



TRADE TRANSFORMED

The Emerging New Corridors of Trade Power

Citi GPS: Global Perspectives & Solutions

18 October 2011



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Willem Buiter joined Citi in January 2010 as Chief Economist. One of the world's most distinguished macroeconomists, Willem previously was

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Contributor**Deimante Kupciuniene**



18 October, 2011

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Citi GPS reports will be aimed at a single theme or insight-driven topic and will not include specific investment recommendations, although we encourage clients to use the resources of Citi Investment Research & Analysis (CIRA) and the Institutional Clients Group to develop strategies around these themes and topics.

In this initial report, Willem Buiter, Citi's Chief Economist, embarks on an in-depth study of world trade and the "third wave of globalization", focusing on the dramatic potential transformation of trading patterns over the next four decades and the rapid evolution of new trading hubs and corridors given the expected continued rise of emerging markets.

Going forward we shall publish a consistent series of reports under the *Citi GPS* banner, including further in-depth thought pieces and individual position papers as well as shorter notes that will address market developments and breaking news on a global basis.

We hope that you find this report useful and insightful, and we would welcome feedback on this new series.

A handwritten signature in black ink, appearing to read "Hamid Biglari".

Hamid Biglari
Head of Emerging Markets
Head of Content
Vice Chairman, Citicorp

Emerging New Corridors of Trade

World trade to rise
6.1% pa to 2030
and 4.4% pa to 2050

Exports from Japan to EM
have doubled since 2000

By **2015** China is top exporter & importer



EM Asia overtakes Western Europe
in trade share by 2030

US trade share falls to 8%
from 13% over 40 years



\$287trn is the value of world trade by 2050

China & India
top 2 in world trade
by 2050

Largest trade corridor is
Advanced Asia-Emerging Asia
by 2030

60% of AE exports will be to EMs
by 2050

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TRADE TRANSFORMED

The Emerging New Corridors of Trade Power

World trade is set for both a prolonged boom and a marked transformation. We forecast the current period of rapid global trade growth, sometimes referred to as the 'third wave of globalisation', to extend at least another four decades. In that period we expect growth in world trade to expand at an average rate of 6.1% pa between 2010 and 2030 and by 4.4% pa between 2030 and 2050, compared to a growth rate of 5.4% pa between 1990 and 2010. In level terms, world trade would rise from \$37trn in 2010 to \$122trn in 2030 to \$287trn in 2050.

Like earlier waves, this growth in cross-border trade is driven by GDP growth, by per capita income growth and by the reduction in man-made and natural trade barriers (transportation costs, tariffs and non-tariff trade barriers). In addition, the globalisation and regionalisation of supply chains and the emergence of new trading hubs will play a bigger role in this wave of globalisation.

Although fast growth in world trade is not new, we do not expect more of the same this time. Rather, the change we expect over the next forty years will be little short of transformational. What is new, at least since the industrial revolution of the late eighteenth century, is the prominence of today's emerging market economies (EMs) in world trade. Emerging Asia is set to overtake Western Europe to become the world's largest trading region by 2015. We expect China, already the world's largest exporter in 2010, to be the world's largest trading nation by 2015, overtaking the US. We expect Emerging Asia to become the largest region by trade in 2025, even though its share of world trade was only about half the level of Western Europe — the largest trading region today — in 2010. And India, currently not even on the list of the 10 largest nations by trade, will overtake the US and Germany to become the world's second largest country by trade in 2050. We also expect Africa, a continent mainly notable for its absence in the first two waves of globalisation, to more than double its share of world trade from 3% in 2010 to 7% in 2050. EMs will rise in significance as both exporters and importers. Thus, intra-EM trade, which rose from only 6% of world trade in 2000 to 15% in 2010, is set to account for 27% of world trade in 2030 and 38% in 2050.

This transformation in the geography of trade means that trade relationships will change almost everywhere. Regional trade partnerships will grow and the importance of China in particular, but also India, as trading hubs will increase while the traditional focus on the US, the EU and Japan as export destinations will diminish. The new, emerging global trading pattern is characterised by fragmented supply chains with increased vertical specialisation, resulting in the foreign or import content of exports rising markedly. The content of trade will also change with today's manufacturing powerhouses exporting (and importing) more consumption goods and services. Today's commodity exporters will also gradually diversify their export offerings.

Our view of the future of world trade rests on a number of assumptions. Most notably, we assume that we will not observe a return to persistent and wide-ranging protectionism, large-scale geopolitical conflicts, or a fundamental derating of the growth prospects in EMs based on domestic or external factors. Should these risks materialise, our forecasts will very likely turn out to be too optimistic.

The growth and transformation of world trade has many implications not only for policy makers and supply chain managers, but also for investors. Economies of scale, scope, conglomeration and agglomeration imply that there is substantial inertia and path dependence in world rankings of trading hubs. But the scope and quality of transport infrastructure (roads, railways, airports, seaports) and the efficiency of infrastructural services (logistics, communications, transport, etc) are important factors — in addition to the legal and regulatory environment — affecting the likelihood of developing into a major trading hub. In the world of trade, many changes are afoot, but trade and finance will likely continue the close interlinkages they have exhibited in the past in the future.

Trade Transformed

1. Introduction

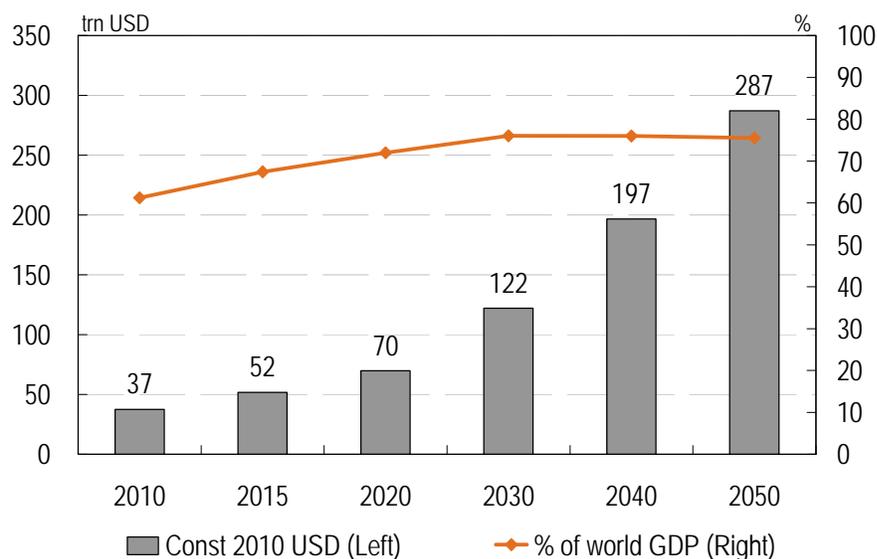
World trade (defined as the sum of world exports and imports of goods and commercial services) is set to expand at an average rate of 6.1% pa between 2010 and 2030, measured in constant 2010 USD, and by 4.4% pa between 2030 and 2050

World trade would rise, in 2010 constant USD, from \$37trn in 2010 to \$122trn in 2030 to \$287trn in 2050

World trade would rise from 61% of world GDP in 2010 to 76% in 2030

Trade across national borders has been commonplace, with small interruptions, for thousands of years. And it would probably have existed long before, had the concepts of nation and national border and the associated recording of trade flows between them taken hold by then, too. Although in former times, crossing borders and travelling long distances involved an element of adventure, cross-border trade in goods and services today has become a routine activity of modern economies, driven by the same private cost-benefit analysis, animal spirits, booms and busts that characterise most types of economic activity. However, even without the trappings of adventure and the exploration of terra incognita, world trade still holds very exciting prospects, in our view.

Figure 1. World – Trade in Goods and Services (Constant 2010 USD trn and % of World GDP), 2010E – 2050F



Note: 2010 is Citi estimate, following years are Citi forecasts
Source: Citi Investment Research and Analysis

World trade is set for both a prolonged boom and a marked transformation, according to our research. We expect world trade (defined as the sum of bilateral exports and imports of goods and commercial services) to expand at an average rate of 6.1% pa between 2010 and 2030, measured in constant 2010 USD, and to expand by 4.4% pa between 2030 and 2050.^{1,2} World trade would rise to be equivalent to 76% of world GDP by 2030 and grow more or less in line with GDP thereafter. We thus expect world trade to continue its success story of the past two decades.

¹ Data in current USD and constant USD are converted at market exchange rates throughout this report. All data are quoted in constant 2010 USD, unless otherwise noted. In current USD, we expect world trade to expand by 8.2%pa between 2010 and 2030 and 6.5%pa between 2030 and 2050.

² The numbers presented here are different from those presented in the Global Economics Essay in Global Economic Outlook and Strategy: June 2011. The differences reflect revisions to our real growth expectations as well as changes in exchange rate forecasts.

In 1990, trade in goods and services was only around 39% of GDP. By 2010, it had risen to 61% of world GDP after two decades during which growth in world GDP was itself quite robust. The average growth rate of world trade in goods was 6.1% pa between 1960 and 2010 and of trade in goods and services 5.4% pa between 1990 and 2010.

But world trade did not start after WWII. An earlier period between 1870 and 1913, sometimes referred to as the 'first wave of globalisation', had already seen fast growth in cross-border trade, due to reductions in both tariffs and transport costs, mostly concentrated in the early part of this period. The interwar period increases in barriers to trade then saw a reversal of much of the growth in world trade during the previous half century. In the post-World War II period, trade also grew very briskly, driven mainly by fast growth in both advanced economies (AEs) and EMs (as well as by tariff reductions in AEs). The current period of rapid global trade growth, starting roughly in 1990, is therefore sometimes referred to as the 'third wave of globalisation' and we expect this period to span at least the next four decades.

World trade will also be transformed in many ways over the next four decades:

Fast growth of world trade is thus not new. But we do not just expect more of the same. Rather, the change we expect will be little short of transformational. What will be new, at least as regards modern economic history (since, say, the industrial revolution of the late eighteenth century), is the prominence of today's EMs in world trade. We expect intra-EM trade to overtake trade among the AEs by 2030 and to be of similar size to trade between AEs and EMs by 2050.³ That is quite a change. As recently as the year 2000, intra-EM trade was a bare 6% of total world trade (counting only merchandise trade, excluding services) and little more than one tenth of the level of intra-AE trade. It was still less than a third of intra-AE trade in 2010 (for trade in goods and services, just over one third of intra-AE trade in goods only).

Prospects for trade are bright across the EM world (and AE exports to EM are one of the few bright spots in the economic sphere in many AEs), but the prospects of Asia stand out. We expect China, already the world's largest exporter in 2010, to be the world's largest trading nation by 2015, overtaking the US. We expect Emerging Asia to become the largest region by trade in 2025, even though its share of world trade was only about half the level of Western Europe – the largest trading region today – in 2010.

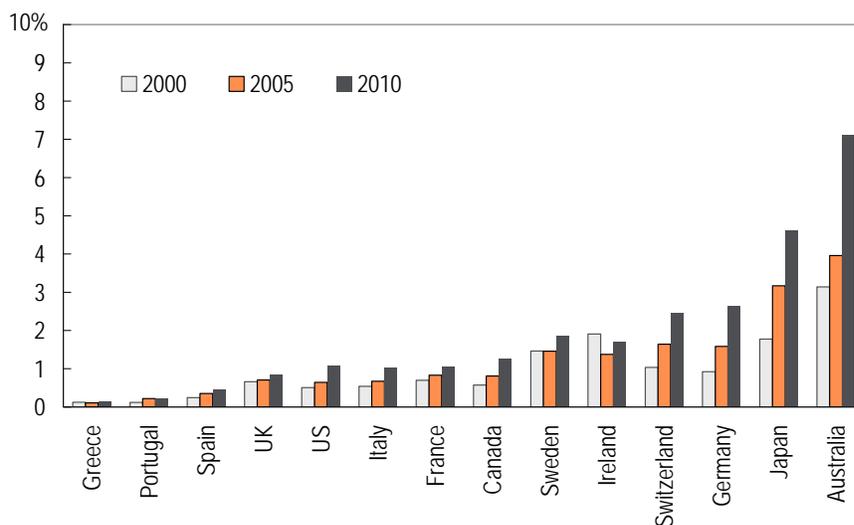
1. The share of EMs in world trade, and EM Asia in particular, is set to rise dramatically

EM Asia and China in particular have already gained substantially in importance as export destinations for many advanced economies and other emerging markets (Figure 2) and the reorientation of exports towards EM Asia is likely to accelerate over the next decades. Currently, net export growth to EM Asia is one of few drivers of GDP growth in AEs.

Continued growth and a shift in the centre of gravity for economic activity – production and trade – towards EMs in general, and EM Asia in particular, are not the only important trends for world trade. Many other changes are under way and we discuss some of them in this study.

³ The definition of EM used in this report excludes Hong Kong, Singapore, Korea, Israel, and Slovenia, as these are included in the advanced economies (AEs) category. The IMF uses the same classification of AEs and EMs. In the publication referred to in footnote 2, we used a different classification which included the above-mentioned countries in the EM category. Using that classification, intra-EM trade would overtake intra-AE trade by 2015 already, and exceed trade between EMs and AEs by 2030. Full definitions of the EM and AE aggregates are given in the Appendix.

Figure 2. Selected Countries – Exports to EM Asia (% of Total Exports), 2000 – 2010



Note: Merchandise exports only

Source: Citi Investment Research and Analysis

2. Both man-made and technological trade barriers are likely to fall, if only gradually

Trade has been bolstered by reductions in both man-made and technological barriers to trade in the past. Transport and communication costs have fallen substantially over time. Trade liberalisation has proceeded in spurts and lulls. After substantial falls in tariffs in advanced economies in the 1950s and 1960s and in many emerging economies more recently, average tariff rates are low, on average, today, but higher in EMs than in AEs. In certain sectors, tariff rates remain relatively high and non-tariff barriers often continue to represent an effective impediment to trade. Prospects for near-term further multilateral liberalisation agreements (including the successful completion of the Doha round) have dimmed. But in the absence of multilateral progress, piecemeal solutions, including regional and bilateral agreements, will continue, despite the current lack of enthusiasm for further opening measures that is typical of post-crisis and halting recovery episodes.

3. New trading hubs will emerge, often combining trade and finance

Trade relationships will change. Regional trade partnerships are growing and the traditional focus on the US, the EU and Japan as export destinations is diminishing, although, with these three regions currently accounting jointly for about 50% of world GDP, they will continue to play an important role in driving global and regional business cycles. The new, emerging global trading pattern is characterised by developing regional supply chains. In North America, the US will remain the centre of a supply chain that stretches to Canada in the north and Mexico in the south, just as Western Europe will continue to be the main point of orientation for the countries in Central and Eastern Europe and North Africa. But in the South and in the East change is afoot. Asia has already seen a number of reconfigurations in its regional supply chains over the last three decades, making its constituent countries quite used to successive relocations of production. China is gradually taking over from Japan as the main trading hub and has developed into a major export destination with its own 'periphery', consisting of both emerging markets and industrialised nations. In Latin America, intra-regional trade is also in the ascendant, albeit from very low levels, with Brazil slowly moving into focus as a regional centre or hub, even though the high commodity content of Latin American exports implies that commodity-hungry China is playing a more dominant part in the near term.

4. Vertical specialisation and the regionalisation and globalisation of supply chains will continue

Supply chains are in motion almost everywhere. Vertical specialisation has increased, creating regional and even global supply chains that involve goods in process crossing borders often multiple times before they reach their final destination. As a result, the foreign or import content of exports has risen markedly, making conventional trade statistics – which are in gross and not in value-added terms – and the meaning of a bilateral trade deficit, conventionally measured, harder to interpret. Growing interconnectedness, specialisation and just-in-time inventory management in the global supply chain also come with costs, as the ripple effects of the recent Japanese double natural and nuclear disaster showed. Disruptions in one part of the world have the potential to have larger effects than before on other, often far-removed, parts of the world economy and present challenges for supply chain managers and policymakers.

5. The content of trade will also change: Manufacturing powerhouses will export (and import) more consumption goods and services

Commodity exporters will also diversify and the share of services and high-technology goods will rise

The content of trade will also change. Today, manufactures dominate world trade, with trade in commodities and agriculture only recently halting a decades-long decline. In tandem with the growing importance of services in modern economies, the share of services in total trade – which stands at around 20% today – is bound to rise. As EMs grow more affluent and as their economies mature, EM trade will not only be larger, but also different. Import demand from nations like China will be less tilted towards capital goods and commodities, and more towards consumption goods and services than today. On the export side, services will also play a larger role, while gradually the sophistication of the types of goods traded and their technology content will increase. Even the commodity exporters of today, notably in the CIS, Middle East and Latin America are likely to see the share of unprocessed natural resources in their exports decline. Exports of different economies will become more similar, as incomes converge along with factor endowments (in particular reproducible capital, both physical and human).

The growth and transformation of world trade have implications for investment in trade-related infrastructure, trade-related service industries and the location of economic activities

The changes in the volume, value and composition of world trade will likely drive public and private investment in trade-related infrastructure (ports, docks, airports, roads, storage facilities, inter-modal freight transport and transshipment facilities), investment in trade-related service industries and in all forms of capital in those locations favoured by trade conglomeration or agglomeration externalities. Trade-related activity is clearly characterised by increasing returns to scale and scope, network externalities and economies of geographical concentration (conglomeration and agglomeration), which means that history or initial conditions matter for location. A first-mover advantage can have an enduring impact on the location of trade-related activity and may favour the early starter over otherwise similar locations. However, the quality of physical infrastructure, efficient infrastructural services and the right legal, regulatory, fiscal and financial environment can do much to increase the lure of particular locations for both trade and production, as the examples of Singapore and Dubai have shown.

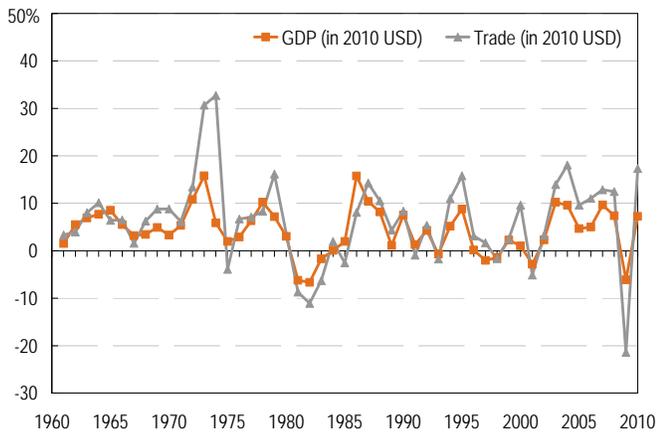
2. The History of Trade: Growth and Volatility

World trade grew by 17.3% in 2010, after a fall of more than 20% during the recent economic and financial crisis — the largest fall on record

In 2010, world trade grew by 17.3% in constant USD (18.7% in current USD). After collapsing during the recent economic and financial crisis — world trade fell by over 20% in 2009 (in both current and constant USD terms) — world trade therefore rebounded strongly. The changes – downward and upward – were rather extreme, but as Figure 3 and Figure 4 show, growth in trade has been rather volatile in prior decades, too. For example, the fall in world trade in 2009 was much sharper than the fall in world GDP — which, at 6% (in constant USD terms, 5% in nominal USD terms), was the largest recorded fall in world GDP since WWII. The recovery in 2010 was similarly much larger in percentage terms than the recovery in GDP growth (see Figure 3 and Figure 4).

The data that are presented in Figure 3 and Figure 4 are in terms of current and constant USD converted at market exchange rates. The values are therefore heavily affected by fluctuations in the (nominal and real) effective US dollar exchange rate. The large fluctuations in US dollar nominal and real effective exchange rates are also part of the story behind the large fluctuations in average ten-year trade growth rates in Figure 5. Thus, the abnormally high 12.5% pa average growth rate of world trade measured in constant USD terms in the 1970s was rather flattered by the fact that the US dollar weakened throughout that decade, with the narrow effective dollar exchange rate falling by almost 20% in nominal terms and almost 30% in real terms (Figure 6).

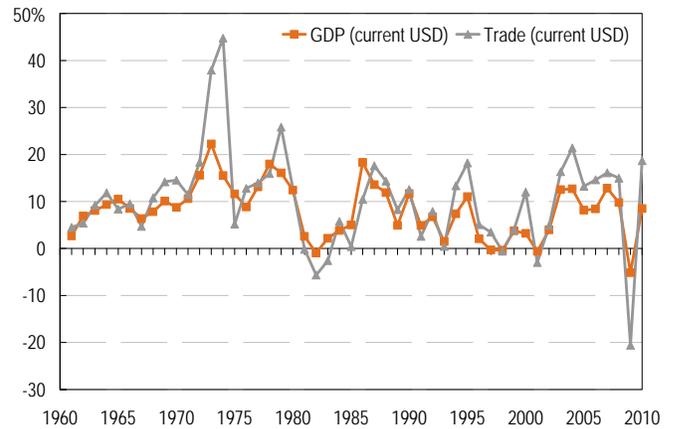
Figure 3. World – GDP and Trade Real Growth Rates (%YoY), 1960 – 2010



Note: Data are measured in constant 2010 USD, deflated using US implicit GDP deflator. Trade in goods only until 1980, trade in goods and services from 1980. World trade = sum of exports and imports of goods and services.

Source: World Bank for GDP, BEA for price deflator, WTO for trade data, and CIRA

Figure 4. World – GDP and Trade Nominal Growth Rates (%YoY), 1960 – 2010



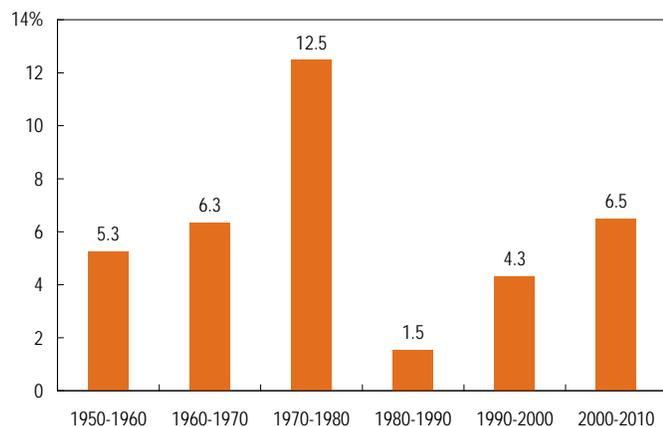
Note: Data are measured in current USD. Trade in goods only until 1980, trade in goods and services from 1980. World trade = sum of exports and imports of goods and services.

Source: World Bank for GDP, WTO for trade data, and CIRA

World trade growth has historically been volatile, but high on average, outstripping GDP growth by about 50%

But growth rates of world trade have not only been volatile, they have also been high, on average (Figure 3 and Figure 4). World trade in goods grew six-fold (in constant 2010 USD terms) between 1960 and 1980, from \$1.6trn to \$9.5trn in 1980 and then tripled again to reach just over \$30trn in 2010. World trade in services quadrupled between 1980 and 2010 and reached just over \$7trn by 2010. Together, the average growth rate of trade in goods and services, again in constant 2010 USD terms, was 4.1% pa between 1980 and 2010, and 5.4% pa between 1990 and 2010.

Figure 5. World – Real Growth of Trade in Goods and Services (%pa), 1950 – 2010



Note: Trade in goods only until 1980, trade in goods and services from 1980. Trade measured in 2010 USD, deflated using US implicit price deflator.

Source: World Bank for GDP, BEA for US price deflator, WTO for trade data, and CIRA

Figure 6. USD – Narrow Nominal and Real Effective Exchange Rate, 1965 – 2011



Note: The US Dollar Narrow Effective Exchange Rate is a geometric trade-weighted average of bilateral exchange rates of the US dollar with the currencies of 26 economies (Australia, Austria, Belgium, Canada, Chinese Taipei, Denmark, Euro area, Finland, France, Germany, Greece, Hong Kong SAR, Ireland, Italy, Japan, Korea, Mexico, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, United Kingdom). The real effective exchange rates are adjusted by relative consumer prices.

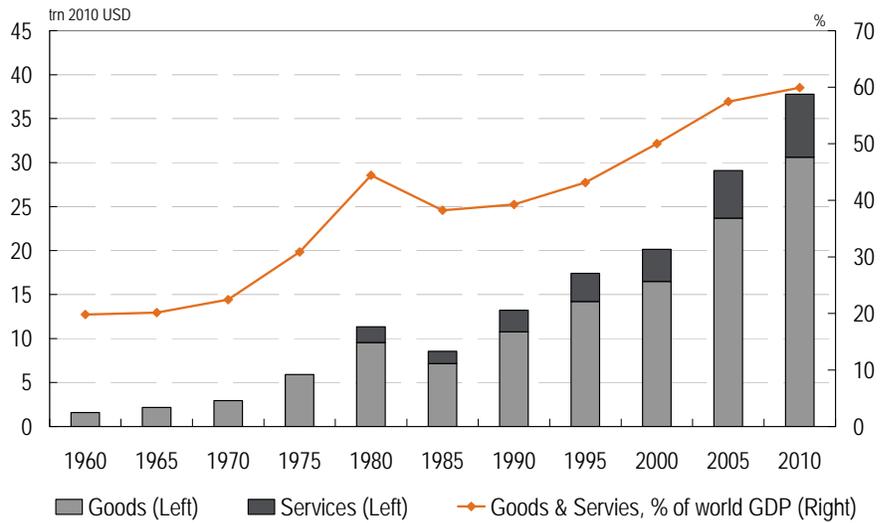
Source: BIS and CIRA

World GDP growth between 1980 and 2010 was 3.1%pa, in constant 2010 USD terms, and 3.2% between 1990 and 2010, with the level of world GDP reaching \$63trn in 2010. World trade has on average grown more quickly than GDP for most of the postwar period (Figure 7 and Figure 3). Whereas trade in goods only accounted for 20% of world GDP in 1960, it reached almost 50% of world GDP in 2010. Adding trade in commercial services implies that world trade was equivalent to 61% of world GDP in 2010.

World trade grew rapidly between 1870 and 1913 before falling abruptly in the interwar years

It is also worth remembering that there was an earlier period in recent history when trade grew fast. This was during the period between 1870 and the outbreak of World War I. This period is sometimes referred to as the 'first wave of globalisation'. It saw rapid trade growth amid large reductions in tariffs and technological progress that reduced transport costs in the early part of the period. The following period, the interwar years between 1913 and 1939, also merits consideration, as large increases in trade barriers reversed most of the earlier increase in trade. Part of the increase in trade that we have seen over the past few decades was therefore only bringing us back to the levels that we had seen prior to World War I.

Figure 7. World Trade – Level (Constant 2010 USD trn) and Share of World GDP (%), 1960 – 2005

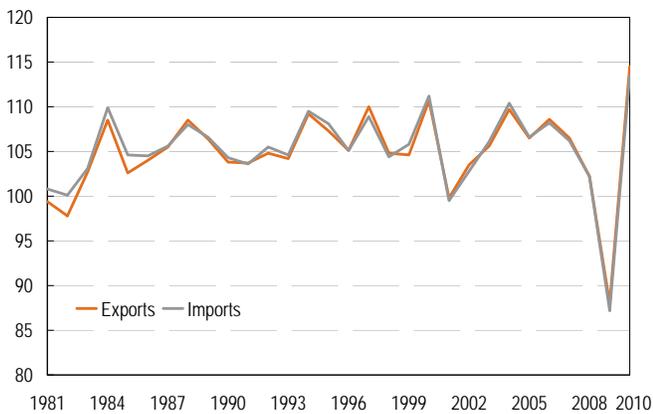


Note: Trade in goods until 1980; trade in goods and services from 1980. Trade deflated using US implicit price deflator.

