Explaining the global trade slowdown

Cristina Constantinescu, Aaditya Mattoo, Michele Ruta 18 January 2015

Not only is world trade lower than its pre-Crisis level, but it is also growing slower than GDP. This column examines the relationship between trade and GDP in the last four decades. The findings indicate that roughly half of the slowdown is driven by structural rather than cyclical factors. Trade itself has become less responsive to GDP in recent years. In particular, supply chains are maturing after years of rapid expansion.

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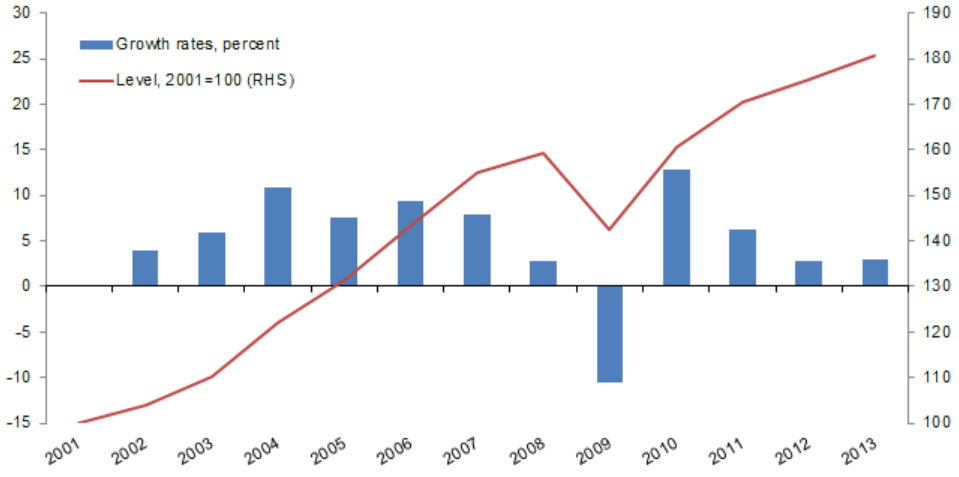
After bouncing back from the historic low in the aftermath of the Global Crisis, world trade (total trade volumes) grew by 6.2% in 2011, 2.8% in 2012, and 3.0% in 2013 (Figure 1). This growth in trade volumes is substantially lower than the pre-Crisis average of 7.1% (1987-2007), and is slightly below the growth rate of world GDP in real terms, which has hovered around 3% in recent years.

Figure 1. Level and growth rates in volume of trade over time



Source: IMF World Economic Outlook.

Structural versus cyclical factors

Cyclical factors contribute to the global trade slowdown. Historically, the negative effect of a crisis on trade performance has not been limited to the crisis period, but persisted through the medium term (Freund 2009, Abiad et al. 2014). The weakness in import demand is symptomatic of overall weakness in aggregate demand. Not surprisingly, weakness in demand has been most pronounced at the epicentre of the Crisis – in high-income countries, notably the Eurozone. With high-income economies accounting for some 65%of global imports, their lingering weakness inevitably impacts the recovery in global trade.

However, a deeper reason for the trade slowdown is the changing long-run relationship between world trade and GDP. In a recent paper (Constantinescu et al. 2014), we estimate the relationship between trade and GDP in the last four decades and find that the long-term trade elasticity rose significantly in the 1990s but declined in the 2000s.[1] For the period 1986-2000, a 1% increase in world real GDP is associated with a 2.2% increase in the volume of world trade.[2] This elasticity is nearly double than that in the preceding (1970-1985) and subsequent (2001-2013) years (Figure 2). Statistical analysis confirms that there was a significant structural break in the trade-income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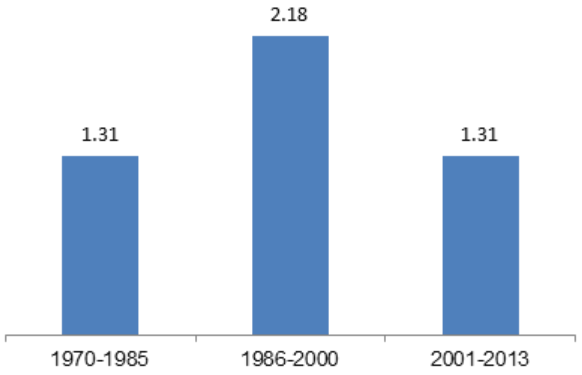
relationship in the period 1986-2000, relative to the preceding and to the subsequent period.

