Global Imbalances and the Trade Slowdown: Implications for Asia

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Abstract

This paper explores the relationship between global imbalances and trade. In the 1990s and early 2000s, increased borrowing from abroad allowed high-demand countries to import more than if they were constrained by their exports, stimulating trade growth. The relationship between trade imbalances and trade flows is especially strong for the United States and East Asia. Strong US import growth directly supported export growth in several East Asian countries, and indirectly supported import growth in these economies because of global supply chains. In recent years, moderating imbalances have been associated with slowing trade growth, especially in the United States and East Asia. Overall, the liberalization of global capital flows may have ushered in a period of more volatile trade growth.

Introduction

Global trade volumes plummeted 13 percent in 2009, many times the 2 percent decline in real GDP growth experienced in the depths of the Great Recession. While the trade collapse shocked economists, the slowdown in trade growth since 2011 has been an even bigger surprise. Real trade grew more than twice as fast as real GDP from 1990 to 2007, but since 2011 trade has grown only slightly faster than GDP. Even prior to 1990, trade grew more than 1.5 times as fast as GDP, so the current slowdown is unprecedented in recent history.

A number of potential explanations for the recent change in the relationship between income growth and trade growth have been explored. Most research points to a decline in demand, especially for the investment goods that weigh heavily in trade flows, as the main factor.

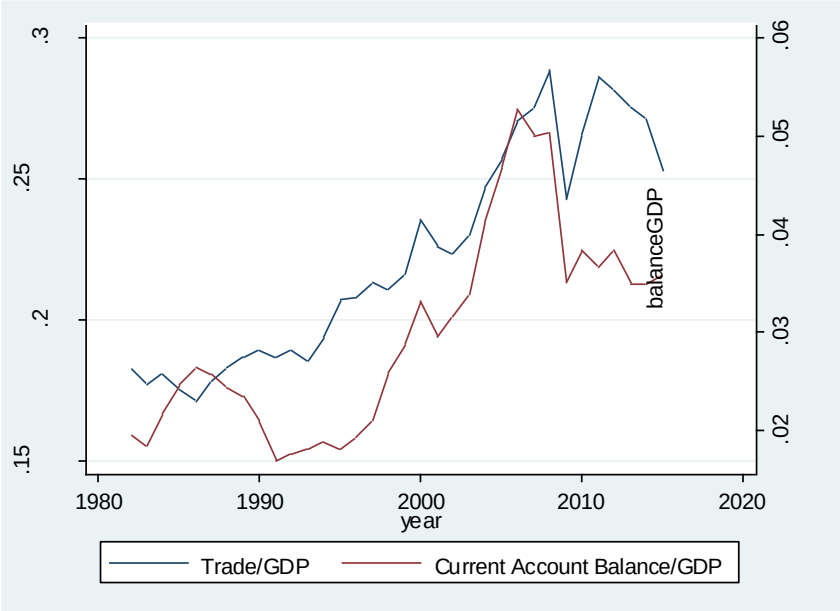
Overlooked in the debate is how greater capital mobility and widening global imbalances may have enhanced the effects of demand on trade in the 1990s and early 2000s. In the period when trade surged, global imbalances also ballooned. If the excess savings in some countries financed more consumption and investment in other countries then trade and trade imbalances would logically move together. Put differently, the ability to borrow from abroad allowed deficit countries to import more than if they were constrained by their exports, stimulating trade growth.

Figure 1 shows global imbalances across 79 countries with data going back to 1982. Global imbalances are calculated as the sum of the absolute values of the countries' current account balances relative to the sum of their incomes. When savings and investment in the large countries are equal, global imbalances will be close to zero. When some countries, such as China, Japan, Korea and the gulf countries, expanded their surpluses, and others, like the US and

several southern European countries, expanded their deficits, the measure of global imbalances grew.

The figure also shows trade to GDP, measured as total imports to total GDP for the same group of countries. Since about 1995, as global imbalances surged, so too did trade growth. The correlation between trade to GDP and global imbalances to GDP since 1995 is 0.80, the correlation before 1995 was -0.61.