Source: World Bank for GDP, BEA for price deflator, WTO for trade data, and CIRA

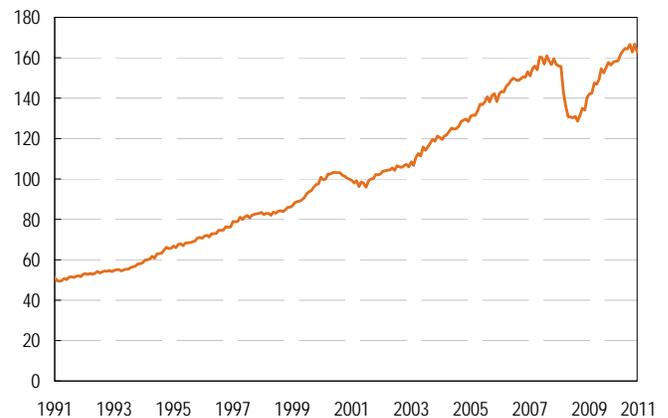
The figures above presented data on world trade in terms of current or constant USD and were therefore affected by movements in the dollar exchange rate. Figure 8 and Figure 9, however, show that we get very much the same picture if we look at *volume* measures of world trade.⁴ Growth rates have been very volatile, but on average high, and the level of merchandise trade has more than tripled over the past 20 years.

Figure 8. World Exports and Imports Volume Indexes (Previous Year = 100)



Note: Merchandise exports and imports only. Excludes Hong Kong, China's re-exports.
Source: WTO and CIRA

Figure 9. Merchandise World Trade Volume (2000 = 100), 1991 – June 2011



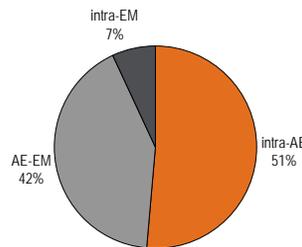
Note: Seasonally adjusted.
Source: Netherlands Bureau for Economic Policy Analysis and CIRA

⁴ Please note that in principle the correlation between world imports and exports in Figure 8 should be perfect, as total imports in the world need to equal total exports. In practice, however, the two hardly ever coincide, for a variety of reasons, some of which we discuss in the Appendix.

World trade is still dominated by AEs today – intra-EM trade was only 6% of world trade in 2000 and accounted for 15% in 2010

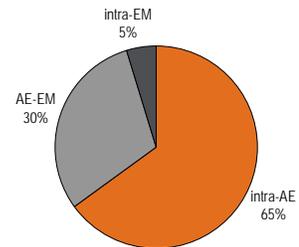
But trade and trade growth have not been smooth. Today's advanced economies dominated trade for most of the post-World War II period. Looking at trade in goods only, intra-EM trade accounted for just 7% of total world trade in goods in 1980, a share that fell to 6% in 2000. Only in the last decade did intra-EM trade truly take off, reaching 15% of total world trade in goods by 2010. Trade between AEs accounted for almost two thirds of world trade in goods in 1990, but the share fell to 57% of world trade in 2000 and below 40% in 2010. AE-EMs share of world trade rose by half, from 30% in 1990 to 46% in 2010, having fallen in relative terms between 1980 and 1990.

Figure 10. AEs and EMs – Trade in Goods (% of World Trade in Goods), 1980



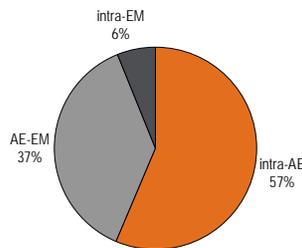
Note: only merchandise trade
Source: IMF DOTS and CIRA

Figure 11. AEs and EMs – Trade in Goods (% of World Trade in Goods), 1990



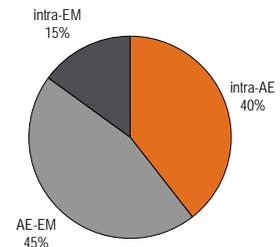
Note: only merchandise trade
Source: IMF DOTS and CIRA

Figure 12. AEs and EMs – Trade in Goods (% of World Trade in Goods), 2000



Note: only merchandise trade
Source: IMF DOTS and CIRA

Figure 13. AEs and EMs – Trade in Goods (% of World Trade), 2010



Note: only merchandise trade. Citi estimate.
Source: IMF DOTS and CIRA

Germany and the US had been the world's largest exporters in the past few decades only to be overtaken by China recently

Germany and the US took up the two top spots as the world's largest exporters of goods combined for virtually the entire period since the 1960s, only to be overtaken by China very recently. Seven of the ten largest exporters in 1970 were European countries, with the US, Japan and Canada making up the rest of the top 10. With the exception of the occasional appearance of Saudi Arabia during periods of unusually high oil prices, EMs only entered the list of the largest exporters by 2000.

Figure 14. Top 10 Countries by Exports of Goods (in 2010 USD bn), 1970 – 2010

1970			1980			1990			2000			2010		
Rank	Country	Exports % of World	Rank	Country	Exports % of World	Rank	Country	Exports % of World	Rank	Country	Exports % of World	Rank	Country	Exports % of World
1	USA	188 13.6%	1	USA	524 11.1%	1	Germany	647 12.2%	1	USA	978 12.1%	1	China	1,578 10.4%
2	Germany	149 10.8%	2	Germany	448 9.5%	2	USA	605 11.4%	2	Germany	690 8.6%	2	USA	1,278 8.4%
3	UK	84 6.1%	3	Japan	303 6.4%	3	Japan	442 8.3%	3	Japan	600 7.4%	3	Germany	1,269 8.3%
4	Japan	84 6.1%	4	France	269 5.7%	4	France	333 6.3%	4	France	410 5.1%	4	Japan	770 5.1%
5	France	79 5.7%	5	UK	256 5.4%	5	UK	284 5.8%	5	UK	357 4.4%	5	Neths	572 3.8%
6	Canada	73 5.3%	6	S. Arabia	253 5.4%	6	Italy	262 4.9%	6	Canada	346 4.3%	6	France	521 3.4%
7	Neths	58 4.2%	7	Italy	181 3.8%	7	Neths	202 3.8%	7	China	312 3.9%	7	Korea	466 3.1%
8	Italy	57 4.2%	8	Neths	172 3.6%	8	Canada	196 3.7%	8	Italy	301 3.7%	8	Italy	448 2.9%
9	Belg-Lux	50 3.7%	9	Canada	157 3.3%	9	Belg-Lux	181 3.4%	9	Neths	292 3.6%	9	Belgium	411 2.7%
10	Sweden	30 2.1%	10	Belg-Lux	150 3.2%	10	HK	127 2.4%	10	HK	254 3.1%	10	UK	405 2.7%

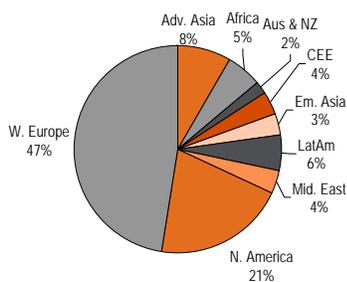
Note: Export levels deflated using US implicit price deflator. In 1970 and 1980, the WTO only presented combined export data for Belgium and Luxembourg ('Belg-Lux').

Source: WTO, BEA and CIRA

Western Europe's share of world trade is still twice that of EM Asia

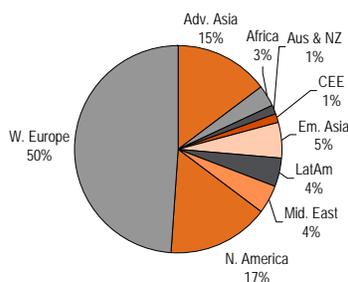
The picture looks little different when we look at the regional split of trade or exports in the past. As Figure 15 to Figure 17 show, Western Europe accounted for 47% of world exports of goods in 1970 and fully half in 1990. By 2010, however, Western Europe's share had fallen to a third, while the share of EM Asia rose from only 3% of world exports in 1970 to 5% in 1990 and then exploded to 17% in 2010.⁵

Figure 15. Selected Regions — Share of World Exports of Goods, 1970



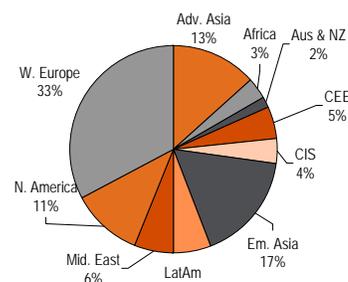
Source: WTO and CIRA

Figure 16. Selected Regions — Share of World Exports of Goods, 1990



Source: WTO and CIRA

Figure 17. Selected Regions — Share of World Exports of Goods, 2010



Source: WTO and CIRA

3. Global Trade Forecasts

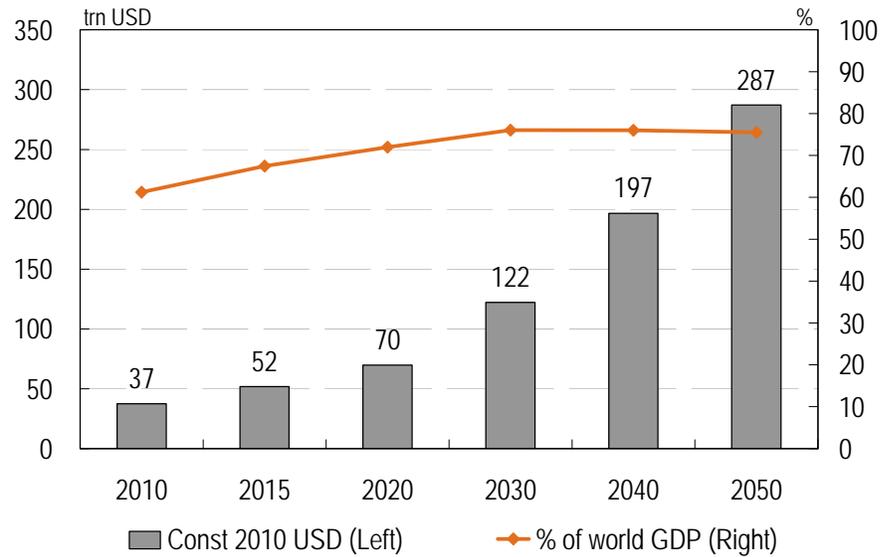
In this section, we present our forecasts for total world trade in goods and commercial services, for total regional trade and bilateral regional trade, as well as for the world's largest traders by country until 2050. The Appendix describes in greater detail the methodology we have used to obtain these estimates.

We expect growth in world trade to average 6.1% pa between 2010 and 2030 to rise from \$37trn in 2010 to \$122trn in 2030 and \$287trn in 2050

We expect the long-run growth story of world trade to continue over the next four decades. According to our projections, world trade in goods and services will grow, in constant 2010 USD terms, from \$37trn in 2010 to \$122trn in 2030 and \$287trn in 2050. This corresponds to an average growth rate of 6.1% pa between 2010 and 2030 and 5.2% pa between 2010 and 2050. Relative to world GDP, world trade would grow from 61% in 2010 to 76% in 2030 and grow at roughly the same rate as GDP between 2030 and 2050 (Figure 18).

⁵ We consider trade in goods only here, as the WTO's records for trade in commercial services are only available from 1980.

Figure 18. World Trade in Goods and Services — Level (Constant 2010 USD trn) and Share of World GDP (%), 2010E – 2050F



Note: 2010 is Citi estimate, following years are Citi forecasts

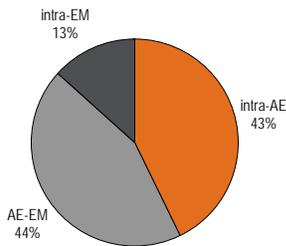
Source: Citi Investment Research and Analysis

3.1. EM vs AE Trade

We expect all regions of the world to experience healthy rates of trade growth over the coming decades. But at least as interesting as the growth in world trade that we forecast are the changes in its composition we expect over the course of the next four decades, with today's EMs set to gain much more prominence in world trade relative to AEs. Today, intra-EM trade in goods and services accounts for but 13% of total world trade, while intra-AE trade accounts for 43% and AE-EM trade for 44% (Figure 19 to Figure 21). We expect intra-EM trade to grow fastest and to overtake within-AE trade by 2030. By 2050, we expect intra-EM trade to be around four fifths the size of AE-EM trade against a third in 2010. The share of within-AE trade on the other hand is expected to almost halve from 43% of world trade in 2010 to 23% in 2030 and to fall further to 15% by 2050.

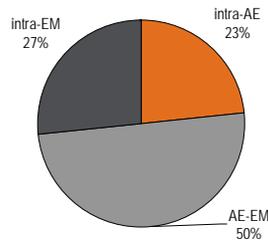
We expect intra-EM trade to overtake within-AE trade by 2030 and to be of comparable size to EM-AE trade by 2050

Figure 19. AE and EM Trade (% of World Trade), 2010



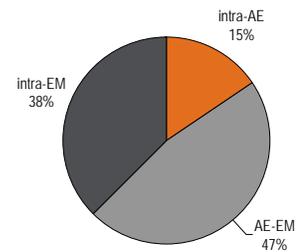
Note: Citi estimate for trade in goods and services
Source: Citi Investment Research and Analysis

Figure 20. AE and EM Trade (% of World Trade), 2030



Note: Citi forecast for trade in goods and services
Source: Citi Investment Research and Analysis

Figure 21. AE and EM Trade (% of World Trade), 2050



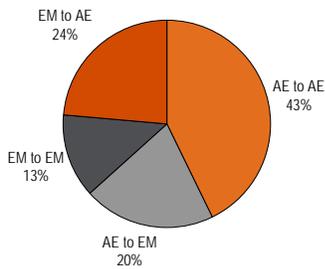
Note: Citi forecast for trade in goods and services
Source: Citi Investment Research and Analysis

Our definition of AE includes Hong Kong, Singapore, Taiwan and Korea

Definitions matter when it comes to discussing AE and EM trade. In the brief note on prospects for trade growth that we published in June ([Global Economic Outlook and Strategy: June 2011](#)), we used a different classification of AEs and EMs. In particular, the definition of EM used in this report excludes Hong Kong, Singapore, Korea, Israel, Estonia, Czech Republic, Slovenia and Slovakia, as these are included in the advanced economies (AEs) category, consistent with the classification used, inter alia, by the IMF. In our June report, we subsumed these countries in the EM category. Using that classification, intra-EM trade would overtake intra-AE trade by 2015 already, and exceed trade between EMs and AEs by 2030. The full list of countries included in the AE and EM aggregates is presented in the Appendix.

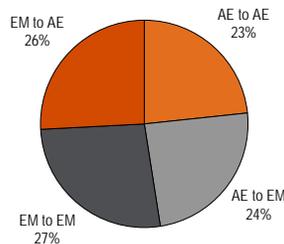
The reorientation of trade holds both for imports and for exports. In 2010, almost two thirds of EM exports were destined for AEs, while we expect that share to fall to roughly 50% by 2030 and around 40% by 2050 (Figure 22 to Figure 24). EMs will also grow in importance as export markets for AEs. In 2010, only just over 30% of AE exports went to EMs. By 2030, that share could rise to 50%, and to 60% by 2050. By construction, the developments for imports in our projections are mirror images of those for exports (Figure 25 to Figure 27).

Figure 22. AE and EM Exports (% of World Exports), 2010



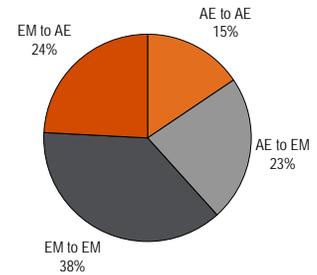
Note: Citi estimate for exports of goods and services
Source: Citi Investment Research and Analysis

Figure 23. AE and EM Exports (% of World Exports), 2030



Note: Citi forecast for exports of goods and services
Source: Citi Investment Research and Analysis

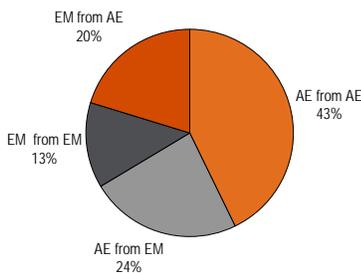
Figure 24. AE and EM Exports (% of World Exports), 2050



Note: Citi forecast for exports of goods and services
Source: Citi Investment Research and Analysis

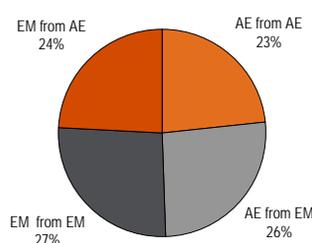
Of course, as noted in the previous section, the transformation of world trade that we expect to happen over the next few years has already begun.

Figure 25. AE and EM Imports (% of World Imports), 2010



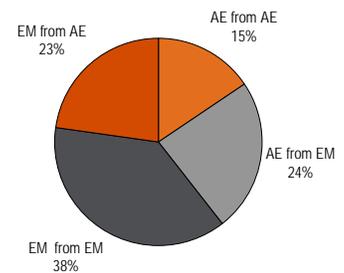
Note: Citi estimate for imports of goods and services
Source: Citi Investment Research and Analysis

Figure 26. AE and EM Imports (% of World Imports), 2030



Note: Citi forecast for imports of goods and services
Source: Citi Investment Research and Analysis

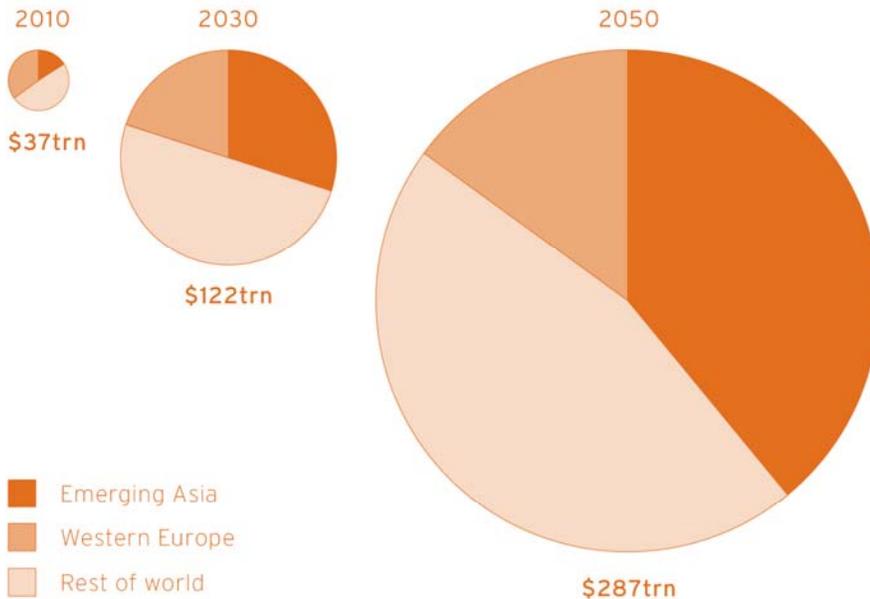
Figure 27. AE and EM Imports (% of World Imports), 2050



Note: Citi forecast for imports of goods and services
Source: Citi Investment Research and Analysis

EVOLVING RELATIONSHIPS: EMERGING ASIA AND WESTERN EUROPE

SHARE OF WORLD TRADE
FROM 2010 - 2050



SHARE OF WORLD POPULATION
IN 2050

Emerging Asia: 47%
Western Europe: 5%

SHARE OF WORLD GDP
IN 2050

Emerging Asia: 46%
Western Europe: 9%

TRADE CORRIDORS AS SHARE OF WORLD TRADE
IN 2010

EM Asia - EM Asia: <2.9%
W. Europe - W. Europe: 19.9%

TRADE CORRIDORS AS SHARE OF WORLD TRADE
IN 2050

EM Asia - EM Asia: 12.5%
W. Europe - W. Europe: 6.0%

We expect Emerging Asia to become the world's largest region by trade by 2015. Germany and the US had been the world's largest exporters in the last few decades only to be overtaken by China recently

3.2. Regional Composition

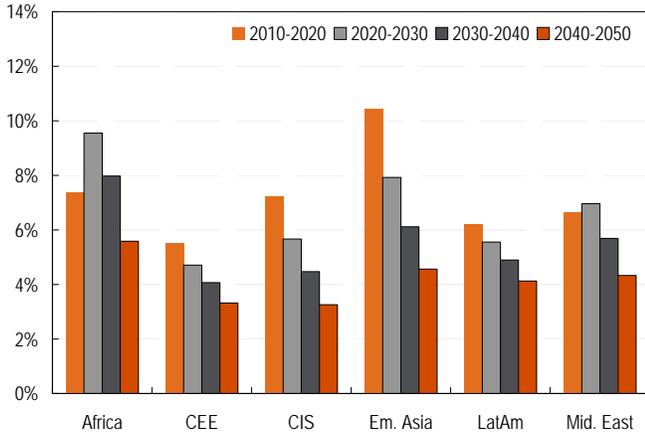
The shift of world trade from today's AEs to EMs will also likely manifest itself in a large regional shift in the composition of trade. Here we present our main results, but the Appendix contains much more detail on regional results as well as the definitions of the 10 regions we distinguish.⁶

The prospects of Emerging Asia stand out. We expect EM Asia's trade to grow by more than 10% pa on average over the next decade before falling rather quickly to around half that level. We also expect other EM regions to experience high growth in trade, propelled, notably in the case of the Middle East and Latin America, by

⁶ The 10 regions are Advanced Asia, EM Asia, Western Europe, North America, Africa, Middle East, Central and Eastern Europe, Latin America, Commonwealth of Independent States, and Australia & New Zealand.

growing trade relationships with EM Asia. Among the advanced economies, Advanced Asia's, and to some extent Australia & New Zealand's, trade growth rates are likely to be bolstered by strong growth in EM Asia in the near term, too. Although trade growth in the rest of the AE world is likely to be more modest, we expect it to exceed AE GDP growth. Growth in AE exports to EMs is indeed one among few clearly identifiable GDP growth drivers in many AE economies.

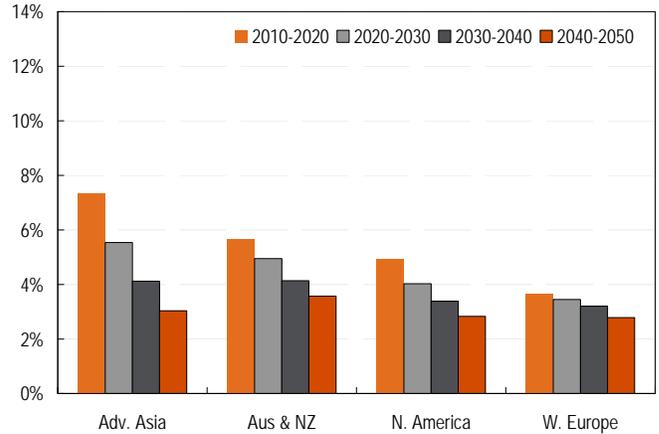
Figure 28. Emerging Markets – Growth in Trade (YoY%), 2010 – 2050



Note: Trade measured in 2010 USD. Trade = sum of exports and imports of goods and services.

Source: Citi Investment Research and Analysis

Figure 29. Advanced Economies – Growth in Trade (YoY%), 2010 – 2050

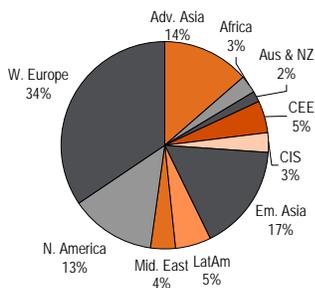


Note: Trade measured in 2010 USD. Trade = sum of exports and imports of goods and services.

Source: Citi Investment Research and Analysis

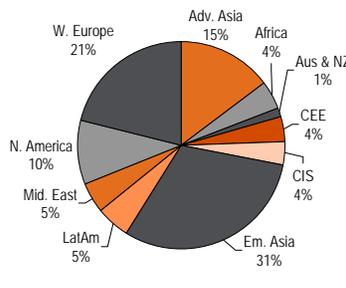
In 2010, EM Asia accounted for 17% of world trade in goods and services, almost exactly half the size of Western Europe's world trade share (see Figure 30, Figure 31 and Figure 32). By 2030, the two regions will almost have switched positions, with Emerging Asia accounting for 31% of world trade, roughly 50% more than Western Europe at 21%. By 2050, the position swap will be complete, with Western Europe down to 17% of world trade. We expect Emerging Asia to account for almost 40% of world trade by then, a rather dramatic change from the just 6% share of world trade the region accounted for in 1990, but still less than the shares of world GDP (46%) or of world population (47%) we expect this region to account for in 2050. Western Europe on the other hand will still punch above its weight at 17% of world trade in 2050, as we expect it to account for only 9% of world GDP (down from 25% in 2010) and 5% of world population (5% in 2010).⁷

Figure 30. Selected Regions — Share of World Trade, 2010



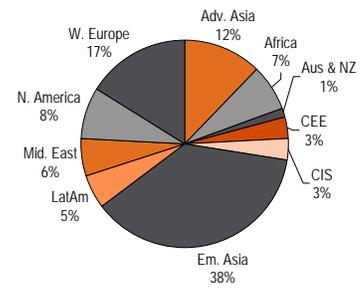
Source: WTO and CIRA

Figure 31. Selected Regions — Share of World Trade, 2030



Source: CIRA

Figure 32. Selected Regions — Share of World Trade, 2050



Source: CIRA

⁷ For long-run projections of GDP and population, please see Global Growth Generators: Moving Beyond 'Emerging Markets' and 'BRIC'

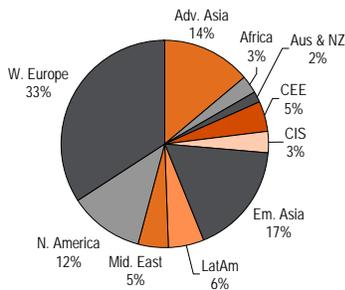
We also expect Africa's share of world trade to rise substantially – from 3% of world trade in 2010 to 7% by 2050

We also expect Africa's share of world trade to increase rather substantially. In 2010, Africa only accounted for around 3% of world trade in goods and services, in line with its share of world GDP and compared to a 16% share of world population. By 2030, we expect Africa's trade share to have gone up to 4% (and to 7% by 2050), still much below its share of world population (19% in 2030, 23% in 2050) and our estimate of Africa's share of world GDP at that stage (6% in 2030, 14% in 2050).

We expect the share of North America in world trade to fall substantially, from around 13% in 2010, to 10% in 2030 and 8% in 2050. On the other hand, we expect the share of Advanced Asia to remain relatively stable. However, the performance of this aggregate reflects rather different growth trajectories for Japan (which is likely to see more modest trade growth) compared to Hong Kong, Singapore and Taiwan, for which higher trade growth is more likely.

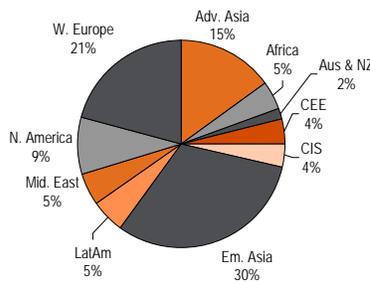
The evolution of trade shares is rather similar if we look at exports or imports rather than total trade (the sum of exports and imports, Figure 33 to Figure 38). Western Europe is the biggest region by size of imports or exports today, but is likely to be overtaken by EM Asia by 2030 in both cases.

