increasing. Second, since the drivers of changed patterns of international production are firms' market-based optimizing decisions, there is less reason to fear negative productivity consequences than if the driver were new trade policy restrictions. Finally, continued fragmentation and specialization within countries, spurred in some cases by increased foreign direct investment, may also sustain productivity growth even as international fragmentation plateaus. This issue merits further investigation.

## **F. Trade as a key pillar of the global policy agenda**

**Part of the explanation for the slowdown in global trade may be that the benefits of past reforms have matured and new reforms have languished.** In the 1990s and early 2000s, reforms in anticipation of and resulting from WTO membership allowed countries, most notably China, to rapidly integrate into the global trading system even as supply chains were built in Asia, Europe and North America. Applied tariffs fell from averages of nearly 30 percent to less than 15 percent in emerging and developing countries and from 10 percent to less than 5 percent in industrial countries (Figure 11). The liberalization led to a significant increase in the ratio of imports to GDP in all countries, with the ratio significantly higher for developing countries through most of the 1990s and early 2000s (Figure 10). The process of unilateral liberalization slowed down after this period and multilateral negotiations have stalled. While some major regional trade initiatives are today in the pipeline, few have so far had the transformative effect of, say, the North American Free Trade Agreement in 1994 or the reforms in Eastern European countries in preparation for their accession to the European Union.

**While the engine of the long 1990s may have less energy for now, the scope for trade integration is still strong.** Reforms aimed at reducing trade costs could lead to efficiency gains by improving access to markets and expanding GVCs, particularly to regions and countries that have missed out on these opportunities in the past.

- For most *advanced countries*, a key challenge will be to push the new trade policy frontiers, opening services markets and making their regulatory systems more coherent.

- Many *emerging market economies*, for example in South Asia and Latin America, can still benefit greatly from integrating via traditional liberalization in goods and services and improving their business environment to facilitate the participation of their firms in GVCs.
- For *developing countries*, trade liberalization needs to be complemented by trade facilitation. It is important that the Bali Trade Facilitation Agreement be swiftly implemented with assistance where needed. Upgrading poor trade infrastructures and improving economic institutions are also crucial.
- An example of a concrete reform that G20 countries could collectively implement is the further *liberalization of trade in transport services*, which are a key component of international trade costs and where countries need to coordinate market-opening in order to maximize global benefits, especially for poor and remote countries.

**Reigniting global trade integration would require an open architecture that allows different speeds and depths, but also ensures coherence among preferential and multilateral efforts.** The finalization of the WTO's Bali agreement is welcome, but earlier impasses as well as the longstanding difficulties to advance the Doha Agenda have emphasized the need to buttress the governance of the multilateral trading system. With the fulcrum of trade policy moving to regional and plurilateral deals, there are new opportunities and new challenges.

- *New liberalization arrangements should ultimately avoid fragmenting the global trading system.* Trade liberalization efforts are currently taking place mainly via preferential (e.g., Trans-Pacific Partnership (TPP) and Transatlantic Trade and Investment Partnership (TTIP)) and plurilateral negotiations (e.g., Trade in Services Agreement (TISA) and Information Technology Agreement (ITA)), which can help advance liberalization in new trade areas. To avoid fragmenting the trading system, these efforts need to be pursued openly and transparently, adopt liberal rules of origin, and be amenable to eventual multilateralization. Ideally, membership of these agreements would be open to all countries which are prepared to implement comparable liberalization.
- *Advancing integration in vital new trade areas (e.g., on regulatory impediments to trade and investment in goods and services) promises significant benefits but will require reforming the global governance of trade.* These initiatives could foster the integration of markets but also intersect with legitimate national policies and regulatory concerns, making the process different and more complex than past trade negotiations that mainly focused on lowering tariffs. The multilateralization of these agreements poses challenges for the global governance of the trading system which need to be addressed to achieve the goal of reviving multilateral trade negotiations.
- *Heightened and coordinated vigilance will be needed to avoid both old and new forms of protectionism and distortionary rules.* The WTO has been effective in enhancing transparency and limiting traditional protectionism through higher tariffs and other border measures, but there is a risk that protectionism will increase through diverse non-tariff

measures such as undue regulatory barriers, for which large data gaps exist. There is also a need for greater transparency of provisions in preferential trade agreements and an assessment of the implications of these provisions for participating and excluded countries. A way forward could be to ask relevant international organizations to collect and analyze information on the implementation and effects of preferential disciplines.

