

## Global Macro Strategy

### Big Macro 06: The What, Why & So-What of Globalisation – I. Separating myth from reality

#### Global Macro Strategy

Global

#### Diving into the under-current

A decline in trend growth and real rates, rising income inequality, a hunt for yield chequered by occasional bouts of high volatility - so goes the story of the post crisis world. A major under-current that has interacted strongly with these forces is a shift in the gears of globalisation. There is a general understanding that globalisation has begun to slow, but the precise facts, their causes, and consequences are less well understood.

#### The What, Why and So What of Globalisation

In the first of a 3 part series, today, we attempt to separate myth from reality and provide context on precisely 'what' is changing with global trade in goods and services, capital flows, and labour mobility. In the second note, to be released next week, we will address 'why' the march of globalisation has apparently slowed, separating cyclical and structural influences. The week after next we will publish our final note on this issue, addressing the question 'so what?'-how investor portfolios should be changing to accommodate the new realities.

#### 'What' is going on with globalisation: Answering 10 key questions

We start by assessing what is and isn't changing with globalisation through 10 key debates we have had with investors, policy makers and academics. Readers can click on the question of interest to go directly to it.

- [The view across centuries – how has globalisation has ebbed and flowed?](#)
- [Quantifying the change – is globalisation slowing, or actually reversing?](#)
- [Who is driving this: DM, or EM or both?](#)
- [Is the slowdown just as pronounced in services as it is in goods?](#)
- [Isn't the US' declining import intensity only about oil?](#)
- [Why does Europe's trade elasticity look healthier than the rest of the world?](#)
- [Can intra-EM trade rescue global trade?](#)
- [Was the trade boom only about the growth of global supply chains?](#)
- [Are global capital flows decelerating in line with trade?](#)
- [Has the movement of labour now become more restricted?](#)

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# The What, Why and So-What of slowing globalisation- I

## What's up with globalisation? Summary and conclusions

- The elasticity of global trade to GDP growth has reverted to levels last seen in the 1970s and early 1980s. We would broadly characterise the changes thus far as a slowdown in globalisation, not a reversal, but the data over the last 12 months has been more concerning.
- While the 'hyper-globalisation' years were different for DM (1990s) and EM (2000s), both now seem to be suffering a slowdown in trade intensity. EM benefited disproportionately from the growth of global supply chains over the last 20 years, and is likely to see a bigger hit to trade volumes.
- It's merchandise trade that's driving the plateauing of global trade today; services trade has continued to grow relative to global output. Services account for only 20% of global trade, but its contribution doubles when measured in value added terms. Developed markets still have 65% of market share here.
- Financial flows have mirrored the shrinking of trade, dropping over 60% from their peak. However, it is bank lending, particularly to DM banks, that has been hit hardest. Trends in lending to corporates, FDI and portfolio investment have not changed dramatically. FDI into EM, however, bears close monitoring.
- The weakness in US trade has been exaggerated by the fall in US oil imports. The elasticity of trade to GDP has slipped ex oil as well, but by less.
- On the face of it, the slowdown in European trade seems entirely cyclical. However, there are signs of 'near-shoring', which may mean a rebound in European growth will mean less for the rest of the world and more for the EU.
- The movement of labour across borders has remained strong, but the reasons for migration have changed. Migration driven by economic 'pull factors' is slowing, and that driven by security concerns, or 'push factors', is growing.

## Why is it happening, and what this means for markets – A sneak-peak into the next two notes

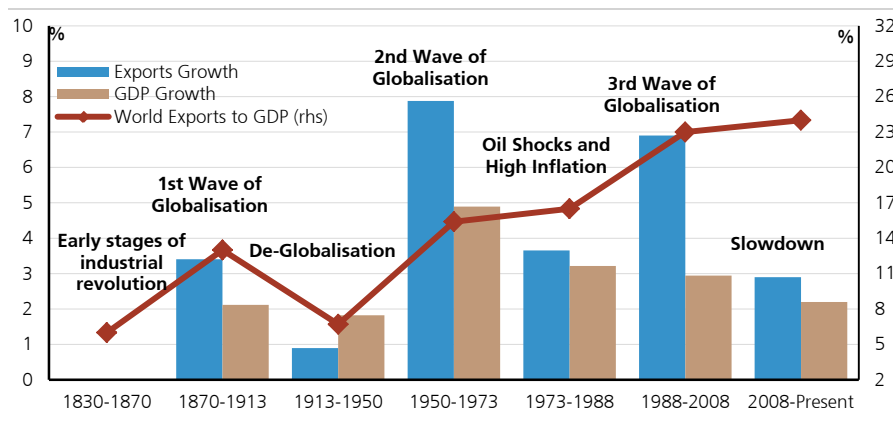
Many investors and academics see the slowdown in trade as purely cyclical: when demand recovers, the argument goes, so will trade. In our [second note](#) we will try to separate the cyclical influences on global trade from the structural, to help explain why global trade is plateauing. Mind you, even if you do believe weak trade is only about weak investment, a big recovery is unlikely to be just around the corner. We will examine the roles played by rebalancing in China, the de-materialisation of investment, protectionism, and shrinking of value chains.

The [third note](#) will be dedicated to key macro and market consequences of globalisation's pivot. A more open world saw a synchronised decline in inflation and real rates. Will a plateau in trade lead to growing divergence? We'll map out the differential impact on earnings across countries, sectors, and regions, lay out how a key instrument of economic adjustment - currencies- may be rendered less potent, and how macro balance sheets will be impacted over time.

# 1. The very long term view – the ebb and flow of globalisation<sup>1</sup>

- The industrial revolution can be thought of as the beginning of the first wave of major globalisation. Despite the name, agrarian goods were still a dominant part of global trade.
- After de-globalisation in the interwar period, a second wave of globalisation was ushered in from the 1950s to the early 1970s. Manufacturing trade and growth in FDI dominated this time.
- In the third wave, which began from the mid to late '80s, trade grew at the fastest pace relative to output. Technology, lower tariffs, trade in services, and increased capital & labour mobility were the hallmarks of this era. We're presently in the rain shadow of this recent success, a marked slowdown.
- Globalisation hasn't moved in a straight line. While openness to trade and commercial policy have been relevant, technological change has been the more important driver of trade over time.

Figure 1: Global trade volumes and real GDP growth: The very long term view<sup>2</sup>



Source: Maddison, IMF, WTO, World Bank, Haver, UBS estimates

Civilisations and nations have traded with each other over millennia, and have done so at a faster pace since the 'age of exploration' in the 15th century, but we can clearly identify the Industrial Revolution as the parent of the modern trading system. The technological advances in transport, communication, science and medicine since the 1850s have seen the world's population grow 6 fold, output grow 60 fold, and trade grow 140 fold since then.

The era between 1870 and 1914, called the 'first wave of globalisation' (Figure 1), saw a notable pick up in trade growth<sup>3</sup>. Steam power revolutionised transportation on seas and land, the Suez Canal reduced distances, refrigerated ships allowed goods to be transported over longer distances, submarine telegraphs improved

**The industrial revolution can be thought of as the genesis of the modern trading system**

**The first wave of globalisation began in 1870-1914, centred on raw materials trade**

<sup>1</sup> The three key sources of long term data on growth and trade are Angus Maddison, The World Economy (2006) published by the OECD, UN Statistics database and WTO

<sup>2</sup> This chart combines real data for gross goods and services exports from Maddison, WTO and World Bank.

<sup>3</sup> See 'Trends in International Trade', World Trade Organisation, 2013

communication and logistics. The industrial revolution facilitated trade, but the trade itself was still mainly in raw materials that moved between the agrarian peripheral world to the industrialised core in Europe, and to a lesser extent, to North America. The income gap between the industrialising 'north' and the agrarian 'south' widened sharply. An increasing number of countries shifted to the gold standard, limiting foreign exchange risk, and making for remarkable confidence and stability in international capital flows. The pound sterling was the main international currency, and British banks played a key role in the international financial system. There was no coordination of global trading order but bilateral agreements pulled down tariffs throughout Europe.

This was followed by a spell of 30-35 years from 1914 to 1950, through which two global wars and a major depression suppressed output growth and, even more than that, trade growth. Protectionism grew<sup>4</sup> as no major global economy was prepared to take leadership<sup>5</sup> amidst rising global imbalances – the US running a big surplus against Europe. Bank failures and competitive devaluations heightened economic and political insecurity.

A major growth revival in war ravaged Europe and Asia, coupled with strong output in a baby-booming US made the spell from 1950 to 1973 the heyday of global growth. The 1944 Bretton-Woods agreement and new international organisations like the UN, IMF, World Bank and GATT laid the template for growth and trade. This 'second wave of globalisation' was characterised by the rise of multinational corporation, and the growth of foreign direct investment. Industrialisation spread from the core to the periphery, and manufacturing came to dominate global trade. This is the era when trade grew at the fastest pace in absolute terms.

Relative to GDP growth, however, trade never grew as it did during the 'third wave of globalisation' – the hyper-globalisation years of the 1990s and the early 2000s, of which the collapse of the Berlin Wall can be seen as a suitable starting point. Not only did a decline in goods tariffs lead to an increase in free movement in product markets, easing regulation stirred factor markets too. Labour migration picked up and capital crossed borders in quantities and forms it never had. Production was unbundled across countries as global value chains grew, particularly in Asia. Services began to grow as part of trade helped by new information and communications technology like fibre optics and the broadband. The advance of the internet helped quicker processing of transactions, but more than that, the spread of ideas.

After the deep recession of global financial crisis of 2008-09, and a smart recovery immediately following that, global trade growth has slowed, both in absolute terms and also relative to GDP growth.

But slowed to where? We address this in the next section.

**Leader-less in the interwar years**

**The post-war era of 1950-1973 saw the most rapid absolute growth in trade volumes. Manufacturing and FDI grew sharply. Trading within multinational corporations rose.**

**The peak of global trade intensity – trade relative to output – was seen in the 'hyper-globalisation' years of the 1990s and mid 2000s**

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<sup>4</sup> The Smoot-Hawley Tariff Act of 1930 raised US tariffs to historic highs and prompted a series of responses from other countries.

<sup>5</sup> See Charles Kindleberger: The World in Depression (1973)

## 2. Quantifying how much things have changed

- The elasticity of trade to GDP rose to as high as 2.2 in the third wave of globalisation, compared with an average of 1.5 since the 1950s.
- In the post-crisis era the elasticity of trade has shifted down to 1.1, not far from the weak average of the 1970s and early 1980s, but well below the second and third waves of globalisation.
- Using monthly data to take a lens to more recent numbers we see a slightly more worrying reality. The beta of trade growth to industrial output has continued to slide. Since 2015 it has been below 1.

Just how big is this slowdown? Indeed, precisely how big was the boom in trade in the decades prior? Are the events of today special, or are we just seeing a regression to a much longer term mean?

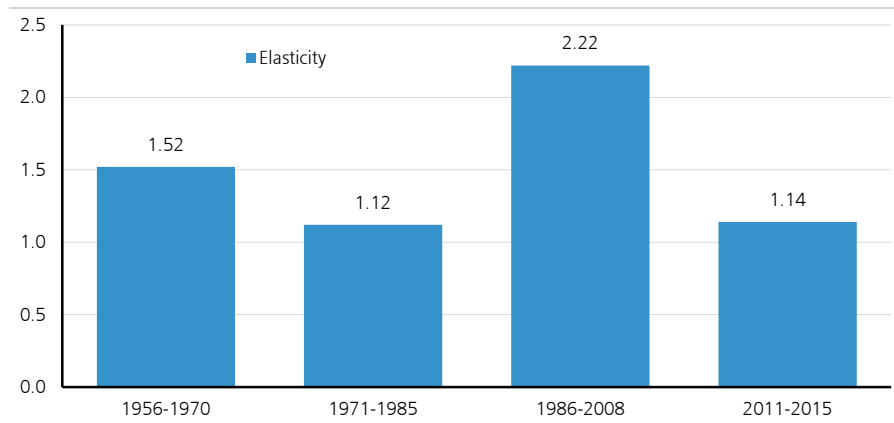
Using data from the WTO, IMF and the CPB, we set up two models that allow us to identify elasticities of trade to output in different periods of interest (see Appendix for details). Within an error correction framework we regress changes in import volumes on changes in GDP in real terms and lags of levels of import volumes and GDP. All variables are in log terms.

The basic model takes the form

$$\Delta \ln M_t = \alpha + \beta_1 \Delta \ln GDP_t + \gamma_1 \ln M_{t-1} + \delta_1 \ln GDP_{t-1}$$

To this we add dummy variables to calculate long term elasticities for different periods, and test whether they are significantly different from each other<sup>6</sup>.

**Figure 2: Global trade elasticity over the last 60 years<sup>7</sup>, annual data**



Source: IMF, Haver, UBS

The first model uses annual data over the last 60 years to assess longer term moves in the elasticity of trade volume growth to global GDP growth. The second model uses monthly data for trade volumes and industrial production over the last 25 years. The advantage here is being able to get a continuous evolution of elasticity<sup>8</sup>.

<sup>6</sup> Our methodology is based on the paper 'Does the post-Crisis weakness of global trade solely reflect weak demand?' by Patrice Ollivaud and Cyrille Schwellnus, May 2015

<sup>7</sup> We separate out the periods, not necessarily in equal blocks of time, according to the regimes of interest.

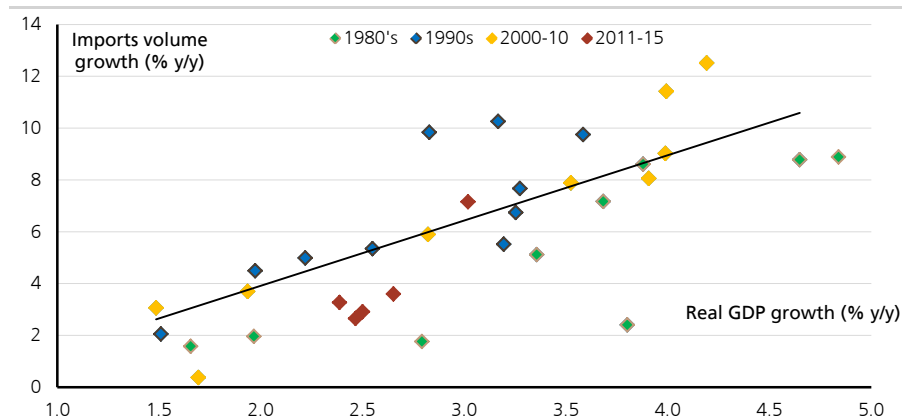
<sup>8</sup> In our annual data series we exclude the 2008-2009 period as it exaggerates beta and given the contraction in activity, it yields nonsensical results for certain sub periods.