Figure 1: Global imbalances and global trade

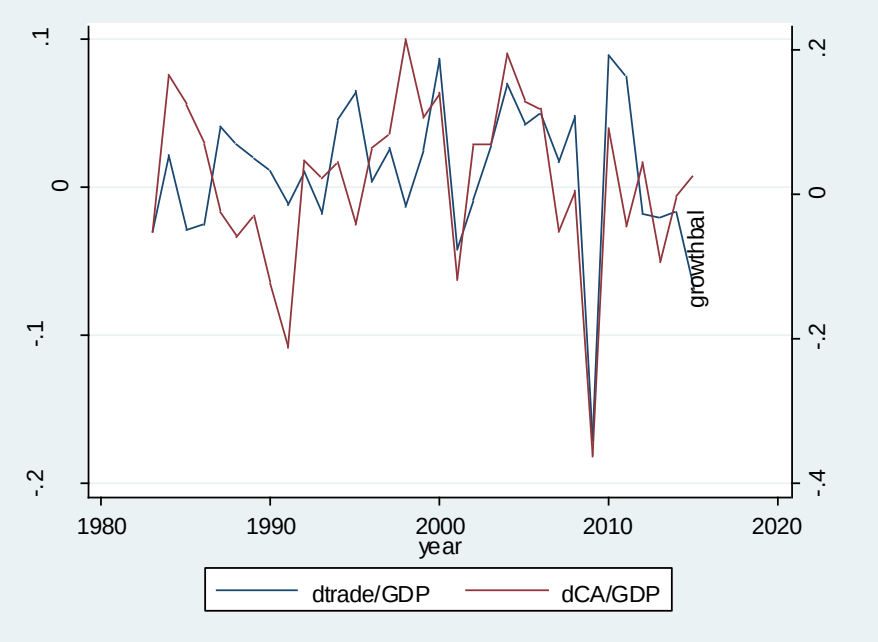


Source: IMF, data in nominal values.

Sources: World Bank, World Development Indicators and authors' calculations. Data for a balanced sample of 76 countries, taken in $US.

Figure 2 shows the relationship in growth rates. Again, the correlation expands overtime. The correlation was zero prior to 1995 and is 0.66 after 1995.

Figure 2: Growth in Trade/GDP and Growth in Imbalances



Source: IMF, data in nominal values.

Sources: World Bank, World Development Indicators and authors' calculations. Data for a balanced sample of 76 countries, taken in current $US.

Further evidence of the relationship between imbalances and trade is apparent when countries are split according to the magnitudes of their current account balances. For countries with current account balances exceeding 2.5 percent of GDP, the correlation between trade growth and growth in global imbalances since 1995 is 0.67, while for the group with more balanced trade it was 0.25. The high correlation is not just a US and China effect. Excluding China and the

United States, the correlation between global imbalances and trade growth for the large imbalance countries is 0.55 and the correlation for the balanced trade countries remains 0.25.

The relationship between imbalances and trade

There is no reason that growing imbalances have to be associated with rapid trade growth, but there is a potential mechanical relationship if trade grows faster than GDP. This section shows that rapid trade growth, however, was not sufficient to explain widening trade balances in the late 1990s and 2000s.

Assume imports and exports both grow at a constant rate, higher than GDP growth. Starting from a position of unbalanced trade, imbalances as a share of income will expand over time as trade grows. However, in this case, global imbalance relative to global trade should remain constant.