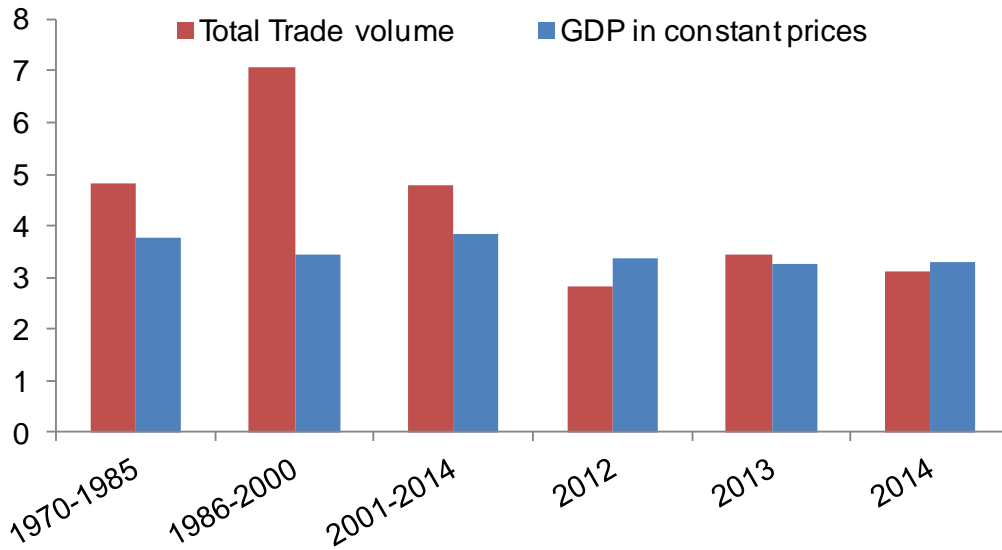
**This is an important juncture in the evolution of trade and trade policy.** Creating greater reform momentum for global trade integration could help the world avoid the adverse consequences of the global trade slowdown.



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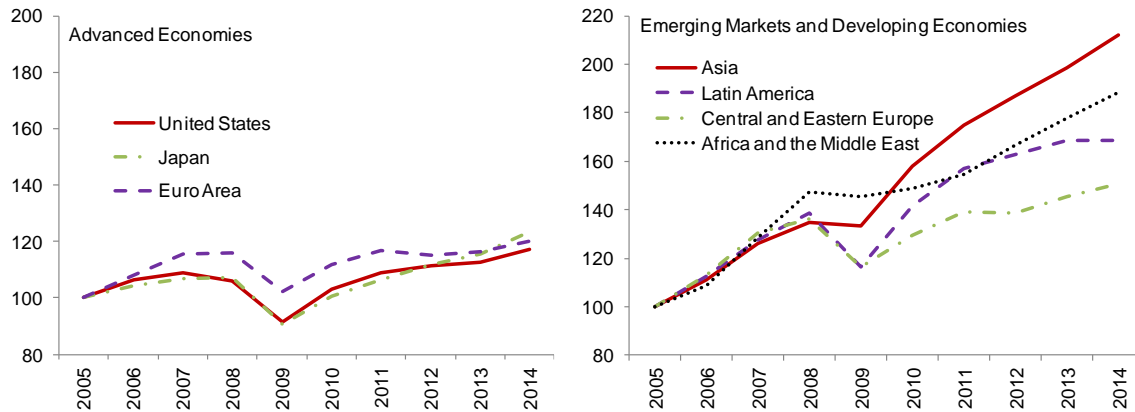
Figure 1. Average Growth Rates in Trade and GDP  
Selected Periods (percent)



Source: IMF World Economic Outlook

Note: Total trade is the sum of exports and imports of goods and services.