Figure 33. Selected Regions — Share of World Exports, 2010



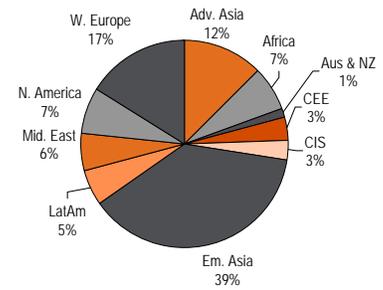
Note: Citi forecast for exports of goods and services. Source: IMF DOTS, WTO and CIRA

Figure 34. Selected Regions — Share of World Exports, 2030



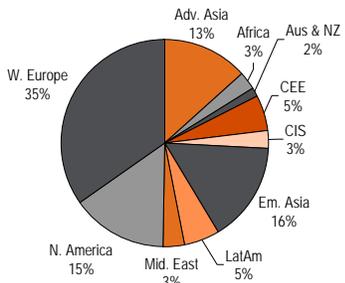
Note: Citi forecast for exports of goods and services. Source: IMF DOTS, WTO and CIRA

Figure 35. Selected Regions — Share of World Exports, 2050



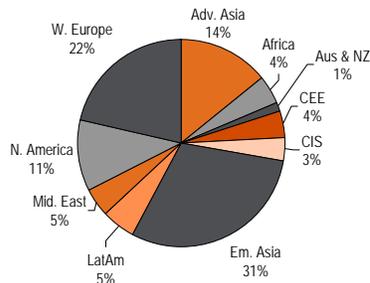
Note: Citi forecast for exports of goods and services. Source: IMF DOTS, WTO and CIRA

Figure 36. Selected Regions — Share of World Imports, 2010



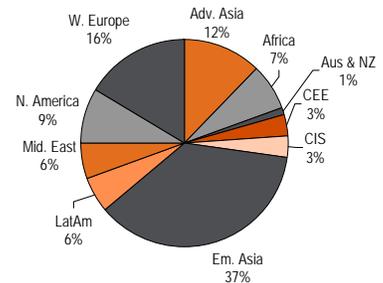
Note: Citi forecast for imports of goods and services. Source: IMF DOTS, WTO and CIRA

Figure 37. Selected Regions — Share of World Imports, 2030



Note: Citi forecast for imports of goods and services. Source: IMF DOTS, WTO and CIRA

Figure 38. Selected Regions — Share of World Imports, 2050



Note: Citi forecast for imports of goods and services. Source: IMF DOTS, WTO and CIRA

We expect China to become the world's largest trader by 2015 and for India to overtake the US and Germany to claim second place by 2050

3.3. The World's Largest Importers, Exporters and Traders

As regards the largest countries by trade, we expect China to overtake the US to become the world's largest trader by 2015 and to remain in the top spot for the rest of our forecast horizon (Figure 39). In section 2, we noted that it already occupied the spot of the top exporter of goods and of goods and services combined in 2010.

India, which does not even feature in the top 10 of the world's largest traders in 2010, is expected to be the world's second-largest trader by 2050, with the US in third place. In 2010, only three countries from Asia featured in the top 10 (China, Japan and Korea), while five European countries (Germany, France, UK, Netherlands and Italy) were among the ten largest traders in the world. By 2015, we expect Hong Kong and India to be among the ten largest traders, to be joined by Singapore by 2030 and Indonesia by 2050. In 2050, Germany and the UK would be the only remaining European countries in this list.

Figure 39. Top 10 Countries by Trade (in 2010 USD bn), 2010 – 2050

2010			2015			2030			2050		
Rank	Country	% of World	Rank	Country	% of World	Rank	Country	% of World	Rank	Country	% of World
1	USA	10.7%	1	China	13.1%	1	China	17.4%	1	China	18.2%
2	China	9.5%	2	USA	10.1%	2	USA	8.2%	2	India	9.0%
3	Germany	7.6%	3	Germany	6.8%	3	India	5.6%	3	USA	6.6%
4	Japan	4.8%	4	Japan	4.3%	4	Germany	4.7%	4	Germany	3.5%
5	France	3.8%	5	Korea	3.5%	5	Korea	3.8%	5	Korea	3.4%
6	UK	3.6%	6	UK	3.4%	6	Japan	3.5%	6	Indonesia	3.1%
7	Neths	3.5%	7	France	3.2%	7	HK	3.1%	7	HK	2.7%
8	Italy	3.1%	8	Neths	3.0%	8	Singapore	2.7%	8	Japan	2.7%
9	Korea	2.8%	9	HK	2.9%	9	UK	2.6%	9	Singapore	2.4%
10	Canada	2.6%	10	India	2.8%	10	Russia	2.3%	10	UK	2.1%

Source: Citi Investment Research and Analysis

China's export prowess is already well established. In 2010, it already was the world's largest exporter, followed by the US and Germany. We expect China's strong export performance to continue, almost doubling its share of world exports from 10.6% in 2010, while we expect both the US and Germany to lose export market share and ultimately to be overtaken by India by 2050 (Figure 40).

Figure 40. Top 10 Countries by Exports (in 2010 USD bn), 2010 – 2050

2010			2015			2030			2050		
Rank	Country	% of World	Rank	Country	% of World	Rank	Country	% of World	Rank	Country	% of World
1	China	10.6%	1	China	14.0%	1	China	18.0%	1	China	18.4%
2	USA	9.4%	2	USA	8.8%	2	USA	7.3%	2	India	8.9%
3	Germany	7.9%	3	Germany	6.9%	3	India	5.5%	3	USA	6.1%
4	Japan	5.0%	4	Japan	4.6%	4	Germany	4.8%	4	Germany	3.4%
5	France	3.6%	5	Korea	3.6%	5	Korea	4.0%	5	Korea	3.4%
6	Neths	3.5%	6	UK	3.2%	6	Japan	3.6%	6	Indonesia	3.1%
7	UK	3.3%	7	France	3.0%	7	HK	3.1%	7	HK	2.7%
8	Italy	2.9%	8	HK	2.9%	8	Singapore	2.7%	8	Japan	2.7%
9	Korea	2.9%	9	Neths	2.9%	9	UK	2.5%	9	Singapore	2.4%
10	Belgium	2.4%	10	India	2.5%	10	Russia	2.4%	10	UK	2.1%

Source: Citi Investment Research and Analysis

We also expect China to become the world's largest importer by 2015

Interestingly, we also expect China to become the world's largest importer by 2015, overtaking the would-be importer of last resort of the past few decades, the US (Figure 41).

Figure 41. Top 10 Countries by Imports (in 2010 USD bn), 2010 – 2050

2010			2015			2030			2050		
Rank	Country	Imports % of World	Rank	Country	Imports % of World	Rank	Country	Imports % of World	Rank	Country	Imports % of World
1	USA	2,266 12.1%	1	China	3,176 12.3%	1	China	10,334 16.9%	1	China	25,764 17.9%
2	China	1,584 8.5%	2	USA	2,949 11.4%	2	USA	5,545 9.1%	2	India	12,930 9.0%
3	Germany	1,381 7.4%	3	Germany	1,724 6.7%	3	India	3,510 5.7%	3	USA	10,354 7.2%
4	Japan	844 4.5%	4	Japan	1,053 4.1%	4	Germany	2,874 4.7%	4	Germany	4,994 3.5%
5	France	759 4.0%	5	UK	942 3.6%	5	Korea	2,270 3.7%	5	Korea	4,791 3.3%
6	UK	732 3.9%	6	France	878 3.4%	6	Japan	2,045 3.3%	6	Indonesia	4,346 3.0%
7	Neths	661 3.5%	7	Korea	861 3.3%	7	HK	1,887 3.1%	7	HK	3,887 2.7%
8	Italy	607 3.2%	8	India	815 3.1%	8	UK	1,659 2.7%	8	Japan	3,756 2.6%
9	Canada	532 2.8%	9	Neths	800 3.1%	9	Singapore	1,615 2.6%	9	Singapore	3,384 2.4%
10	Korea	511 2.7%	10	HK	738 2.8%	10	France	1,392 2.3%	10	UK	3,069 2.1%

Source: Citi Investment Research and Analysis

3.4. The Major Trading Corridors

We also study the evolution of trading corridors

In our study, we projected bilateral trading relationships for a large number of countries and then aggregated these into country and regional aggregates. However, bilateral trading relationships or 'trading corridors' remain a focus of our study. In particular, we aim to track the most important regional trade corridors. Again, the rise of EM trade is the dominant theme. The second important theme is the continued importance of regionalism. Figure 42 shows that the growth in EM trade manifests itself both in growing intra-regional trade as well as in growth of trade between regions.

In 2010, trade within Western Europe accounted for just under 20% of world trade, making it by far the largest trading corridor in the world

In 2010, trade within Western Europe (WE) represented by far the largest trade corridor, accounting for just under 20% of world trade, almost twice as much as the next largest trade corridor (EM Asia – AE Asia), with WE – EM Asia trade at number three. We expect intra-WE trade to remain the world's largest trade corridor in 2015, but to slide to second place by 2030 and to fourth by 2050, despite more than doubling in size (at an average growth rate of 2.1% pa between 2010 and 2050). By 2030, intra-WE trade would account for less than 10% of world trade, and even less by 2050.⁸ In fact, we expect trade between EM Asia and Western Europe to overtake intra-WE trade by 2050, having grown at 6.1% pa, on average, between 2010 and 2050.

We expect EM Asia – Advanced Asia to become the largest trading corridor by 2030, with intra-EM Asia second, and Asia generally dominating the list of the largest trading corridors

Instead, we expect trade between Advanced Asia and EM Asia to create the world's largest trade corridor by 2030 and 2050, accounting for 16% and 15% of total world trade, respectively, growing by 8.7% pa between 2010 and 2030 and 4.1% between 2030 and 2050. Trade within EM Asia, which does not even make the list of the 10 largest trade corridors in 2010 (it comes in at number 11 in our ranking), is expected to rise to seventh place by 2015, fourth by 2030 and second by 2050, rising almost thirty-five fold in constant 2010 USD terms and accounting for 13% of total world trade by 2050. By comparison, intra-regional exports of goods in Developing Asia accounted for 1% of world exports in 2000 and stood at 3% in 2010, according to IMF data.

Asia appears six times in our list of the 10 largest trade corridors in 2010 (both AE Asia and EM Asia appear three times each), rising to eight appearances by 2015 (AE Asia 3, EM Asia 5), and to nine by 2030 and 2050 (AE Asia 1, EM Asia 8). In addition to intra-EM Asia trade and trade between EM Asia and Advanced Asia, we expect trade between EM Asia and the Middle East, Africa and Latin America to continue to increase in size and importance.

⁸ For comparison, exports of goods from the European Union to the European Union (a trade corridor which is comparable to our definition of intra-WE trade) were 30% of world goods exports in 1990.

On the other hand, Western Europe, which retains a central role in world trade today, will diminish in relative importance. Intra-WE's share of world trade is expected to fall to roughly a third of today's share of nearly 20% of total world trade. In 2010, Western Europe was also a counterparty in four of the five largest regional trade corridors, but by 2030 we only expect intra-WE and trade between WE and EM Asia trade to appear among the five largest.

Africa, which was not part of any of the ten largest trade relationships in 2010, is expected to be a part of two such corridors by 2050, while CEE, which featured once in 2010, is expected to disappear from this list altogether.

Figure 42. Largest Trade Corridors (in 2010 USD bn), 2010 – 2050

2010				2015				2030				2050			
Rank	Trade Corridor	Trade	% of World	Rank	Trade Corridor	Trade	% of World	Rank	Trade Corridor	Trade	% of World	Rank	Trade Corridor	Trade	% of World
1	W. Europe - W. Europe	7,461	19.9%	1	W. Europe - W. Europe	8,331	16.1%	1	Adv. Asia - Em. Asia	19,325	15.8%	1	Adv. Asia - Em. Asia	42,917	14.9%
2	Adv. Asia - Em. Asia	3,677	9.8%	2	Adv. Asia - Em. Asia	6,535	12.6%	2	W. Europe - W. Europe	11,305	9.3%	2	Em. Asia - Em. Asia	35,922	12.5%
3	Em. Asia - W. Europe	2,241	6.0%	3	Em. Asia - W. Europe	3,736	7.2%	3	Em. Asia - W. Europe	10,138	8.3%	3	Em. Asia - W. Europe	23,876	8.3%
4	N. America - W. Europe	2,188	5.8%	4	Em. Asia - N. America	2,932	5.7%	4	Em. Asia - Em. Asia	9,810	8.0%	4	W. Europe - W. Europe	17,293	6.0%
5	CEE - W. Europe	1,972	5.3%	5	N. America - W. Europe	2,551	4.9%	5	Em. Asia - N. America	7,564	6.2%	5	Africa - Em. Asia	17,181	6.0%
6	Em. Asia - N. America	1,802	4.8%	6	CEE - W. Europe	2,434	4.7%	6	Em. Asia - Mid. East	5,141	4.2%	6	Em. Asia - Mid. East	16,524	5.8%
7	LatAm - N. America	1,552	4.1%	7	Em. Asia - Em. Asia	2,002	3.9%	7	Africa - Em. Asia	4,019	3.3%	7	Em. Asia - N. America	16,475	5.7%
8	Adv. Asia - W. Europe	1,457	3.9%	8	LatAm - N. America	1,956	3.8%	8	CEE - W. Europe	3,917	3.2%	8	Em. Asia - LatAm	9,874	3.4%
9	Adv. Asia - N. America	1,209	3.2%	9	Adv. Asia - W. Europe	1,879	3.6%	9	N. America - W. Europe	3,765	3.1%	9	Africa - W. Europe	7,299	2.5%
10	N. America - N. America	1,093	2.9%	10	Adv. Asia - N. America	1,526	2.9%	10	LatAm - N. America	3,464	2.8%	10	LatAm - N. America	6,710	2.3%

Source: Citi Investment Research and Analysis

4. Trends and Drivers of Trade

World trade is already very much in motion – we discuss some of the main trends

We have already discussed two of the most significant trends in world trade: its growth and its reorientation towards EMs in general, and EM Asia in particular. In the next few sections, we discuss a number of other important trends for world trade. Many of these can be seen also as *drivers* of world trade. The trends and drivers we discuss over the next few sections are sustained long-term global population and GDP per capita growth driven by the EMs, the slow reduction of both technological and man-made barriers to trade, the importance of manufactures and the increasing weight of services in world trade, complementarities and the emergence of new trading hubs, and the globalisation and regionalisation of supply chains.

5. Trade, Growth and Development

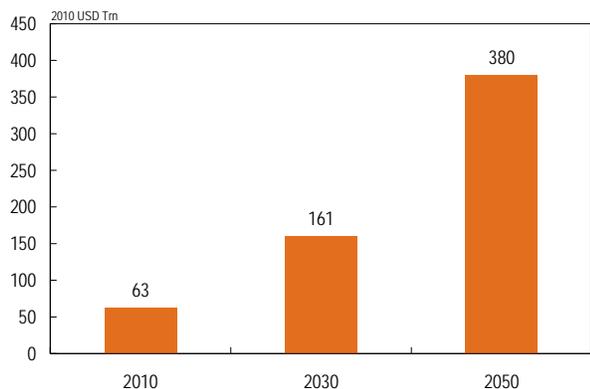
Trade, GDP growth and development go hand in hand

There is a vast literature on the drivers of trade (see e.g. Anderson (2010), Bergstrand and Egger (2010), Anderson and van Wincoop (2004) and Krugman (1995)). Among the empirically most prominent are growth in GDP and GDP per capita. As economies grow larger and more affluent, specialisation, the number of product varieties and preferences for variety increase, leading to increases in both imports and exports. The greater specialisation and greater input variety permitted by trade in turn boost efficiency and productivity.

We expect high growth in world GDP over the next four decades, driven by increases in GDP per capita and population

In our work on prospects for long-term growth earlier in 2011 which we dubbed 'Global Growth Generators' or '3G', we concluded that the long-term growth prospects of the world are rather good, driven both by increases in world population and in affluence measured as GDP per capita (Figure 43 and Figure 44).⁹

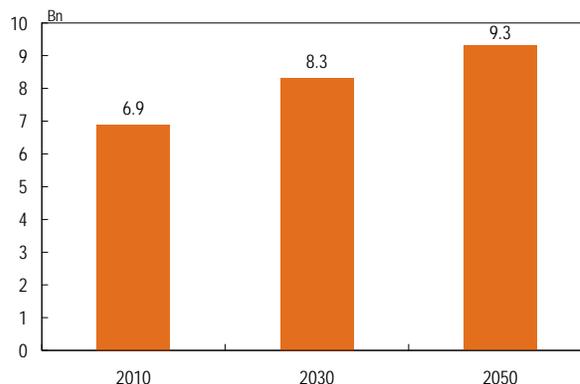
Figure 43. World GDP (2010 USD Trn)



Note: Citi forecasts. GDP measured at market exchange rates. GDP deflated using Citi US inflation forecasts.

Source: CIRA

Figure 44. World Population (Bn)



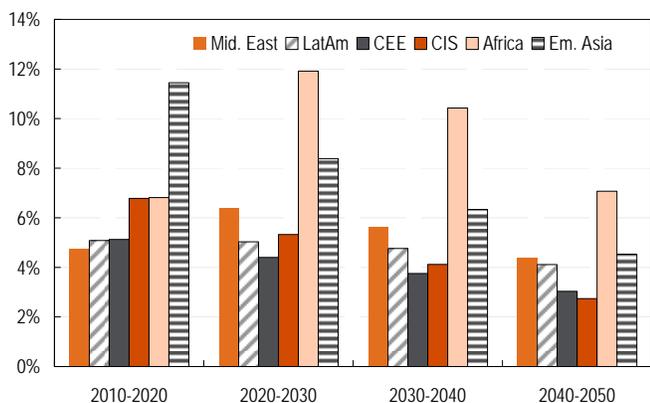
Source: U.N. Population Statistics and CIRA

⁹ See Global Growth Generators: Moving Beyond 'Emerging Markets' and 'BRIC'. Figure 43 reflects forecast revisions since the publication of the piece and therefore differs from the corresponding figures in the publication in February 2011. A second difference concerns the unit of account. In the February 2011 piece, our benchmark results were presented in terms of constant 2010 USD, converted at purchasing power parity-adjusted exchange rates, while we use constant 2010 USD, converted at market exchange rates in this piece.

Prospects for GDP growth are brightest in EM Asia and Africa

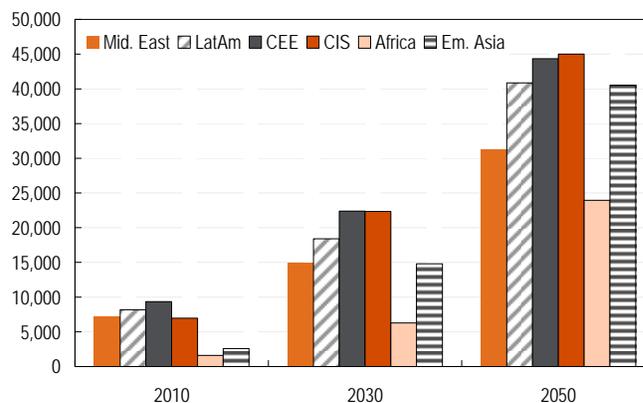
In our 3G study, we also noted that the prospects for growth in GDP and GDP per capita in EMs in general, and Asia and Africa in particular, are brightest (see Figure 45 and Figure 46), while the growth prospects in AEs are modest, but still positive. The list of countries and regions for which we predict the highest rates of trade growth is therefore very similar to the list of countries with the best prospects of high GDP growth.

Figure 45. Emerging Economies – Average Real GDP Growth (YoY%), 2010 – 2050



Note: Citi forecasts. GDP measured in 2010 USD at market exchange rates.
Source: Citi Investment Research and Analysis

Figure 46. Emerging Economies – Real GDP per Capita, 2010 – 2050



Note: Citi forecasts. GDP measured in 2010 USD at market exchange rates.
Source: Citi Investment Research and Analysis

There is two-way causation between trade and GDP growth

But as is often the case (and as every econometrician admits with a sad smile), the causation does not run in one direction only: two-way causation *and* a common third factor driving two statistically correlated variables are the norm. Rapid catch-up requires technology transfer from the leaders to the laggards. This can occur through spontaneous diffusion, including in recent years the intensive use of internet search engines. It is boosted significantly by FDI. This requires not just at least some degree of openness of the financial account of the balance of payments, it also requires further openness: the legal and regulatory regime must permit the cross-border transfer of corporate control rights and at least some degree of cross-border mobility of persons – both managers and skilled workers. There is less agreement on whether or under what conditions trade openness promotes growth. Conventional ‘Ricardian’ trade theory shows that trade promotes economic welfare (given sufficient internal redistribution tools), not that it boosts the *level* of output (GDP), let alone its growth rate. New trade theory emphasising either conventional increasing returns to scale or the welfare- and productivity-enhancing effects of the greater product or input variety permitted by cross-border trade in the presence of increasing returns does point to sustained or even permanent growth-enhancing effects of greater trade openness (Romer (1986), Rivera-Batiz and Romer (1991), Backus, Kehoe and Kehoe (1992)).

Empirical studies of the relationship between trade and GDP growth have been inconclusive (Edwards (1998), Frankel and Romer (1999)). A problem in interpreting any empirical correlation between growth and openness is that openness is to a significant degree a political choice variable. It is therefore potentially endogenous and may respond to some of the unobservable fundamental factors that also drive growth. Again, correlation is unlikely to reflect (only) one-way causation, but the two (GDP growth and trade growth) are likely to move together over the next few decades.

6. Barriers to Trade

The evolution of trade barriers – both man-made and technological – also drives trade growth

Both natural and man-made barriers to trade have tended to fall over time (man-made ones since World War II), but the reductions are neither automatic nor irreversible

In addition to GDP growth and economic development, a major driver of trade growth is acknowledged to be the evolution of a range of trade costs. Thus, Jacks et al (2011) estimate that trade cost declines explain roughly 55% of the pre-World War I trade boom and 33% of the post-World War II trade boom (where output growth was found to be the dominant driver of trade growth), while a large rise in trade costs can explain almost the entire interwar trade bust.

There are many barriers to trade, ranging from the technological and logistical challenges of transporting a good from the location of production to the location of use, to the political ones of man-made barriers to the inflow or outflow of goods or services for any number of reasons, including protecting domestic interest groups or raising government revenues from tariffs, export taxes or the sale of import licences. Other trade costs include those due to information asymmetries, different languages, laws, histories or cultures.

In general, we can distinguish between natural or technological barriers to trade, notably transport costs, and man-made barriers to trade. Both natural and man-made trade barriers have fallen over time, on average, man-made ones since the end of the global protectionist era that started with World War I and ended after the end of World War II. These developments have proceeded with substantial spurts and lulls, rather than smoothly.

Estimates of the costs of trade vary dramatically, depending not only on the methodology but also on the definition of the concept of trade costs. Some costs can be tracked directly, e.g. particular tariff rates or freight rates. Even in those cases, finding consistent – let alone comprehensive – time series over time or across countries or constructing averages and aggregates presents major challenges that lack a solution that enjoys common support. What is commonly acknowledged, however, is that such direct measures present an incomplete and unsatisfying measure of total trade costs.

Indirect measures often use theory and construct trade costs as a function of the difference between observed trade and an estimate of trade predicted on a model/theory and data on quantities and/or prices. Measures of trade costs obtained from such indirect approaches have the advantage that they should in principle include such elusive factors as information asymmetries, the effects of common language or history or patriotism. Unsurprisingly, these indirect measures of trade costs tend to be larger. For example, Anderson and van Wincoop (2004) estimate that average total trade costs could be up to an equivalent of a 170% tariff of which 55% are local (retail and wholesale) distribution costs and 74% are international trade costs, though they also note a large variance across countries and across goods.¹⁰

¹⁰ Note that $1.55 \times 1.74 - 1 = 1.70$ which yields the 170% total trade cost estimate. The 74% international costs are further broken down into 21% transport costs (11% freight transport costs and 9% time costs) and 44% border-related trade costs. These estimates are based on US-centred data.

Natural and technological barriers to trade include transport costs, but potentially also costs arising from asymmetric information, different cultures or different languages

Transport costs have fallen over time, but the variation between countries and between commodities within countries continues to be large

6.1. Natural and Technological Barriers to Trade

Natural barriers to trade include the time and expense needed to overcome the distance between the point of production and the point of use, i.e. transport costs. Of course, a separation of production and use of a good or service is, in general, a characteristic of most exchange, even within countries. But since geographical distance, on average, tends to be larger and transport costs correspondingly, too, when trade takes place between agents that are located in different countries, geographical distance takes on more importance for trade between countries relative to within-country trade. Of course, in many countries, including Russia, the US, Canada and China the distance between locations of production and consumption can be substantial, too.

In general, natural/technological barriers to trade have tended to fall over time due, in particular, to technology-driven reductions in communication and transport costs. In the estimate of 174% of total trade costs by Anderson and van Wincoop (2004), only 11% reflected freight transport costs. Arguably, the 7% that reflects a language barrier and the 3% security cost should also be included in this category.¹¹

Direct data, e.g. of freight, shipping rates and insurance, are often used to track movements in average transport costs. Another measure of transport costs is sometimes referred to as the 'cif-fob' factor which refers to the difference between the values for two measures of trade flows. The first measure is 'cost-insurance-freight' which denotes the value of imports or exports at the destination port, including the cost of insurance and freight. The second measure is 'free on board' which refers to the value of a shipment at its origin. The difference between the two can then be seen as a reasonable estimate of transport costs. Baier and Bergstrand (2001) report that the average cif-fob factor (i.e. the difference between the cif and fob measures of export) for 16 OECD countries was 8.2% in 1958 and 4.3% in 1988, thus roughly halving over the course of 30 years. Hummels (1999) found a fall in a trade-weighted average of transport costs for the US from 6% to 4% over the preceding 30 years.

However, the variation in transport costs across countries and across goods or services within countries is even larger than across time. Hummels (1999) finds that freight rates (in 1994) varied strongly across countries, with average transport costs ranging from 3.8% for the US to 13.3% for (landlocked) Paraguay. Variation in transport costs across commodities is also very large. Trade in goods with high value-to-weight ratios is less affected by transport costs. In the mid-1990s, the average transport cost was roughly 1% of the production cost for transport equipment in the US, but 28% for fertilizer (Hummels (1999)). And the 28% for fertilizer is unlikely to be the true upper bound of the range of transport costs. The reason is that transport costs for some goods, e.g. cement, are so large relative to its value that we do not see substantial cross-border trade in these goods.

Finally, time is also a cost of distance that should not be underestimated. Hummels (2001) finds that every additional day in ocean travel time for a shipment to arrive affects both the probability of outsourcing (reducing it by 1%) and the prices firms are prepared to pay for shipping (raising them by 1% for each day saved). Clearly, for perishable goods, the impact of time is even larger.

¹¹ The authors also note an 8% for policy barriers, 14% for currency barriers and 6% for information costs which could be included in a wide definition of natural or technological trade barriers.