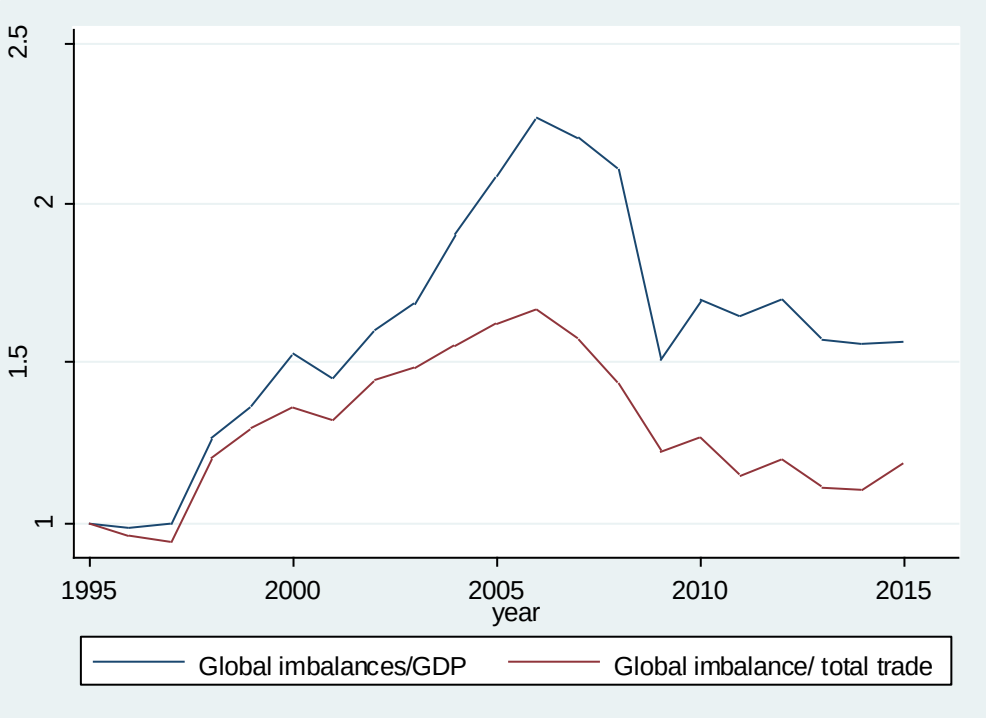
For example, assume exports and imports are growing twice as fast as GDP (as happened in the 1990s), but trade growth is constant across countries, then we have:

(1) Global imbalance/GDP at time t + 1 = $\frac{\sum_i|(1+2x)*X_i-(1+2x)*M_i|}{\sum_i(1+x)GDP} = \frac{(1+2x)}{(1+x)} * \frac{\sum_i|X_i-M_i|}{\sum_i GDP}$

(2) Global imbalance/total trade at time t +1= $\frac{\sum_i|(1+2x)*X_i-(1+2x)*M_i|}{\sum_i(1+2x)(X+M)} = \frac{(1+2x)}{(1+2x)} * \frac{\sum_i|X_i-M_i|}{\sum_i(X+M)}$

As trade grows faster than income, imbalances as a share of GDP increase, but imbalances as a share of total trade does not. In fact, over the period in question both increased (Figure 3), indicating that the growth in imbalances was partly caused by relatively high import growth in the importer/deficit countries and relatively high export growth in the export/surplus countries.

Figure 3: Global Imbalances/GDP v Trade/GDP



Source: IMF, data in nominal values.