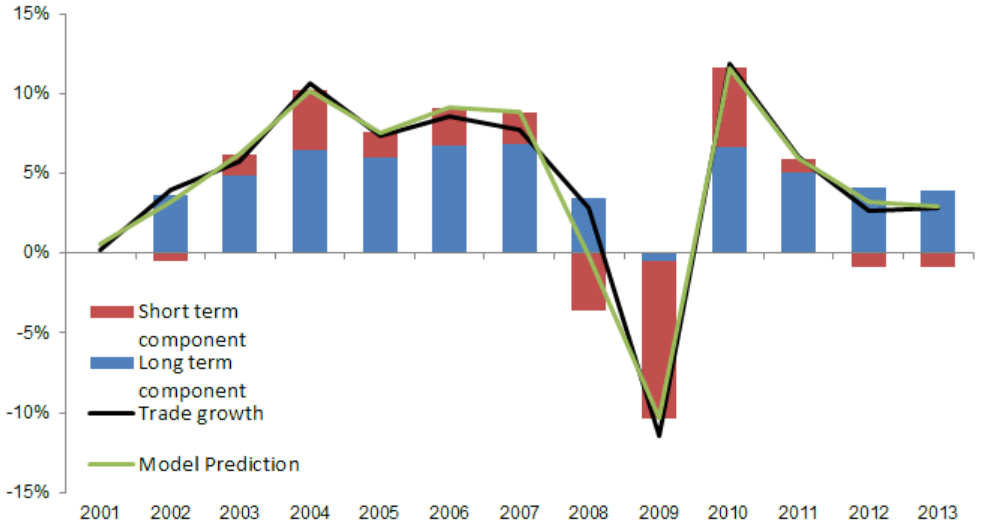
Figure 2. Long-term trade elasticity with respect to GDP



Source: IMF WEO and authors' calculations.

A key question is whether structural or cyclical factors dominate the trade slowdown. Our approach offers a simple answer. A decomposition analysis based on the model estimates suggests that while short-term determinants (including weak demand) were dominant during the Global Crisis and the first year of the recovery, their contribution has subsided in recent years (Figure 3). The contribution of the long-term component to global trade growth over 2012-2013 explains roughly half of the trade slowdown. These results suggest that trade after the Global Crisis is growing more slowly not only because global GDP growth is lower, but also because trade itself has become less responsive to GDP.

Figure 3. Contribution of short- and long-term components to trade growth



Source: IMF World Economic Outlook and authors' calculations.

Long-term changes

There are a number of non-exclusive and non-exhaustive explanations for the decline in the long-run trade elasticity, including changes in the composition of world trade, in the composition of GDP, and in the trade regime. While there may be merit in these explanations, we find most compelling the changes in the structure of trade associated with the pace of expansion of global supply chains.

The high trade elasticity of the 1990s reflected the increasing fragmentation of production (Escaith et al. 2010).
Conversely, the decline in the world trade elasticity is likely to be a symptom of the slower pace of this fragmentation process.