We have already stressed that natural/technological barriers to trade tend to fall over time. However, this tendency, intuitive as it is, should not be taken for granted. Recent increases in the prices of fuel products and security-related increases in cross-border transport costs have highlighted that such trends can be reversed.

Despite the fall in transport costs over time, it is clear, however, that geographical distance has kept its relevance for trade, and not only for goods trade. For example, Disdier and Head (2008) find an average elasticity of trade flows with respect to distance of around -0.9 in a meta-analysis of studies. Of course, as noted above, distance may not only reflect geographical distance. Language, culture, common borders and common historical roots are other factors that have been found to have significant and usually persistent effects on the levels of trade between countries and can, from today's point of view, be seen as more or less exogenous. We expect distance to continue to exert a substantial effect on levels of bilateral and total trade, but for direct transport costs to continue to fall modestly over time.

6.2. Man-Made Barriers to Trade

Man-made barriers to trade include tariffs (duties or taxes) on the import and export of goods as well as the myriad non-tariff barriers to trade, including quotas, licences, standards, rules of origin, trade facilitation, safety and health standards, labelling and a number of other administrative measures that effectively reduce the ability of foreign producers to gain access to domestic markets or the ability of domestic producers to sell their products abroad. Man-made barriers to trade have also fallen over the past few decades in all but a handful of countries.

The importance of different types of man-made trade barriers has always varied quite strongly depending on the type of product. For many types of goods, tariffs have long been the most significant barrier. Even today, tariffs often remain the most visible type of man-made trade impediment for many products. However, for most products, non-tariff barriers are much more significant today. This is especially true for services which are heavily affected by many non-tariff barriers to trade, including restrictions on the movement of people.

However, both tariff and in particular non-tariff barriers to trade remain significant in many areas and continued sustained growth in world trade does rely on further gains in liberalising trade.

6.2.1. Tariffs

Tariffs have fallen strongly since the 1950s in today's AEs, and the bulk of the reductions took place in the 1950s and 1960s. In many EMs on the other hand, tariffs remained high until the 1980s, but have come down substantially since then, too (although they still remain, on average, higher than in AEs). Anderson and van Wincoop (2004) and Baier and Bergstrand (2010) report that tariffs were low in most countries at the time when they surveyed the data (in the early noughties), at less than 5% for AEs and 10-20% for EMs (see also Figure 47 and Figure 48), and have since fallen further. As tariffs have come down fast in many EMs over the past decade, cross-country differences have diminished, but remain non-negligible. Switzerland and Hong Kong have zero tariffs, and average tariff rates not only in the US, UK and Germany, but also Turkey are below 3%. On the other hand, countries such as Bangladesh, India, Iran or Brazil maintain tariffs above 10% on average (all based on a simple mean of tariff rates on all products, see also Figure 49).

Figure 47. Selected Countries — Average MFN Applied Tariff Rates (% of Value), 1981-2009



Note: All tariff rates are based on unweighted averages for all goods in ad valorem rates, or applied rates, or MFN rates, whichever data are available in a longer period. Missing values interpolated. MFN stands for Most Favoured Nation.

Sources: World Bank Data on Trade and Import Barriers and CIRA

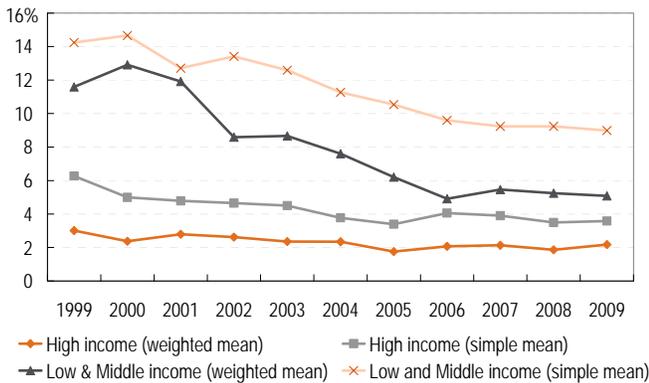
Average tariffs are below 4% in AEs, but above 10% in EMs, on average

The variation across countries and across industries remains significant

There are many issues with the available data on policy barriers to trade. Where such data are available in a systematic form, such as in the World Bank's World Integrated Trade System (WITS), missing data, inconsistencies across countries and long lags are common. Another issue that arises with comparing tariff rates across time or across countries is how to aggregate tariff schedules for individual products or industries. In principle, it appears desirable to weigh product categories by their economic significance, say by the amount of trade in that particular year. However, the amount of trade is clearly related to the level of the policy barrier to trade, so both unweighted and trade-weighted averages of tariff schedules enjoy widespread use in practice.¹²

Despite the generally low average level of tariff rates, tariffs on certain classes of products or in certain sectors or industries, such as agriculture and some areas of manufacturing, often remain at fairly high levels and show little sign of falling further. Nevertheless, the low average (trade-weighted or unweighted) tariff rates have led to the widespread conclusion that tariffs no longer represent a major impediment to cross-border trade. As already noted, this is only partially true given that tariff rates remain high for particular industries (e.g. agriculture) and in particular countries. However, it is more difficult to argue with the conclusion that the prospects for trade growth are more tightly linked to the prospects for removing non-tariff barriers to trade.

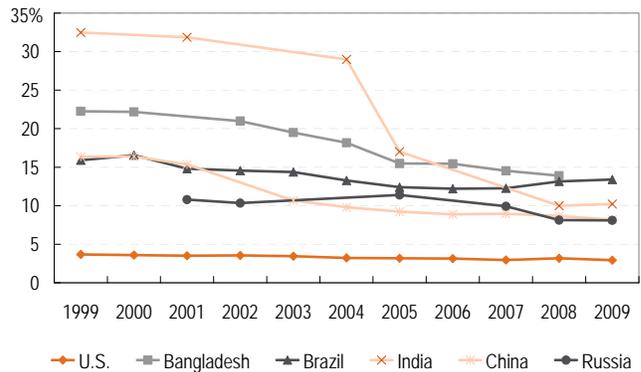
Figure 48. High and Low & Medium Income Countries – Average Tariff Rates (%), 1999 – 2009



Note: Simple and weighted mean of applied tariff rate for all products for High and Low & Medium income countries, respectively.

Source: Citi Investment Research and Analysis

Figure 49. Selected Countries – Average Tariff Rates (%), 1999 - 2009



Note: Simple and weighted mean of applied tariff rate for all products.

Source: Citi Investment Research and Analysis

¹² Imagine that a (near) infinite tariff rate is levied on a hypothetical sector X. In that case, we would be highly unlikely to observe any trade taking place in the products sector X produces. A trade-weighted measure of tariffs would therefore give a zero weight to tariffs in this sector, biasing measured average tariff rates downwards. There are theoretically more appealing ways to aggregate tariff schedules (see Anderson and Neary (2005)), but they also imply a larger conceptual and computational burden. Compared to trade-weighted measures, these more sophisticated approaches generally imply higher estimates of average tariff costs, as the latter estimates reflect that high tariff rates have reduced trade levels (and thus weights) in the respective industries.

Non-tariff barriers have become increasingly important, but systematic data on them are hard to come by

6.2.2. Non-Tariff Barriers

Many types of non-tariff barriers (NTBs) to trade exist, including quotas, licensing requirements, embargoes and prohibitions, antidumping and countervailing duty investigations, standards, rules of origin, trade facilitation (e.g. the capacity of customs to inspect imports before allowing them to be distributed onshore), safety and health standards and labelling conventions. Non-tariff barriers can be imposed for a variety of reasons, ranging from the narrowly trade avoiding to genuine environmental, health or social concerns.

While there is wide agreement that NTBs to trade are important, data on them are even more difficult to come by than data on aggregate tariff rates.

Direct data on NTBs are few and far between and usually require the use of specialised databases. Indirect approaches may be more fruitful. Commonly used measures to reflect average levels of NTBs are NTB 'coverage ratios' defined as the percentage of tariff lines subject to a NTB. Such a ratio can again be computed in an unweighted or weighted, e.g. trade-weighted, way. Coverage ratios can vary significantly, depending on what measures are included in the definition of NTBs (most notably whether antidumping measures are included or not – including them can raise the coverage ratio by a multiple) and whether unweighted or weighted measures are used (as NTBs are quite common in important tradable sectors, the weighted measure is usually much larger than the unweighted measure). Anderson and van Wincoop (2004) report a coverage ratio of 1.5% for the US in 1999 based on a narrow measure of NTBs, while the ratio rises to 27% if antidumping measures were included. NTBs tend to be concentrated in certain sectors, such as food, agriculture, textiles/apparel and some other areas of manufacturing.

Tariffs and NTBs can be reduced multilaterally, bilaterally or unilaterally

6.2.3. Different Routes to Trade Liberalisation

Different routes exist to achieve reductions in man-made barriers: Countries can decide unilaterally to reduce their trade barriers. Negotiations can take place in a multilateral setting, such as those that take place under the umbrella of the World Trade Organisation where all WTO members participate and need to come to some type of agreement, or those deemed plurilateral, i.e. involving more than two but not a large number of countries, or those called preferential of regional trade agreements. In addition, two countries or clubs of countries can decide to negotiate reductions in trade barriers bilaterally. There are also special agreements which give preferential treatment to the least developed countries.

The objectives of trade agreements can vary quite widely. At the very narrow level, they are supposed to directly promote trade between the counterparties by reducing particular trade barriers, sometimes only in a very limited range of products or industries. But the benefits of trade agreements often go beyond the narrowly trade-promoting. Trade agreements are often a catalyst for investment, both domestic investment and foreign direct investment. For instance, preferential access to the developed markets in the US and the EU for industries in the least developed economies was meant to spur investment by companies in those same countries, from AEs or other EMs as well as investment in infrastructure that would be needed to transport the resulting goods to the respective export markets. Last but not least, many regional trade agreements pursue even broader goals, such as broader and deeper economic cooperation and integration, or political goals.

Given the numerous benefits that free trade may generate, it may appear surprising how difficult it is in practice to reach agreements on further liberalisation, even leaving aside that quantitative estimates of the economic effects of liberalising trade differ widely. Classical economic theories, including the Ricardian theory of trade, showed that in principle, at least under some generous assumptions, all counterparties in a trade agreement could benefit from free trade.

However, even those same theories already showed that free trade would not be beneficial for all agents *within* an economy, i.e. there are still winners and losers from trade agreement. And while the economic calculus may suggest an overall benefit to the economy, at best imperfect mechanisms for compensating the losers mean that even the economic argument for liberalising trade may not be as straightforward. More importantly, economic reasoning becomes only one of a number of factors, with political considerations often the more dominant one.

In general, trade agreements thus run up against a basic tension. By definition, each country in the world has a comparative advantage compared to another country in some activity or sector. For instance, assume that there are only two activities, agriculture and services provision, and two countries, Country X and Country Y. Country X, an advanced economy, has a comparative advantage in providing services. The services sector thus has an interest in lobbying for opening up trade, while the sector with a comparative disadvantage, agriculture, is likely to impede liberalisation. By symmetry, in Country Y, which has a comparative advantage in agriculture, the agricultural sector has an interest in opening up trade, while the services sector will lobby in favour of protectionism. We can thus often be left in a situation where Country X favours (and lobbies for) taking measures that liberalise trade in services while resisting further opening related to the agricultural sector, while the reverse is true for Country Y, illustrating the difficulty of reaching agreements once political constraints are taken into account.

Successful conclusion of free trade agreements thus often depends on a mixture of political leadership, appropriate mechanisms to compensate losers, and a benign coincidence that the vested interests that are relatively more influential are those that favour liberalisation. But these dynamics also highlight that it is not necessarily the economically most sensible reductions in trade barriers that result from these bargaining processes.

6.2.3.1. Multilateralism: Stumbling or Limping Along?

The World Trade Organisation (and its predecessor) were successful in bringing down tariffs, but have reached a (temporary?) impasse over further multilateral liberalisation

The likely most consequential trade agreements that have been signed since World War II have been the multilateral negotiations under the auspices of the WTO, which was created in 1995, and its predecessor organisation, the General Agreement on Tariffs and Trade (GATT) which was founded in 1948. GATT and WTO 'rounds', as the multi-year processes and negotiations on multilateral trade liberalisation tend to be called, were concentrated on reducing tariffs in the early years and were rather successful at bringing down average tariffs, notably in advanced economies. Later rounds included agreements on anti-dumping measures, offering preferential trade treatment to aid development in poor countries, non-tariff barriers and dispute settlement. Whereas the GATT mainly dealt with trade in goods, the WTO and its agreements now cover trade in services, and in traded inventions, creations and designs (intellectual property) – for an overview of the key events in WTO history, see Figure 50.

Figure 50. WTO – Key Events, 1947 – 2011

Date	Content
1947	23 countries sign the General Agreement on Tariffs and Trade (GATT) in Geneva, Switzerland, to boost trade liberalisation (agreement comes into force in 1948).
1949	Second GATT round of trade talks held at Annecy, France, where countries exchanged some 5,000 tariff concessions.
1950	Third GATT round held in Torquay, England, where countries exchanged some 8,700 tariff concessions, cutting the 1948 tariff levels by 25%.
1955-56	The next trade round completed in May 1956, resulting in \$2.5bn in tariff reductions.
1960-62	Fifth GATT round named in honour of US Under Secretary of State Douglas Dillon who proposed the negotiations. It yielded tariff concessions worth \$4.9bn of world trade and involved negotiations related to the creation of the European Economic Community.
1964-67	The Kennedy Round, named in honour of the late US president, achieves tariff cuts worth \$40bn of world trade.
1973-79	The seventh round, launched in Tokyo, Japan, sees GATT reach agreement to start reducing not only tariffs but non-tariff trade barriers as well, such as subsidies and import licensing. Tariff reductions worth more than \$300bn achieved.
1986-93	GATT trade ministers launch the Uruguay Round in Punta Del Este, Uruguay, the most ambitious and far-reaching trade round so far. The round extended the range of trade negotiations, leading to major reductions in agricultural subsidies, an agreement to allow full access for textiles and clothing from developing countries, and an extension of intellectual property rights.
1994	Trade ministers meet for the final time under GATT auspices in Marrakesh, Morocco to establish the World Trade Organisation (WTO) and complete the Uruguay Round.
1995	The World Trade Organisation is created in Geneva.
2001	WTO members meet in Doha, Qatar, in November to agree on the Doha Development Agenda, the ninth trade round which is intended to open negotiations on opening markets to agricultural, manufactured goods and services. China joins the WTO. Taiwan admitted weeks later.
2001-08	Trade talks break down repeatedly due to insurmountable differences over agriculture and other issues.
2011	Former WTO director-general Peter Sutherland joins British Prime Minister David Cameron and German Chancellor Angela Merkel in demanding the conclusion of the Doha talks by the end of 2011, but progress remains uncertain.

Source: Citi Investment Research and Analysis

The WTO operates on the basis of two principles: Non-discrimination and reciprocity. Non-discrimination is mostly about applying the so-called 'Most Favoured Nation' (MFN) rule which requires that a WTO member has to extend to all WTO members treatment it has offered one WTO member. Reciprocity refers to the ideal that each counterparty makes appropriate concessions such that the gains from trade will be more or less balanced across countries. WTO agreements are notoriously difficult to achieve. Most decisions – outside of dispute settlement proceedings, of course – are reached on a consensual basis. This also applies to the question of membership which is one of the reasons why WTO membership application processes can take a very long time. The WTO currently has 153 members which include, since 2001, China and Taiwan, but exclude Russia even though it has negotiated WTO accession since 1993.

The current WTO round, the "Doha Development Agenda", was launched in 2001 with a rather ambitious agenda. Its work programme covers about 20 areas of trade, among them agriculture, non-agriculture market access, services, intellectual property, trade and development. However, progress has been painfully slow, with repeated breakdowns of talks, including in 2003 and 2008. The major areas of contention include, unsurprisingly, agriculture, and in particular the 'special safeguard mechanism' (SSM, a measure designed to protect poor farmers by allowing countries to impose a special tariff on certain agricultural goods in the event of an import surge or fall in world prices), the level of agricultural subsidies in the EU, other European countries like Norway and Switzerland, the US and Japan, and the question of market access for agriculture in both AEs and EMs.

After years of delays, expectations for near-term progress in the Doha round are low and many have written off this trade round completely. There has certainly been no shortage of public officials and academics urging rapid progress and at times pledging to make the necessary concessions, but so far even agreement to hold explicit multilateral talks has eluded the member countries.¹³

The role of the WTO over time has also shifted to some extent. In particular, agreements on tariff levels have diminished in importance. For example, the WTO records so-called 'bound' tariff rates which are recorded by the WTO in Geneva and difficult to increase. In practice, many tariff rates actually applied are lower, often much lower, than the 'bound rates' implying that negotiated reductions in bound rates often do not translate into any effective trade liberalisation. By contrast, since actual tariff rates are below bound rates, countries sometimes raise their applied tariff rates without changing the bound, as has happened, though at a rather modest scale, in a number of countries recently. The dispute settlement process at the WTO, on the other hand, has taken on more importance over time, as more countries, notably China, have joined. An efficient and effective dispute settlement process, including speedy and impartial rulings and effective enforcement mechanisms, is necessary to ensure that notional commitments are implemented and increase the future prospects for further liberalisation.

6.2.3.2. Preferential and Regional Trade Agreements

As multilateral efforts have languished, regional trade agreements have flourished, but both their scope and their merits can vary widely

As multilateral trade negotiations have lost momentum and as their complexity has grown, attention has refocused on regional trade agreements (RTAs), or more generally preferential trade agreements (PTAs). The number of PTAs has grown more or less in tandem with multilateral trade liberalisation, including waves of increase in the mid-1800s, the 1950s and '60s and between the early '80s and mid-'90s. According to the WTO (2011), there are 300 active PTAs currently, a fourfold increase over the past two decades. Figure 51 lists some major regional (but not bilateral) trade agreements along with their main signatories and date of implementation.

PTAs are noted as an exception to the general principle of non-discrimination that is supposed to prevail under WTO agreements. For the exception to be valid under WTO rules, PTAs regarding trade in goods are required to eliminate tariffs and other trade-restrictive regulations of commerce on "substantially all the trade" in principle within a 10-year period and prohibited from raising tariffs and other trade barriers against countries outside the agreement. But the definition of 'substantially all trade' was never clarified. In practice, most PTAs go into effect without an explicit WTO stamp of approval and many of them violate the spirit of 'substantially all trade', as entire sectors are excluded from the agreements, e.g. agriculture and any EU PTAs.

The coverage of PTAs can vary quite widely. Many PTAs under discussion reflect rather far-reaching ambitions, but the number of actual 'deep' PTAs is rather small. Among those, the European Union stands out with its goal of establishing a single market not only for goods, but also for financial services, investment and labour, and having made significant progress towards this goal. Many other agreements have hardly matured beyond the stage of a free trade area, a customs union or, sometimes, a letter of intent. Interestingly, in many PTAs those areas which are still subject to fairly high levels of protectionism under WTO rules, for example, agricultural and food items, and labour-intensive manufacturing, such as footwear and textiles, are also excluded from the PTA agreements.

¹³ See e.g. Baldwin and Evenett (2011) and Bhagwati (2011), "The Wrong Way to Free Trade", New York Times, 24 July 2011.
http://www.nytimes.com/2011/07/25/opinion/25bhagwati.html?_r=1

Figure 51. Selected Countries – Regional Trade Agreements, 1958 to 2011

Regional Trade Agreement	Coverage	Countries	Date of entry into force
Andean Community (CAN)	Goods	Bolivia, Colombia, Ecuador, Peru	1988
ASEAN Free Trade Area (AFTA)	Goods	Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, Vietnam	1992
Asia Pacific Trade Agreement (APTA)	Goods	Bangladesh, China, India, Korea, Laos, Sri Lanka	1976
Central American Common Market (CACM)	Goods	Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua	1961
Caribbean Community and Common Market (CARICOM)	Goods & Services	Antigua and Barbuda, Bahamas, Barbados, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Montserrat, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago	1973
Central European Free Trade Agreement (CEFTA) 2006	Goods	Albania, Bosnia and Herzegovina, Croatia, Macedonia, Moldova, Montenegro, Serbia, UNMIK/Kosovo	2007
Common Economic Zone (CEZ)	Goods	Belarus, Kazakhstan, Russia, Ukraine	2004
Common Market for Eastern and Southern Africa (COMESA)	Goods	Burundi, Comoros, DR Congo, Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libyan Arab Jamahiriya, Madagascar, Malawi, Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia, Zimbabwe	1994
Commonwealth of Independent States (CIS)	Goods	Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyz Republic, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan	1994
Dominican Republic - Central America - United States Free Trade Agreement (CAFTA-DR)	Goods & Services	Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua, United States	2006
East African Community (EAC)	Goods	Burundi, Kenya, Rwanda, Tanzania, Uganda	2000
EC Treaty	Goods & Services	Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom	1958
Economic and Monetary Community of Central Africa (CEMAC)	Goods	Cameroon, Central African Republic, Chad, Congo, Equatorial Guinea, Gabon	1999
Economic Cooperation Organization (ECO)	Goods	Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyz Republic, Pakistan, Tajikistan, Turkey, Turkmenistan, Uzbekistan	1992
European Economic Area (EEA)	Services	Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, United Kingdom	1994
European Free Trade Association (EFTA)	Goods & Services	Iceland, Liechtenstein, Norway, Switzerland	1960
Gulf Cooperation Council (GCC)	Goods	Bahrain, Saudi Arabia, Kuwait, Oman, Qatar, United Arab Emirates	2003
Latin American Integration Association (LAIA)	Goods	Argentina, Venezuela, Bolivia, Brazil, Chile, Colombia, Cuba, Ecuador, Mexico, Paraguay, Peru, Uruguay	1981
North American Free Trade Agreement (NAFTA)	Goods & Services	Canada, Mexico, United States	1994
Pan-Arab Free Trade Area (PAFTA)	Goods	Algeria, Bahrain, Egypt, Iraq, Jordan, Saudi Arabia, Kuwait, Lebanon, Libyan Arab Jamahiriya, Morocco, Oman, Qatar, Sudan, Syria, The Palestinian Authority of the West Bank and the Gaza Strip, Tunisia, United Arab Emirates	1998
South Asian Free Trade Agreement (SAFTA)	Goods	Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka	2006
South Asian Preferential Trade Arrangement (SAPTA)	Goods	Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka	1995
South Pacific Regional Trade and Economic Cooperation Agreement (SPARTECA)	Goods	Australia, Cook Islands, Fiji, Kiribati, Marshall Islands, Micronesia, Federated States of, Nauru, New Zealand, Niue, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu	1981
Southern African Development Community (SADC)	Goods	Angola, Botswana, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe	2000
Southern Common Market (MERCOSUR)	Goods & Services	Argentina, Brazil, Paraguay, Uruguay	1991
West African Economic and Monetary Union (WAEMU)	Goods	Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, Togo	2000

Source: Citi Investment Research and Analysis

6.2.4. Outlook for Further Trade Liberalisation

Further trade liberalisation will likely be driven by regional efforts and proceed very gradually, but we do not expect a major return to protectionism

Post-crisis years, especially when these are years characterised by hesitant or halting recoveries, have historically tended to be poor years to make progress on the trade liberalisation front. On the contrary, the 1870s recession and the interwar period were both marred by large reversals of prior trade liberalisation which substantially reduced levels of trade globally and sometimes led to the creation of inward-looking, 'defensive' trade blocs.

We expect little substantial progress in further bringing down trade barriers over the next few years, but we also do not expect a significant increase in trade barriers. Prospects for a near-term conclusion of the WTO Doha Round are very slim. But the prospects for smaller, bilateral or regional trade agreements to be concluded are much better. As an example, free trade agreements of the US with South Korea, Colombia and Panama are seen as one of few areas where bipartisan agreement can be found in the US currently and these agreements are likely to be implemented in the very near future.¹⁴ In fact, Figure 52 indicates that many substantial PTAs and RTAs are currently being negotiated, in particular in Asia where multiple such initiatives overlap, and we see a fairly high chance of progress at least on the regional trade liberalisation front. We also consider it unlikely that these regional liberalisation efforts will spur an isolationist trend between regions. We therefore assume that policy barriers to trade will be further reduced gradually over the next few decades, both in AEs and in EMs.

Figure 52. Preferential Trade Agreements in Progress

Region	Name	Countries	Scope	Status and Prospects
Asia	FTAAP (Free Trade Area of the Asia Pacific)	Australia, Brunei, Canada, Chile, China, Indonesia, Japan, Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Taiwan, Thailand, United States and Vietnam	Transform the current APEC (Asia Pacific Economic Community) into a full-fledged FTA for both trade and investment.	Intentions agreed in 2006, possible pathways agreed in late 2009 and reiterated in 2010. Supposed to build on other initiatives such as ASEAN+3, ASEAN+6 and TPP
	AFTA (Asean Free Trade Agreement)/ ASEAN Economic Community	Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam	FTA for goods, services, investment and capital flows and take measures to integrate product and capital markets.	ASEAN Economic Community Blueprint was adopted in 2007. Tariffs between members have been lowered substantially and are set to fall to near zero by 2015/17
	TPP (Trans-Pacific Partnership)	Australia, Brunei, Chile, New Zealand, Singapore, Malaysia, Peru, US & Vietnam. Canada, Japan, Korea, Philippines and Taiwan may join	Creation of a FTA and further agreements, including on rules of origin, trade remedies, sanitary measures, technical barriers to trade, trade in services, intellectual property, government procurement and competition policy.	Target for conclusion of negotiations is late 2011, but slippage likely
	CEPEA (Comprehensive Economic Partnership for East Asia)	Australia, Brunei, Cambodia, China, India, Indonesia, Japan, Korea, Laos, Malaysia, Myanmar, New Zealand, Philippines, Singapore, Thailand, Vietnam	Japan-led initiative for a free trade agreement, relationship with other liberalisation initiatives in the region unclear.	Proposals are still being discussed in working groups, near-term agreement unlikely
CIS	'Single Economic Space'	Belarus, Kazakhstan and Russia	Customs union (harmonisation of most external tariffs and import duties) with intention to deepen to harmonisation and coordination of other economic policies.	Target of 2012 for creating 'single economic space' unlikely to be met
Africa	SADC (Southern African Development Community)	South Africa, Namibia, Botswana, Lesotho, Swaziland, Malawi, Mauritius, Mozambique, Tanzania, Zambia, Zimbabwe, Angola and Seychelles	High level of integration, including a FTA, a common market for goods, services and investment, and a monetary union. Integration with other African regional agreements, including the East African Community (EAC) and the Common Market for Eastern and Southern Africa (COMESA).	Tariff reduction proceeded more or less at the intended pace, but goals of common market (by 2015) and monetary union (by 2016-18) likely to be at least delayed substantially

Selected bilateral Preferential Trade Agreements under negotiation

Malaysia-EU, Colombia-EU, Peru-EU, Canada-EU, India-EU, Singapore-EU, South Africa-EU, MERCOSUR-Jordan, US-Korea, US-Colombia, US-Panama, Mexico-Peru, Mexico-Brazil, Mexico-Singapore, Colombia-Panama, Chile-Korea, Peru-Korea, Turkey-Korea, Australia-Korea, New Zealand-Korea, Canada-Korea, GCC-Korea, Mexico-Korea, GCC-Turkey, Ukraine-Turkey, MERCOSUR-Turkey, Libya-Turkey, Cameroon-Turkey, DRC-Turkey, Malaysia-Turkey, Ecuador-Turkey, Colombia-Turkey, China-Taiwan, Singapore-Taiwan, ASEAN-Australia/New Zealand, ASEAN-India, GCC-China, Australia-China, Iceland-China, Norway-China, SACU-China, Chile-Thailand, ASEAN-China

Selected bilateral Preferential Trade Agreements under consideration

China-Japan-Korea, Korea-MERCOSUR, Korea-Israel, Korea-Vietnam, Korea-Mongolia, Korea-Indonesia, Korea-Malaysia, Korea-Russia, Algeria-Turkey, Mexico-Turkey, SACU-Turkey, ASEAN-Turkey, Indonesia-Turkey, Peru-Turkey, India-Turkey, Canada-Turkey, GCC-Jordan, Taiwan-EU, Philippines-Taiwan, India-Taiwan, US-Taiwan, Japan-Taiwan, Indonesia-EFTA, China-India, China-Switzerland

Source: Citi Investment Research and Analysis

¹⁴ The US Congress approved these free trade agreements on October 12, 2011, the first ones since 1997.