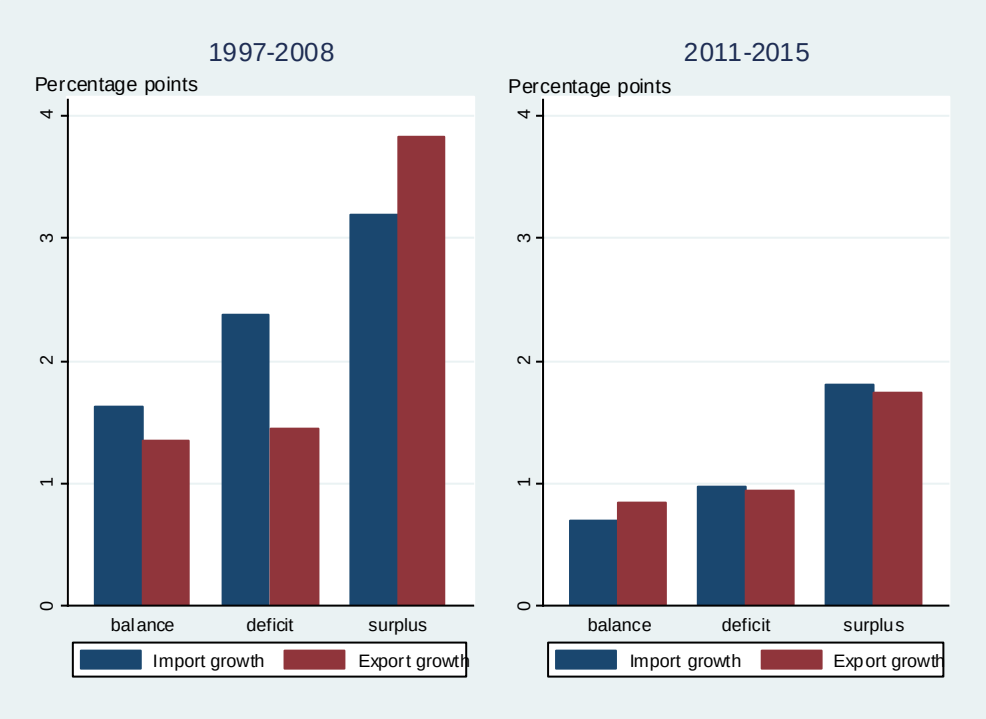
Decomposing Trade Growth

If trade imbalances boosted trade growth in the 1990s and 2000s, then we would expect a large share of global trade growth to be driven by exports from the surplus countries and imports from the deficit countries. In fact, this is exactly what happened.

Figure 4 divides countries into three groups, deficit countries (those with average deficit above 2.5 percent of GDP), surplus countries (those with average surplus above 2.5 percent of GDP) and trade balance countries. It shows the contribution to global real trade growth for each group,

during the rapid growth period and during the slowdown. The period of rapid trade growth is 1997-2007 (1997 is the first year because data on real trade growth for China begin in this year). As shown in the left panel, during the period of rapid trade growth, strong import growth in deficit countries and strong export growth in surplus countries were important contributors to trade growth. In the recent slowdown (2011-2015), trade growth has been both lower and more balanced.

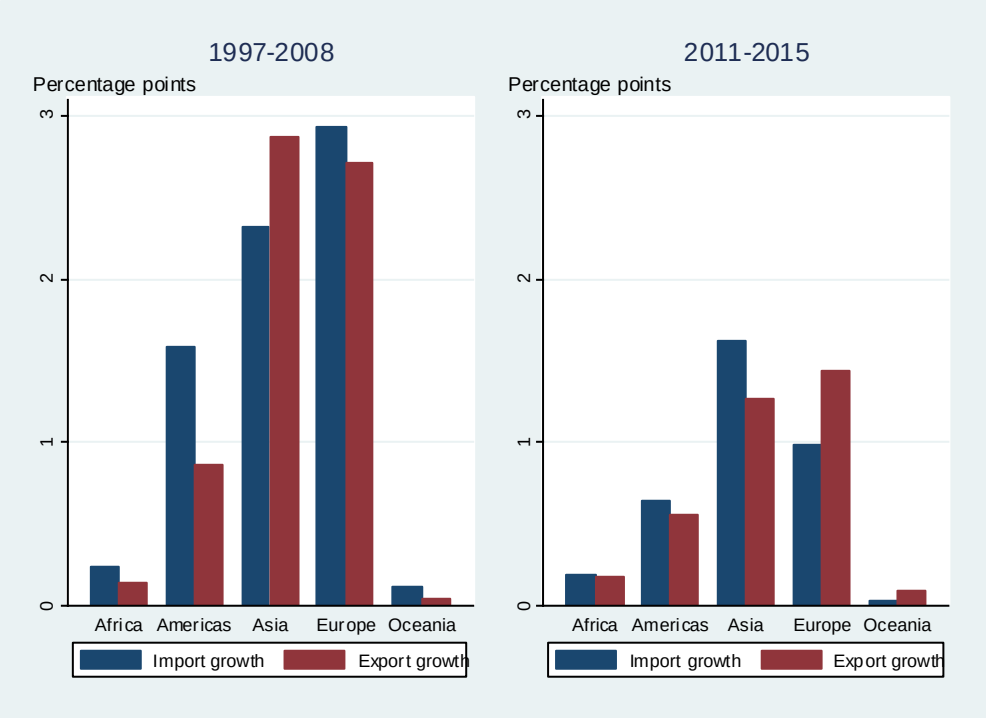
Figure 4: Contribution to real trade growth, by type, before and after the financial crisis



Source: IMF and author's calculations.

Figure 5 shows contributions by region. The rapid trade growth period was associated with rapid export growth in Asia and rapid import growth in the Americas. Trade in Europe also slowed markedly, but it was more balanced, linked to slowing growth associated with the Euro crisis.