To show this, we estimate the long-run trade elasticities in value-added terms on a rolling basis and compare them with the gross trade elasticities calculated in the same way. Intuitively, if the slower pace of global supply chains' expansion is a contributing factor of the trade slowdown, we 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 4 indeed shows that world long-run elasticities of gross trade to GDP decreased over time approaching the lower and subsequently more stable estimates

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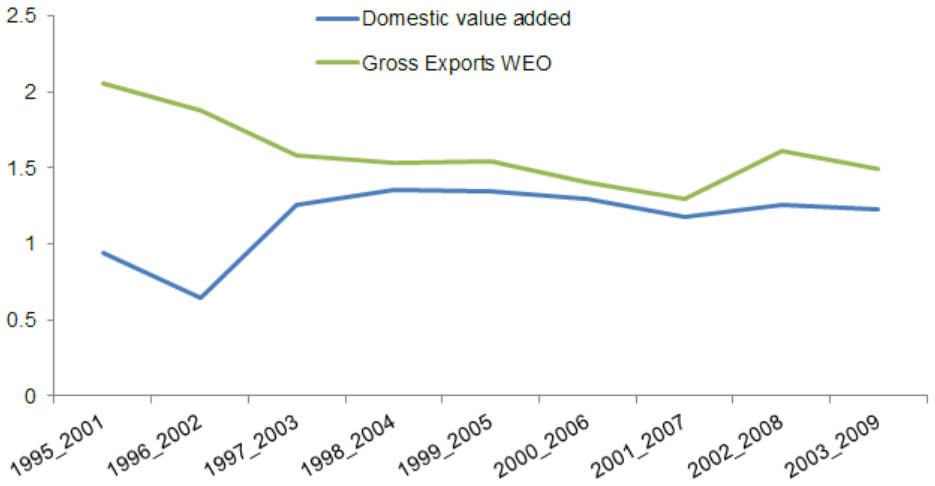
of the trade elasticities in value added terms.

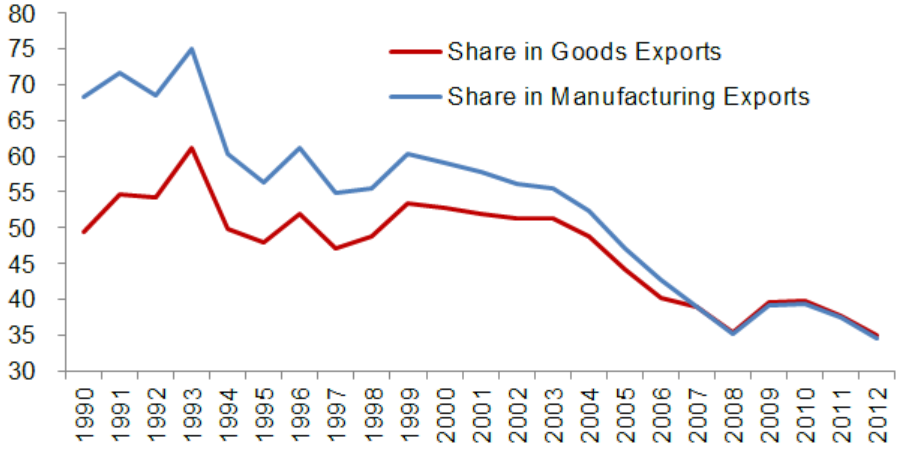
Figure 4. Long run elasticities, 7-year periods



Source: IMF WEO and authors' calculations.

A disaggregated analysis of the big traders reveals that the US and China both experienced significant declines in the elasticity of trade to growth (from 3.7 to 1.0 for the US, and from 1.5 to 1.1 for China). The case of China is particularly revealing. Figure 5 shows the fall in the share of Chinese imports of parts and components in merchandise exports, which decreased from its peak in the mid-1990s of 60% to the current share of approximately 35%. The decline is even more striking if calculated as a share of manufacturing exports. These developments reflect the progressive substitution of domestic inputs for foreign inputs by Chinese firms, a finding that is corroborated by evidence of increasing domestic value added in Chinese firms (Kee and Tang 2014).