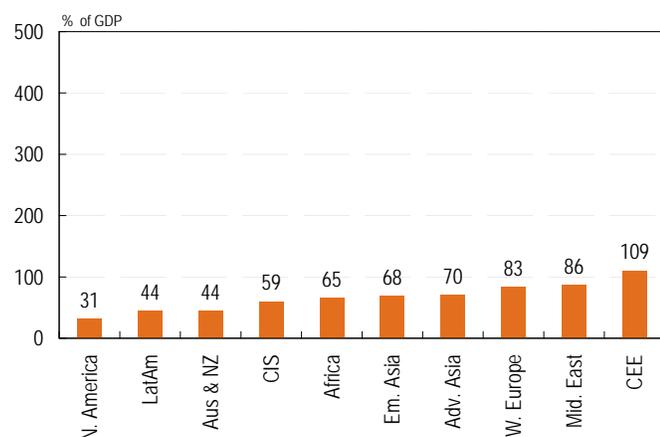
6.3. Trade Openness

Trade openness (measured by the sum of imports and exports divided by GDP) varies widely across countries, and not just with size

There are many different measures of trade openness. One commonly used measure is the ratio of total trade (defined as the sum of imports and exports of goods and services of a country or region) to GDP. This measure is clearly an outcome measure rather than a choice variable, but it nevertheless gives a useful snapshot of the degree to which an economy is directly affected by external trade factors. Trade openness as given by this measure varies widely by country and region (Figure 53 and Figure 54). This measure of trade openness is clearly negatively related to country size (for the world viewed as a single entity, it ought to be zero).

But even if we control for country size (say, population, GDP or landmass), significant variation remains. The relatively small size and export orientation of many Western European countries, the CEE and countries in the Middle East explain their high openness values. In Advanced Asia, it is the entrepot nature of Hong Kong and Singapore that we project to continue as trade in EM Asia continues to expand rapidly, driving growth in trade openness in Advanced Asia to very high levels (Figure 53 and Figure 54).

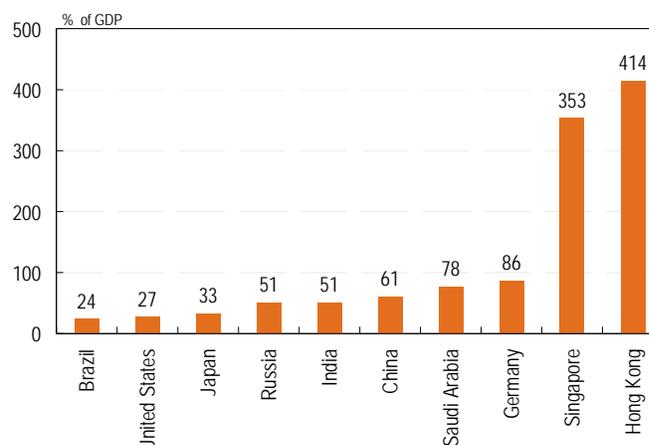
Figure 53. Selected Regions – Trade Openness, 2010



Note: Sum of imports and exports of goods and services as % of GDP.

Source: IMF DOTS, WTO and Citi Investment Research and Analysis

Figure 54. Selected Countries – Trade Openness, 2010



Note: Sum of imports and exports of goods and services as % of GDP.

Source: IMF DOTS, WTO and Citi Investment Research and Analysis

Our long-term forecasts in section 3 highlighted that we expect growth in world trade to continue, on average, to outpace the growth of world output. This implies that we expect this measure of trade openness to continue to increase, on average. However, in a number of fast-growing countries, trade may in fact grow less strongly than GDP, as domestic markets develop and rebalancing towards domestic markets takes place.

7. The Substance of Trade

7.1. Trading What?

Goods trade accounts for roughly 80% of world trade and manufactures are the dominant category within trade in goods

In this study, we do not provide commodity-level or industry-level forecasts. The following section, however, does at least break up our forecasts into trade in goods and trade in commercial services. In this section, we show some present and historical evidence on the types of products traded.

Roughly 80% of total world trade is trade in goods. Figure 55 gives an overview of the main components of goods trade. Several points are worth noting.

First, trade in manufactures is the dominant type of trade in goods, accounting for almost 70% of all trade in goods in 2009, the last year for which these data were available. Among manufactures, chemicals, office and telecom equipment and automotive products are the largest product categories, accounting for a little under half of all manufactures trade and roughly 30% of total goods trade. Fuel and mining products account for roughly 20% of goods trade, while agriculture accounts for 10%.

Figure 55. Selected Regions — Shares of Selected Product Categories in Total Exports and Imports of Goods (in %), 2009

	Exports										Imports	
	Agricultural Products		Fuels + Mining Products		Manufactures						Fuels	Manufactures
	Total	Fuels	Total	Iron + Steel	Chemicals	Office and Telecom Equipment	Automotive Products	Textiles	Clothing			
World	9.6	18.6	14.8	68.6	2.7	11.9	10.9	7.0	1.7	2.6	14.8	68.6
N America	11.2	13.6	9.8	70.5	1.3	12.3	10.8	8.9	0.8	0.6	15.1	73.0
Latin America	30.5	38.9	23.9	27.4	2.7	6.3	1.1	3.3	0.7	2.2	16.5	68.8
Europe	10.5	9.6	6.9	77.3	2.9	17.2	6.7	9.4	1.4	2.2	12.3	70.9
CIS	8.7	62.9	56.3	24.1	8.1	5.9	0.4	0.8	0.4	0.3	10.1	72.6
Africa	10.2	64.0	55.3	19.2	1.8	3.7	0.6	1.4	0.6	2.5	11.5	69.5
Middle East	2.6	68.0	66.8	27.3	0.7	6.3	2.9	2.7	1.1	0.8	7.2	77.0
Asia	6.3	10.8	7.4	79.7	2.7	7.7	22.0	5.3	3.1	4.7	19.6	62.8

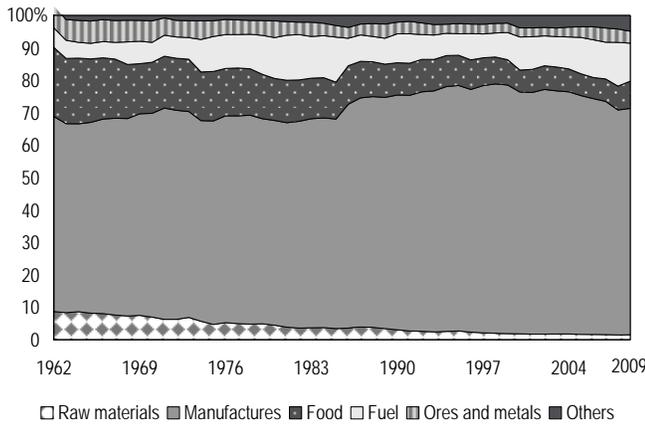
Source: WTO and Citi Investment Research and Analysis

Among the categories of trade in services, exports of computer, communication and related services accounted for almost 45% of the total in 2009, according to the WTO. Travel services (26% of total world commercial service exports), transport services (21%) and insurance and financial services (8%) are the other major product categories.

Regional variation for the composition of exports is large – in Europe and Asia, manufactures account for more than 80% of exports, while they account for less than 30% in Latin America, the CIS, Africa and the Middle East

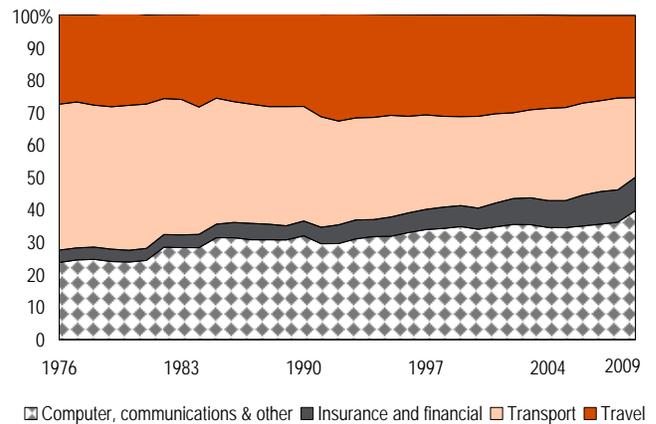
Second, regional variation in the type of goods exported is substantial. In the CIS, Africa and the Middle East, fuel products alone accounted for over half of total exports of goods in 2009. In Europe and Asia on the other hand, manufactures account for almost 80% of goods exports, while they account for less than 30% in Latin America, the CIS, Africa and the Middle East. At the regional level, agriculture has ceased to be a major export category everywhere but in Latin America, where agricultural exports still accounted for over 30% of total goods exports, while in most other regions agricultural exports were at most 10% of total goods exports.

Figure 56. World – Composition of Goods Exports, 1962 – 2009



Source: World Bank WDI and CIRA

Figure 57. World – Composition of Services Exports, 1976 – 2009



Source: World Bank WDI and CIRA

Commodities and agriculture have recently halted the decades-long decline in their relative shares of world trade

Third, there are significant trends over time (Figure 56 and Figure 57). The share of commodities in total trade fell for decades, but this decline has recently halted and even reversed, due to the rise in commodity-hungry EM nations, notably in Asia. This trend of high demand and high commodity prices should continue, on average, over the near and near-medium term. However, as these economies develop, the commodity content of their incremental output growth should moderate, and we would expect the total share of commodity trade to remain at rather moderate levels.

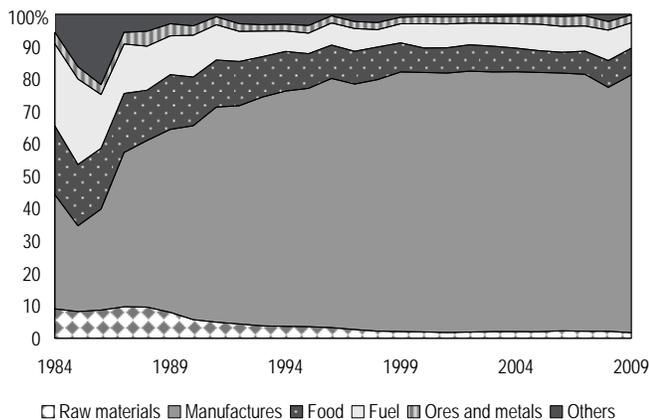
The fall in the share of agriculture in world trade has been almost uninterrupted and has only recently started to slow down. We expect this declining trend to reverse in the near term and for agricultural trade to likely enjoy stable or mildly rising shares of total trade, due both to increases in population and to growing affluence in many of the relatively poorer parts of the world where the income elasticity of demand for food and other agricultural commodities is higher than in the richer countries.

IT and communication services and finance and insurance have grown relative to transport services

Trade in financial services has seen a spectacular increase, though from a low base, rising from a share of just 2-3% of total services exports in the late 1970s and early 1980s to 8% in 2009. The share of transport services has fallen during this period, while the share of travel services has remained relatively stable.

Regional developments in the composition of different product categories in total exports or imports can be quite different from the average or global picture. Thus, the share of manufactures increased strongly among the nations of Developing South East Asia and Pacific, a World Bank aggregate that includes China, while the share of imports of manufactures grew strongly in Europe.

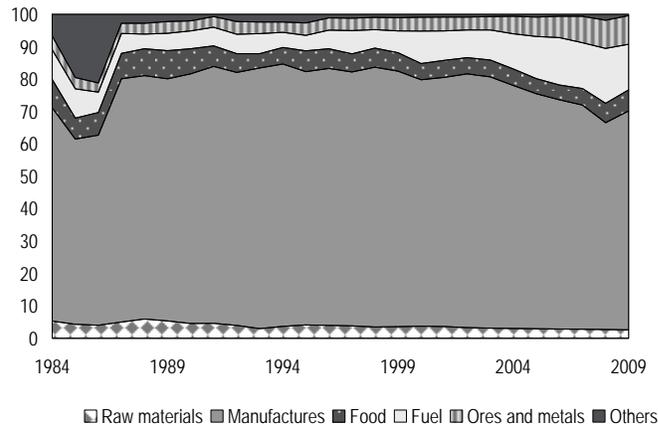
Figure 58. Developing South East Asia and Pacific – Composition of Goods Exports, 1984 – 2009



Note: Region includes American Samoa, Cambodia, China, Fiji, Indonesia, Kiribati, Lao PDR, Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tuvalu, Tonga, Vanuatu, Vietnam

Source: World Bank WDI and CIRA

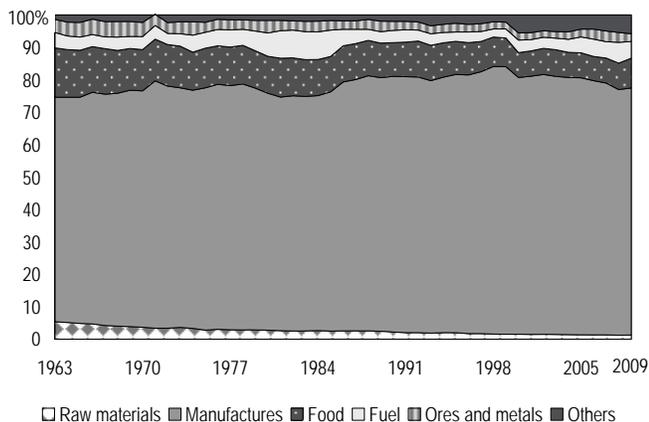
Figure 59. Developing South East Asia and Pacific – Composition of Goods Imports, 1984 – 2009



Note: Region includes American Samoa, Cambodia, China, Fiji, Indonesia, Kiribati, Lao PDR, Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tuvalu, Tonga, Vanuatu, Vietnam

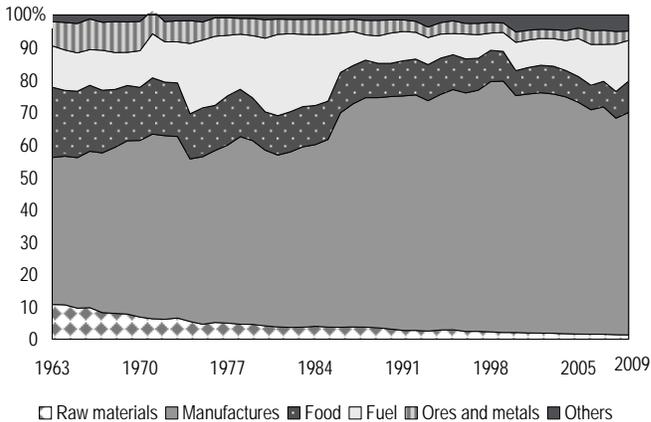
Source: World Bank WDI and CIRA

Figure 60. European Union – Composition of Goods Exports, 1963 – 2009



Source: WB WDI and CIRA

Figure 61. European Union – Composition of Goods Imports, 1963 – 2009



Source: WB WDI and CIRA

7.2. Goods and Services

Services trade accounted for 19% of total trade in 2010 – we expect that its share will rise to 24% by 2050

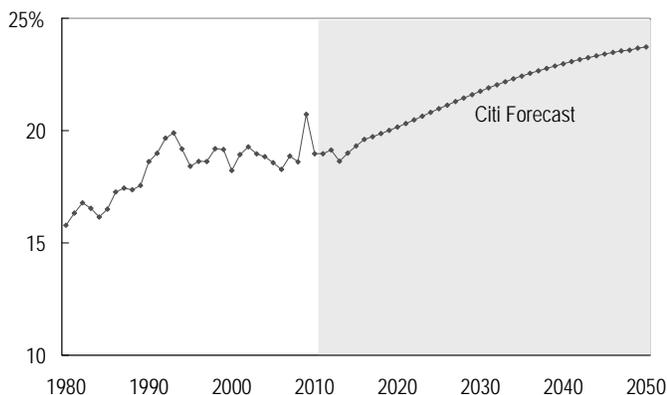
As noted in the previous subsection, we forecast trade in goods separately from trade in commercial services. The share of commercial services in total trade grew from 15.8% in 1980 to just under 20% in 1994, but has moved sideways since. This is despite the fact that the share of services in world GDP rose from 64.6% in 1994 to 70.2% in 2008, the latest year for which data are available at the global level from the World Bank.¹⁵ In our view, there are at least three reasons for this slightly surprising finding. First, the composition of countries has changed over the past few decades, and notably in the past 10 years, with EM countries – which engage in less services trade relative to goods trade compared with AEs – gaining more prominence.

¹⁵ The rise in the share of services in GDP has been much more dramatic for AEs. For example, the average share of services in GDP in the EU rose from 58% in 1980 to 75% in 2009. The average for the ‘High income countries’ aggregate of the World Bank (which includes nearly all EU countries) rose from 59% in 1980 to 73% in 2008.

Second, services trade has been relatively less affected by the increasing globalisation and regionalisation of supply chains, though it is by no means immune to these developments. Third, the value-added component of services trade is likely higher than for goods trade, adding a measurement component (and bias) to the official statistics that can account for part of the evolution of the ratio of goods trade to services trade.

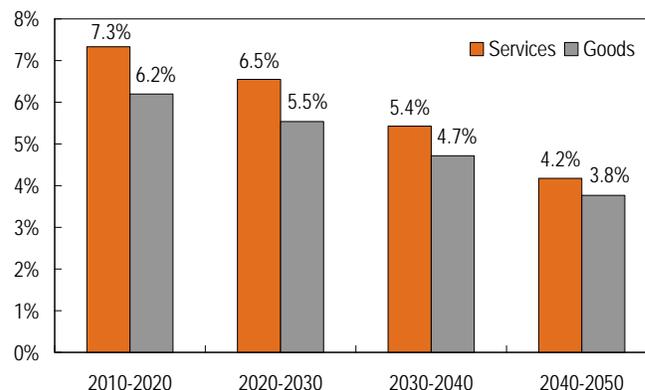
Traditional services are often cited as the quintessential ‘nontradable’ goods – despite the fact that transportation, shipping and trade are themselves traditional services. With the ascent of financial services and information and communication technology, any association of services with non-tradability is clearly no longer appropriate – if indeed it ever was. We expect services trade to grow more rapidly than goods trade (Figure 63). We therefore expect the share of services in total trade to rise over the next four decades, but as some of the factors pointed out above will likely continue to be present, we expect the increase in the share of services to be relatively modest, increasing from just under 19% of total trade in 2010 to 22% in 2030 and 24% in 2050.

Figure 62. World – Share of Services Trade in Total Goods and Services Trade (in %), 1980–2050F



Source: Citi Investment Research and Analysis

Figure 63. World Trade Growth in Goods and Services (%pa), 2010 – 2050



Note: Citi forecasts

Source: Citi Investment Research and Analysis

The US is the world's largest exporter of services, with the UK at number three, ahead of China

Differences remain at the regional level (Figure 65 and Figure 66), but are more muted. For Western Europe, Advanced Asia and North America services account for a relatively high share of both imports and exports, while most EMs have lower services shares. We expect the increase in the share of services in total trade to be driven both by a continued increase in the share of services in GDP everywhere and by an accelerated shift towards services – in trade and the economy as a whole – in EMs. Figure 67 and Figure 68 show that countries in EM Asia have actually seen a decrease in the share of services in both imports and exports over the past 15 years, unlike AEs which experienced steadily growing shares of services in total trade.

Trade in services is quite different from trade in goods in many respects. First, it is not obviously impacted by measures of transport costs though it may be related to distance in more elusive ways. Second, some countries are much more important players currently in services trade than they are in goods trade. For example, while China is the world's largest exporter of goods, the US is the world's largest exporter of commercial services, with a world market share of more than twice the runner-up (14.1% for the US vs 6.3% for Germany). The US remains the world's largest importer of both goods and services. The UK, Spain and India also come higher in the ranking of the largest exporters of services, entering at 3rd (UK), 7th (Spain) and 10th (India), respectively.

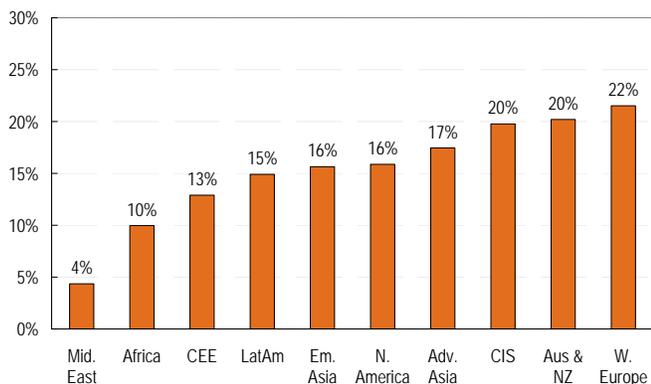
China and Japan, on the other hand, which are currently the world's largest and fourth largest exporters of goods, only occupy ranks 4 and 6 for services exports. The share of services in total trade has fallen in Asia, but risen in AEs over the past 15 years.

Figure 64. Top Importers and Exporters of Goods and Services, 2010

Goods						Services									
Rank	Country	Imports, bn USD	% of world	Rank	Country	Exports, bn USD	% of world	Rank	Country	Imports, bn USD	% of world	Rank	Country	Exports, bn USD	% of world
1	USA	1,968	12.8%	1	China	1,578	10.4%	1	USA	358	10.2%	1	USA	515	14.1%
2	China	1,395	9.1%	2	USA	1,278	8.4%	2	Germany	256	7.3%	2	Germany	230	6.3%
3	Germany	1,067	6.9%	3	Germany	1,269	8.3%	3	China	192	5.5%	3	UK	227	6.2%
4	Japan	693	4.5%	4	Japan	770	5.1%	4	UK	156	4.5%	4	China	170	4.6%
5	France	606	3.9%	5	Netherlands	572	3.8%	5	Japan	155	4.4%	5	France	140	3.8%
6	UK	558	3.6%	6	France	521	3.4%	6	France	126	3.6%	6	Japan	138	3.8%
7	Netherlands	517	3.4%	7	Korea	466	3.1%	7	India	117	3.3%	7	Spain	121	3.3%
8	Italy	484	3.1%	8	Italy	448	2.9%	8	Netherlands	109	3.1%	8	Singapore	112	3.0%
9	Hong Kong	442	2.9%	9	Belgium	411	2.7%	9	Italy	108	3.1%	9	Netherlands	111	3.0%
10	Korea	425	2.8%	10	UK	405	2.7%	10	Ireland	106	3.0%	10	India	110	3.0%

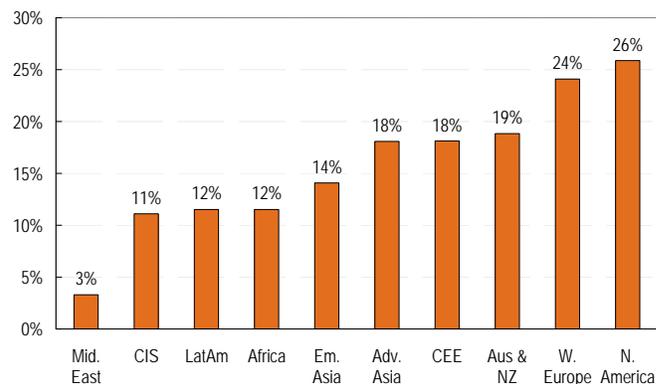
Source: WTO and CIRA

Figure 65. Share of Services in Region's Imports (%), 2010



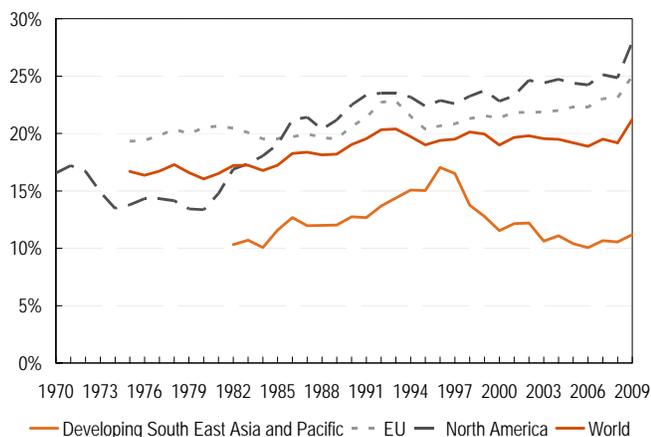
Source: WTO and CIRA

Figure 66. Share of Services in Region's Exports (%), 2010



Source: WTO and CIRA

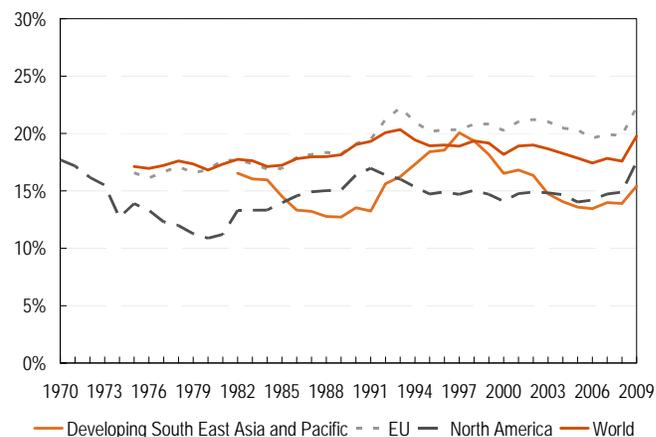
Figure 67. Selected Regions – Share of Services in Total Exports (%), 1970 – 2009



Note: Developing South East Asia and Pacific includes American Samoa, Cambodia, China, Fiji, Indonesia, Kiribati, Lao PDR, Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tuvalu, Tonga, Vanuatu, Vietnam

Source: World Bank WDI and CIRA

Figure 68. Selected Regions – Share of Services in Total Imports (%), 1970 – 2009



Note: Developing South East Asia and Pacific includes American Samoa, Cambodia, China, Fiji, Indonesia, Kiribati, Lao PDR, Malaysia, Marshall Islands, Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tuvalu, Tonga, Vanuatu, Vietnam

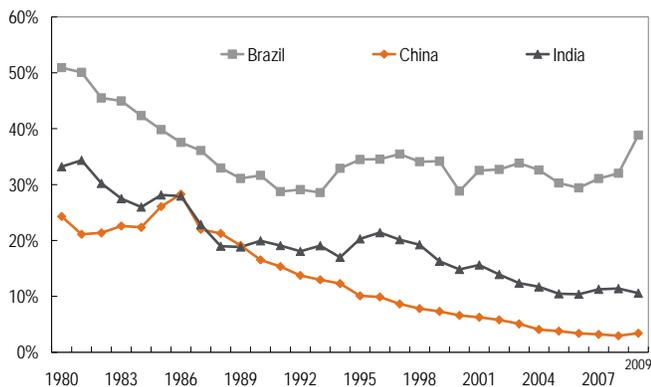
Source: World Bank WDI and CIRA

7.3. Trading Up?

The composition of trade is likely to change substantially:

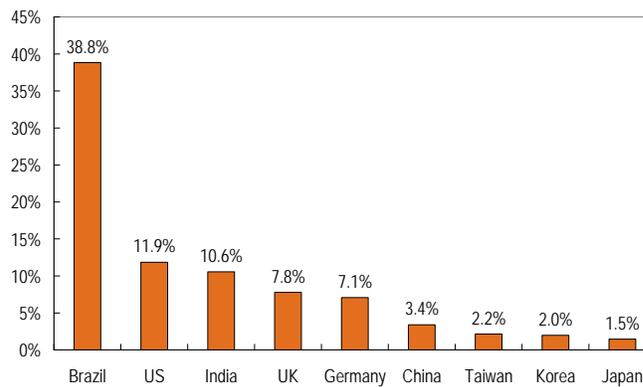
AEs tend to export more goods with a relatively high technology content than today's EMs, which have a larger presence in low- and medium-technology sectors and commodities as indicated in Figure 55. As noted above, we do not forecast the future content of trade by commodity. However, as today's EMs grow richer, we do foresee a number of changes in the composition of both imports and exports of EMs. As EMs industrialise and grow richer, the share of agriculture in total trade tends to fall, a process that has long begun, but may have further to go, notably in Latin America (Figure 69 and Figure 70).