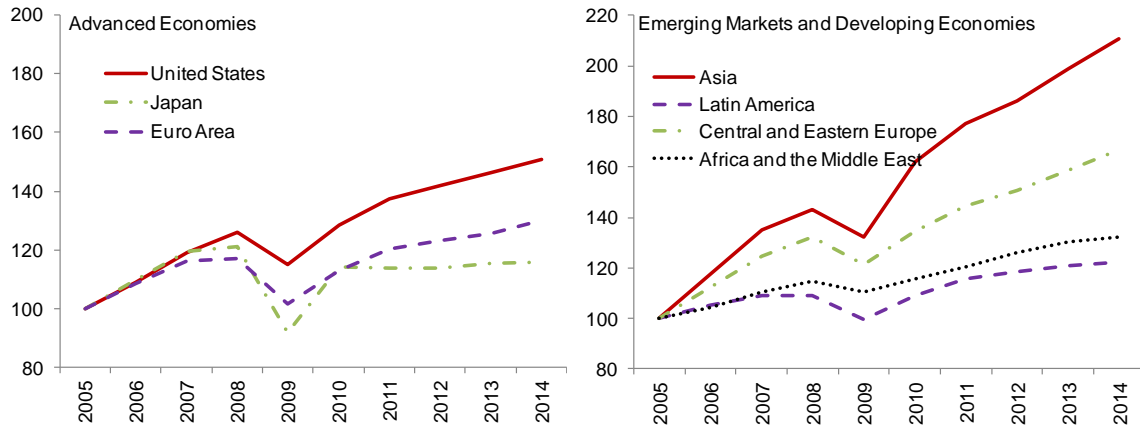
Figure 2. Total Import Volumes (Index, 2005=100)



Source: IMF World Economic Outlook

Note: Total imports is the sum of imports of goods and services.

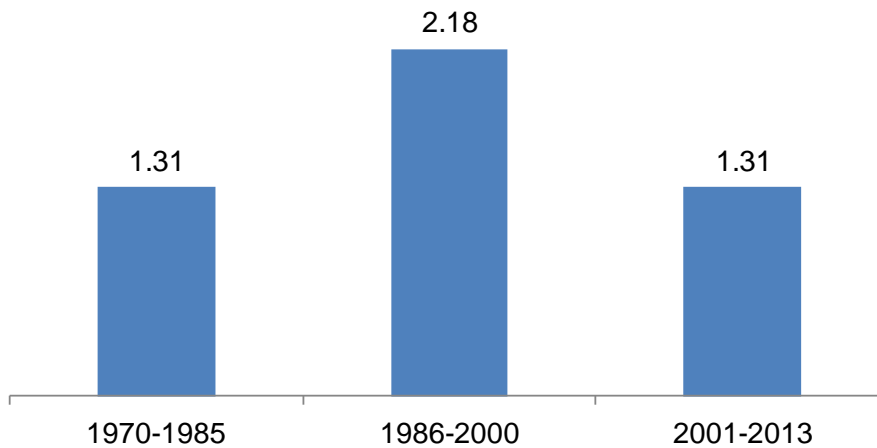
Figure 3. Total Export Volumes (Index, 2005=100)



Source: IMF World Economic Outlook

Note: Total exports is the sum of exports of goods and services.

Figure 4. Estimated Long Run Elasticity of World Trade with Respect to World GDP ( $e_i$ )



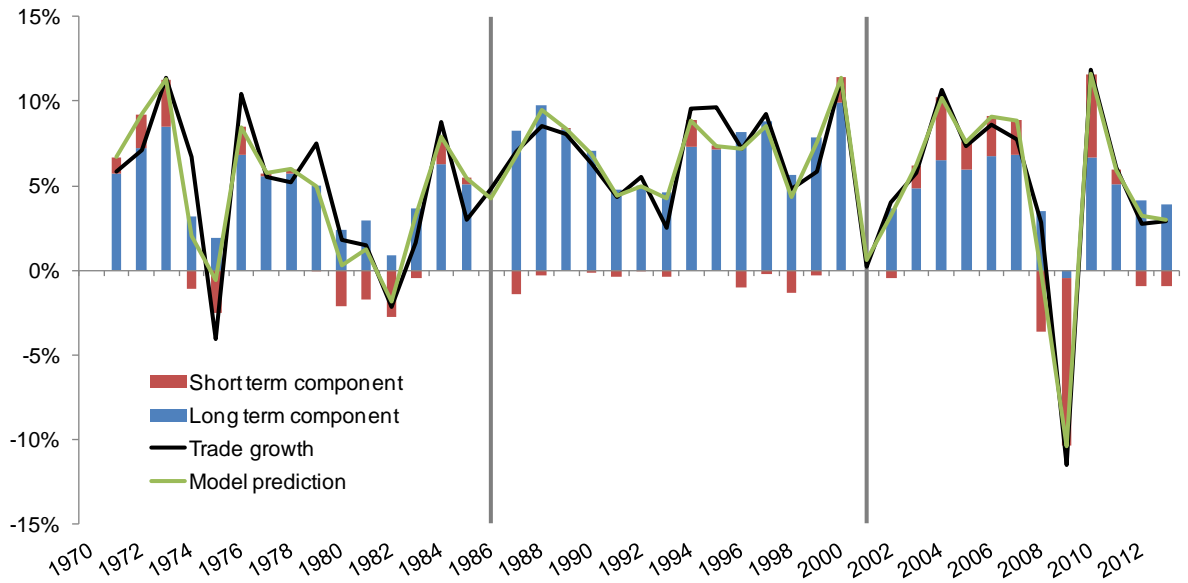
Source: IMF World Economic Outlook and authors' calculations