**We use simple error corrections models with dummies for different periods to estimate how trade elasticities have evolved over different periods**

The annual numbers clearly show that the real outlier in the relationship between global trade and global growth was the spell of the 1990s and the early 2000s (Figure 2). There certainly is a slowdown in trade growth relative to GDP growth in the post crisis world, but it is a reversion to the levels of trade seen during 1970s, and the early 80s (Figure 3), not active de-globalisation.

**Viewed over the long term, the real outlier in trade patterns was the 1990s and early 2000s – not today**

**Figure 3: Real GDP growth vs Imports volume growth**

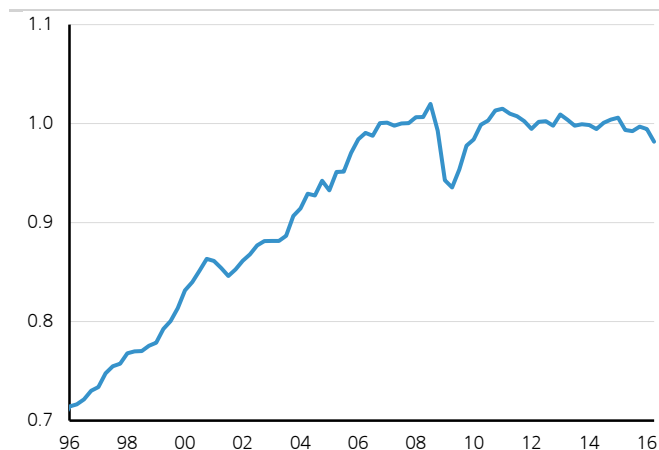


Source: IMFWEO, UBS \*Note that the regression lines are based on data from 1985-07 and the data for 2009 is not shown in the graph

The monthly numbers, where we use industrial production as a proxy for GDP trends, allow us to delve deeper into the most recent history, do point to a slightly more troubling reality. They show that the elasticity of trade to output has actually slipped below 1, i.e. trade growth has been weaker than GDP growth over the last 3 years; the first such instance in a non-recessionary period in the last quarter of a century (Figure 4 and Figure 5).

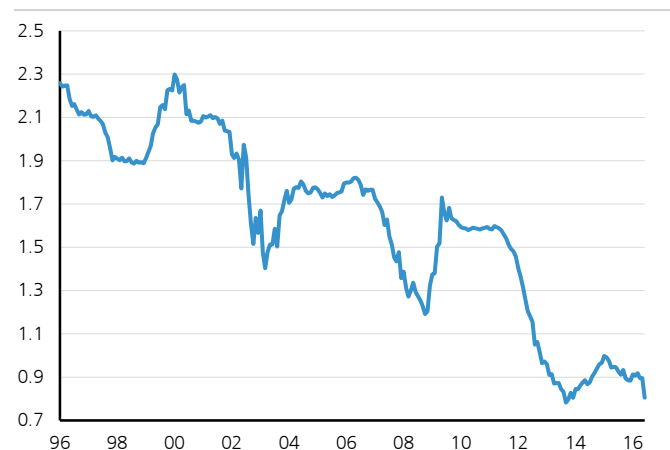
**Higher frequency data suggests global trade is now growing more slowly than GDP, its weakest relationship in at least 25 years**

**Figure 4: Global trade volumes to global industrial production, monthly data, 2010=1**



Source: CPB World Trade Monitor, Haver, UBS

**Figure 5: Rolling 3 year elasticity of global trade volumes to global industrial production, monthly data**



Source: CPB World Trade Monitor, Haver, UBS

Note that in talking about a regression to the 1970s and 1980s, or an even sharper drop more recently, we are referring to trade elasticity to GDP, which can be thought of as the pace at which globalisation is growing. In terms of the level of trade to GDP, or how globalised the world is, we remain more open today than even the 1990s.

**The pace of growth in globalisation has slowed, and this matters, but the world still remains more globalised than it was even in the 1990s.**

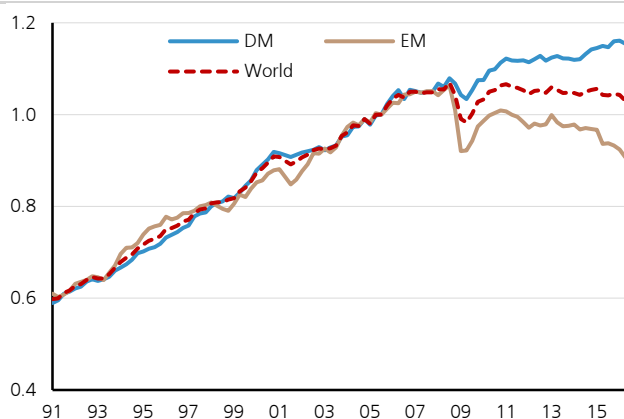
### 3. The hyper-globalisation years and now: disparate peaks then, a simultaneous slowdown now

- *To understand where we are going it is important to understand where we are coming from. Growth in trade relative to output peaked at different times for DM and EM economies.*
- *1990s were the decade of boom for DM trade while EM trade expanded strongly in the 2000s. DM trade growth weakened even before the GFC while EM trade stayed strong until as recently as 2013.*
- *Over the last two years EM trade has weakened at a faster pace than DM trade.*

The periods of peak trade buoyancy have not been perfectly synchronised across developed and emerging markets. For DM, the big gains in trade growth relative to output came from the late 1980s (Figure 7) till the early 2000s. Through this period the world saw the collapse of communism in the USSR, a steep decline in trade barriers, OECD removing all restrictions of cross border financial flows, the institution of NAFTA, the transition from GATT to WTO, the internet becoming publically available, the run-up to and the actual creation of the Eurozone, and the loosening of restrictions in the Chinese housing market. The production process was unbundled into vertical supply chains in non-contiguous geographical areas. Productivity rose sharply along with higher domestic and foreign investment. FDI flows soared from 0.5% of global GDP to nearly 4% of global GDP. Correlations in global rates rose and they began a long slide down. Technology helped the economy become more dematerialised, and trade in services rose quickly. Trade elasticity to GDP rose sharply to 2.2.

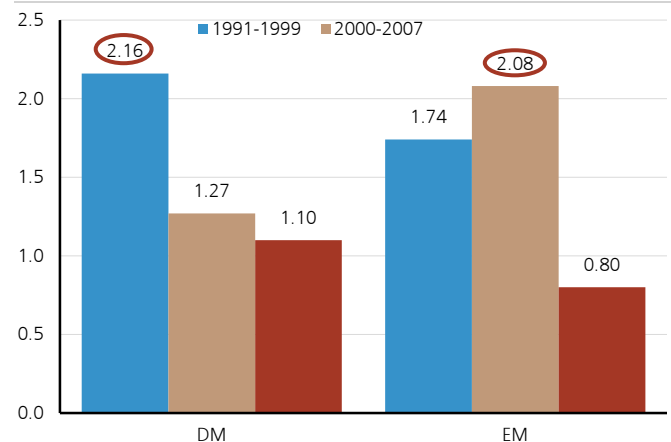
By the early 2000s the elasticity of trade to production in developed market countries was already off its highs. From 2005 it slowed further, growing at only slightly higher pace than GDP in the post-crisis era.

**Figure 6: Ratio of trade volume to industrial production (2010 = 1)**



Source: CPB World Monitor, Haver, UBS

**Figure 7: Trade elasticity to IP through the hyper-globalisation years**



Source: CPB World Monitor, Haver, UBS

**The peak in developed world trade was in the 1990s...**

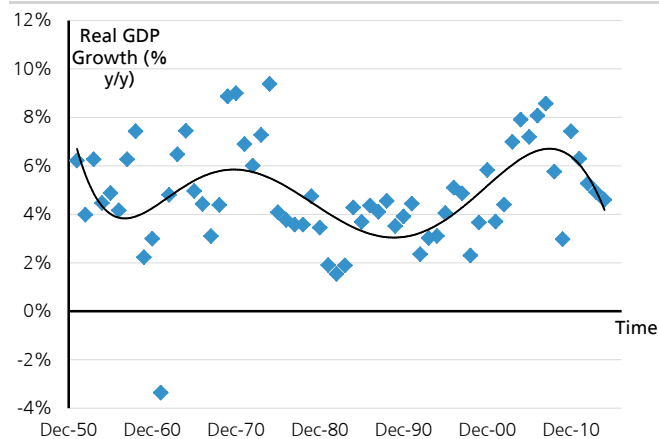
We would have already seen world trade and world growth slow down in early 2000s, but things were moving to a slightly different beat in the emerging world.

**For EM the peak of trade intensity was the 2000s**

The period beginning late 1990s saw what Arvind Subramanian and Martin Kessler have described as 'convergence with a vengeance'<sup>9</sup>- economic growth took off across the world. Till the mid to late 1980s, 1/3 of the developing world was catching up with the United States at a pace of 1.5% per capita per annum. Most of these were Asian economies. From the late 1990s ¾ of the developing world caught with the economic frontier at up at 3.3% per capita per annum. CEE economies found their place in the borders of core Europe, away from communism, LatAm grew at the fastest pace since the 1970s and Africa joined the convergence for the first time since its independence<sup>10</sup>. This period marked not just China's rise into the global production chain culminating in entry to the WTO, it also saw an unprecedented boom in housing construction in China which made huge demands on imports, pushing up both import volumes and prices of commodities.

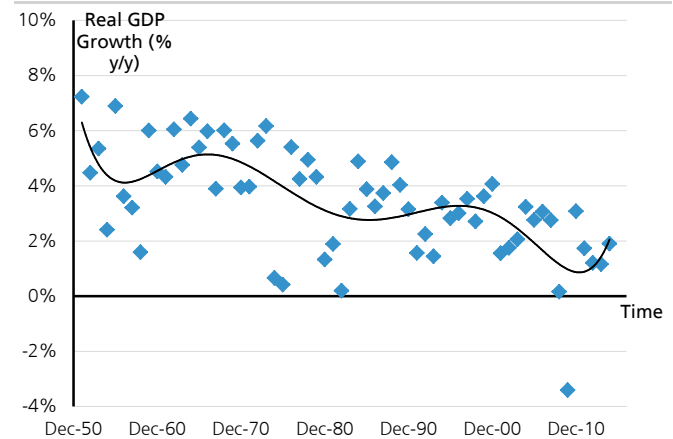
**Convergence with a vengeance**

**Figure 8: EM GDP Growth: A synchronised growth explosion in the 2000s; a big slowdown since**



Source: Penn World Tables, IMF, UBS \* All data in Real Terms

**Figure 9: DM GDP Growth: some improvement in the 1990s, but broadly, a steady trend lower**



Source: Penn World Tables, IMF, UBS \* All data in Real Terms

The growth in trade volumes relative to GDP growth did begin to slow down well before the crisis in EM too, but the nominal illusion<sup>11</sup> of growth in trade values remained strong. After the sharp drop of 2008-2009, emerging economies, unlike developed economies, saw a very strong rebound in trade volumes in 2010 and 2011. Since then, however, the beta of EM trade to global growth turned south very quickly. Over the last 18 months the slide has accelerated with export volumes growing less EM real GDP and production, the beta between the two now slipping to 0.8. The trade elasticity trends over the last couple of years compare unfavourably not just with the 1990s, but even with the 1980s.

**But common to both EM and DM, trade elasticities are declining today**

<sup>9</sup> See A Subramanian and M Kessler: 'The Hyper-globalisation of trade and its future' PIIE, July 2013

<sup>10</sup> See Dani Rodrik 'The future of convergence' Aug 2011

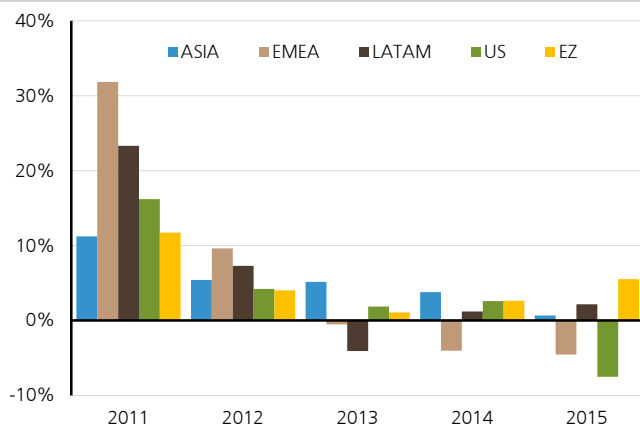
<sup>11</sup> However, even as it was slowing in real terms, trade was doing just fine in nominal terms. Amidst high commodity prices, the value of exports and earnings of companies were buoyant, suppressing market worries about what then was just a nascent slowdown in trade volumes.



## 4. Trade in services has stayed relatively strong, and is becoming more important

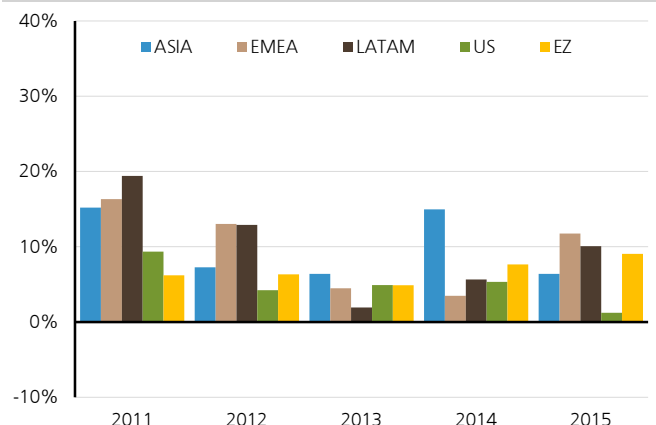
- *In nominal terms there is no slowdown in the elasticity of services trade to GDP. This is due to elasticity of real service trade holding up, but also due to a secular terms of trade shift in favour services, and away from durables manufacturing.*
- *Services trade has grown from 3% of global GDP to 6.5% of global GDP in the last three decades. In gross terms it forms about 20% of total trade, but its contribution in value added terms is nearly double of that.*
- *DM economies still have about 65 % market share in global trade of services, with only a few Asian economies like India, China, Korea accounting for the majority of EM services trade. EM is a larger part of global imports of services than it is of exports of services.*
- *We should not overstate the good news. The relationship between goods and services trade has loosened, but only modestly so. It would be difficult for them to move in different directions over long periods, or for services trade to fully offset weakness in goods trade.*

**Figure 10: Merchandise Trade growth (% y/y)**



Source: IMFBOP, Haver, UBS \*average of services imports and exports growth, measured in nominal local currency terms

**Figure 11: Services Trade growth (% y/y)**



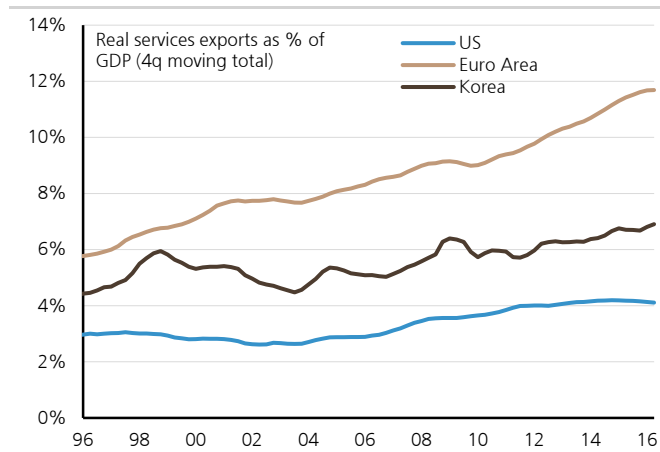
Source: IMFBOP, Haver, UBS \*average of services imports and exports growth, measured in nominal local currency terms

Even as growth in goods trade has slowed, and subsequently contracted (Figure 10), trade in services has continued to stay positive across all regions (Figure 11). In real terms the elasticity of services trade to GDP has fallen, but only more recently, and by much less so than the fall in the elasticity of merchandise trade to GDP. (Figure 12).