Figure 69. Selected Economies – Exports of Agricultural Goods (% of Total Exports), 1980 – 2009



Source: WTO and Citi Investment Research and Analysis

Figure 70. Selected Economies – Exports of Agricultural Goods (% of Total Exports), 2009



Source: WTO and Citi Investment Research and Analysis

EM manufacture exporters are likely to both import and export more consumption goods and services

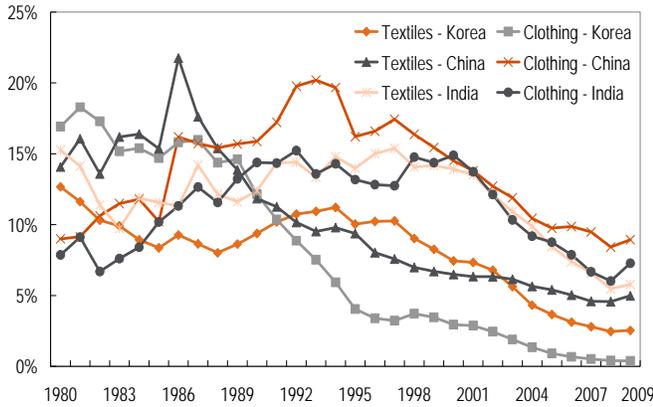
Commodity exporters will also likely diversify

EM exporters will see an increase in the technology content of their exports

But even for EMs that are already manufacturing powerhouses, such as China, the composition of exports is likely to change. In the earlier stages of industrialisation, the share of relatively unsophisticated manufacturing goods, such as textiles or clothing, is rather high, but falls quickly as economies switch towards producing and exporting more sophisticated goods. This process has long begun in China and also India, but has much further to go, as the example of Korea shows (Figure 71). Figure 72 also shows that the share of relatively unsophisticated manufacturing exports in China and India remains much higher than in Korea, Taiwan or Japan.

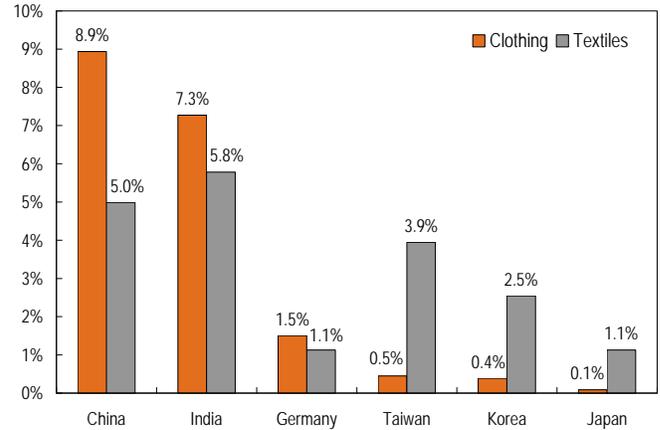
Similarly, commodity exporters are also likely to see the share of commodities in total exports shrink in the coming decades, in favour of exports of manufactures and services. On the import side, imports of services and consumption goods are likely to increase relative to imports of capital goods in the main manufacture exporters in particular.

Figure 71. Selected Countries – Exports of Textiles and Clothing (% of Total Exports), 1980 – 2009



Source: WTO and Citi Investment Research and Analysis

Figure 72. Selected Countries – Exports of Textiles and Clothing (% of Total Exports), 2009

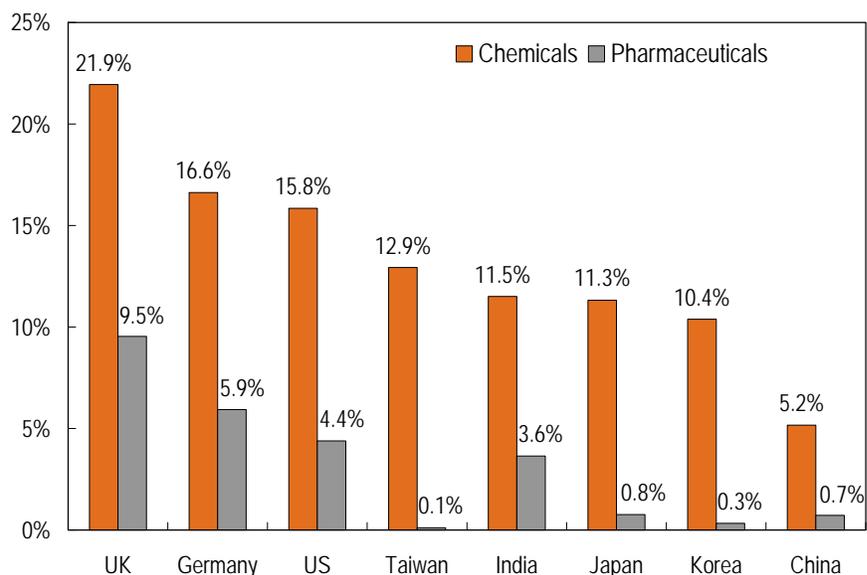


Source: WTO and Citi Investment Research and Analysis

Thus, the commodity composition of EM trade within the broad categories of goods and services will also evolve alongside changes in the composition of production and consumption in these countries and regions. EMs will gradually increase the technology content of their trade, notably exporting more goods in the high technology sectors than today (see also IMF (2011)). Figure 73 shows two other examples of industries, chemicals and pharmaceuticals, which are likely to see rather robust growth (in terms of export shares) in many EMs, given the low starting shares compared to AEs today.

One implication is that, in the aggregate (or on average), we will see a further increase in the share of high- and medium-technology trade at the expense of low-technology exports, such as textiles. This dynamic should also still be present in the AEs, with higher shares of services and a further shift towards exports with high-technology content, but the trend will be less monotonic, as the example of Japan shows. In the Japanese case, the share of high-technology exports in total exports has actually fallen in recent years (see IMF (2011)). While there are some measurement issues that could potentially explain part of this phenomenon, the outsourcing of some high-technology production to neighbouring EMs and increasing demand for low-to-medium technology exports from those same EMs have likely played a part.

Figure 73. Selected Countries – Exports of Chemicals and Pharmaceuticals (% of total exports), 1980 – 2009



Source: WTO and Citi Investment Research and Analysis

7.4. Terms of Trade and Relative Prices

Relative prices of different types of goods can fluctuate widely over time, and so can countries' terms of trade

For most of the 20th century, the prices of primary commodities fell relative to the price of manufactures – implying that the terms of trade of mostly commodity producing EMs deteriorated

In the last two decades, the price of commodities relative to manufactures has fallen, but many EMs now export primarily manufactures

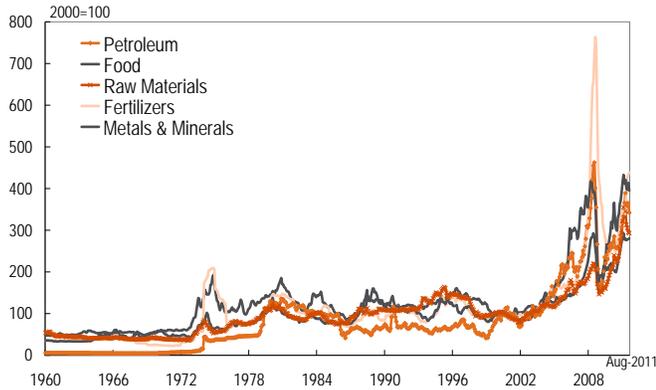
Most of our analysis in this report focuses on the evolution of trade in value terms. The evolution of trade value can be split into the evolution of trade volumes and prices. Relative prices of different types of goods can fluctuate significantly over time. These fluctuations can be cyclical or structural.

Much of the earlier work on trends in the terms of trade of particular countries, defined usually as the price of exports divided by the price of imports, or the relative price of certain types of goods focused on the structural dimension. The 'classical view' claimed that the relative price of primary commodities would go up over time, given the relative inelasticity of natural resource supply (see e.g. Diakosavvas and Scandizzo (1991)). However, this trend was mostly notable by its absence for most of the 20th century, when the price of commodities fell relative to the price of manufactured goods. The so-called Singer–Prebisch thesis (Prebisch (1950)) rationalised this behaviour of prices by the greater income elasticity of demand for manufactured goods than that for primary products, especially food, meaning that as incomes rise, consumers would demand relatively more manufactured goods than primary products.

Since most EMs exported primary commodities, while manufactured goods exports were mostly the domain of AEs, the statistical trend of increases in the price of manufactured goods relative to commodities reinforced views that EMs would not be able to even start converging with AEs in terms of income per capita and that, on the contrary, significant forces for divergence were at work in world trade.

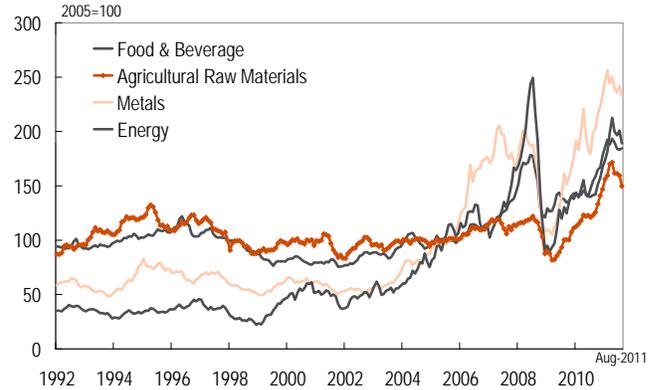
However, over the past two decades, commodity prices have increased substantially (Figure 74 and Figure 75). The trend of increases in the relative price of manufactured goods has reversed, and correspondingly the relative price of commodities has increased. One common explanation has been the increase in the supply of manufactures, driven by the liberalisation and opening to trade of a number of economies, notably China. Not only did these economies increase the supply of manufactures in world markets, they also increased the demand for primary commodities, contributing even more to the reversal of the trend in the relative prices of manufactures and commodities.

Figure 74. Commodity Prices (2000 = 100), 1960 – 2011



Source: World Bank and Citi Investment Research and Analysis

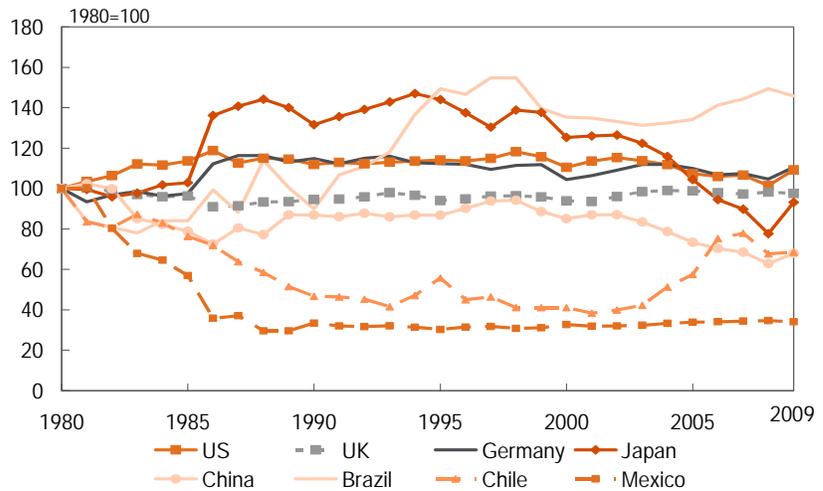
Figure 75. Commodity Prices (2005 = 100), 1992 – 2011



Source: World Bank and Citi Investment Research and Analysis

The rise of China and other EM manufacture producers in world trade has another implication: While it is no longer true that the relative price of manufactures is increasing, many EMs are actually producing those manufactures, therefore again being at the wrong end of trends in relative prices of export goods. Thus, China's terms of trade worsened by around 15% over the past 15 years (Figure 76). The terms of trade of Mexico, the country in Latin America that relies most heavily on manufacture exports relative to commodity exports, fell dramatically in the 1980s, but have remained more or less stable since then. Of course, a number of commodity-exporting EMs have benefited substantially from large terms of trade movements in their favour over the last 20-odd years, including Brazil and Chile. The terms of trade of AEs throughout this period were, on average, more stable.

Figure 76. Selected Economies – Terms of Trade (1980=100), 1980 – 2009



Note: Net barter terms of trade

Source: World Bank and Citi Investment Research and Analysis

In addition to the structural or long-term trends in terms of trade for particular classes of goods or countries, the cyclical behaviour of the terms of trade has also received more attention recently. The reason is that as economies trade more and become more open, volatility in net exports can result in substantial fluctuations in fiscal outlays and economic activity in general, and potentially contributing to the emergence of crises. In particular, economies that rely heavily on commodity exports can be quite vulnerable to fluctuations in commodity prices and the volatility of commodity prices has clearly been in evidence during the past decade.

8. Complementarities in Trade and the Presence and Emergence of Trading Hubs

8.1. Persistence and Emergence of Trading Hubs

Trade is subject to significant economies of scale, scope and agglomeration – implying substantial persistence in the presence of particular trading hubs

There are clear, increasing returns to scale, network externalities, economies of conglomeration and agglomeration in trade-related activities. These result from the existence of infrastructure, geographic location, a proximity to major production sites or consumption centres or the accumulation of human capital, skills and experience. It is therefore not surprising that there are major trading hubs on the globe and that their position tends to be relatively stable over time. There appear to be two types of trading hubs. Some trading hubs owe their position mostly to their proximity to major production or consumption centres. Others have attained their position of prominent trading hub by virtue of being efficient and reliable intermediaries. The two characteristics are clearly related, but trading hubs in the EU and in the US are closer to the first variety, while Hong Kong, Singapore and Dubai are better described by the second archetype.

A trading hub is not just characterised by the size of the trade that it is involved in, but also by the number of interconnections it has. IMF (2011) produces a ranking of the jurisdictions with the most systemically important trade sectors that takes into account both their size and their interconnectedness (see Figure 77). Figure 77 clearly highlights the persistence in the ranking of the most prominent countries in world trade, as 9 out of the 10 most systemically important countries for trade in 1999 reappeared in the ranking for 2009.

Figure 77. World – Jurisdictions with Systemically Important Trade Sectors, 1999 - 2009

Jurisdiction	1999			Jurisdiction	2009		
	Overall Rank ¹	Size Rank	Interconnectedness Rank ²		Overall Rank ¹	Size Rank	Interconnectedness Rank ²
Germany	1	2	2	China	1	1	1
United States	2	1	6	United States	2	1	3
France	3	3	2	Germany	3	3	2
Japan	4	3	5	Netherlands	4	6	3
United Kingdom	5	5	2	Japan	5	4	8
Netherlands	6	8	1	France	6	5	6
Italy	7	7	7	Italy	7	7	7
Canada	8	6	12	United Kingdom	8	8	5
China	9	9	8	Belgium	9	9	11
Belgium	10	11	9	Korea	10	10	10
Hong Kong	11	9	18	Canada	11	12	13
Korea	12	13	10	Hong Kong	12	10	20
Spain	13	14	11	Spain	13	14	11
Switzerland	14	16	13	India	14	17	9
Singapore	15	14	22	Singapore	15	13	22
Malaysia	16	16	21	Russia	16	16	21
Sweden	17	18	17	Switzerland	17	18	17
Thailand	18	22	16	Thailand	18	20	15
Denmark	19	24	15	Brazil	19	22	14
Mexico	20	12	44	Malaysia	20	20	19
India	21	25	14	Australia	21	19	29
Brazil	22	23	19	Sweden	22	25	17
Austria	23	19	29	Mexico	23	15	44
Ireland	24	20	27	Austria	24	24	25
Australia	25	21	25	Turkey	25	29	15

Note: ¹ Weighted average of the size and interconnectedness rankings using a 0.7/0.3 weight breakdown, respectively.

² Excludes links representing less than 0.1% of each jurisdiction's GDP.

Source: Citi Investment Research and Analysis

But China is on the way to becoming the world's major trading hub

Although the above-mentioned scale and scope economies, network effects and conglomeration and agglomeration externalities induce substantial inertia and path dependence in trading hub rankings over time, the list of the major trading hubs is not fixed. A vivid example of that is China, which is at the heart of a new regional and supra-regional supply chain. China (excluding Hong Kong and Taiwan), which only ranked 9th and 8th, respectively, for size and interconnectedness in 1999, ranks 1st on both indicators and overall in 2009. More surprising fluctuations within the list include the rise of Belgium from 10 to 9 and of the Netherlands from 6 to 4. Generally, the more or less seamless borders in the EU and especially in the Euro Area imply that the European countries' rather high position in the ranking is due to high interconnectedness rather than large size. Nevertheless, Germany, which topped the list in 1999, dropped down to third in 2009. Interestingly, the United States occupied the second position both in 1999 and 2009, although its interdependence rose from a rather low 6th position in 1999 (when it was 1st by size) to third place in 2009 (shared with the Netherlands).

Good transport infrastructure and efficient infrastructural services are a powerful catalyst for international trade

8.2. The Importance of Infrastructure

A number of factors play a role in the emergence of trading hubs, including proximity to major centres of production or consumption, geographical location, the quality of the legal, institutional and regulatory environment and accidents of history. The scope and quality of infrastructure is another important factor that affects the likelihood of developing into a major trading hub. Two types of infrastructure are of particular interest. Key transport infrastructure includes roads, railways, airports, seaports, etc, while infrastructural services, such as an efficient transport and logistics sector, telecommunications networks, and the services provided over such networks, are also of importance. A direct implication of poor transport infrastructure or inefficient transport services is higher direct transport costs and longer delivery times. Liamo and Venables (2001) find that a deterioration of infrastructure (defined as an average of the density of the road network, the size of the paved road network, the size of the rail network and the number of telephone main lines per person in a country) from the median to the 75th percentile of destinations raises transport cost by 12%. Hummels (2001) argues that faster transport (shifting from shipping to air and faster ships) has reduced the tax equivalent of time costs for the US from 32% to 9% over the period 1950-1998.

Figure 78. Ranking of Countries by Quality of Infrastructure

Rank	Country	Score	Rank	Country	Score
1	Hong Kong	6.77	11	Japan	5.69
2	Germany	6.43	12	Iceland	5.69
3	United Arab Emirates	6.26	13	Denmark	5.69
4	France	6.24	14	Spain	5.67
5	Singapore	6.22	15	United States	5.65
6	Switzerland	6.09	16	Taiwan	5.63
7	Netherlands	5.93	17	Finland	5.59
8	United Kingdom	5.88	18	Korea	5.59
9	Canada	5.80	19	Luxembourg	5.56
10	Sweden	5.76	20	Austria	5.56

Note: The World Economic Forum Global Competitiveness Index: Infrastructure 2010-11

Source: World Economic Forum and Citi Investment Research and Analysis

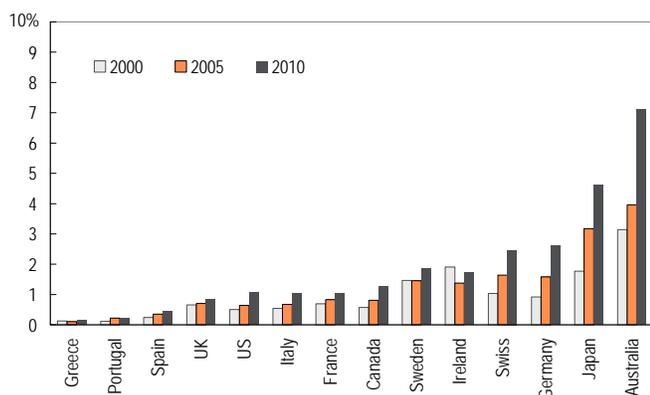
Anecdotal evidence and commentary on the poor state of physical infrastructure in the US abound. But Figure 78, which lists countries by the quality of their infrastructure (measured by the World Economic Forum), highlights that the list is still very much dominated by AEs, with the implication that today's EMs are very much lagging in providing adequate infrastructure for trade. Our forecasts for very strong trade growth in EMs contain an assumption that the large investment necessary to facilitate the expansion of trade will be forthcoming.

8.3. The Importance of China and EM Asia for Trade Within and Outside the Region

Export exposure of virtually all AEs to EMs in general, and EM Asia and China in particular, has increased substantially over the past decade – and we expect further growth

The growth of the Chinese economy has likely left few corners of the world economy wholly untouched. Figure 79 and Figure 80 present the shares of total exports for selected economies that are destined for EM Asia and all EMs in 2000, 2005 and 2010. The trend is quite clear. With very few exceptions, export exposure to EMs has increased, often substantially. In the case of Japan, the share of exports that goes to EMs has more than doubled, while it has nearly doubled for Germany. A comparison of the two figures shows that for most countries, a substantial part of the increase in EM exposure was driven by increases in the share of exports that goes to EM Asia, in particular China. This is clearly the case for Australia and Japan where EM Asia accounted for nearly all of the increase in EMs' share of exports, but also for Switzerland, and to a lesser extent for Germany, which also saw a large increase in trade with the CEE region.

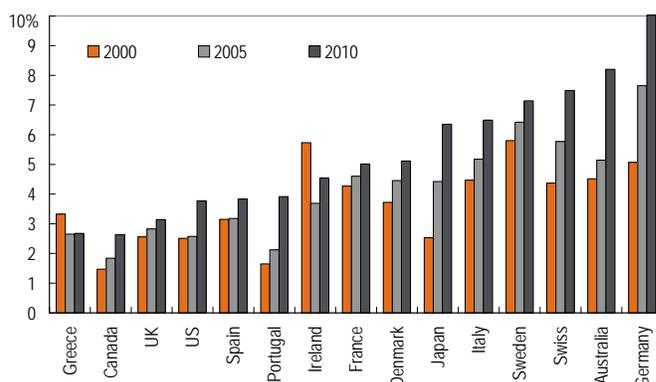
Figure 79. Selected Countries – Exports to EM Asia (% of Total Exports), 2000 – 2010



Note: Merchandise exports only

Source: IMF DOTS and Citi Investment Research and Analysis

Figure 80. Selected Countries – Exports to EM (% of Total Exports), 2000 – 2010

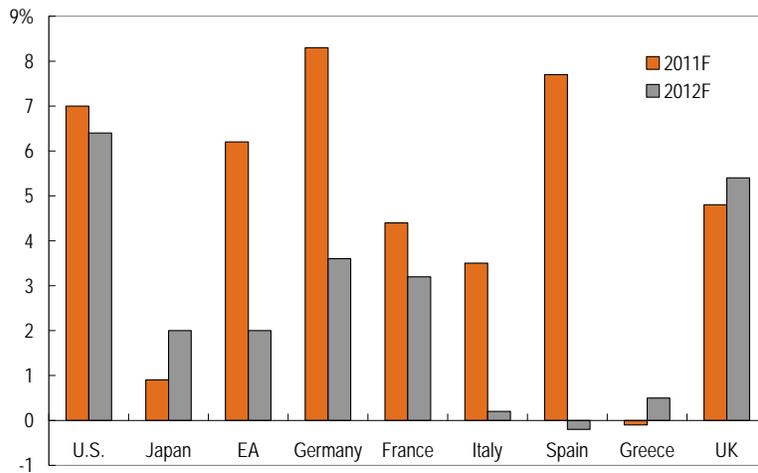


Note: Merchandise exports only

Source: IMF DOTS and Citi Investment Research and Analysis

As section 3 highlighted, we expect the weight of EM Asia in world trade to increase further. Figure 81 shows why this matters. Growth projections in the near term have come down substantially for virtually all AEs. Among the very few consistent drivers of growth in AEs are net exports to EMs. Figure 81 shows that we expect export growth in virtually all AEs (not all are shown), and net export (exports minus imports) growth in all AEs. In the few cases where export growth is expected to be negative, net exports are still expected to grow and the fall in exports is smaller than the fall in GDP. A substantial part of the momentum in exports is due to China and EM Asia as a whole, attesting to the newly found significance of the region for world trade and the world economy as a whole.

Figure 81. Selected Economies – Export Growth (%YoY), 2011 – 2012



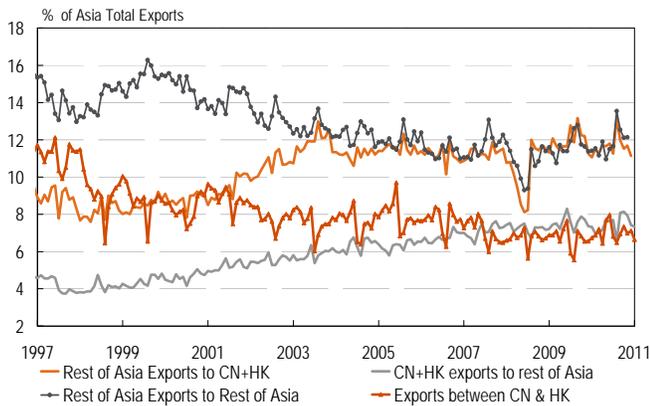
Source: CIRA [Global Economic Outlook and Strategy](#)

So EM Asia and China in particular have a special role to play for safeguarding the modest growth that we still project for 2011 and 2012 for AEs as a whole. But the economic importance of China and EM Asia is often even more significant for other EMs including EM Asia itself.