Note: Elasticity equals  $-\delta/\gamma$ , with estimates derived from ECM specification:

$$\ln(\text{imports})_t = \alpha + \beta \ln(\text{gdp})_t + \gamma \ln(\text{imports})_{t-1} + \delta \ln(\text{gdp})_{t-1} + \epsilon_t$$

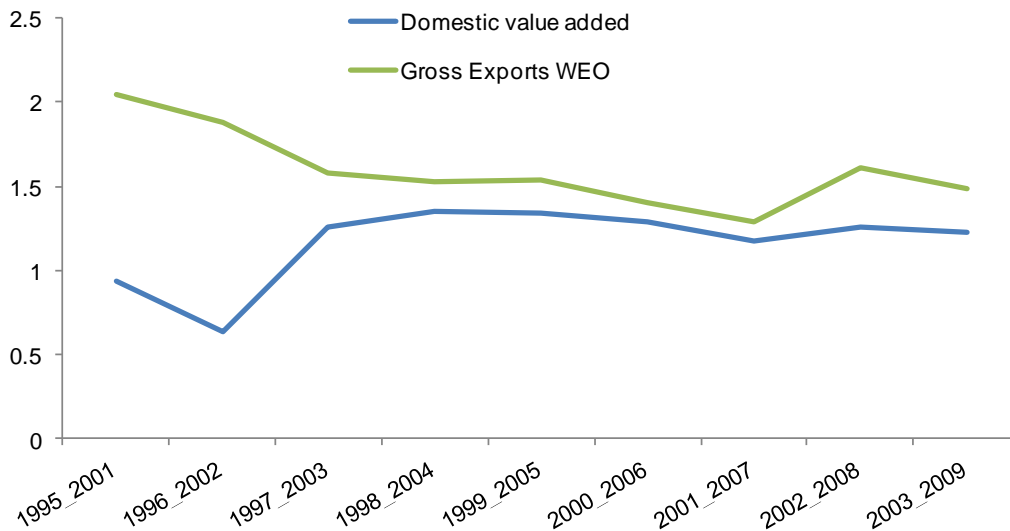
Imports volume includes goods and services and gdp is in real terms.

Figure 5. Decomposition of World Trade Growth



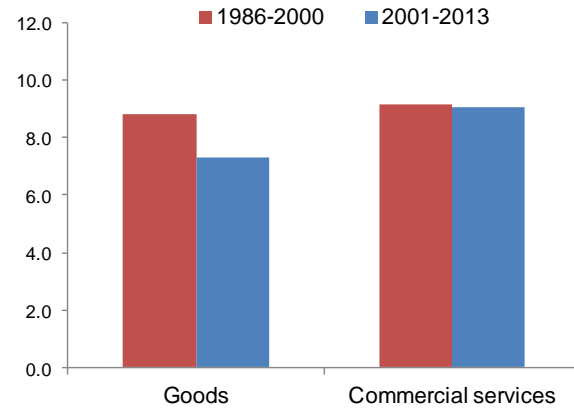
Source: IMF World Economic Outlook and authors' calculations  
 Note: Trade in this figure refers to imports of goods and services.

Figure 6. Long Run World Trade Elasticities ( $\epsilon$ ): Value Added Trade and Gross Trade, 7-year periods



Source: IMF World Economic Outlook  
 Note: The figure depicts 7-year rolling elasticities of gross world trade and domestic value added trade, both with respect to world GDP.