The really good news is that in nominal terms there has been no break in services trade elasticity to speak of; a very different picture compared to goods trade (Figure 13). The differences here point to a terms of trade shift away from goods towards services. Both domestically and internationally, service prices are rising faster than goods prices. This may not matter for real GDP today, but does matter for the markets.

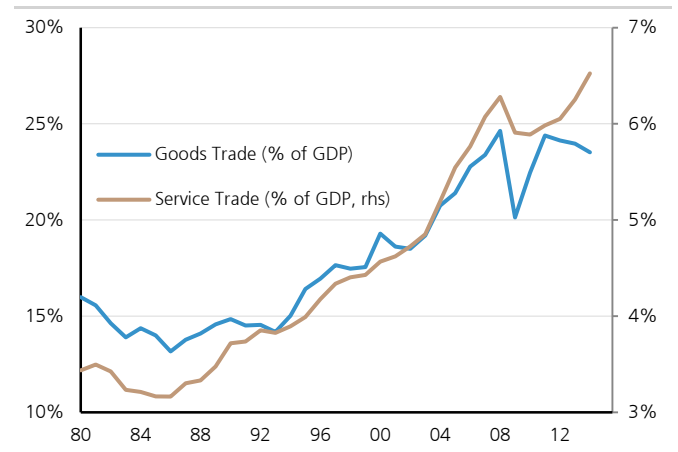
**Unlike goods, the elasticity of trade in services to GDP has not seen a structural break**

**Figure 12: Services exports: US, Eurozone, Korea (% of GDP): no decline in elasticity of services trade**



Source: Haver, UBS estimates \* Few countries release data for services in real terms. We present national accounts based data for US, Euro Area and KR

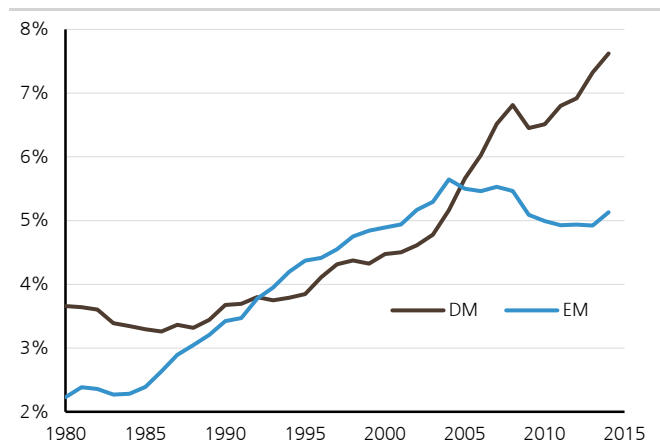
**Figure 13: Trade in goods and services relative to world GDP\*: no decline in elasticity of services trade**



Source: UNCTAD, UBS. Data recorded in nominal terms because service exports are not available at an aggregate level in real terms

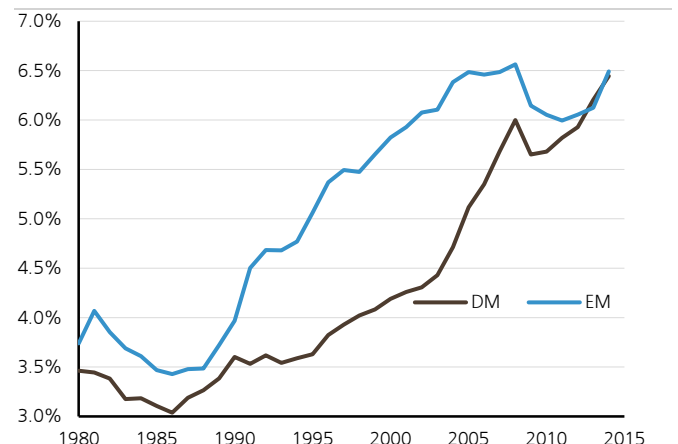
There are important differences within regions which must be noted. EM services exports, which displayed a higher elasticity to growth than DM from the 1990s till around 2005, are now barely growing at the pace of GDP, while DM services exports are continuing to motor on (Figure 14).

**Figure 14: Service exports (% of GDP)**



Source: UNCTAD, UBS. Data recorded in nominal terms because service exports are not available at an aggregate level in real terms

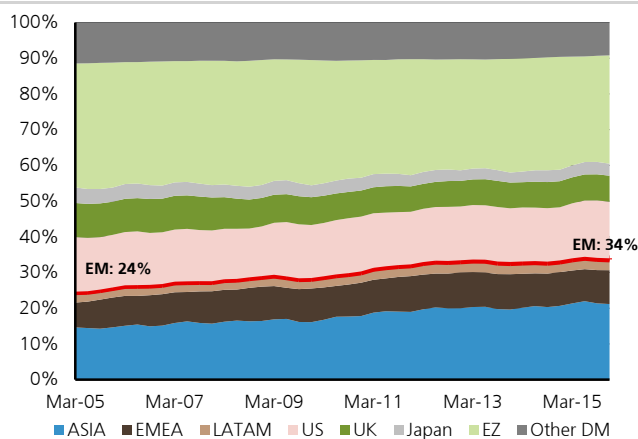
**Figure 15: Service imports (% of GDP)**



Source: UNCTAD, UBS. Data recorded in nominal terms because service exports are not available at an aggregate level in real terms

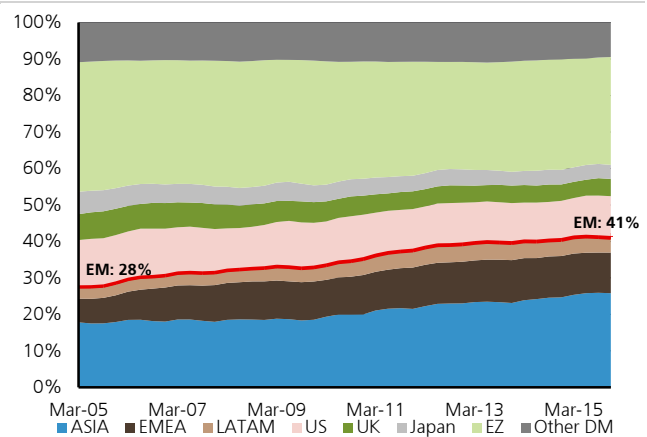
EM's service imports, however, have stayed strong relative to GDP (Figure 15), a very different pattern from EM's goods imports.

**Figure 16: Services exports by region (% of global)**



Source: Haver, UBS estimates. Services exports and imports are based on BoP data. We normalise this by USD GDP figures. This still doesn't make the numbers real because service trade and GDP will have different deflators

**Figure 17: Services imports by region (% of global)**

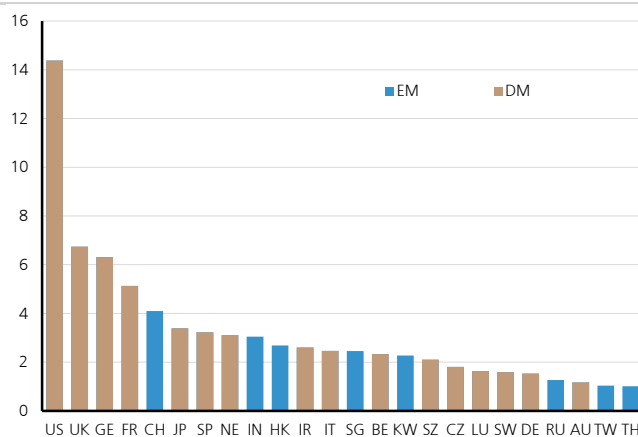


Source: Haver, UBS estimates. Services exports and imports are based on BoP data. We normalise this by USD GDP figures. This still doesn't make the numbers real because service trade and GDP will have different deflators

Instead of looking at service exports relative to a region's own output, if we focus on different regions' market share in global services exports, we do find that EM is gaining share very incrementally. It is led here primarily by Asia ex Japan economies (Figure 16). EM now accounts for 34% of global services exports, compared to 50% share in global merchandise goods exports. EM has bigger weight as an importer of services, now making up for 42% of the global share, after growing strongly in the last 10 years. By comparison, EM accounts for 45% share in goods imports.

**DM is still two-thirds of global exports of services. EM economies constitute a larger and quicker growing part of global imports of services.**

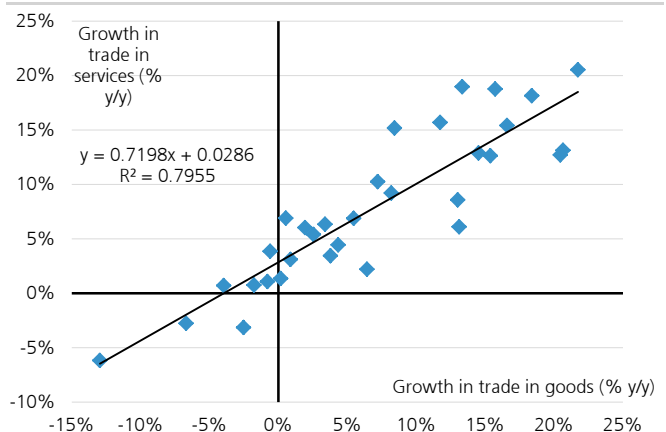
**Figure 18: Country market share in services exports**



Source: UNCTAD, UBS estimates

Drilling down to a country level reveals more clearly the still imbalanced picture of share in services exports between EM and DM, and also within EM economies themselves. Other than large industrial economies of Asia, it is really only India that shows up with a meaningful global market share in service exports (Figure 18). It is fair to say, we think, that developed markets still firmly hold the comparative advantage in services. To the extent that global trade can be supported by services, DM economies are likely to enjoy a disproportionate amount of the gains.

**Figure 19: Service trade growth and goods trade growth**



Source: UNCTAD, UBS estimates \*excludes data from 2008-10

**Asia dominates services exports within in EM, but services exports are largely a DM gig**

The relative resilience of services trade today is heartening, but two questions still remain. First, can services trade continue to grow if goods doesn't, and second, just how big is services trade anyway? On the first point, Figure 19 presents a sobering reality. The beta between services trade and goods trade has fallen

somewhat recently but it remains high at 0.7. It is difficult to see goods and services trade moving in different direction over the long haul.

This second issue of importance of services trade is one of the more uncertain areas in international trade because of serious measurement issues. Let's lay out what we know. Compared to 3% of world GDP in 1985, services trade now forms about 6.5%, still much smaller than the 23.5% of world GDP for goods trade. However, this comparison, based on gross numbers, flatters the importance of goods trade, where fragmentation and double counting driven by global value chains is more deeply entrenched. While in gross terms the share of services has remained steady at around 20%, in value added terms they account for as much as 40-50% of global trade<sup>12</sup>. Why is the proportion of services in value added trade so high?

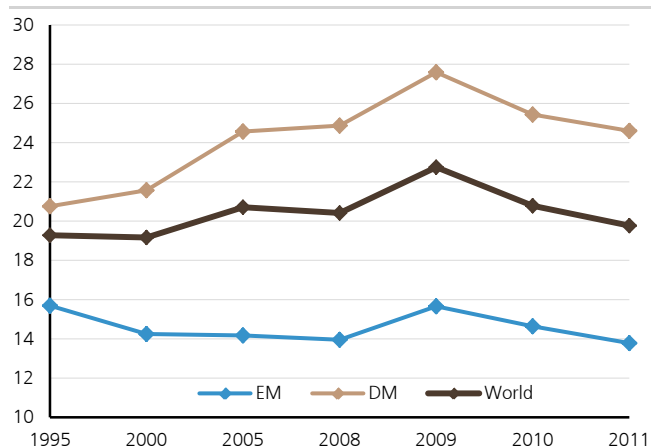
First, in value added accounting we are not only capturing services being directly traded, but also the contribution of services needed to trade facilitate goods trade, which in gross trade accounting is embedded in the goods trade numbers. The true contribution of services is only captured in value added<sup>13</sup>.

Second, we remind readers again that services trade numbers are all in nominal terms, and there has been a steady increase in services prices relative to goods prices, especially in the last 10 years.<sup>14</sup>

**Services share of global trade is much higher in value added terms than in gross terms**

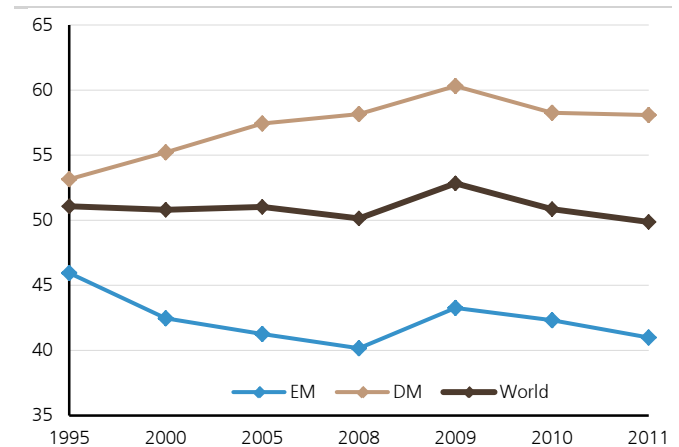
**A part of the increase in services share is a secular terms of trade shift away from goods to services**

**Figure 20: Services' share of gross goods and services exports**



Source: UNCTAD, UBS

**Figure 21: Services' share of value added exports**



Source: TIVA Database, UBS

On the whole trade in services has been hit much less than trade in goods, it does have heft, with DM still the dominant beneficiary. All that is good news. However, as services trade remains strongly correlated to goods trade (especially transportation services), one would hope for some pick up on the latter to see gains in the former.

<sup>12</sup> Based on OECD-WTO TIVA database. Unfortunately the last data point here is only for 2011. Note also that although one can measure services trade in value added terms from this database, there is no good measure of services trade in volume terms- all numbers are still nominal, and as we said before, services inflation is higher.