China has a central place in the regional supply chain in EM Asia, but Chinese trade growth has outpaced trade growth in the rest of the region

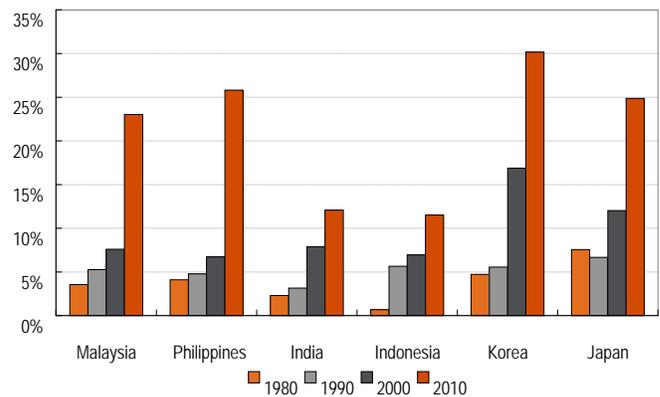
First, start with trade within EM Asia. Figure 82 presents the share of total exports of a number of Asian countries destined for China and Hong Kong. In all countries, the share was below 10% in 1980 and below 5% in all countries bar Japan. By 1990, export shares had risen but not by much, except in the case of Indonesia, and had fallen slightly in Japan. The bulk of the increase in China's share of Asian exports occurred over the last two decades. By 2010, China's share of exports exceeded 10% of all exports in all of these economies, and exceeded 20% of exports in all cases except India and Indonesia. As the Figure shows, the increase was not restricted to Asia's less industrialised periphery, but also included trade with Korea and Japan. Trade with the US and the EU has consequently fallen in relative importance. For instance, while 35% of Malaysian and 46% of Filipino exports found their way to the US and EU in 1980, the shares in 2010 were 20% and 25% respectively.

Figure 82. Asia – Intra-Regional Exports (% of Total), 1997 – 2011



Note: Asia trade data exclude India due to data unavailability
Source: CEIC Data Company Ltd and CIRA

Figure 83. Selected Economies – Exports to China (% of Total Exports), 1980 – 2010



Note: Exports of goods to China and Hong Kong
Source: IMF DOTS and Citi Investment Research and Analysis

As Figure 83 shows, growth of exports to China has exceeded growth of exports to other destinations. Likewise, China's exports to the rest of the region have grown substantially over the past decade (Figure 82). Figure 82 shows that China's and Hong Kong's exports to the rest of Asia have grown substantially as a share of total Asian exports, while total Asian exports have themselves grown very fast.

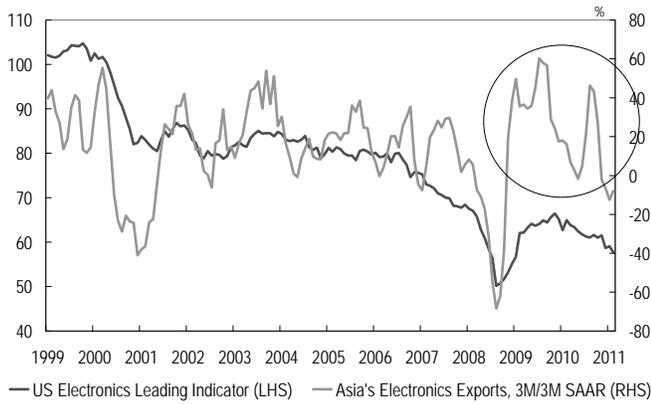
Figure 82 also shows a different facet of China's special position in Asia's supply chain: exports from the rest of Asia to the rest of Asia, i.e. not destined for China, have fallen as a fraction of total exports over the same period, reflecting that intra-Asian trade has not kept pace with growth in China's trade.¹⁶ What is more, while the share of China in the exports of the Rest of Asia has increased over the past decade, the share of the Rest of Asia in China's imports has fallen (**Figure 85**). This again suggests that trade growth in the Rest of Asia has not kept up with trade growth in China, but also that China has had a major impact as an importer on other regions beyond EM Asia and the AEs.

There is little hard evidence of 'decoupling' of Chinese growth from growth in AEs

As China's economic clout grows, a recurring question is whether growth in China becomes less dependent on growth in its traditional exports markets, the US and the European Union (and consequently more dependent on domestic demand and demand by other economies, including its neighbours in Asia and other EMs). In the past, including during the last global recession, any hopes for such 'decoupling' proved unwarranted (see e.g. Kim et al (2009)). To date, there is also very little hard evidence of decoupling, but there may be some anecdotal evidence of marginally more resilience than during the last global recession. For example, Figure 84 superimposes Asia's electronics exports over a US electronics leading indicator. As the Figure shows, the relationship between the two indicators used to be relatively close in the past, but has diverged substantially since the 07/08 financial crisis, raising the possibility that, at least in the recovery from the 07/08 downturn, demand for Asian electronics is no longer as tightly linked to US demand as before (see also [Asia Macro Flash - Asia's Tech De-Stocking Outlook](#)). However, in the event of a global recession and a further generalised downturn in the advanced economies there is clearly little hope for decoupling even today and the best that can be hoped for is a marginal reduction in the degree to which Asian economies are affected and a marginal increase in the support which Asian economies can provide to the world economy. In fact, there are already signs that export demand both in electronics and beyond has started to moderate as a result of lower growth in advanced economies (see [Asia Macro and Strategy Outlook - Could Asia Still Be a "Safe Haven"?](#)).

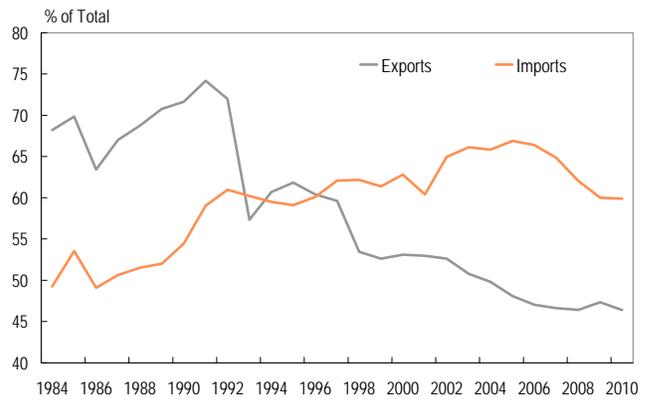
¹⁶ In this chart, India is excluded from the Rest of Asia, due to the fact that its data become available only with a longer lag. The trend is qualitatively unchanged if India was included.

Figure 84. Asia and US – Decoupling



Source: Citi Investment Research and Analysis

Figure 85. China – Trade with Asia (% of Total), 1984 – 2010

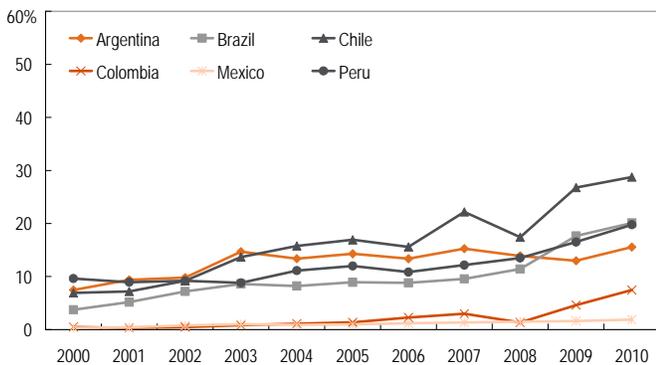


Note: Exports to Asia as % of total Chinese exports. Imports from Asia as % of total Chinese imports.

Source: CEIC and Citi Investment Research and Analysis

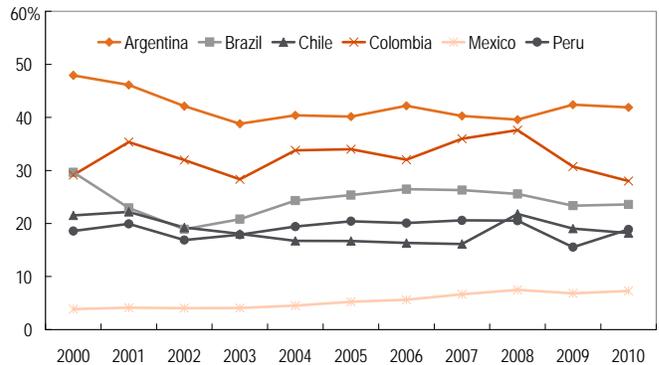
One region that has clearly been affected by the emergence of China and the rest of EM Asia is Latin America. Figure 86 shows that the share of exports to EM Asia has gone up dramatically for a number of countries in Latin America, notably for Chile where it rose from 6% in 2000 to more than 25% in 2010. Export shares have also gone up for Argentina, Brazil, Colombia and Peru. However, Mexico has seen no such increase, reflecting both the much smaller commodity content of Mexican exports compared to its Latin American peers and its northward orientation to the US. Figure 87 highlights that the increase in China's share of the region's exports has likely also put a check on further intra-regional integration and orientation.

Figure 86. Latin America – Exports to EM Asia (% of Total), 2000 – 2010



Source: IMF DOTS and Citi Investment Research and Analysis

Figure 87. Latin America – Intra-Regional Exports (% of Total), 2000 – 2010



Source: IMF DOTS and Citi Investment Research and Analysis

8.4. Trade and Finance

Trade and finance often co-locate

Trade and finance have enjoyed a rather symbiotic relationship over the course of history. Of course, before the capital account liberalisation of the past few decades, cross-border finance mostly facilitated trade in goods (and some services). Today, finance, and international or cross-border finance, very much has a life of its own, separate from trade finance. But trade and finance remain closely correlated nonetheless and have a tendency to co-locate. IMF (2010) uses the same methodology for financial sectors as IMF (2011) does for trade to identify the systemically most important countries and IMF (2011) shows that the list of the 25 most important countries is nearly identical for both trade and finance, with only two exceptions.¹⁷

8.5. Systemic Importance = Systemic Risk

Interdependence carries risks of greater 'contagion'

Trading hubs will benefit disproportionately from the increase in trade that we predict. However, they are important from another perspective: because they are systemically important, shocks to these trading hubs will be transmitted more forcefully to the rest of the world. They are therefore natural areas for policymakers to focus regulatory attention on and for firms to construct contingency plans around. The example of the ripple effects of the double natural and nuclear disaster in Japan are a clear reminder of how disruptions in trading hubs can impact geographically remote areas quite vehemently.

9. Specialisation and Global Supply Chains

Vertical specialisation and the regionalisation and globalisation of supply chains continue

Complementarities in trade and the emergence of trading hubs have emerged alongside another major trend in international trade: the regionalisation and globalisation of supply chains, outsourcing and vertical specialisation. Trading hubs may simply be convenient places to carry out transactions. But we have also seen a dispersion and fragmentation of supply chains, driven by vertical specialisation and reductions in trade costs. These often involve the multiple crossing of borders in intermediate stages of the production process.

The rise in cross-border supply chains has a number of implications.

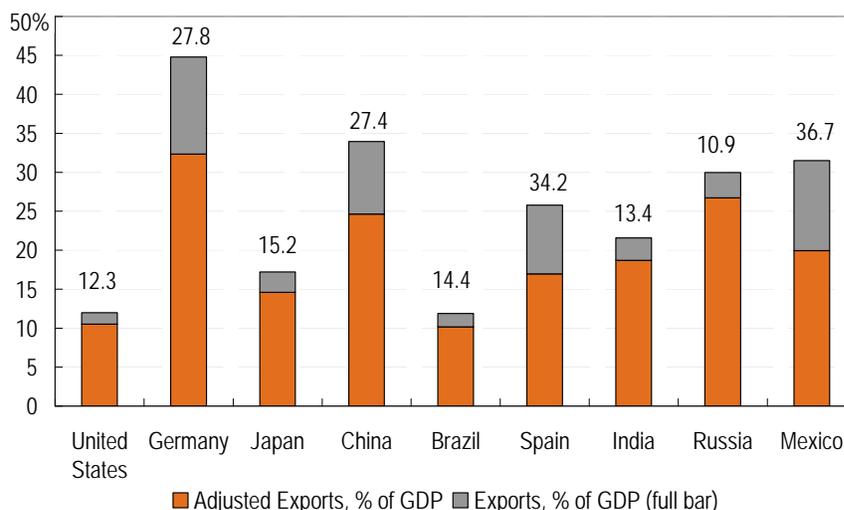
Foreign value-added content in exports is rising, making traditional trade statistics – which are in gross terms – less useful

One implication of the dispersion of supply chains is that the foreign or import content of exports has increased in most countries. Conventional gross trade statistics record the gross value of imports and exports at each border crossing rather than the net value-added traded between countries. Estimating the value-added content of trade is hard work (and rarely ever attempted for services trade), as it involves use of input-output tables across several (ideally many) countries and such data are available only at lengthy intervals and with a lag. Using such data, Hummels et al (2001) find that for the 28 countries they covered, the share of foreign value-added (FVA) in gross exports rose from 18% of the total to 24% between 1970 and 1990. IMF (2011) updated this data and found FVA shares of 27% in 1995 and 33% in 2005 for 34 countries. This means that, on average, one third of total exports represent foreign value-added, and two thirds domestic value-added.

¹⁷ The 23 countries that feature in the list of the 25 most systemically important countries for both trade and finance are Australia, Austria, Brazil, Belgium, Canada, China, France, Germany, Hong Kong, India, Italy, Japan, Korea, Mexico, Netherlands, Russia, Singapore, Spain, Sweden, Switzerland, Turkey, UK, US. The two exceptions are Luxembourg and Ireland which only show up among the 25 most systemically important countries for finance and Malaysia and Thailand which are only in the list for trade.

But the average increase and the average level conceal many differences. Differences by country can be enormous. Countries which are heavily involved in assembly or in processing trade, such as Singapore, will re-export much of their imports and thus will have a much higher ratio of gross trade to domestic value-added. Regional differences can also be large. An outlier in this regard is Asia, which has a more dispersed configuration of supply chains, due at least in part to several relatively independent developments in its history that resulted in successive relocations in production activities and that may have allowed the region to respond more flexibly to changing production environments and demands.¹⁸ As a result, for example, around 15% of the Japanese value-added content that is included in Chinese exports goes through other Asian countries before reaching China, while in other regions, most of the foreign value-added in exports arrives directly from its original location of production, without going through other countries first.

Figure 88. Selected Economies – Gross Exports, Adjusted Gross Exports and Foreign Value-Added, 2005



Note: Foreign value-added (FVA) content in % above bars. Adjusted exports are calculated as gross exports (in % of GDP) x (1-FVA).

Source: Citi Investment Research and Analysis

As the share of foreign value-added rises, it becomes less and less obvious how to interpret conventional trade statistics, and in particular bilateral trade balances. A particularly instructive, if extreme, example is exports of iPhones from China to the US (Xing (2011)). The iPhone is designed and marketed by the US firm Apple, but its production takes place mostly outside of the US, involving nine companies which are located in China, South Korea, Japan, Germany and the US. Assume that the assembled phones are exported from China to the US and valued at the total production cost of \$179 per phone (Rassweiler (2009)). However, only 3.6% of the total production cost represents manufacturing and assembly costs, while the remainder represents the costs of inputs which are imported into China from third countries.

¹⁸ Among the relevant developments were regulations to restrict the import of manufactured goods to protect infant industries in many Asian countries until the mid-1980s, progressive rapid liberalisation, the shift of assembly operations from Japan when the yen appreciated massively in the mid-1980s, and the rise of China (see Gaulier et al (2005), Baldwin (2008), Thorbecke (2011), and IMF (2011)).

Thus, only 3.6% of the value of exports of iPhones from China to the US reflect value-added. Under the plausible assumption that China's value-added content of exports to the US is smaller than that of US exports to China, conventionally recorded bilateral trade balances between the US and China grossly overestimate the actual resource transfer resulting from trade.

Greater interconnectedness of supply chains implies higher exposure to foreign shocks

A second implication of the increase in the global and regional supply chains is that the effect of local disturbances on other parts of the world economy has increased. Again, the effects of the Japan double natural and nuclear disaster were a case in point, but it is worth noting that for a shock to be transmitted to the rest of the system, it need not occur in a trading hub, if supply chains are sufficiently globalised and if there is only one or at most a very limited number of independent and geographically diversified suppliers of key intermediate inputs in the global supply process. The combination of a single supplier of a key input and lean inventory management methods can be a source of significant vulnerability. 'Just-in-time' inventory management does not always trump 'just-in-case' inventory management in global supply chains.

As supply chains become more fragmented across countries, trade elasticities with respect to exchange rate movements moderate

A higher import content of trade also implies smaller elasticities of trade with respect to the (real) exchange rate. The reason is that if the local currency appreciates against all other currencies, then local exports become more expensive, but the local import bill becomes smaller, potentially allowing exporters to cut prices without suffering too much from a fall in margins (IMF (2011), Koopman et al (2009), Bems and Johnson (2011)). The increased resilience of trade to movements in the exchange rate in turn has a double-edged implication for the relative desirability of particular exchange rate arrangements. On the one hand, the exchange rate could do little to bring about adjustments in external competitiveness, making having the exchange rate available as a policy instrument or shock absorber less useful. On the other hand, movements in exchange rates which are unrelated to fundamentals are also less likely to be destabilising, at least for trade in goods and services.

10. Limits to Trade

We are not likely to run up against a limit to trade anytime soon

Fast growth of world trade in the past and the forecast of strong future growth we present in this note raise the question of whether we may soon reach the limits of trade growth, in absolute terms or relative to GDP. In our view, that day is still far off, for at least two reasons. The first one has to do with the way trade flows are conventionally measured and which we have already discussed. The second reason relies on a theoretical measure of 'frictionless' or maximum trade.

First, as noted before trade is typically measured on a gross basis, while GDP is a value-added measure. As previously discussed, data on the share of value-added in trade are notoriously difficult to obtain, but estimates of the import content of exports circulate of between 20% and 30% in G7 countries, implying that trade measured in value-added terms would be up to a third smaller than the gross measures (see e.g. Johnson and Noguera (2011)). In countries that are heavily involved in processing trade or in re-exporting, the share of value-added can be much lower still, as should be clear from the fact that trade in places like Singapore or Hong Kong already accounts for multiples of GDP today — there is thus no reason for measured imports, exports or total trade in a country, a region or the world as a whole to be smaller than, say, 100% of the GDP of that country, region or the world.

Figure 89. Advanced Economies – Actual and Frictionless Trade (% of GDP), 2010 – 2050

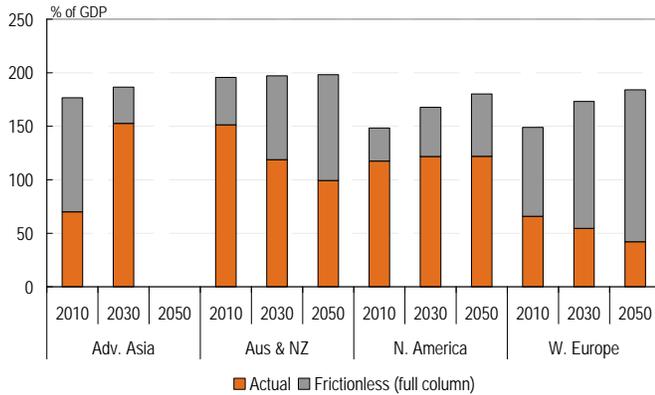
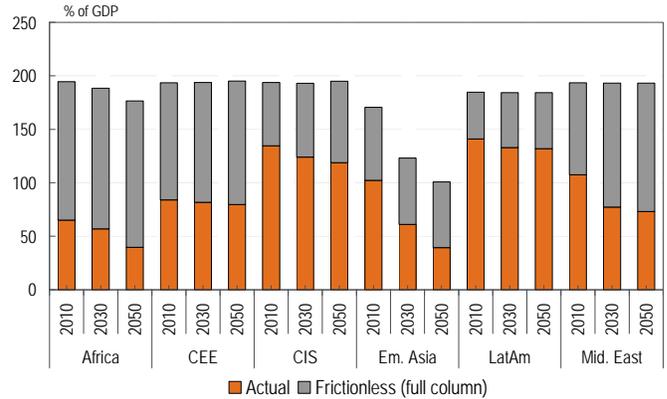


Figure 90. Emerging Economies – Actual and Frictionless Trade (% of GDP), 2010 – 2050

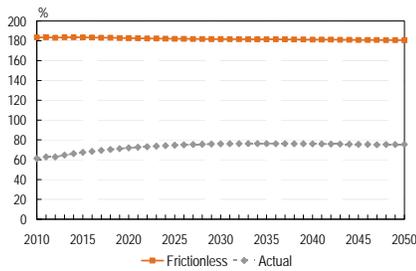


Note: 2050 values for Advanced Asia omitted for presentational purposes, see text below.

Source: Citi Investment Research and Analysis

Source: Citi Investment Research and Analysis

Figure 91. Frictionless and Actual World Trade (% of GDP), 2010 – 2050F



Source: CIRA

Second, we can obtain a simple theoretical measure of the ‘frictionless’ level of trade which can be interpreted as a natural upper bound for trade in the absence of any trade barriers – natural or man-made. Assume that the proportion of spending of any country *i* on its own (final) goods and services is the same as the proportion of world (final goods and services) spending on country *i*. This assumption implies that the share of value-added imports in country *i*’s GDP equals the rest of the world’s share in world GDP.¹⁹ For the US, which accounted for 23% of world GDP in 2010, this measure implies a frictionless level of value-added imports of 77% of GDP. Assuming balanced trade in equilibrium, exports would be of the same size and imply an equilibrium frictionless level of trade, measured in value-added terms, of 154% of GDP for the US in 2010 – compared to an actual value of gross (not value-added!) trade of 28%. Applying the same approach to all other countries in the world, we arrive at a measure of ‘frictionless’ world trade of 183% of world GDP in 2010. This compares to an actual (gross) value of world trade of around 61% in 2010, and 76% in 2050 (Figure 91). Assuming that a third of measured trade reflects foreign value-added, the appropriate current values to be compared to the frictionless value would be a third lower still, indicating that we are very far away from the limits of world trade.²⁰ Figure 89 and Figure 90 highlight that the same holds at the regional level. The only region where actual measured trade may catch up with the frictionless value-added level is Advanced Asia, but the entrepot nature of the trading hubs in that region, notably Singapore and Hong Kong, imply that trade in value-added terms in those regions is still far away from the frictionless bound, too.

¹⁹ For a detailed exposition of this approach see Anderson, J (2011).

²⁰ The frictionless value of world trade is in principle time-varying, but quantitatively virtually unchanged between 2010 in 2050 in our projections.

11. Risks of the Trade

Long-term forecasts are naturally to be treated with caution, and our trade forecasts are no exception. Here, we point out a number of key caveats.

Lower-than-expected GDP growth would likely be associated with lower trade growth

First, GDP growth and catch-up in productivity and incomes by many of today's EM economies are a key driver of trade in our forecasts. In our view, the causation clearly runs both ways here, as openness to trade, FDI and migration are likely to be key factors that allow today's poorer economies to import best practices from abroad and to start to close the productivity and income gap with the richer world. Notably, trade barriers are much higher in EMs today than in AEs. This includes trade barriers imposed by EMs on other EMs. Cyclically or secularly lower than expected GDP growth is likely to be associated with lower growth in world trade.

Increases in protectionism or other trade costs, or a more inward orientation, can also lower expectations for trade growth

A second relevant risk is a prolonged return to a more protectionist environment. The current trade-negotiation round of the WTO, the Doha Development Round, has stalled since 2008 and is unlikely to be concluded anytime soon. Despite a current lack of enthusiasm for further trade liberalisation in much of the world, we expect the long-term trend of a slow reduction in both natural and man-made trade barriers to resume in the future. Should this resumption fail to materialise, our trade projections will likely turn out to be too optimistic. Even if the world stops short of erecting significant new barriers to trade, a more inward orientation in many countries could still markedly reduce the prospects for an expansion of world trade. Large supply-driven increases in commodity prices or in security-related costs of cross-border trade would also endanger the predicted trade expansion and do not form part of our central scenario.

12. Conclusion

At times of adversity, it is all the more worthwhile highlighting bright spots and opportunities. The prospects of cross-border trade are among the brightest spots in the economic sphere currently and this piece has articulated our expectations in this regard.

We expect world trade in goods and services to expand from around \$37trn in 2010 to \$122trn in 2030 and \$287trn in 2050, all in constant 2010 USD converted at market exchange rates. This is equivalent to growth of 6.1% pa between 2010 and 2030, coincidentally the same growth rate as the average growth rate of world trade in goods (excluding services) between 1960 and 2010, and average growth of 4.4% pa between 2030 and 2050.

Along with a sustained expansion of trade, we forecast a marked reorientation of world trade towards EMs in general, and Developing Asia in particular. This reorientation has of course already begun, with China and Emerging Asia's shares of both world and regional exports and imports having multiplied over the past two decades.

New trade corridors between AEs and EMs and within EMs will come into existence and existing ones will become both deeper and wider. New trading hubs and centres will also emerge. Some of these will spring into existence as a byproduct of the emergence of major centres of production or consumption in their proximity.

Others will succeed by virtue of superior transport infrastructure, including ports, docks, airports, roads, storage facilities, inter-modal freight transport and transshipment facilities, or more efficient trade-related service industries, including logistics, communications, the financing and insurance of trade, transport and tourism, and a supportive legal, regulatory and institutional infrastructure. Extensions of existing trade corridors and emergence of new ones will require substantial investment in trade-related infrastructure and service capabilities.

The content of trade will also change. As industrialising EMs become richer, they will import fewer capital goods and commodities and more consumption goods and services. Exporters of non-renewable natural resources need to diversify their economies to prepare for the eventual depletion of their natural resource endowments, even if that eventuality is still some decades off.

The new trade routes have the potential to create new winners, be they products, services, cities, companies, industries or economies.

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14. Appendix

14.1. Definitions of Aggregates

Advanced Asia: Hong Kong, Japan, South Korea, Singapore, Taiwan

Africa: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tomé and Príncipe, Senegal, Seychelles, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Western Sahara, Zambia and Zimbabwe.

Central and Eastern Europe: Albania, Bulgaria, Croatia, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Former Yugoslav Republic of Macedonia, Malta, Poland, Romania, Slovak Republic, Slovenia and Turkey.

Commonwealth of Independent States: Armenia, Azerbaijan, Belarus, Kazakhstan, Kyrgyz Republic, Moldova, Mongolia, Russia, Tajikistan, Turkmenistan, Ukraine and Uzbekistan. Mongolia, which is not a member of the Commonwealth of Independent States, is included in this group for reasons of geography and similarities in economic structure.

Emerging Asia: Bangladesh, Bhutan, Cambodia, China, Fiji, India, Indonesia, Kiribati, People's Democratic Republic of Lao, Malaysia, Maldives, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Samoa, Solomon Islands, Sri Lanka, Thailand, Tonga, Vanuatu and Vietnam.

Latin America and Caribbean: Antigua and Barbuda, Argentina, The Bahamas, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Netherlands, Antilles, Nicaragua, Panama, Paraguay, Peru, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, and Venezuela.

Middle East: Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, United Arab Emirates, Yemen, Gaza.

North America: Canada, United States.

Western Europe: Andorra, Austria, Belgium, Denmark, Finland, France, Iceland, Ireland, Italy, Germany, Gibraltar, Liechtenstein, Luxembourg, Monaco, Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, United Kingdom.

EM: Africa, CEE (excl. Czech Republic, Estonia, Slovenia, Slovakia), CIS, Emerging Asia, Latin America and Caribbean, Middle East (excl. Israel).

AE: Australia, New Zealand, Advanced Asia, North America, Western Europe, Israel, Czech Republic, Estonia, Slovenia and Slovakia.