Figure 7a. Growth Rates of Goods and Commercial Services (percent)



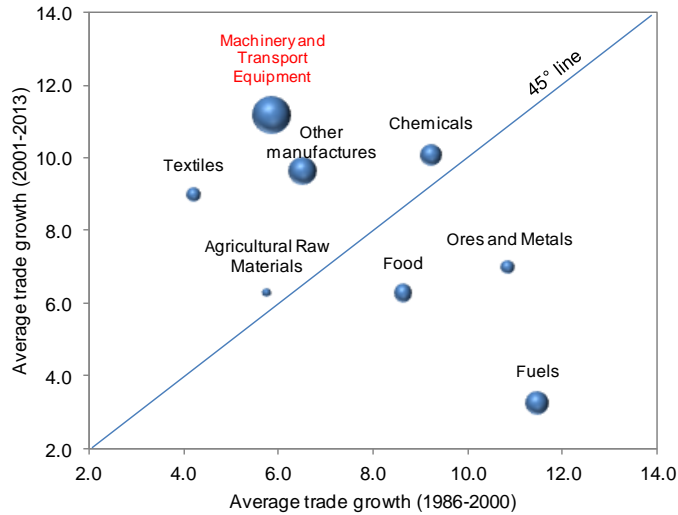
Source: UN Comtrade

Figure 7b. Growth Rates, by Category of Goods (percent)



Source: UN Comtrade, WTO

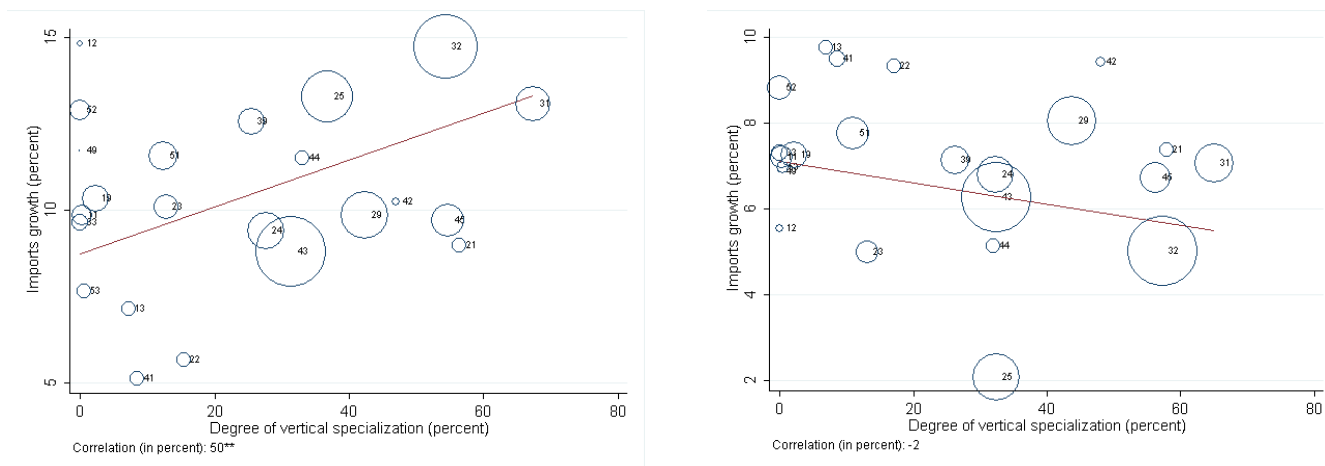
Figure 7c. Growth Rates by Product Group (percent)



Source: UN Comtrade (SITC2 classification)

Note: Bubbles above the 45 degree line denote faster growth of trade in the long 1990s relative to the 2000s, and vice versa for points below the 45 degree line. The size of the bubbles reflects the share of the sector in total goods trade in the 2000s.

Figure 8. Growth Rates and the Degree of Vertical Specialization  
 Manufacturing of Fabricated Metal Products, Machinery and Equipment (ISIC2 category 38)  
 1986-2000. 2001-2013