<sup>13</sup> See: The Hyperglobalisation of trade and its future: Arvind Subramanian and Martin Kessler, July 2013

<sup>14</sup> If the price of a medical service goes up, is it because it is becoming more expensive, or because the quality of that service is improving? We think service deflators may be rising at a faster pace than is really the case, whereas the 'real' consumption of services may be higher.

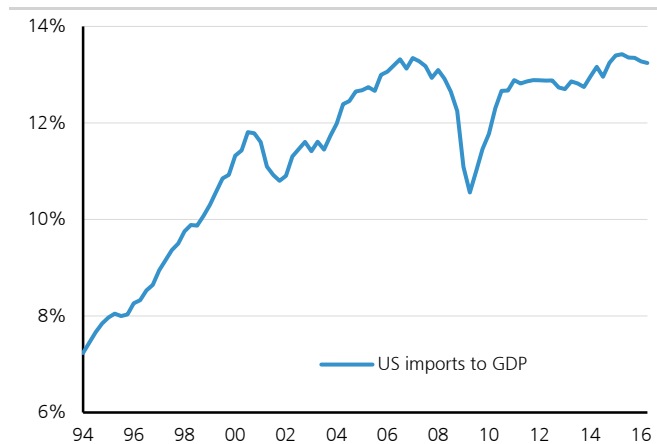
## 5. US trade patterns are better for the world than they look

- *The elasticity of US trade to GDP began flattening out around 2006, and hasn't recovered since. This partly reflects the energy revolution in the US- most oil production has been on-shored. If we look only at non-oil trade, US trade seems more responsive to output.*
- *This is not to suggest that it's business as usual for manufacturing exporters to the US. The elasticity of non-oil imports to GDP has also declined, just not as much as it has for overall imports.*
- *Outside oil and very high technology industries, there is little evidence of major import substitution in the US. Consumption patterns may be changing in a manner that hurts trade. But this effect is likely to be marginal in the long term.*

US import volumes have flattened out relative to GDP for the better part of a decade now. Given that US is the largest importer in the world, a slowdown here potentially presents a major problem for global economic growth.

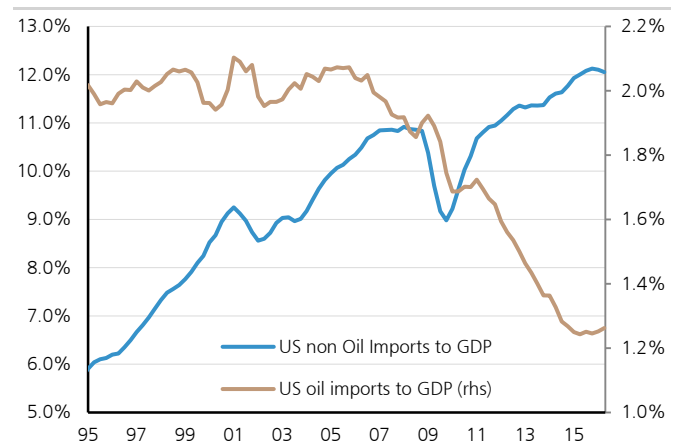
**At face value the relationship between US imports and growth has flattened since 2005...**

**Figure 22: US goods imports to GDP**



Source: Haver, UBS All in Real terms

**Figure 23: US oil imports and non-oil imports to GDP**



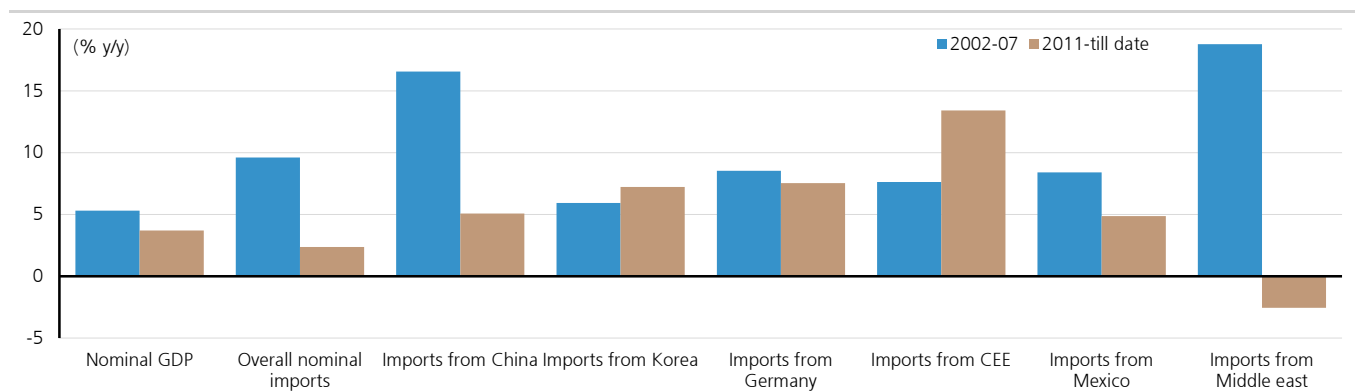
Source: Haver, UBS. All numbers in volume terms

Thankfully, the slowdown in imports isn't even across all sectors. The US import growth slowdown appears driven to a large extent by on-shoring in one sector – oil. The decline in elasticity of US non-oil imports to growth looks more muted than that for overall imports (Figure 22 and Figure 23).

**...however, this is exaggerated by import substitution in the oil industry**

Unsurprisingly, commodity producers in the Middle-East have been hit hard, but manufacturing economies such as China, Korea, Germany, and Mexico have managed to grow their exports to the US (Figure 24).

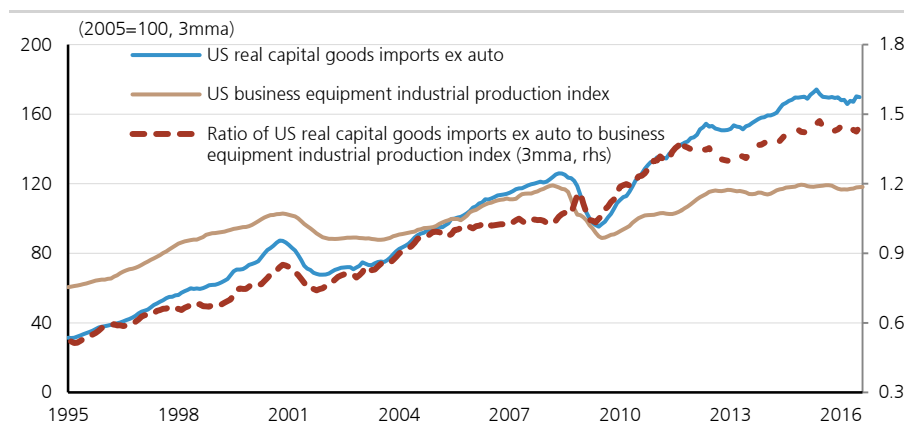
**Figure 24: US import growth by region, pre and post crisis averages**



Source: IMF, Haver, UBS. All data in Nominal terms

We can assess the continuity of manufacturing imports elasticity to US economic growth in another way. Comparing real imports of capital goods to production of business equipment in the US also suggests no change in the elasticity of imports to production in this area (Figure 25). This is good news for the rest of the world.

**Figure 25: US business equipment production and capital goods imports.. little change in the long term relationship**

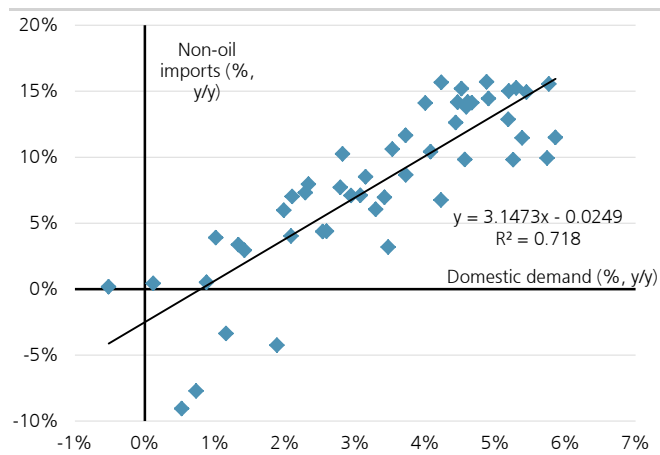


Source: Haver, UBS

Perhaps we should say 'less bad' news instead of 'good' news, because as Figure 24 also suggests, it is hardly business as usual for even the manufacturing countries. They may be better off than the global energy producers but they too are suffering slower growth. Important as it is, a reduction in oil imports doesn't fully explain the slowdown in US' import elasticity to output. The beta of growth in imports ex oil to output growth has still declined, (Figure 26 and Figure 27).

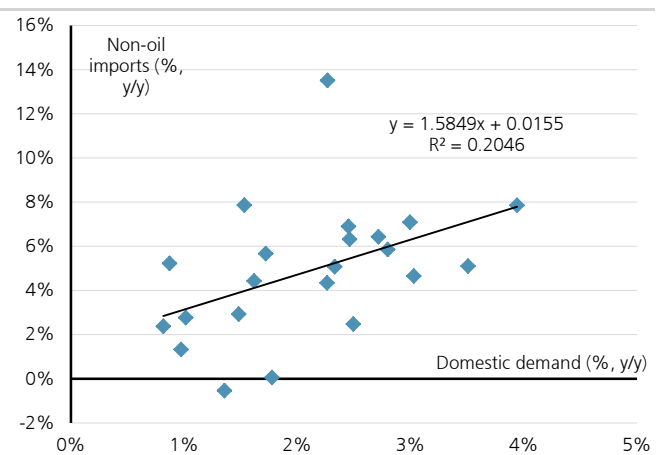
**Nonetheless, there is still moderate evidence of a looser relationship post-crisis**

**Figure 26: US real imports ex oil to GDP (pre-crisis)**



Source: Haver, UBS

**Figure 27: US real imports ex oil to GDP (post-crisis)**



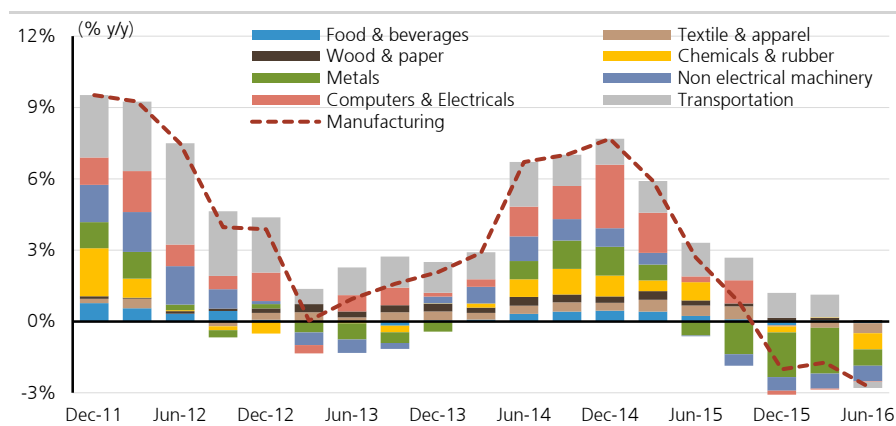
Source: Haver, UBS. Data is since 2011

So, why may this be happening? We dive further into manufacturing imports by category to find out.

Figure 28 shows the growth of manufacturing imports<sup>[1]</sup> broken down by different sub groups. While it is difficult to discern a single product group as the major driver of the more muted manufactured imports demand in the US, lower import growth of metals, chemicals (plus rubber and plastics), and electronics seem to have played an important role.

**Most manufacturing imports have fallen. Is that because US is seeing a major manufacturing renaissance?**

**Figure 28: Breakdown of US manufacturing imports by product**



Source: Haver, UBS

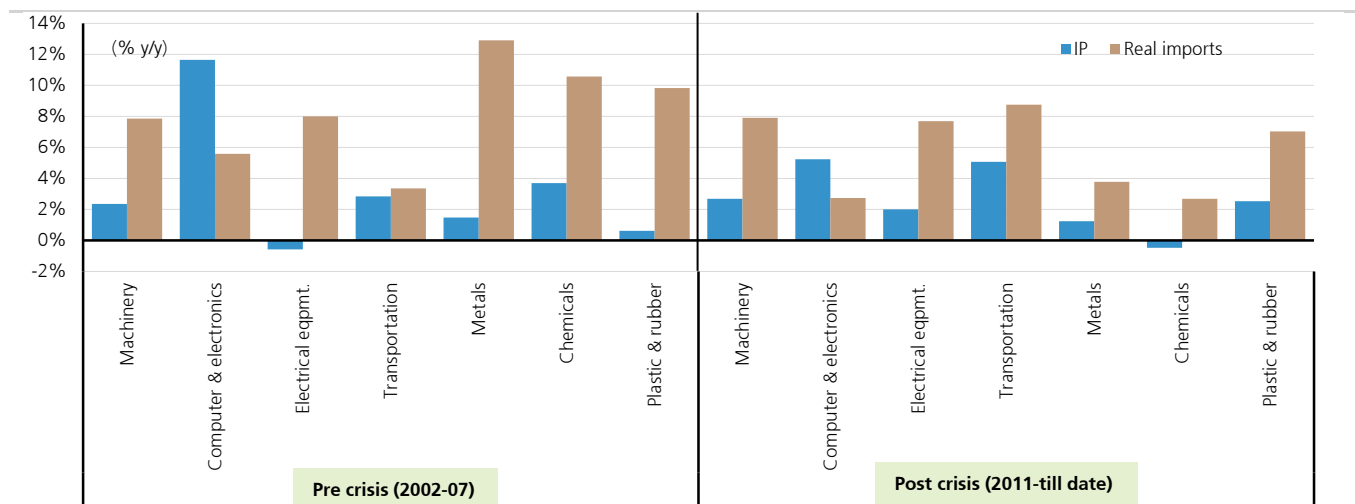
But is this because of lack of demand or a more permanent shift? In other words, is the US re-discovering comparative advantage in the domestic production of various manufacturing categories as well?

We can discern a little more by comparing the domestic production and import details of similar categories of manufactured goods (Figure 29) .<sup>[2]</sup>

<sup>[1]</sup> We have subtracted petroleum and coal manufactured products and non-classified manufactured products from the headline to focus on non-commodity related manufactured products that we can categorise

<sup>[2]</sup> We looked at IP and Imports sub-categories based on the NAICS classification. IP is real and imports details were available in nominal terms, so we deflated the imports series by non-petroleum import price index

**Figure 29: Breakdown of industrial production and import growth by NAICS product category, pre and post crisis**



Source: Haver, UBS

We find that in most product categories, IP growth after the crisis has been weaker than real import growth. This is especially true for non-durable goods manufacturing like chemicals and plastics.