Figure 5. Share of Chinese imports in merchandise and manufacturing exports



Source: UN Comtrade

Note: Classification of parts and components based on UN Comtrade's BEC1

1 sum of three UN Comtrade's Broad Economic Categories:

42 - parts and accessories of capital goods (except transport equipment);

53 - parts and accessories of transport equipment;

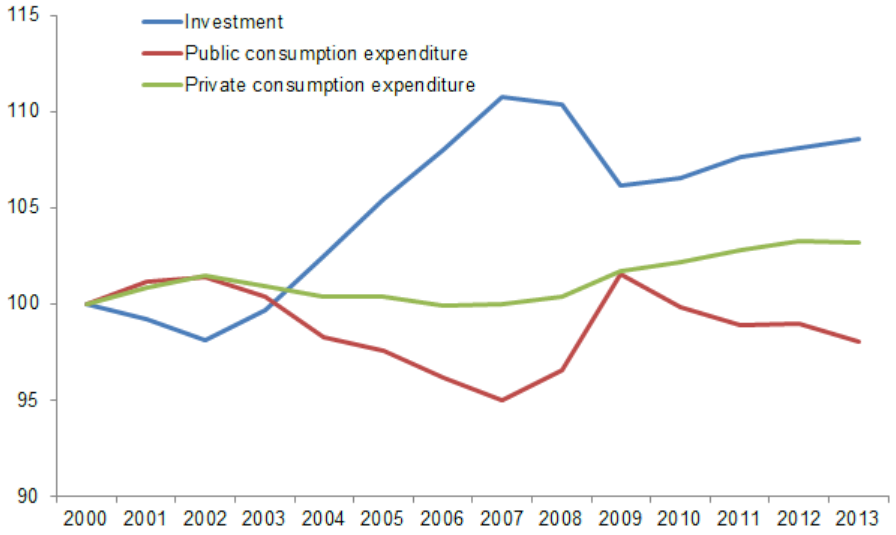
22 - processed industrial supplies not elsewhere specifed.

Other long-term factors can contribute to the global trade slowdown, but the evidence is mixed. Traditional protectionism has increased only modestly and new measures are a combination of trade restrictions and trade promotion whose ultimate effect on trade growth is ambiguous (Evenett 2014). However, it is possible that the slower pace of trade liberalisation of the 2000s relative to 1986-2000 may have contributed to the lower trade elasticity.

The changing composition of GDP can explain the lower trade elasticity after the Global Crisis, particularly due to the decline of trade-intensive components of GDP such as investment (Boz et al. 2014), but not its historical decline since the early 2000s as the investment share in GDP surged before the Crisis (Figure 6). Finally, it is not clear how far changes in the composition of trade can explain the lower trade elasticity in the 2000s, because the share of some of its basic components

(that is, goods and services) has been remarkably stable in recent years. Furthermore, the significant changes in composition within goods trade, e.g. from durable goods to less-durable goods, also occurred post-Crisis.

Figure 6. Shares of real investment and consumption in world real GDP (Index, 2000=100)



Source: IMF World Economic Outlook.

Has the trade share peaked?

We find that roughly half of the 2012–13 global trade slowdown can be explained by a structural change in the trade-income relationship. These results suggest that trade is growing slowly not only because of slow GDP growth, but also because trade itself became less responsive to GDP in recent years and that the phenomenon, being in part structural, is likely to persist in the near future.

For the longer term, however, trade pessimism should not be overstated. This changing long-term relationship between trade and income is primarily a symptom of changing patterns of international production. The forces that led to a rapid expansion of global supply chains in countries like China and the US are less strong for now. But the scope for a finer international division of labour could be important tomorrow for regions that have not yet made the most of global supply chains, such as South Asia, Africa, and South America.

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Footnotes

1 A related article appeared on the December 2014 issue of Finance and Development and in World Bank (2015). The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the IMF or the World Bank, or those of the Executive Directors of the IMF or the World Bank or the governments they represent.

2 We follow the literature (Irwin, 2002, Escaith et al., 2010, among others) and estimate a simple import demand equation for the world between 1970 and 2013 using an Error Correction Model (ECM).

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