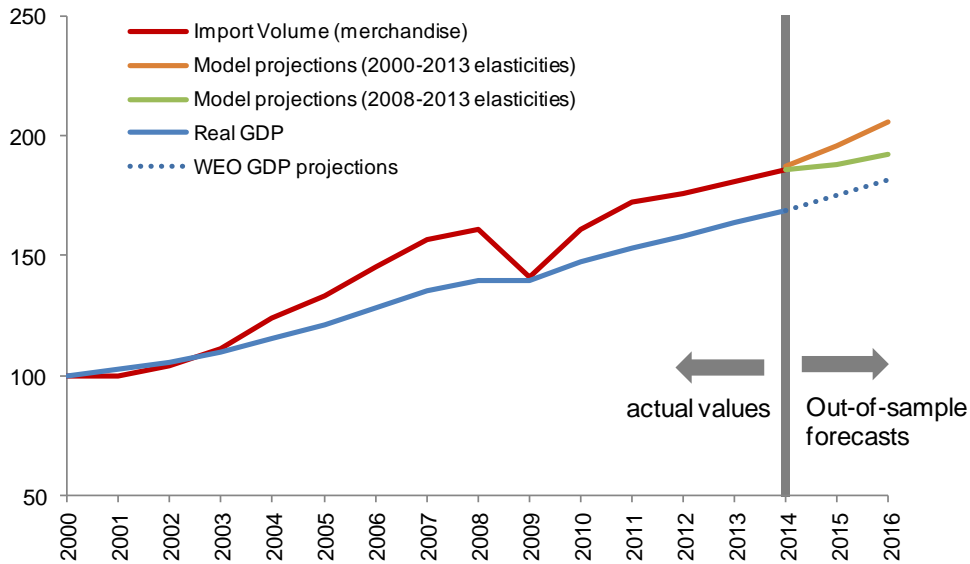
Source: UN Comtrade (ISIC2 classification)

Notes: \*\*\* indicates a significance level of 1%, \*\* of 5% and \* of 10%

Vertical specialization is measured by the share of trade in parts and accessories in total trade in the corresponding sector. The size of the bubbles denotes the share of the sub-sector (see list below) in total trade of products in the category “Manufacturing of Fabricated Metal Products, Machinery and Equipment.”

- |  |   |
|--|---|
| 11 Manuf. of cutlery, hand tools and general hardware                    | 32 Manuf. of radio, television and communication equipment and apparatus    |
| 12 Manuf. of furnitures and fixtures primarily of metal                  | 33 Manuf. of electrical appliances and housewares                           |
| 13 Manuf. of structural metal products                                   | 39 Manuf. of electrical apparatus and supplies n.e.c.                       |
| 19 Manuf. of fabricated metal products except machinery and equip n.e.c. | 41 Shipbuilding and repairing   |
| 21 Manuf. of engines and turbines  | 42 Manuf. of railroad equipment   |
| 22 Manuf. of agricultural machinery and equipment                        | 43 Manuf. of motor vehicles   |
| 23 Manuf. of metal and wood working machinery                            | 44 Manuf. of motorcycles and bicycles                                       |
| Manuf. of special industrial machinery and equipment except metal and    | 45 Manuf. of aircraft   |
| 24 wood working machinery  | 49 Manuf. of transport equipment n.e.c.                                     |
| 25 Manuf. of office, computing and accounting machinery                  | Manuf. of professional and scientific, and measuring and controlling equip. |
| 29 Machinery and equipment except electrical not elsewhere classified    | 51 n.e.c.   |
| 31 Manuf. of electrical industrial machinery and apparatus               | 52 Manuf. of photographic and optical goods                                 |
|  | 53 Manuf. of watches and clocks   |

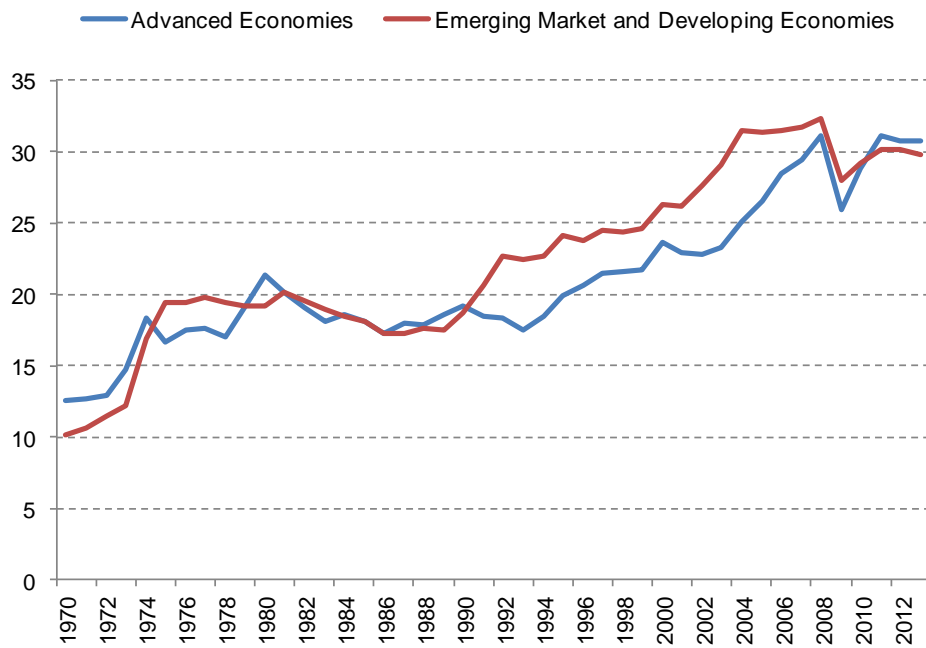
Figure 9. Trade Predictions (Index, 2000=100)