Figure 5: Contribution to global real trade growth by region and period

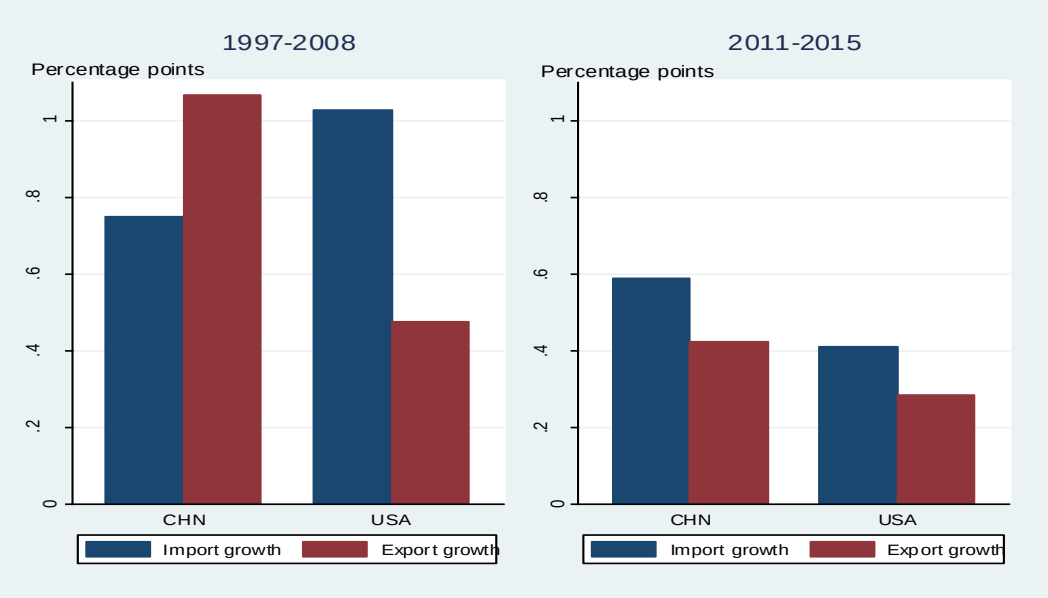


Source: IMF and author's calculations.

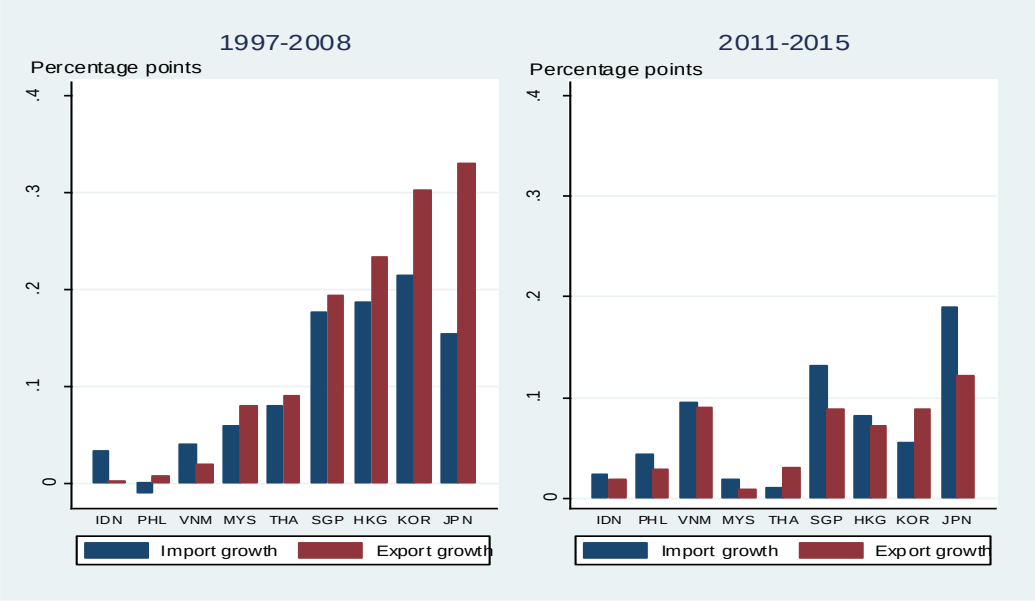
Figure 6 shows the contribution to trade growth by countries in East Asia and the United States, before and after the financial crisis. China recorded especially fast growing exports and the United States recorded especially fast growing imports in the early period. Both moderated in the latter period, the gaps between export and import growth closed, and in the case of China reversed. Among other East Asian countries, Japan and Korea also experienced widening trade imbalances in the early period that disappeared or reversed since 2011.