**In most products, there is little evidence of import substitution in the US...**

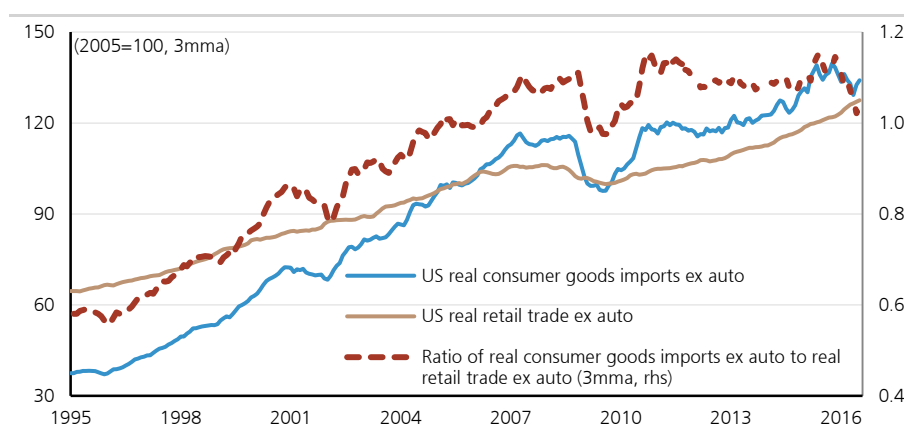
The one area where domestic production does seem to be pushing at a better rate than imports is computers and electronics products, which accounts for about 20% of total manufactured goods. Note, however, that this trend is not new – production of computers and electronics products has been growing at a faster pace than imports even before the crisis.

**... with the possible exception of high technology products**

So, there is some evidence of a longer term and persistent process of selected high technology industries growing at a faster pace onshore than in imports. But, there is nothing to suggest a major manufacturing renaissance driving factories back to the rust belt.

**On the whole, there's little evidence of re-shoring**

**Figure 30: US Real Consumer imports ex auto and real retail sales ex auto and ratio.. a flattening out**



Source: Haver, UBS

It is also interesting to observe the changes in import patterns by end-use category. We find here that growth in imports of consumer goods ex autos is slowing relative to the growth in real retail sales ex autos. The strength of the USD in the mid to late 1990s was one of the factors that led to a big increase in retail sales in the US, an increasing amount of which was fed by imports. USD strength since

**Assessing changes in imports from end use category highlights consumer imports as weak**



2011 doesn't seem to have engineered a similar deepening of import intensity in US retail demand.

Digging further,<sup>[3]</sup> we find that consumer imports have slowed particularly in cameras, household electronic and electrical appliances, which is suggestive of a change in consumption patterns (think CDs, DVDs and books being replaced by downloadable services), impacting trade across borders. Our view is that, in general, rising non store and e-commerce sales should help, not hinder international trade over the long haul, a modest hit to media products notwithstanding.

When US imports slow down, global exporters worry. Today things are not getting incrementally better. However, a more detailed examination gives a little comfort about changes here being skewed by on-shoring in oil, and continued cementing of a US advantage in high technology. There is little evidence that the demand for manufacturing imports has seen a wholesale and permanent decline.

**Shifting patterns of consumption driven by technological change may be hurting imports, but this impact isn't likely to be big in the long term.**

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<sup>[3]</sup> The details are available only on a nominal basis, however, so it's possible that the data is picking up a terms of trade shift against consumer electronics rather than a volume shift.

## 6. European trade patterns appear slightly better for the world than they are

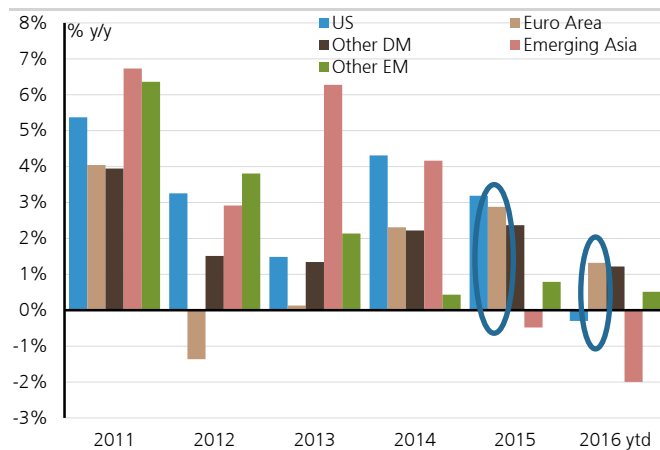
- *There has been no change in the relationship between trade and GDP growth in Europe at an aggregate level. On the face of it, Europe faces only a cyclical problem - when growth recovers, so should trade.*
- *However, there is evidence of higher trade within the European Union, and flattening to weaker trade with other trade partners.*
- *A desire to shrink the length of value chains and cheaper currencies in emerging Europe may explain this apparent near-shoring.*
- *A rebound in European trade, were we to see one, may not help the globe equally, at least in the near term.*

European trade (average growth in export and import volumes) has grown at 3.7% per annum over the last 5 years in real terms, modestly stronger than the US' 3.3%, and Emerging Asia's 3.5% (Figure 31). In the last two years it is really Euro area trade that has kept global trade growth supported, as the US and EM Asia's contributions have slipped (Figure 32).

**Europe's contribution to global import growth has been crucial in the last couple of years.**

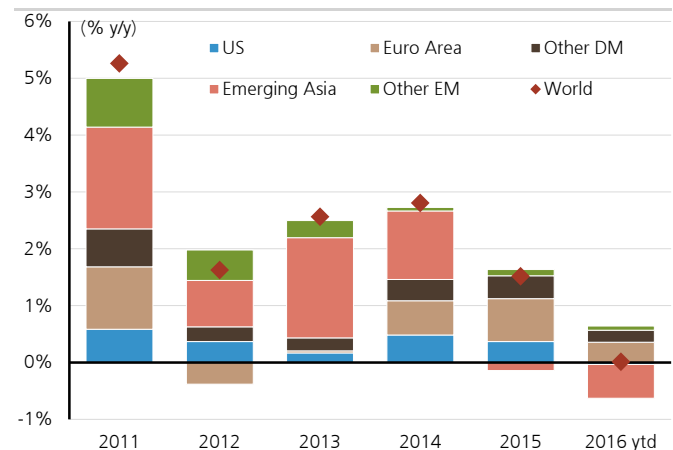
There was sharp divergence between weak import and strong export patterns in Europe in the early years of this decade as Europe suffered the financial crisis, while Asian growth remained very strong (Figure 33 and Figure 32). More recent years have seen a role reversal as Europe stimulated domestic demand, and China rebalanced away from import sensitive sectors.

**Figure 31: Growth in global trade volumes by region**



Source: CPB world trade monitor, UBS

**Figure 32: Contribution to growth in trade volumes**

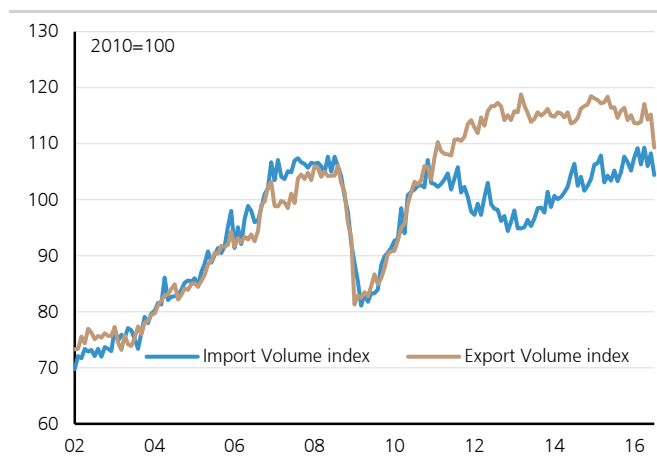


Source: CPB world trade monitor, UBS

Where the Euro area is very different from the US and Asia is that there has been no real change in the elasticity of trade to output in the pre and post crisis periods (Figure 34) – import growth has slowed relative to the pre-crisis era because output has. That gives hope that trade here will recover strongly if demand does – a significant hope for the global trading system, given Europe's weight.

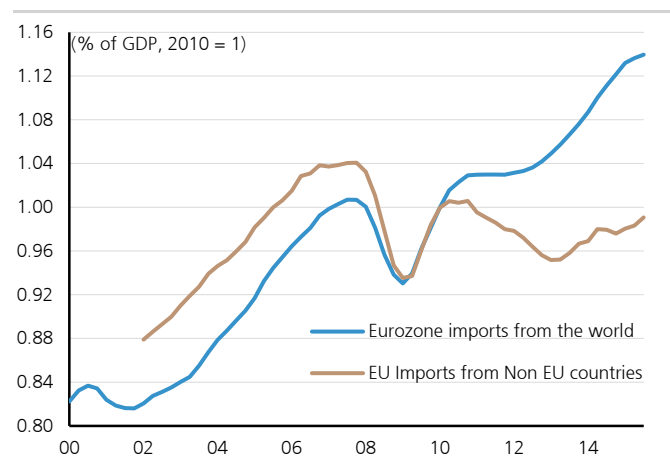
**The Euro area shows fewer signs of waning import elasticities relative to growth...**

**Figure 33: Euro area export and import volumes**



Source: Eurostat, CPB, Haver, UBS

**Figure 34: EA imports to GDP and EU imports\* to GDP**



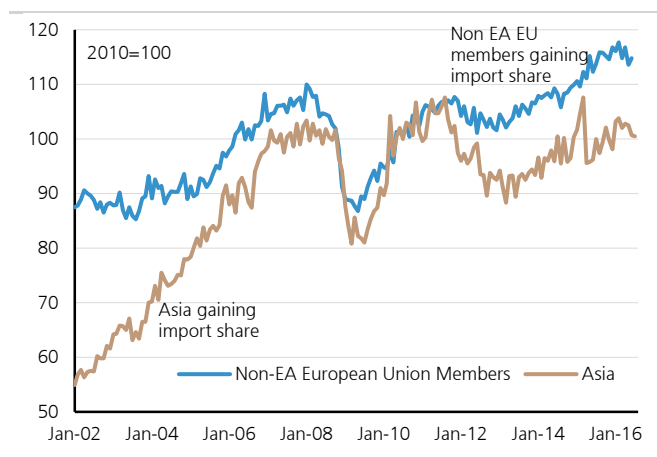
Source: Haver, UBS \* EU imports is from non EU countries

However, there are interesting developments underneath the surface here. Eurozone economies appear to be trading more and more with emerging economies of the European Union, at the expense of the rest of the world. Figure 34 shows the clear flattening in the EU's elasticity to import from the rest of the world compared with the Eurozone's. Relative to growth in their respective areas, the Eurozone's trade with the rest of the world hasn't slowed down, but European Union's trade with the rest of the world certainly has.

**...but import demand appears to be increasingly met from EU states, and less from the rest of the world**

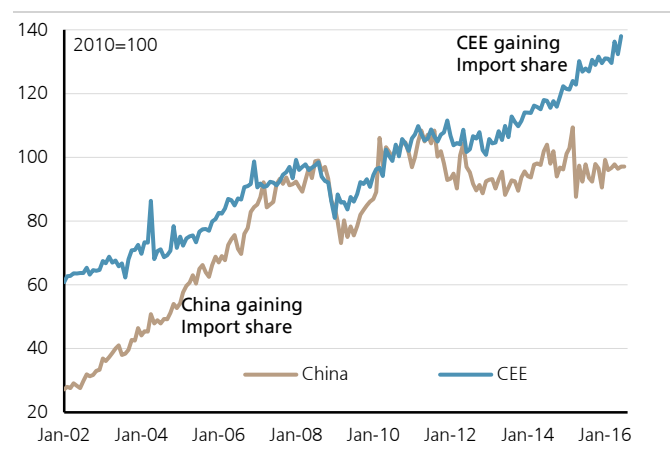
Figure 35 and Figure 36 show this pattern for specific markets. The Euro area has been importing more in real terms from the European Union (ex Euro area states) while its imports from Asia, for instance, have stalled. In terms of size, EA imports from non EA Eurozone countries<sup>15</sup> is similar to that from industrial Asia.

**Figure 35: EA import volumes from non-EA EU and Asia**



Source: Haver, UBS

**Figure 36: EA import volumes from CEE and China**



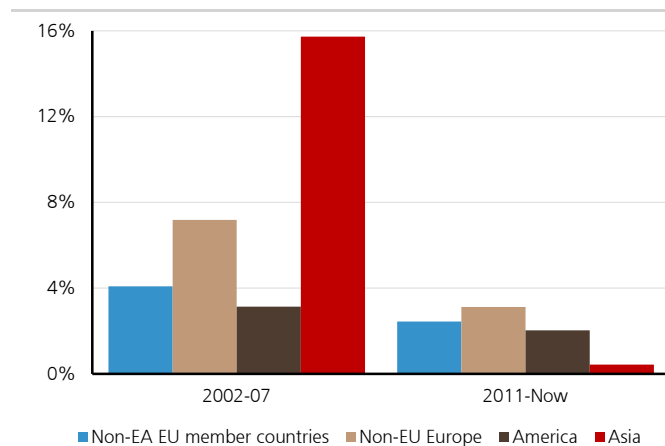
Source: Haver, UBS

This pattern points (also seen in Figure 37) towards near-shoring more than it does to a demise of trading demand. It is not entirely clear whether the shift in trade closer to home is because of a desire to shorten value chains, or whether it is

<sup>15</sup> In fact, it is only the CEE countries – Poland, Czech Republic, Croatia, Bulgaria, Hungary Romania, Slovakia and Turkey that are driving these gains. Developed non-EA European countries such as UK, Sweden and Denmark have seen their exports to EA weaken.

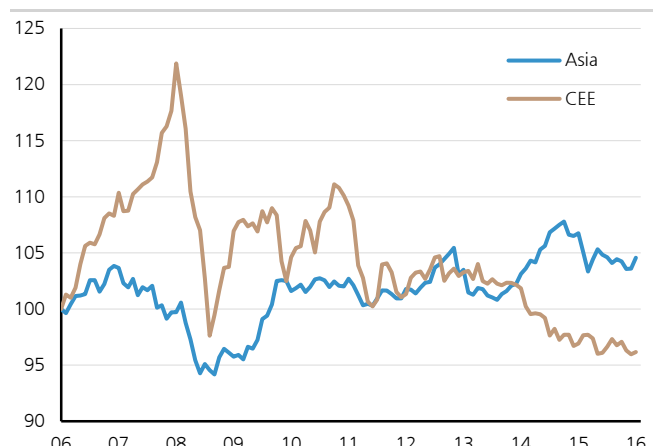
simply a response to a significant real depreciation in CEE currencies relative to Asian currencies (Figure 38).

**Figure 37: Euro Area manufactured goods imports volume growth**



Source: BIS, Haver, UBS

**Figure 38: Index of REER Asian FX and CEE FX (July 06 = 100)**



Source: Haver, UBS

At the very least, without a major shift lower in Asian currency values it is unlikely that this recent pattern changes in a hurry. If so, an improvement in growth in core Europe, were we to see it, may mean notable gains for CEE production and exports, but much less than it used for the US, and particularly, Asia.