Source: IMF WEO, IMF IFS and authors' calculations

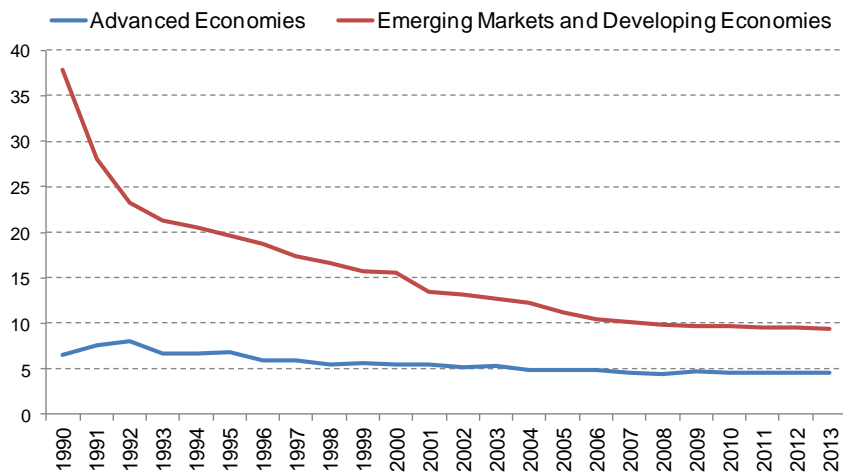
Note: Trade figures are only for goods because the quarterly data used to make projections is only available for goods. Model projections beyond 2016 have not been made using 2008-2013 elasticities because the latter have been computed using quarterly data which is not available for IMF GDP projections beyond 2016.

Figure 10. Imports of goods and services, percent of GDP in US dollars: Advanced Countries and Emerging Markets and Developing Economies, 1970-2013



Source: IMF WEO

Figure 11. Average Applied Tariffs\* (percent): Advanced Countries and Emerging Markets and Developing Economies



Source: UNCTAD TRAINS

\*Simple averages of MFN Applied and Preferential tariffs.

Note: The data for tariffs does not pertain to a consistent sample of countries over time.

Table 1. Long Run Elasticity of Imports to GDP ( $e_i$ ), by Type of Imports



Country/Region	Period	Total imports	Services	Goods		
				Total	Manufacturing	Commodities
World	1986-2000	2.18***	1.80***	2.31***	2.61***	1.66***
	2001-2013	1.31***	2.18	1.31***	0.79***	2.35***
United States	1986-2000	3.68	1.68***	3.49***	2.75***	2.41**
	2001-2013	1.77***	1.95***	1.73***	1.14***	3.77**
China	1986-2000	1.54***	2.24***	1.44***	1.20***	1.26***
	2001-2013	1.10***	1.22***	1.10***	0.73***	1.84***

Source: IMF WEO and authors' calculations

Note: \*\*\* indicates a significance level of 1%, \*\* of 5% and \* of 10%.

**Table 2. Out-of-sample Forecasts using Model Elasticities**

	World Imports of Goods		Advanced Economies Imports of Goods		Developing Economies Imports of Goods	
	Model forecasts		Model forecasts		Model forecasts	
	2000-2014 elast.	2008-2014 elast.	2000-2014 elast.	2008-2014 elast.	2000-2014 elast.	2008-2014 elast.
2015	4.4	1.1	6.7	1.2	4.5	2.6
2016	5.1	1.9	6.0	0.5	6.3	3.0
2017	5.0		5.1		6.7	
2018	5.0		4.7		6.9	
2019	5.0		4.5		7.1	

Source: IMF WEO, IMF IFS and authors' calculations

Note: \*\*\* indicates a significance level of 1%, \*\* of 5% and \* of 10%.