Figure 6: Contribution to global real trade growth, by country and period

6a: The United States and China



6B: East Asia



Source: IMF and author's calculations.

What would trade growth have looked like under more balanced global trade?

How much of the rapid growth in trade from 1995-2007 and of the slowdown from 2011-2014 can be attributed to global imbalances? To answer this question, actual trade data is replaced with estimates, assuming current account deficits are constrained. The focus is on import constraint in the deficit countries because the contraction in global imbalances after the financial crisis came almost entirely through demand reduction in the deficit countries IMF (2014). In addition, it is widening deficits—not surpluses--that are a systemic risk.

For this exercise, nominal data are used because current accounts are measured in current dollars. 2015 is excluded because nominal trade declined sharply in that year owing to the 50 percent drop in oil prices.

Two series are created, where one restricts countries to trade balance and the second allows countries to run deficits similar to historical norms. Specifically, under the latter case, for each deficit country, imports are assumed to be constrained to ensure that the trade deficit to GDP does not exceed:

i. 2.5 percent of GDP

ii. The average value plus 2 standard deviations, during the period 1980-1995.

The first criterion ensures that the deficit is reasonably large. The second ensures that it is larger than its historical norm. The second condition is important because a number of small developing countries had large imbalances in the 1990s, and the rule allows them to maintain these imbalances.

For countries where the deficit reaches the limit, imports are assumed to decline to the level that would allow the current account deficit to be within one standard deviation of its historical value

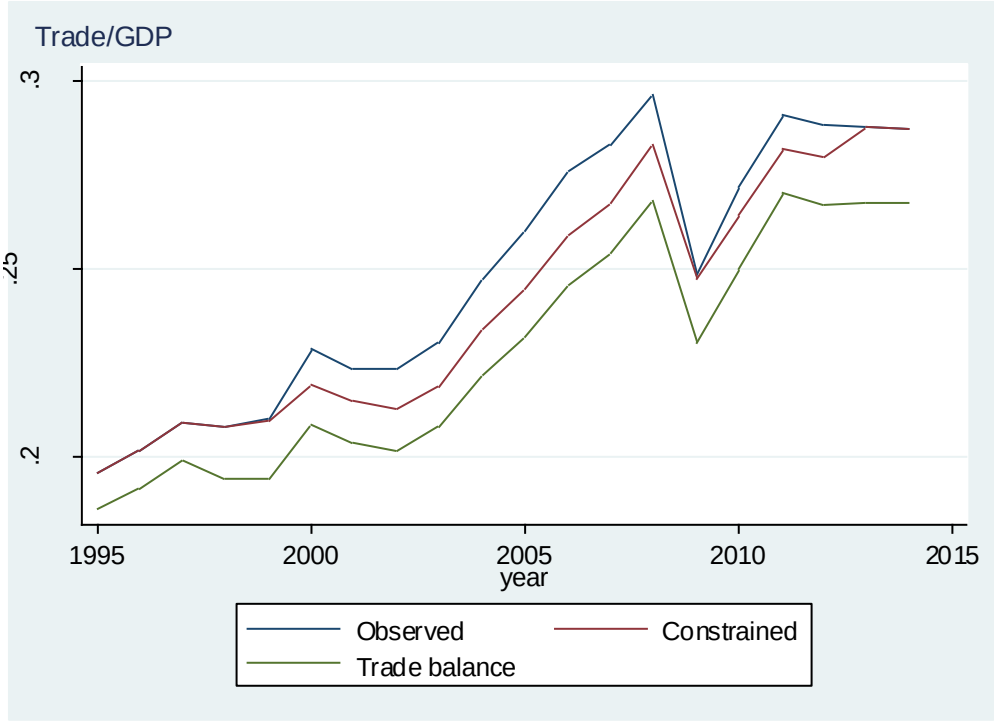
or to trade balance, whichever is larger. This case maintains global imbalances to near an average of 2.5 percent of GDP.