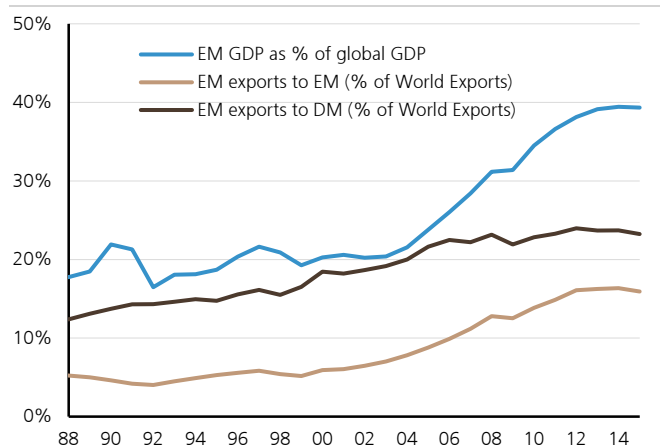
## 7. EM to EM trade is not one to rescue global trade today

- While it has grown as a proportion of total world trade, intra-EM trade is still only 16% of global trade. Of this China makes up nearly a third.
- As commodity demand has fallen and global value chains have stopped lengthening, EM to EM trade is now weakening.
- India, next promised source of demand within EM, may take up to 2 to 4 decades to reach China's current import size.

The big hope was that as emerging markets become a much larger part of the global economy trade between them will be strong enough to support overall global trade. To some extent this hope has not been belied – EM to EM trade has become a larger part of global trade<sup>16</sup> in nominal terms. But intra EM trade is now just 16-17% of global trade, and it doesn't look like increasing at a fast pace soon.

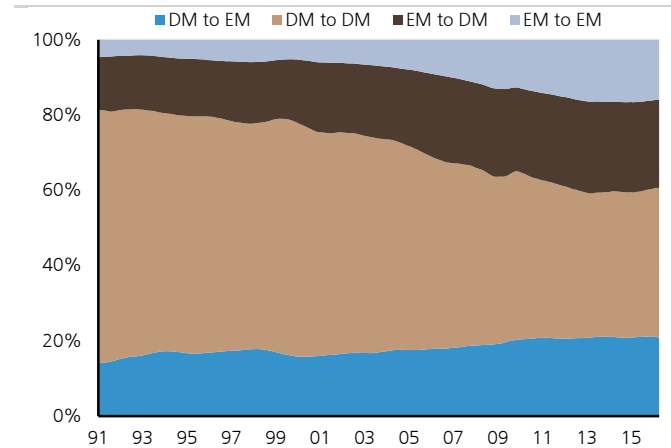
**Can intra-EM trade compensate for weaker trade in the developed world?**

**Figure 39: EM to EM trade as a proportion of total trade, and EM output as proportion of global output**



Source: IMF, Haver, UBS

**Figure 40: EM to EM trade, EM to DM trade, DM to DM trade, DM to EM trade (as % of global trade)**



Source: Haver, UBS

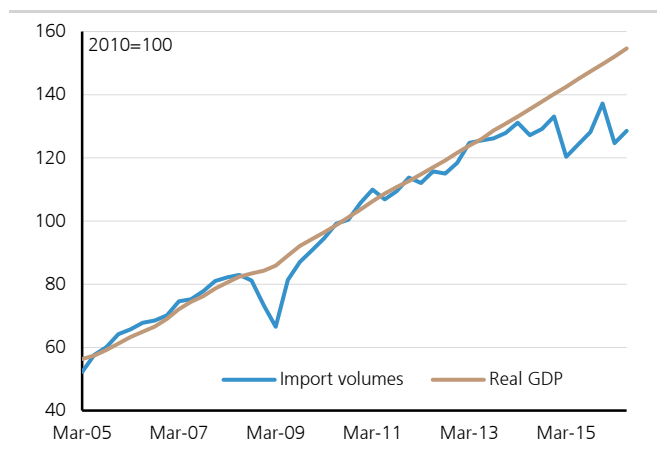
In the last 15-20 years there were two drivers of the growth south-south trade: a) commodity (particularly fuel) imports, and b) value chain trade. Over the last 3-4 years both have slowed sharply, impacting intra EM trade. Advanced economy exports to other advanced economies are becoming a larger share of the trade pie.

Geographically, the biggest reason behind the decline in intra EM trade is the decline in demand from China, which in itself formed nearly 30% of the EM to EM trade. China is experiencing a big decline in its import propensity (Figure 41), which, as we will argue in greater detail in our next piece of this series, is a major cause of the inflexion lower in global trade.

**China itself is at the epicentre of the weakness in global import volumes**

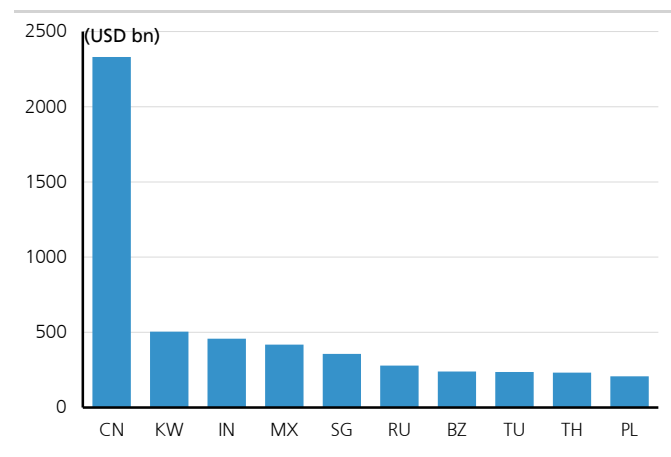
<sup>16</sup> These numbers are based on Direction of Trade Statistics from the IMF, which are provided in current USD terms, so there is a definite impact of commodity prices in both directions.

**Figure 41: China real GDP vs Imports volume**



Source: Haver, UBS

**Figure 42: Top 10 EM importers from World**



Source: IMF, Haver, UBS. Data represents 5y average imports (2011-15)

But can't weakening import growth from China be made up for by stronger demand from other EM economies? Look at the relative size of China's imports to other big importers in EM (Figure 42). At some point the second largest importers (Korea is just slightly bigger than India, but the latter has better growth prospects so we will focus on it) will reach the size China's imports are today. Just this move by itself, will push the size of total global trade higher by 7%. But when can we expect this? It will take India about 15 years to equal the size of import demand from China today assuming (heroically) that their imports grow at the pace of 10% a year. Growing at the post crisis average of 3% a year, it will take 40 years to reach China's present size.

The 'next in line' after China is a long, long way back. There are presently no candidates to lift intra-EM and global trade single-handedly the way China did from the 1990s.

**Other EMs are too small to compensate for what is likely a structural decline in China's import propensity**

## 8. The rise and fall in trade is not only about value chains (not for everyone, anyway)

- *Splitting production processes across global value chains did exaggerate the size of global trade relative to growth, but domestic value added was the main driver of gross trade.*
- *Global value chains were a much bigger part of EM trade than DM trade. At its peak nearly a third of China's gross exports were from foreign sources. For other EM economies this ratio was much higher. Domestic value added trade still grew, but not much faster than GDP. As global value chains are now shrinking, the impact on gross EM trade will be larger.*
- *The causes for value chains shrinking are not clear, and it's possible that if the cycle improves, they lengthen again.*

Some investors have argued that the explosive growth in global trade over the past 20 years was always an accounting artefact. Counting both intermediate goods imports and also their exports of products further downstream in a vertically integrated chain exaggerated growth in trade volumes. Those who argue that globalisation isn't going through a fundamental change posit that as the boom in global trade was never really about value added content, any slowdown in the growth of vertically integrated supply chains would dampen trade statistics relative to growth, but otherwise have limited relevance for global growth.

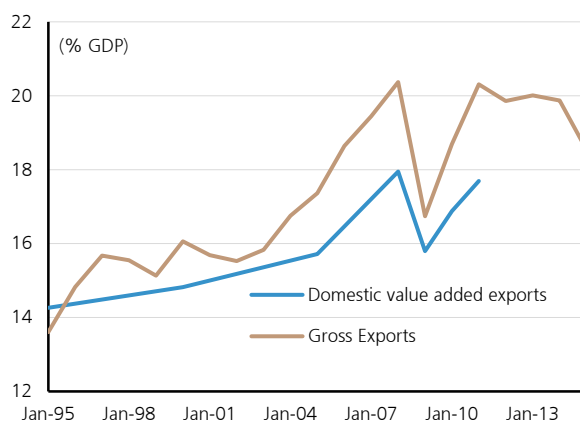
To investigate the relative contributions of domestic value added and foreign inputs (we will call the latter the global value chain (GVC) contribution), we looked closely at the OECD-Trade in Value Added database.

The data shows that at a global level, higher GVC activity did support the growth in global trade in the mid-1990s and 2000s. However the main driver of the growth in trade, both in absolute terms and relative to GDP, was very clearly changes in the domestic value added component of export growth (the blue lines in Figure 43 and Figure 44). So, the underlying reality of exports did indeed change significantly even after stripping away the impact of global value chains.

**Is today's slowdown in global trade driven by the fact that global supply chains are no longer expanding as fast?**

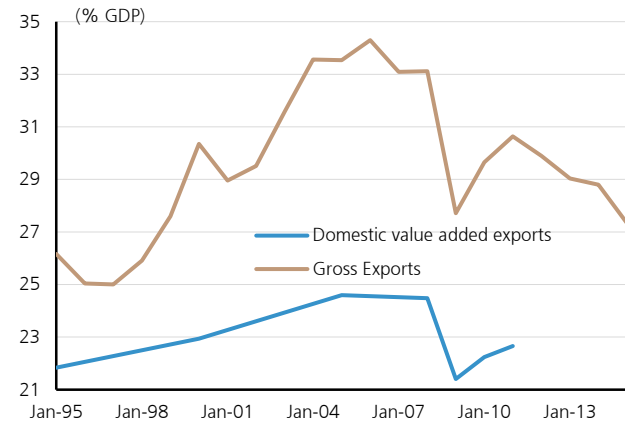
**Domestic value added trade still grew strongly relative to output in the 1990s, pointing to a genuine increase in global trade intensity**

**Figure 43: DM gross exports and domestic value added exports (% of GDP)**



Source: Haver, OECD-TIVA, UBS. TIVA data runs to 2011

**Figure 44: EM gross exports and domestic value added exports (% of GDP)**



Source: Haver, OECD-TIVA, UBS. TIVA data runs to 2011

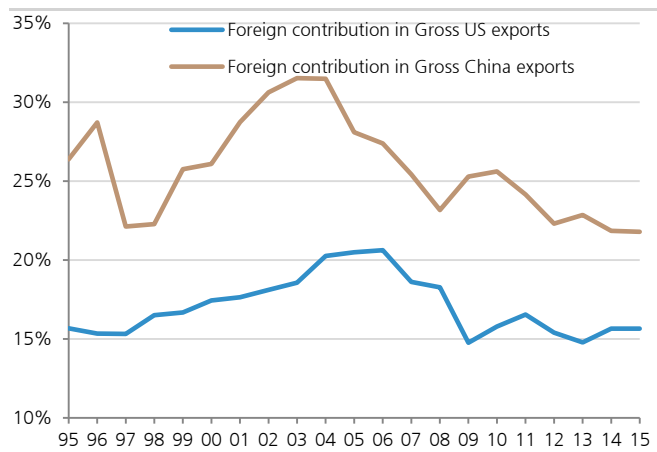
To be fair, this statement is more true for DM than EM economies. In fact, when we look at EM ex China we find that the domestic value added share as a percentage of GDP didn't rise much at all. That doesn't mean that domestic value added in exports for these countries didn't grow; they just didn't grow faster than GDP, as was the case in China and in developed markets. It has also been argued that the obsession with the share in value added of a product's production process is misplaced - even if a firm constitutes only 5% of value added in a production process, it may still be seeing very healthy growth in value added volumes.<sup>17</sup>

Since the crisis certainly global value chains have become shorter as some countries have on-shored production and others have not off-shored production at quite the same pace (Figure 45). Declining foreign contribution is having a notable impact on gross foreign trade, particularly in small open economies in South East and North East Asia which have participated extensively in the specialisation of the production process (Figure 46).

**There was little change in domestic value added exports as a % of GDP for Asia ex China and the commodity producers, but this doesn't mean there were no absolute gains**

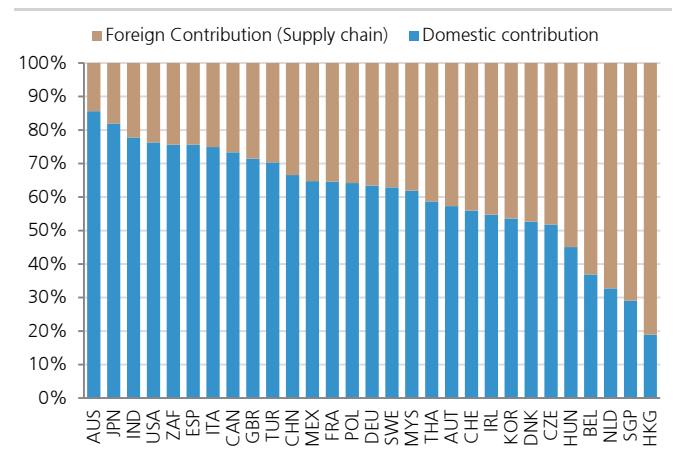
**Value chains are shrinking everywhere**

**Figure 45: Foreign contribution to Gross Exports (supply chain): China and the US<sup>18</sup>**



Source: Haver, UN Comtrade, UBS

**Figure 46: Gross exports broken down into foreign contribution (supply chain) and domestic value added<sup>19</sup>**



Source: OECD-TiVA database

The reasons behind value chains shrinking are not completely clear. They vary from desire to bring production closer to home to serve end customers better, to expensive currencies (relative to CEE and LatAM) and higher unit labour costs in Asia. However, it does seem that the length that value chains spawn is a very cyclical phenomenon. As and when businesses feel confident in investing, they may again split the production process to achieve maximum efficiency.