Model projections beyond 2016 have not been made using 2008-2013 elasticities because the latter have been computed using quarterly data which is not available for IMF GDP projections beyond 2016.

## Appendix. World Merchandise Trade (percentage change)

	quarter to previous quarter						quarter on same quarter of previous year					
	2013	2014	2014Q1	2014Q2	2014Q3	2014Q4	2013	2014	2014Q1	2014Q2	2014Q3	2014Q4
<b>World trade</b>	2.7	3.3	-0.3	0.7	2.0	1.1	2.7	3.3	3.2	2.9	3.7	3.5
<b>World imports</b>	2.6	3.5	0.2	-0.1	2.1	1.3	2.6	3.5	3.8	3.1	3.4	3.6
<b>Advanced Economies (c)</b>	-0.3	2.8	0.6	0.7	0.7	1.0	-0.3	2.8	2.7	2.8	2.7	3.1
United States	0.8	4.5	-0.1	2.5	0.5	4.2	0.8	4.5	2.9	4.0	3.8	7.3
Japan	1.6	2.1	4.5	-6.9	0.8	1.1	1.6	2.1	9.2	1.1	-0.5	-1.0
<b>Euro Area</b>	-0.6	2.3	0.9	0.4	0.5	-0.3	-0.6	2.3	2.6	2.6	2.3	1.7
Other Advanced Economies	-1.7	2.1	-0.9	2.2	1.5	-0.3	-1.7	2.1	0.2	2.3	3.3	2.6
<b>Emerging Economies</b>	5.6	4.1	-0.1	-0.9	3.5	1.6	5.6	4.1	5.0	3.4	4.1	4.1
<b>Asia</b>	5.3	4.3	-1.8	-0.7	5.8	2.1	5.3	4.3	3.5	3.0	5.4	5.4
<b>Central and Eastern Europe</b>	4.8	1.2	-0.3	-1.8	-0.3	1.1	4.8	1.2	4.6	2.4	-0.6	-1.4
Latin America	8.9	2.5	2.5	-2.3	0.6	5.0	8.9	2.5	4.1	0.7	-0.6	5.7
<b>Africa and Middle East</b>	5.3	7.2	3.5	0.1	2.2	-1.3	5.3	7.2	10.2	7.0	7.2	4.4
<b>World exports</b>	2.8	3.2	-0.9	1.5	1.8	0.9	2.8	3.2	2.5	2.8	4.0	3.5
<b>Advanced Economies (a)</b>	1.2	1.9	-0.1	0.5	0.9	1.7	1.2	1.9	2.0	0.8	1.6	3.0
United States	2.6	3.3	-2.9	2.4	2.2	1.2	2.6	3.3	2.8	3.2	4.4	2.8
Japan	-1.4	1.7	-1.0	-1.2	1.6	4.8	-1.4	1.7	2.5	-0.9	0.9	4.1
Euro Area	0.3	1.8	0.7	0.6	0.2	1.1	0.3	1.8	1.4	1.8	1.6	2.6
Other Advanced Economies	3.6	0.6	1.2	-0.9	1.3	2.2	3.6	0.6	2.8	-3.4	-0.3	3.7
<b>Emerging Economies</b>	4.4	4.5	-1.7	2.6	2.7	0.2	4.4	4.5	3.0	4.8	6.3	3.9
<b>Asia</b>	5.7	5.6	-3.1	4.9	3.9	-0.3	5.7	5.6	1.6	6.5	9.0	5.3
<b>Central and Eastern Europe</b>	2.1	5.2	2.0	-1.1	0.8	1.1	2.1	5.2	8.3	5.9	3.8	2.9
Latin America	5.2	1.9	-1.7	0.2	-0.1	2.6	5.2	1.9	5.4	0.9	0.5	1.1
Africa and Middle East	0.5	0.0	0.9	-1.8	1.5	0.0	0.5	0.0	0.8	-2.0	0.5	0.6

Source: CPB Netherlands Bureau of Economic Policy Analysis. All data are seasonally adjusted.