For both specifications, feedback effects to surplus countries are incorporated because exports use imports in their production. The feedback effect is based on the import content of exports in each year (from OECD TiVA database).[1] Specifically, for global trade to be balanced, exports above balance from the surplus countries must decline by the same amount as the decline in excess imports of the deficit countries. The export reduction is then translated to an import reduction in the surplus countries, using the annual average import content of exports. No further feedback effects, from the decline in imports in surplus countries, are assumed.

Figure 7 shows observed exports and predicted exports assuming current account balances were restricted. In both cases, the ramp up in trade would have been somewhat slower in the absence of large current account imbalances. In the case where trade deficits are constrained, but not limited to balanced trade, the 2011-2015 growth slowdown is less dramatic because the 2010-2011 rebound in trade happens more gradually than actually occurred.

Figure 7: Trade/GDP without Growing Imbalances

[1] Data on exports, imports, GDP and the import share of exports are available for 57 countries.



Source: IMF, OECD and author's calculations.

Table 1 records average trade growth for the period 1995-2007 and 2011-2014, for observed flows and the series where current account balances were restricted. It also shows average trade growth relative to average income growth. There is evidence that growing imbalances contributed to more rapid trade growth during the first period, and that moderating trade imbalances contributed to slower growth in recent years. Overall, about 25-50 percent of the drop in trade growth relative to GDP growth can be explained by the rise and fall in imbalances.

Table 1: Responsiveness of trade to income and global imbalances

	Trade growth			Elasticity		
Period	Actual	Balanced	Restricted	Actual	Balanced	Restricted
1995-2007	8.1%	7.6%	7.6%	1.61	1.51	1.51
2010-2014	2.2%	2.3%	2.7%	0.98	1.03	1.21
Share of decline explained by imbalances					23%	52%

Transmission of US shock to East Asian Economies

To the extent that the period of rapid trade growth was driven by US demand fueling export growth in Asia, the trade in the Asian economies will tend to move with US imports. Table 2 shows results from regressing real import and export growth in the East Asian countries on real US import growth. East Asian imports may also be correlated with US imports, because a high share of the imports are inputs used in exports. For example, in Japan the import share of exports is 20 percent, in China it is 30 percent and in Korea it is 40 percent.

Table 2 shows that, for the surplus Asian countries, both import growth and export growth are highly correlated with US import growth. In contrast, for the East Asian countries with roughly balanced trade or trade deficits, the correlations are much lower and not significant. While the surplus economies and the US could be responding to global growth or other excluded variables, the fact that only the surplus countries show a strong correlation with US import growth is consistent with movements in imbalances enhancing the transmission from slow US growth to East Asian exports and imports.

Table 2: Trade growth in surplus Asian countries is highly correlated with US import growth

Dependent variable: Import growth													
	Deficit		Balance			Surplus							
	LAO	KHM	VNM	IDN	PHL	JPN	KOR	CHN	THA	HKG	TWN	MYS	SGP
US import growth	0.0223	0.66	-0.186	0.505	0.0767	0.636***	0.695	0.596*	1.110**	0.625**	1.237***	1.173***	0.825***
	[0.414]	[0.489]	[0.418]	[0.523]	[0.375]	[0.174]	[0.4]	[0.282]	[0.417]	[0.234]	[0.206]	[0.323]	[0.269]
Observations	18	18	18	18	18	18	18	18	18	18	18	18	18
R-squared	0.00	0.10	0.01	0.06	0.00	0.46	0.16	0.22	0.31	0.31	0.69	0.45	0.37
Average CA/GDP	-16.26	-5.82	-1.14	1.12	1.83	2.72	3.28	3.84	3.86	7.22	7.66	10.28	18.89
Dependent variable: Export growth													
	Deficit		Balance			Surplus							
	LAO	KHM	VNM	IDN	PHL	JPN	KOR	CHN	THA	HKG	TWN	MYS	SGP
US import growth	0.275	0.783*	-0.108	0.133	0.434	1.189***	0.718***	1.051**	0.931***	0.720***	1.013***	0.918***	0.740***
	[0.343]	[0.381]	[0.238]	[0.371]	[0.464]	[0.241]	[0.177]	[0.364]	[0.131]	[0.222]	[0.206]	[0.206]	[0.212]
Observations	18	18	18	18	18	18	18	18	18	18	18	18	18
R-squared	0.039	0.209	0.013	0.008	0.052	0.603	0.508	0.342	0.761	0.397	0.602	0.553	0.432
Average CA/GDP	-16.26	-5.82	-1.14	1.12	1.83	2.72	3.28	3.84	3.86	7.22	7.66	10.28	18.89

Notes: * indicates significant at the 10 percent level, ** significant at the 5 percent level and *** significant at the 1 percent level. Data are real import and export growth from the IMF.