**Not clear why value chains have shrunk, but the cycle does seem to play a role**

<sup>17</sup> See Kowalski P et al (2015), "Participation of developing countries in global value chains: Implications of trade and trade related policies" OECD trade policy papers, No 179

<sup>18</sup> Unlike our China supply chain proxy, we do not use UN Comtrade data for constructing the US supply chain proxy. This is because SITC Category 7 imports for the US (machinery and transport equipment) and its subcategories likely include more final goods imports whose end user is the US consumer. Instead we use intermediate goods data from the World Bank's World Integrated Trade Solution (WITS) database

<sup>19</sup> Note data is as of 2011, the last available print from the TiVA database



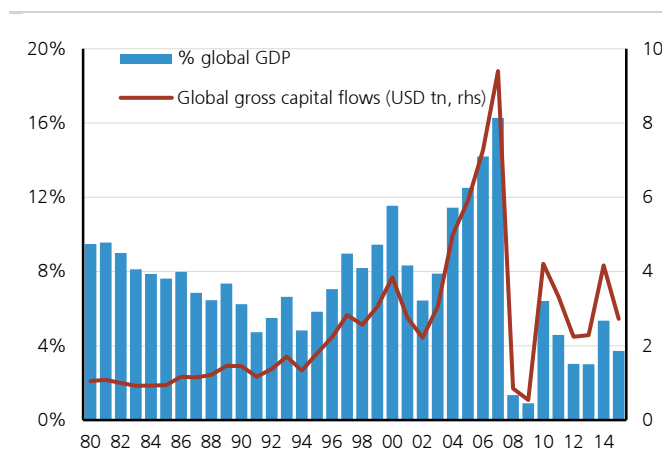
## 9. The globalisation of finance is slowing, but the details are less alarming

- Global gross cross-border flows are down 60% from their peak. The bulk of the decline, however, has come from international bank loans - perhaps a desirable trait after the explosion in financial sector leverage pre-crisis. DM has been at the epicentre of this dynamic, though EM has also seen a trend slowdown in gross capital inflows.
- There is a less pronounced slowdown in global FDI flows, although the drift weaker in FDI to EM economies bears watching given that this is typically the most stable, growth-supportive source of capital inflow.
- Portfolio flows, which impact asset markets most directly and immediately, have remained broadly steady.

The sum of total cross border capital 'flows' (defined as direct, portfolio and other investment capital flowing into EM and DM countries) rose sharply as a share of GDP over the 1990s and till the GFC, but has since come down dramatically – by about 60% from its pre-crisis peak (Figure 47).

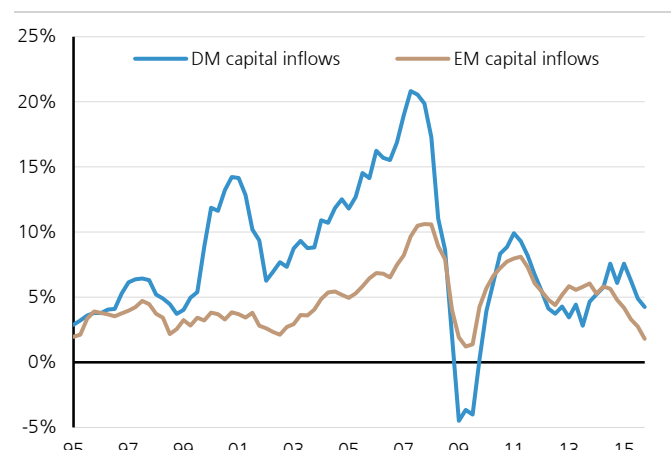
**Global cross border capital flows have decelerated significantly as a share of GDP post-crisis**

**Figure 47: Gross cross border financial inflows (USD tn), and as % of global GDP**



Source: IMF, Haver, UBS

**Figure 48: EM vs. DM capital inflows (% GDP, 4q rolling)**



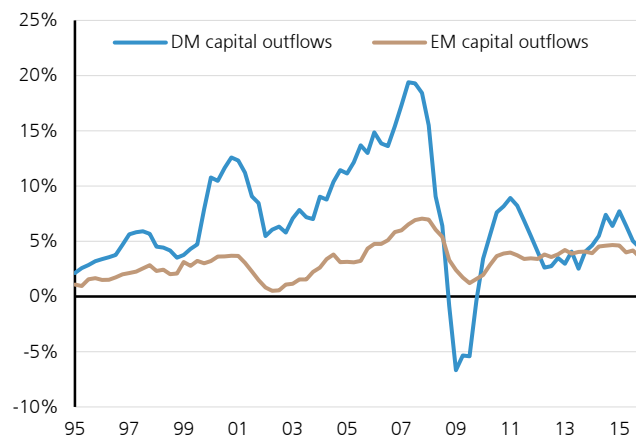
Source: IMF, Haver, UBS

As Figure 48 shows, the peak-to-trough swing in capital inflows to GDP over the past ten years has been much more dramatic in DM than in EM. However capital inflows in EM have still clearly shown a flattening in trend post-crisis.

**DM economies are at the epicentre of this change, with respect to both inflows and outflows**

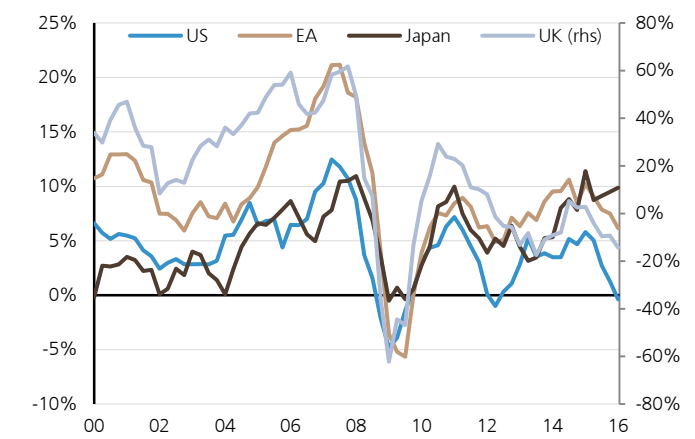
Figure 49 below shows that it is DM economies that have also shown the largest drop in propensities to invest abroad. This has been driven by the US, Euro area and UK. EM capital outflows have moderated to a lesser degree.

**Figure 49: EM vs. DM capital outflows (% GDP, 4q rolling)**



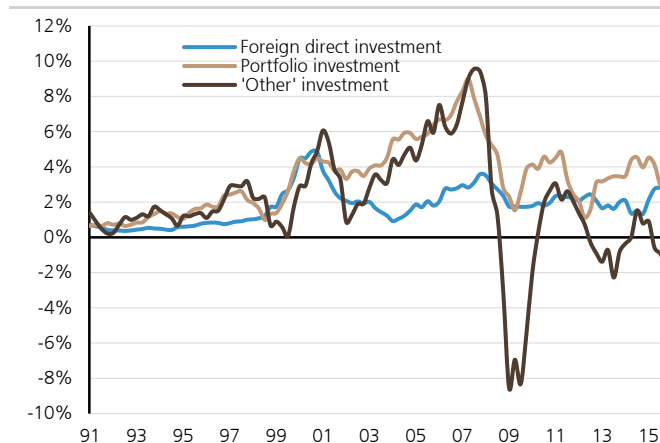
Source: IMF, Haver, UBS.

**Figure 50: Total outward financial investment by country, selected DMs (% of GDP, 4q rolling)**



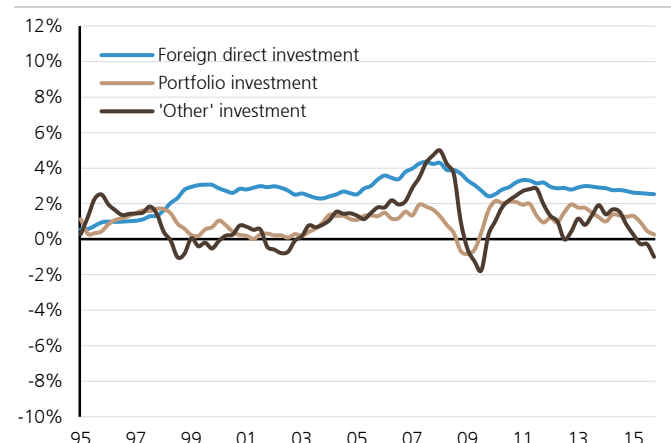
Source: IMF, Haver, UBS

**Figure 51: Developed markets' gross capital inflows by type of financial flow (% of GDP, 4q rolling)**



Source: Haver, UBS

**Figure 52: Emerging markets' gross capital inflows by type of financial flow (% of GDP, 4q rolling)**



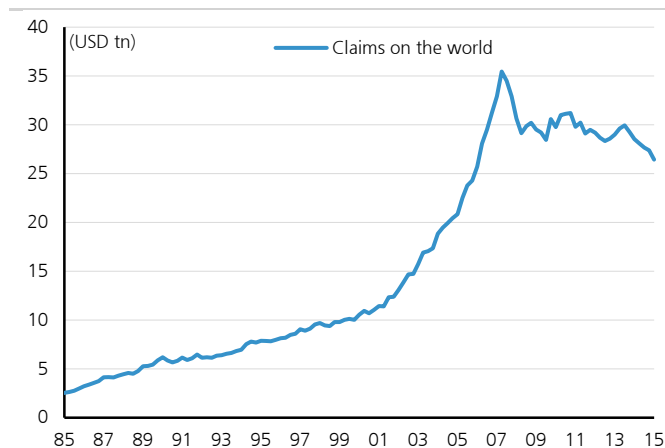
Source: Haver, UBS

The financial flow which has been compromised the most is 'other investment' (Figure 51 and Figure 52), the main sub-components of which are cross-border bank lending, currency and deposits, and trade credits. In particular, cross border bank lending has essentially fallen off a cliff (Figure 53). Portfolio and foreign direct investment as a share of GDP have moderated too, but to a far lesser degree.

Data from the BIS helps us dig a little deeper into what's going on here. What really collapsed around the crisis is lending by developed market banks to other developed market banks, not to developed market companies, or emerging markets as a whole – though lending to these areas has levelled off since the crisis. This slowdown is particularly pronounced within the Euro area.

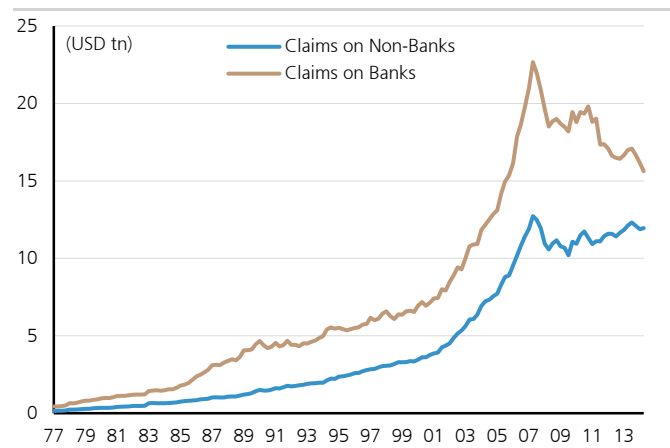
**Cross border lending has fallen, portfolio flows and FDI flows have remained more or less stable**

**Figure 53: Total cross-border claims of banks**



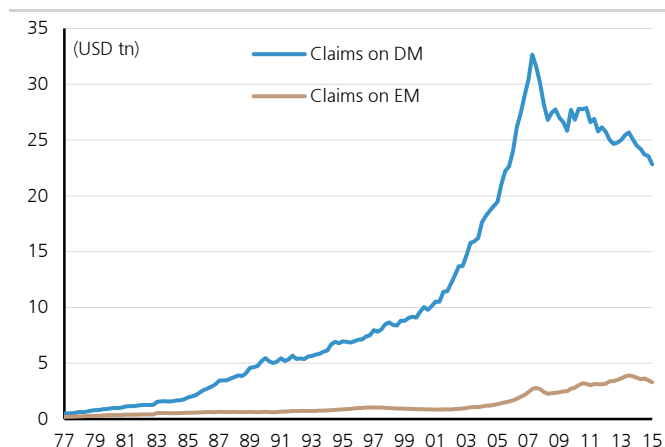
Source: BIS Locational Banking Statistics, Haver, UBS

**Figure 54: International assets of banks: claims on banks and non-banks**



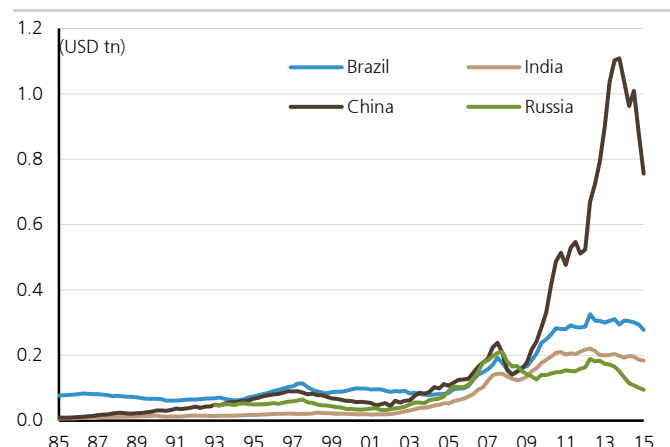
Source: BIS Locational Banking Statistics, Haver, UBS

**Figure 55: International assets of banks - Claims on developed and emerging economies**



Source: BIS Locational Banking Statistics, Haver, UBS. Claims on offshore centres are included within DM.

**Figure 56: International assets of banks: Total claims on Brazil, China, Russia and India**



Source: BIS Locational Banking Statistics, Haver, UBS

After the pre-crisis credit binge within the financial system, banks have had to urgently de-lever by raising equity and reducing lending, both domestically and abroad. This has hit trade, commodity financing and infrastructure financing particularly hard, no doubt, setting into motion second-order dampening effects on the demand for international credit. Regulatory changes put in place to contain money laundering and counter-terrorism initiatives have also had an impact, as have restrictions on counterparties<sup>20</sup>.

While this has pulled down overall numbers for financial flows, having exaggerated them earlier, the decline in 'Other Investment' flows is not necessarily all bad news, as long as capital becomes more parochial only during the phase financial institutions heal. Also, currency and deposit flows, which form about 35% of this type of capital flow seem less likely to be structurally impeded by factors such as

**The hangover from excess financial sector leverage pre-crisis is a driver of this trend...**

**...though it also has cyclical characteristics**

<sup>20</sup> See International Monetary Fund, *Navigating Monetary Policy Challenges and Managing Risks*, Global Financial Stability Report, April 2015, and IMF discussion note : The withdrawal of correspondent banking relationships : Michaela Erbenova et al, June 2016

tighter regulation and weaker bank balance sheets that are compromising international loan flows. As such, the decline in OI flows to GDP may not be entirely structural in our view.

It is encouraging that FDI and portfolio flows have either not declined or have done so at a much more moderate pace than the decline in bank claims.