Is this explanation consistent with the existing literature?

The main explanations put forward for the recent trade slowdown are: (i) weak demand, especially for the investment goods that are a big part of trade flows, (ii) a slowdown in the development of global supply chains, and (iii) protectionism.

The IMF WEO (2016) did the most extensive study to date and found that demand is largely to blame for the trade slowdown, accounting for 50-80 percent, with supply chains and protectionism each explaining at most 5 percent. Their results are consistent with research showing that investment tends to drive trade movements (Bussiere et.al. 2013). While trade imbalances are, of course, related to demand, neither study considered whether increasing global imbalances in the mid-1990s may have affected the relationship between trade and growth.

A number of studies focus on the role of China in the trade slowdown. Contantinescu, Mattoo and Ruta (2015) find the deceleration in vertical integration, particularly in China, is important. Gaulier et. al. (2015) focus China's rise as a manufacturing and center and its shift to domestic demand as important in explaining changes in global trade growth overtime. Considering the role of widening global imbalances in fueling trade growth is complementary to these studies in that it helps to explain how China's exports could grow so rapidly and the timing of the shift to domestic demand driven growth.

While there is no reason trade could not surge in an environment of more balanced trade (indeed, most trade models assume trade is balanced), the ability to have large trade imbalances could enhance trade growth because countries can import more when demand is strong. The growth in cross-border capital flows magnifies the effects of the existing explanations because budget constraints are no longer binding. In terms of demand as an explanation, the ease of borrowing from abroad means that demand can exceed supply for longer periods, without price increases. Similarly, in the presence of greater capital mobility, the build-up of supply chains was likely faster than it otherwise would have been.

The trade growth puzzle may therefore be the next of kin to one of the major paradoxes in macroeconomics from the 1980s, the high correlation between savings and investment across countries. Theory predicts that savings should flow to the best investment opportunities. Because the top investment prospects may not be in the domestic market, the correlation between savings and investment across countries should be low. Instead economists found it to be very high in the 1960s and 1970s. This paradox, known as the Feldstein-Horioka puzzle for the economists who uncovered it, has unraveled in recent decades, as the cross-country correlation

between savings and investment declined.[2] The widening and then narrowing of global imbalances that resulted from greater capital mobility contributed to more volatile trade growth. If instead the gap between savings and investment has remained limited, trade growth would have very likely been more balanced over time as shown is figure 7.

Implications for Trade and Growth

The unprecedented trade growth that followed the rise of cross border capital flows is linked to widening trade imbalances. Similarly, the current period of slow trade growth is associated with a narrowing of global imbalances. From this perspective, the dramatic trade slowdown stems not just from weak global growth, but from weaker growth combined with a return to more balanced capital flows.

Going forward, even as global growth picks up, the new weaker relationship between trade and income may remain in place if global imbalances remain constrained. Overall, the dismantling of the Feldstein-Horioka puzzle may have ushered in a period when the relationship between global trade growth and global income growth is more volatile. In periods when demand is strong in large countries, their widening imbalances fuel trade growth to a greater extent than if they were constrained by their exports. Similarly, the eventual pressure to narrow trade deficits will eventually result in slower trade growth.

An alternative way of viewing the results is that the export-led growth policies in Asia fueled strong trade growth in the late 1990s and early 2000s and widening imbalances. Those policies

[2] Feldstein and Horioka (1980)

effectively shifted export growth from the future to that period, resulting in slower trade growth and in recent years as pressure for more balanced trade increased. An important implication for the East Asian surplus countries is that they will now need to rely more on domestic reform and less on export-led growth. Over time, a new wave of global income and trade growth could result if the roles reverse and surplus East Asia were to absorb a higher share of global capital flows.

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