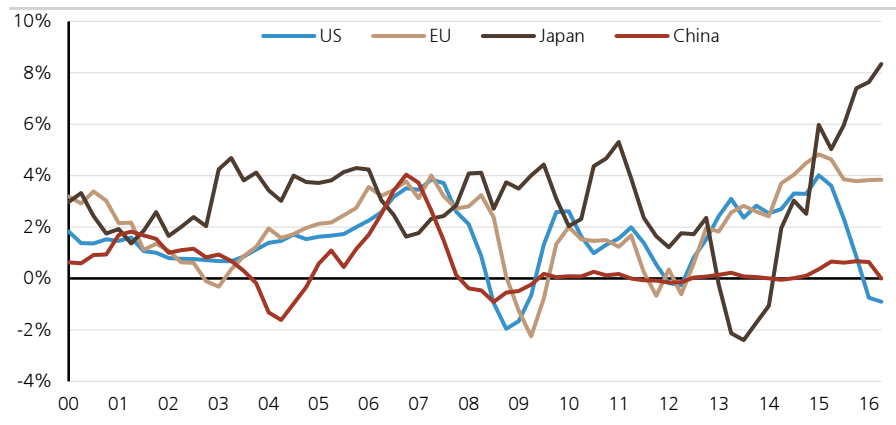
The one area where we are beginning to get slightly concerned is the gradual but steady decline in FDI inflows into EM. This may both drive and reflect weak trade growth itself, and could also be a statement of the high prior level of investment to GDP in EM economies. It has not reached alarming levels yet, and there is plenty of divergence within the overall headline, but we think this is worth keeping an eye on. It has had a strong relationship with productivity growth and thereby influences all asset markets in EM.

The clearest grounds for optimism, in our view, stem from nascent signs of increasing globalisation of portfolio investment, most clearly in the Euro area and Japan. Near zero yields appear to be motivating increased appetite to invest overseas, providing markets with an important positive offset to growing concerns about weak global investment, wages and trend growth dynamics. However, while the temptation is to assume that this trend will remain in motion, the declining propensity of US investors to engage in portfolio investment abroad post-crisis despite record low real rates sends a note of caution as to whether this trend in Japan and Euro area will be sustained. Ultimately the drivers of low rates – weaker global growth and waning profitability, heightened policy uncertainty, and rising leverage – are likely to challenge the continued globalisation of portfolio investment.

**A key risk is that weaker global trade propensities drive a deeper slowdown in FDI, particularly to EM**

**Some hope from DM 'push' factors, as Japanese and European portfolio investment is becoming more globalised**

**Figure 57: Portfolio investment abroad by creditor, % GDP, 4q rolling**



Source: Haver, UBS

## 10. The globalisation of labour continues, but the details are less encouraging

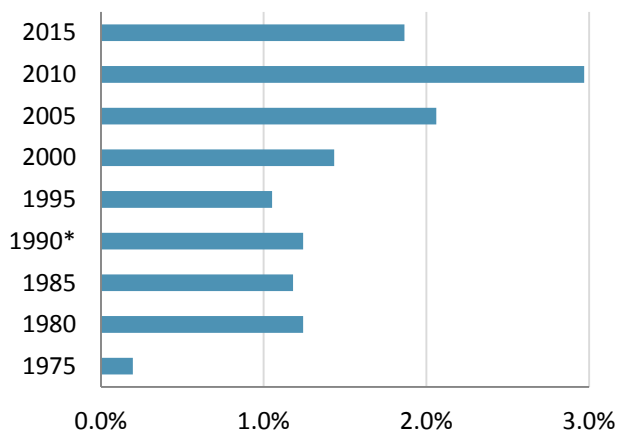
- *Labour shadowed trade and capital in becoming increasingly mobile. Between 1990 and 2010 the net migrant population in developed markets grew by just over 3% per annum.*
- *Within EM, migration began to grow only after 2000 and it was the Middle East that saw the bulk of inward flow.*
- *Overall migration numbers remain high, but the reason for emigration seems to be changing from an economic 'pull' in the more prosperous parts of the world to a 'push' from less secure areas of the world.*

Along with the boom in trade and finance, labour also became increasingly mobile through the 1990s and 2000s. Average growth in the net migrant stock increased to 1.9% post the 1990s from 0.8% in the period 1975-1985, showing increased labour mobility (Figure 58 and Figure 59).

Semi-decadal global migration data from the World Bank shows that the most recent five year period (2015) saw only a very modest slowdown in the population growth of net migrants (defined as foreign-born persons residing in a country). The details are more interesting, however.

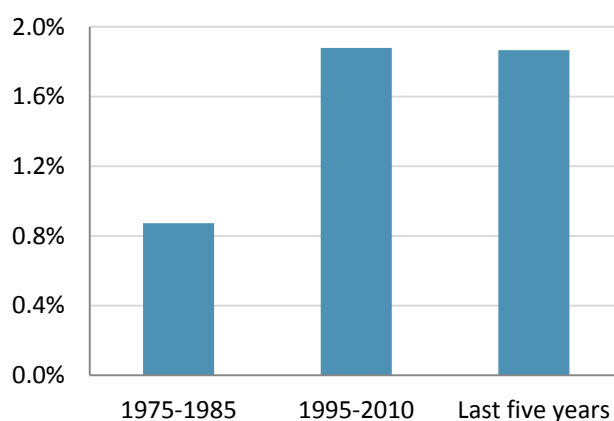
**Rates of migration have remained very high. At an aggregate level there has been no slowdown**

**Figure 58: Growth in global net migrant stock**



Source: World Bank, UBS. \*1990 is likely to be underestimated as changes were made to the data due to major discontinuities

**Figure 59: Average growth in global net migrant stock**



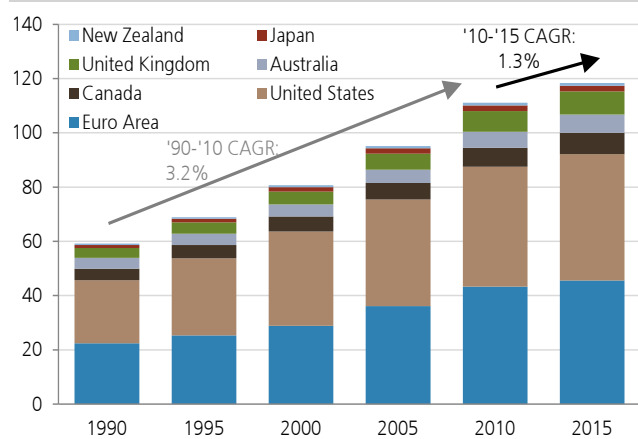
Source: World Bank, UBS

The slowdown in migration is most notable within developed markets. After growing at a fairly steady average annual rate of 3.2% per annum from 1990-2010, the most recent half decade saw migration growth fall to 1.3% (Figure 60). The US and Europe, which account for 78% of all migrants residing in DM economies, have seen migrant population growth rates fall since 2005.

Migration into EM strengthened from the mid-2000s, particularly to Middle Eastern countries, and there has been little change in this trend since then. Beneath the surface a lot is changing though (Figure 61).

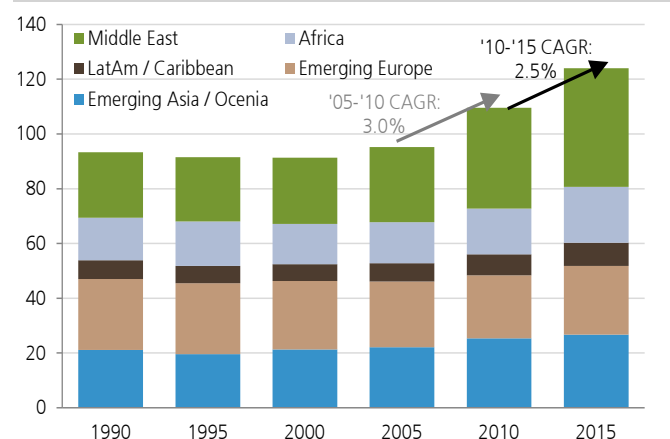
**Migration to DM has slowed while migration to EM has picked up... but understanding why is important**

**Figure 60: DM net migrant population by region (millions)**



Source: World Bank, UBS

**Figure 61: EM net migrant population by region (millions)**



Source: World Bank, UBS

The country breakdown suggests that the migration into the Middle East has shifted from being driven by oil, to being driven by regional conflicts. In the most recent period UAE's ranking has been displaced by non-oil economies such as Turkey, and even smaller regional countries such as Lebanon, which border Syria.

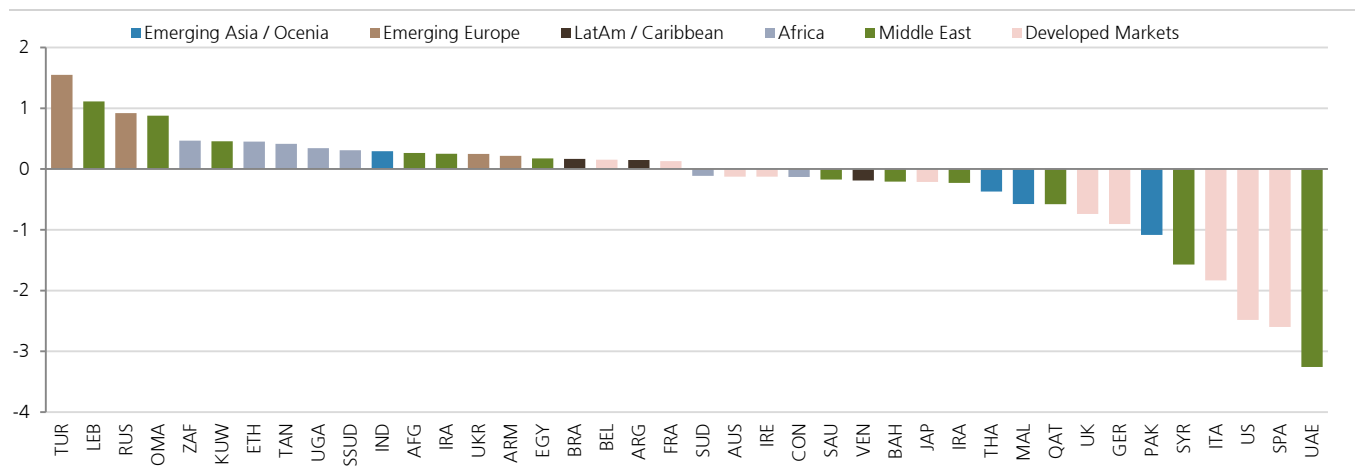
As Figure 62 shows, net migration inflows have slowed more in prosperous countries such as US and UK, which suggests that at the margin the importance of productive 'pull' migration may be falling, and forced 'push' migration may be rising. To be clear, the data shows that net migrant inflows into the US, the UK and Europe continues, but at a much slower pace.

It can be argued that over the long haul it doesn't matter why people are migrating – pull or push, it will still help the society they are migrating to, and tie the world closer together in trade and financial flows. However, if the migration is from labour abundant countries to other labour abundant countries, as seems to be the case today, the gains may be less obvious than migration from developed Asia to Europe.

**Pull migration being replaced by push migration**

**When ranking countries by "immigration acceleration" between 2010-15, the US ranks near the bottom; Turkey and Lebanon, which border Syria, have seen their immigration rates climb the highest**

**Figure 62: Change in rate of migrant population growth from 2010-15 (millions of people per five years); top 20 and bottom 20 countries**



Source: World Bank, UBS

## Appendix

### Estimating elasticity of World trade to world growth: Annual data since 1950

We use annual WTO data from 1950 – 2015 on export volumes and GDP. As all series had unit roots, we used the following Error Correction Model specification in the mould of Ollivaud and Schwellnus (2015) and Constantinescu et al. (2015).

Results are based on estimation of the following equation:

$$\begin{aligned}\Delta \ln M_t = & \alpha + \beta_1 \Delta \ln GDP_t * DV1 + \gamma_1 \ln M_{t-1} * DV1 + \delta_1 \ln GDP_{t-1} * DV1 \\ & + \beta_2 \Delta \ln GDP_t * DV2 + \gamma_2 \ln M_{t-1} * DV2 + \delta_2 \ln GDP_{t-1} \\ & * DV2 + \beta_3 \Delta \ln GDP_t * DV3 + \gamma_3 \ln M_{t-1} * DV3 + \delta_3 \ln GDP_{t-1} \\ & * DV3 + \beta_4 \Delta \ln GDP_t * DV4 + \gamma_4 \ln M_{t-1} * DV4 + \delta_4 \ln GDP_{t-1} \\ & * DV4 + \varepsilon_t\end{aligned}$$

Here,  $M_t$  denotes world import volumes,  $GDP_t$  denotes world GDP. DV1, DV2, DV3 and DV4 are dummy variables for the periods 1956 – 1970, 1971 – 1985, 1986 – 2008 and 2011 – 2015 respectively. These periods are not equal sized but broken down according to times where theory and data tells trade may be inflecting up or down.

We report the long-run elasticity of world imports with respect to world GDP, which is given by  $-\delta/\gamma_i$  for each period.

Time Period	World Imports	P value (Wald test)
1956 – 1970	1.52	0.062
1971 – 1985	1.12	0.067
1986 – 2008	2.22	0.057
2011 – 2015	1.14	0.039

We test the significance of the elasticities using a Wald test for exclusion restrictions, and find that all have a p-value lower than 6%. Although estimated using different data and over different time periods, our results are broadly in line with the existing literature, which increases our conviction in the results.

### Estimating elasticity of trade in EM and DM: Monthly data since 1991

As before, we use an ECM specification to analyse long-run elasticities. However, here we are using monthly data EM export volumes and World production, so the elasticity of trade here is with respect to industrial output, not GDP. The results are similar to GDP based estimation using quarterly numbers but the monthly numbers provide a richer data set to assess changes in elasticity trade over time.

Results are based on a similar equation as above, but with monthly data.

$$\begin{aligned}\Delta \ln X_t = & \alpha + \beta_1 \Delta \ln WIP_t * DV1 + \gamma_1 \ln X_{t-1} * DV1 + \delta_1 \ln WIP_{t-1} * DV1 \\ & + \beta_2 \Delta \ln WIP_t * DV2 + \gamma_2 \ln X_{t-1} * DV2 + \delta_2 \ln WIP_{t-1} \\ & * DV2 + \beta_3 \Delta \ln WIP_t * DV3 + \gamma_3 \ln X_{t-1} * DV3 + \delta_3 \ln WIP_{t-1} \\ & * DV3 + \varepsilon_t\end{aligned}$$

$WIP_t$  denotes world industrial production. DV1, DV2 and DV3 are dummy variables for the periods 1991 – 1999, 2000 – 2007 and 2011 – 2016 respectively. Again, we report the long-run elasticity of each variable with respect to world IP, which is also given by  $-\delta/\gamma_i$  for each period. As before, we test the significance of the elasticities using a Wald test for exclusion restrictions.

Wald tests indicate that all are significant at the 1 % level.

Time Period	DM Imports	EM Exports	DM Exports	EM Imports
1991 – 1999	2.61	1.74	1.80	1.12
2000 – 2007	1.27	2.08	1.24	5.99 (insig.)
2011 – 2016	0.55	1.07	1.39	0.38 (insig.)

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Risks of multi-asset investing include but are not limited to market risk, credit risk, interest rate risk, and foreign exchange risk. Correlations of returns among different asset classes may deviate from historical patterns. Geopolitical events and policy shocks pose risks that can reduce asset returns. Valuations may be adversely affected during times of high market volatility, thin liquidity, and economic dislocation.



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