14.2. Measuring Trade – Selected Issues

The measurement issues in international trade are numerous. First, there is the issue of deciding on a unit of account. The three most commonly used units of account are current USD converted at market exchange rates, constant USD converted at market exchange rates and present trade numbers in terms of a volume index. Measures which are converted at market exchange rates are heavily affected by fluctuations in the dollar exchange rate. One reason to favour such a measure nevertheless is that the US dollar remains the currency of choice in international trade, including as default invoicing currency for trade in certain commodities and often for trade that does not involve the US as importer or exporter. Using constant USD as the unit of account removes the effects of changes in the domestic purchasing power of the US dollar. Volume measures of international trade are not subject to the vagaries of the foreign exchange market. However, the volume measures are aggregated across very heterogeneous types of goods (and sometimes services) and are expressed relative to a more or less arbitrarily chosen base value, implying that the use of volume measures can be quite useful in tracking developments over time, but do not have a clear interpretation in absolute terms. In our study, we follow much of the academic literature and use measures of trade in constant USD, converted at market exchange rates.

Once the unit of account is settled, it remains to be determined where trade is measured and by whom. Trade can be measured by the exporter or by the importer (or their proxies in the customs office). In principle, those two measures should coincide, at least once any costs of freight, transport, insurance or depreciation (due to the time in transit) are allowed for. In practice, imports and exports recorded rarely coincide, sometimes even at the individual shipment level (if the data are available), and very often at the aggregate level. There are many potential reasons for these discrepancies which have spawned a small academic literature to investigate. Among the most prominent explanations are systematic underreporting of exports, due to tax reasons, regulatory arbitrage or even lesser motives, giving rise to a 'world current account deficit' – recorded world imports exceed world exports. A related issue concerns the fact that trade can be measured in 'c.i.f.' ('cost-insurance-freight') or 'f.o.b.' ('free on board') terms, whereby the former measure includes the costs of insurance and freight for shipments, while the latter does not. For bilateral trade, many trading firms or governments choose not to release either the export destination or the import origin.

There are also different conventions with regard to measuring trade, based on whether these are for national account purposes (such as in the balance of payment) or for the measurement of trade flows directly. For the former purposes, the aim is to measure trade based on a 'change of ownership' principle, while the latter focuses on physical border crossings. Goods physically entering the country, but not its economic sphere (as they are meant for re-export) are sometimes, but not always included in a country's trade statistics.

Related to the previous paragraph, trade is conventionally measured in gross terms, while GDP is measured in value-added terms. Converting trade measures into value-added terms is not only cumbersome but relies on data (mostly input-output data) that are only available at relatively irregular intervals and often with substantial lags.

14.3. Forecast Methodology

Our forecast methodology combines country-level bilateral data on trade in goods and country-level aggregate data on trade in services and some adjustments to reflect inaccuracies in reported data. The adjusted data for 2010 is then combined with assumptions about likely drivers of future growth of trade to arrive at annual country-level bilateral forecasts of trade in goods and services. These are then aggregated into regional and other aggregates by simple summation over the respective countries.

Our starting point is the values for bilateral trade in merchandise goods in 2010 measured in current USD and presented in the IMF's Direction of Trade Statistics (DOTS) database. We collect data on 174 countries, but the data have a number of deficiencies which we attempt to address.

First, as noted before, the value of exports from country X to country Y does not generally coincide with the value of imports of country Y from country X. In principle, one could therefore use either imports, or exports or the average of the two to reflect actual trade flows.

For goods, the value of exports recorded is, on average, below the value of imports recorded. We assume that the errors of omission exceed errors of commission, reflecting systematic underreporting of goods exports, and base our estimates on reported import values. For services, exports on average exceed recorded imports. We choose in this case to rely on export data rather than import data, as again we assume errors of omission to outweigh errors of commission. Also, we assume that the main exporters of commercial services, which are mostly AEs, have institutions and procedures in place that allow them to record trade flows more accurately for trade in services than importers of commercial services.²¹

Second, for many countries, the sum of bilateral imports is smaller than the 'total imports' value given in the IMF DOTS database, e.g. because information on the counterparty of the trade movement was omitted by the importer or exporter. We adjust for this by allocating the 'import shortfall' for any particular importer ('total imports' from IMF DOTS minus sum of bilateral imports) to all exporters according to a function that rises with an increase in the 'exports shortfall' ('total exports' from IMF DOTS divided by sum of implied bilateral exports), an increase in the size of total exports, and falls with distance between the two countries. As a result, total imports for a country match total imports in DOTS, but bilateral imports from any country, total exports or bilateral exports do not. World total imports in our projections equal total World exports in every year.

Third, the IMF DOTS data exclude data on services and bilateral data on trade in services and are notoriously incomplete. We therefore take total (not bilateral) data on services exports from the WTO and allocate them to all importers according to an algorithm that increases with total imports in WTO data, and falls with distance (but by less than with unitary elasticity).

²¹ AEs relatively both export and import more commercial services, but the relative weight of AEs in commercial services exports is higher than for commercial services imports

In terms of our forecasts we project future bilateral values for trade in goods and trade in services separately, assuming that bilateral trade growth will be a function of importer GDP and GDP per capita growth, exporter GDP and GDP per capita growth and the total trade deficit (in % of GDP). We assume that the elasticities of trade growth with respect to growth in GDP and GDP per capita are higher for trade in services than for trade in goods, reflecting the higher growth prospects for trade in services. We further assume that these elasticities for both trade in goods and trade in services will fall smoothly over time.

GDP growth and GDP per capita forecasts are taken from our 3G publication, updated by changes in GDP forecasts since then.

14.4. Regional Analysis

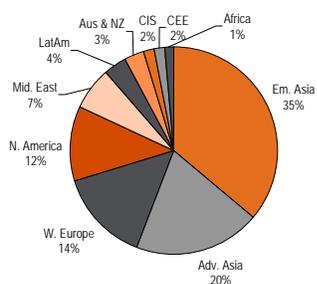
14.4.1. Advanced Asia

Figure 92. Advanced Asia

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	565	1,222	2,494	4,077	12,938	38,826	7.7%	8.6%	5.6%
<i>constant USD</i>	866	1,526	2,494	3,635	8,691	17,551	5.4%	6.4%	3.6%
<i>% of world</i>	12.9%	14.9%	13.3%	14.0%	14.2%	12.2%			
<i>% of GDP</i>	16.4%	22.4%	34.4%	45.1%	74.4%	121.6%			
Exports									
<i>current USD</i>	570	1,313	2,578	4,410	13,612	39,567	7.8%	8.7%	5.5%
<i>constant USD</i>	873	1,639	2,578	3,932	9,144	17,886	5.6%	6.5%	3.4%
<i>% of world</i>	13.5%	16.5%	13.8%	15.2%	15.0%	12.5%			
<i>% of GDP</i>	16.6%	24.0%	35.6%	48.7%	78.3%	123.9%			
Trade									
<i>current USD</i>	1,134	2,535	5,072	8,487	26,550	78,393	7.8%	8.6%	5.6%
<i>constant USD</i>	1,739	3,165	5,072	7,568	17,834	35,437	5.5%	6.5%	3.5%
<i>% of world</i>	13.2%	15.7%	13.5%	14.6%	14.6%	12.3%			
<i>% of GDP</i>	33.0%	46.4%	70.0%	93.8%	152.7%	245.6%			
Population									
<i>Millions</i>	194	205	210,049	211,337	208,736	171,010	41.8%	0.0%	-1.0%
<i>% of world</i>	3.7%	3.3%	3.1%	3.0%	2.6%	1.9%			
GDP									
<i>trn current USD</i>	3.44	5.46	7.25	9.05	17.38	31.92	3.8%	4.5%	3.1%
<i>% of world</i>	15.7%	17.0%	11.8%	10.5%	7.3%	3.8%			

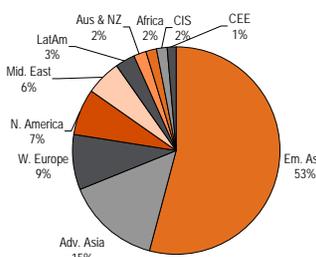
Source: Citi Investment Research and Analysis

Figure 93. Advanced Asia – Trade Partners (% of Total Trade), 2010



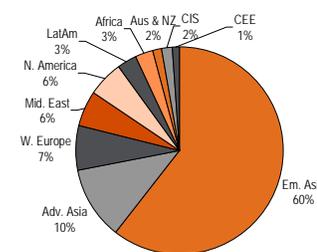
Source: Citi Investment Research and Analysis

Figure 94. Advanced Asia – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 95. Advanced Asia – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

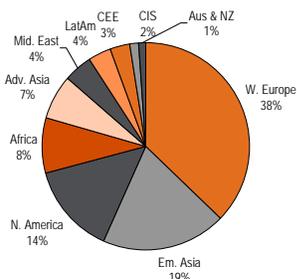
14.4.2. Africa

Figure 96. Africa

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	126	168	509	779	4,061	22,501	7.2%	10.9%	8.9%
<i>constant USD</i>	193	210	509	695	2,728	10,172	5.0%	8.8%	6.8%
<i>% of world</i>	2.9%	2.1%	2.7%	2.7%	4.5%	7.1%			
<i>% of GDP</i>	27.1%	29.0%	31.5%	33.9%	28.3%	19.8%			
Exports									
<i>current USD</i>	125	180	543	833	4,105	22,614	7.6%	10.6%	8.9%
<i>constant USD</i>	191	225	543	743	2,757	10,222	5.4%	8.5%	6.8%
<i>% of world</i>	2.9%	2.3%	2.9%	2.9%	4.5%	7.1%			
<i>% of GDP</i>	26.8%	31.0%	33.6%	36.2%	28.6%	19.9%			
Trade									
<i>current USD</i>	251	348	1,052	1,612	8,166	45,115	7.4%	10.8%	8.9%
<i>constant USD</i>	384	435	1,052	1,438	5,485	20,394	5.2%	8.6%	6.8%
<i>% of world</i>	2.9%	2.2%	2.8%	2.8%	4.5%	7.1%			
<i>% of GDP</i>	53.9%	60.0%	65.1%	70.1%	56.9%	39.6%			
Population									
<i>Millions</i>	623	796	1,005,734	1,126,426	1,534,149	2,147,255	44.7%	2.1%	1.7%
<i>% of world</i>	11.7%	13.0%	14.8%	15.7%	18.7%	23.4%			
GDP									
<i>trn current USD</i>	0.47	0.58	1.62	2.30	14.34	113.79	6.4%	11.5%	10.9%
<i>% of world</i>	2.1%	1.8%	2.6%	2.7%	6.0%	13.5%			

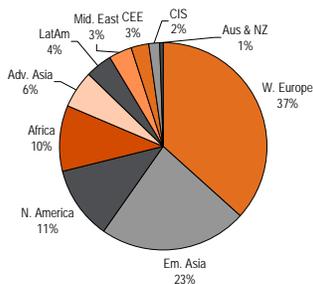
Source: Citi Investment Research and Analysis

Figure 97. Africa – Trade Partners (% of Total Trade), 2010



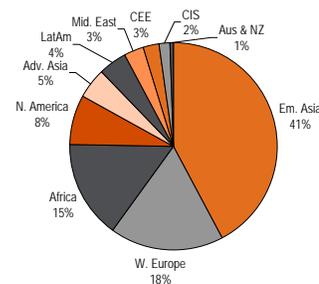
Source: Citi Investment Research and Analysis

Figure 98. Africa – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 99. Africa – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

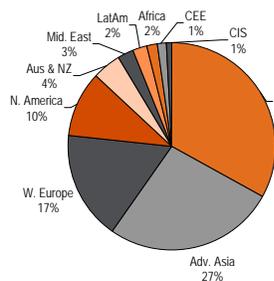
14.4.3. Australia and New Zealand

Figure 100. Australia and New Zealand

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	68	108	296	440	1,238	3,916	7.6%	7.4%	5.9%
<i>constant USD</i>	104	135	296	393	831	1,770	5.3%	5.3%	3.9%
<i>% of world</i>	1.6%	1.3%	1.6%	1.5%	1.4%	1.2%			
<i>% of GDP</i>	19.0%	23.1%	21.8%	28.2%	36.8%	47.1%			
Exports									
<i>current USD</i>	61	101	306	478	1,398	4,305	8.4%	7.9%	5.8%
<i>constant USD</i>	94	126	306	426	939	1,946	6.1%	5.8%	3.7%
<i>% of world</i>	1.5%	1.3%	1.6%	1.6%	1.5%	1.4%			
<i>% of GDP</i>	17.1%	21.5%	22.5%	30.6%	41.6%	51.8%			
Trade									
<i>current USD</i>	130	209	601	919	2,636	8,221	8.0%	7.7%	5.9%
<i>constant USD</i>	199	261	601	819	1,770	3,716	5.7%	5.5%	3.8%
<i>% of world</i>	1.5%	1.3%	1.6%	1.6%	1.4%	1.3%			
<i>% of GDP</i>	36.1%	44.7%	44.3%	58.8%	78.4%	98.9%			
Population									
<i>Millions</i>	20	23	26,636	28,394	32,982	37,063	43.1%	1.1%	0.6%
<i>% of world</i>	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%			
GDP									
<i>trn current USD</i>	0.36	0.47	1.36	1.56	3.36	8.31	6.9%	4.6%	4.6%
<i>% of world</i>	1.6%	1.5%	2.2%	1.8%	1.4%	1.0%			

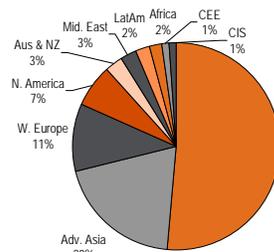
Source: Citi Investment Research and Analysis

Figure 101. Australia and New Zealand – Trade Partners (% of Total Trade), 2010



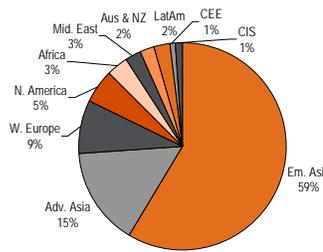
Source: Citi Investment Research and Analysis

Figure 102. Australia and New Zealand – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 103. Australia and New Zealand – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

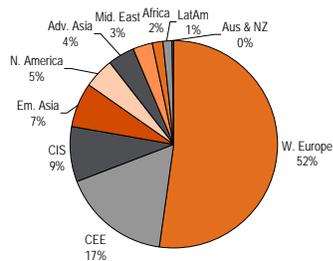
14.4.4. Central and Eastern Europe

Figure 104. Central and Eastern Europe

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	67	281	1,012	1,476	3,752	10,907	14.6%	6.8%	5.5%
<i>constant USD</i>	102	351	1,012	1,316	2,520	4,930	12.2%	4.7%	3.4%
<i>% of world</i>	1.5%	3.4%	5.4%	5.1%	4.1%	3.4%			
<i>% of GDP</i>	15.6%	40.0%	58.6%	58.0%	57.5%	57.7%			
Exports									
<i>current USD</i>	63	231	880	1,315	3,554	10,910	14.1%	7.2%	5.8%
<i>constant USD</i>	96	289	880	1,173	2,387	4,932	11.7%	5.1%	3.7%
<i>% of world</i>	1.5%	2.9%	4.7%	4.5%	3.9%	3.4%			
<i>% of GDP</i>	14.7%	32.9%	50.9%	51.6%	54.5%	57.7%			
Trade									
<i>current USD</i>	129	513	1,891	2,792	7,305	21,817	14.4%	7.0%	5.6%
<i>constant USD</i>	198	640	1,891	2,489	4,907	9,862	11.9%	4.9%	3.6%
<i>% of world</i>	1.5%	3.2%	5.0%	4.8%	4.0%	3.4%			
<i>% of GDP</i>	30.2%	72.9%	109.5%	109.6%	112.0%	115.4%			
Population									
<i>Millions</i>	190	196	184,980	188,862	195,680	192,726	41.1%	0.3%	-0.1%
<i>% of world</i>	3.6%	3.2%	2.7%	2.6%	2.4%	2.1%			
GDP									
<i>trn current USD</i>	0.43	0.70	1.73	2.55	6.52	18.91	7.2%	6.9%	5.5%
<i>% of world</i>	2.0%	2.2%	2.8%	3.0%	2.7%	2.2%			

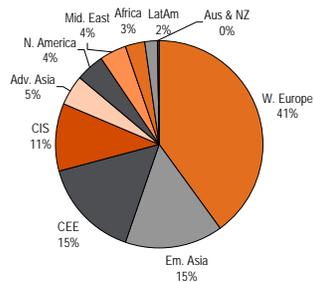
Source: Citi Investment Research and Analysis

Figure 105. Central and Eastern Europe – Trade Partners (% of Total Trade), 2010



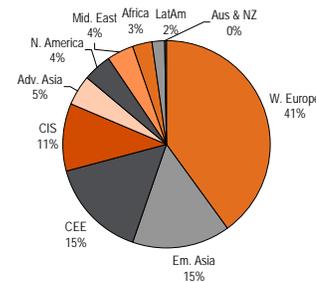
Source: Citi Investment Research and Analysis

Figure 106. Central and Eastern Europe – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 107. Central and Eastern Europe – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

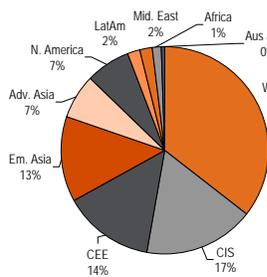
14.4.5. Commonwealth of Independent States

Figure 108. Commonwealth of Independent States

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	66	106	519	922	3,165	10,343	10.8%	9.5%	6.1%
<i>constant USD</i>	102	132	519	822	2,126	4,675	8.5%	7.3%	4.0%
<i>% of world</i>	1.5%	1.3%	2.8%	3.2%	3.5%	3.3%			
<i>% of GDP</i>	9.7%	30.1%	26.8%	29.3%	33.9%	38.0%			
Exports									
<i>current USD</i>	59	163	630	1,043	3,270	10,367	12.6%	8.6%	5.9%
<i>constant USD</i>	90	204	630	930	2,196	4,686	10.2%	6.4%	3.9%
<i>% of world</i>	1.4%	2.1%	3.4%	3.6%	3.6%	3.3%			
<i>% of GDP</i>	8.7%	46.6%	32.5%	33.1%	35.0%	38.1%			
Trade									
<i>current USD</i>	125	269	1,149	1,965	6,435	20,710	11.7%	9.0%	6.0%
<i>constant USD</i>	192	336	1,149	1,752	4,322	9,362	9.4%	6.8%	3.9%
<i>% of world</i>	1.5%	1.7%	3.1%	3.4%	3.5%	3.3%			
<i>% of GDP</i>	18.4%	76.8%	59.3%	62.4%	68.9%	76.1%			
Population									
<i>Millions</i>	278	279	277,336	279,540	280,505	273,326	41.2%	0.1%	-0.1%
<i>% of world</i>	5.2%	4.6%	4.1%	3.9%	3.4%	3.0%			
GDP									
<i>trn current USD</i>	0.68	0.35	1.94	3.15	9.33	27.21	5.4%	8.2%	5.5%
<i>% of world</i>	3.1%	1.1%	3.2%	3.7%	3.9%	3.2%			

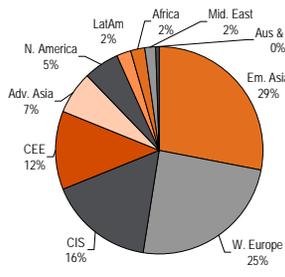
Source: Citi Investment Research and Analysis

Figure 109. Commonwealth of Independent States – Trade Partners (% of Total Trade), 2010



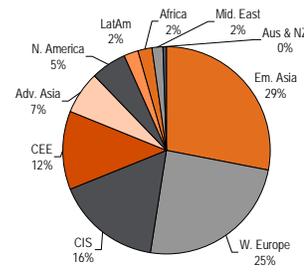
Source: Citi Investment Research and Analysis

Figure 110. Commonwealth of Independent States – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 111. Commonwealth of Independent States – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

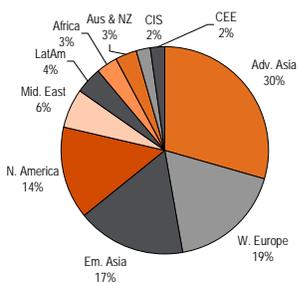
14.4.6. Emerging Asia

Figure 112. Emerging Asia

		Year						Average growth rate		
		1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports	<i>current USD</i>	221	661	2,943	5,925	27,319	116,422	13.8%	11.8%	7.5%
	<i>constant USD</i>	339	826	2,943	5,283	18,351	52,628	11.4%	9.6%	5.4%
	<i>% of world</i>	5%	8%	16%	20%	30%	37%			
	<i>% of GDP</i>	22%	30%	32%	31%	30%	30%			
Exports	<i>current USD</i>	208	693	3,308	6,380	28,474	119,695	14.8%	11.4%	7.4%
	<i>constant USD</i>	318	865	3,308	5,689	19,126	54,107	12.4%	9.2%	5.3%
	<i>% of world</i>	5%	9%	18%	22%	31%	38%			
	<i>% of GDP</i>	20%	31%	36%	34%	32%	31%			
Trade	<i>current USD</i>	429	1,355	6,251	12,305	55,793	236,117	14.3%	11.6%	7.5%
	<i>constant USD</i>	657	1,691	6,251	10,972	37,477	106,735	11.9%	9.4%	5.4%
	<i>% of world</i>	5%	8%	17%	21%	31%	37%			
	<i>% of GDP</i>	42%	61%	68%	65%	62%	61%			
Population	<i>Millions</i>	2,623	3,039	3,512,594	3,686,702	4,083,756	4,294,144	43.3%	0.8%	0.3%
	<i>% of world</i>	49%	50%	52%	52%	50%	47%			
GDP	<i>trn current USD</i>	1.02	2.24	9.14	18.91	89.97	384.90	11.6%	12.1%	7.5%
	<i>% of world</i>	5%	7%	15%	22%	38%	46%			

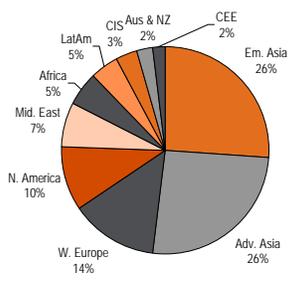
Source: Citi Investment Research and Analysis

Figure 113. Emerging Asia – Trade Partners (% of Total Trade), 2010



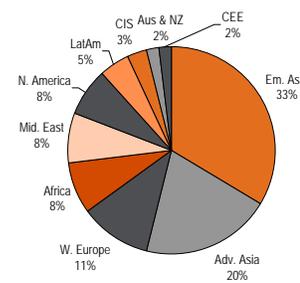
Source: Citi Investment Research and Analysis

Figure 114. Emerging Asia – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 115. Emerging Asia – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

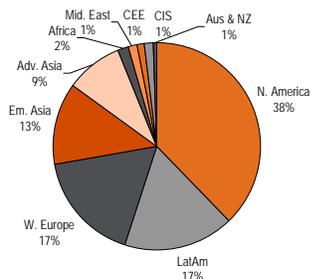
14.4.7. Latin America

Figure 116. Latin America

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	157	452	1,019	1,579	4,796	17,498	9.8%	8.1%	6.7%
<i>constant USD</i>	241	564	1,019	1,408	3,221	7,910	7.5%	5.9%	4.6%
<i>% of world</i>	3.6%	5.5%	5.4%	5.4%	5.3%	5.5%			
<i>% of GDP</i>	13.6%	21.2%	21.7%	22.7%	25.5%	26.3%			
Exports									
<i>current USD</i>	172	419	1,034	1,612	4,823	17,331	9.4%	8.0%	6.6%
<i>constant USD</i>	263	523	1,034	1,438	3,240	7,834	7.1%	5.9%	4.5%
<i>% of world</i>	4.1%	5.3%	5.5%	5.5%	5.3%	5.5%			
<i>% of GDP</i>	14.9%	19.6%	22.0%	23.2%	25.7%	26.1%			
Trade									
<i>current USD</i>	329	871	2,053	3,191	9,619	34,828	9.6%	8.0%	6.6%
<i>constant USD</i>	504	1,087	2,053	2,846	6,461	15,744	7.3%	5.9%	4.6%
<i>% of world</i>	3.8%	5.4%	5.5%	5.5%	5.3%	5.5%			
<i>% of GDP</i>	28.5%	40.8%	43.7%	45.9%	51.2%	52.4%			
Population									
<i>Millions</i>	441	519	573,619	605,955	685,228	735,675	43.1%	0.9%	0.4%
<i>% of world</i>	8.3%	8.5%	8.5%	8.5%	8.4%	8.0%			
GDP									
<i>trn current USD</i>	1.15	2.13	4.70	6.96	18.77	66.50	7.3%	7.2%	6.5%
<i>% of world</i>	5.3%	6.6%	7.7%	8.1%	7.9%	7.9%			

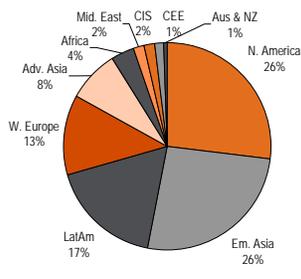
Source: Citi Investment Research and Analysis

Figure 117. Latin America – Trade Partners (% of Total Trade) 2010



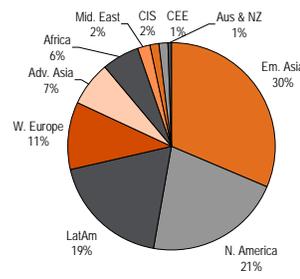
Source: Citi Investment Research and Analysis

Figure 118. Latin America – Trade Partners (% of Total Trade) 2030



Source: Citi Investment Research and Analysis

Figure 119. Latin America – Trade Partners (% of Total Trade) 2050



Source: Citi Investment Research and Analysis

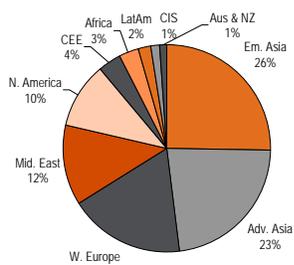
14.4.8. Middle East

Figure 120. Middle East

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	139	226	644	960	4,173	17,679	8.0%	9.8%	7.5%
<i>constant USD</i>	213	282	644	856	2,803	7,992	5.7%	7.6%	5.4%
<i>% of world</i>	3.2%	2.8%	3.4%	3.3%	4.6%	5.6%			
<i>% of GDP</i>	32.8%	31.1%	37.0%	43.0%	54.4%	58.4%			
Exports									
<i>current USD</i>	157	308	849	1,236	4,723	18,654	8.8%	9.0%	7.1%
<i>constant USD</i>	241	385	849	1,102	3,172	8,432	6.5%	6.8%	5.0%
<i>% of world</i>	3.7%	3.9%	4.5%	4.3%	5.2%	5.9%			
<i>% of GDP</i>	37.0%	42.4%	48.8%	55.4%	61.6%	61.6%			
Trade									
<i>current USD</i>	296	534	1,493	2,195	8,896	36,333	8.4%	9.3%	7.3%
<i>constant USD</i>	454	667	1,493	1,958	5,975	16,424	6.1%	7.2%	5.2%
<i>% of world</i>	3.4%	3.3%	4.0%	3.8%	4.9%	5.7%			
<i>% of GDP</i>	69.8%	73.5%	85.9%	98.4%	116.0%	120.0%			
Population									
<i>Millions</i>	245	319	240,378	266,683	343,684	438,518	41.1%	1.8%	1.2%
<i>% of world</i>	4.6%	5.2%	3.5%	3.7%	4.2%	4.8%			
GDP									
<i>trn current USD</i>	0.42	0.73	1.74	2.23	7.67	30.29	7.3%	7.7%	7.1%
<i>% of world</i>	1.9%	2.3%	2.8%	2.6%	3.2%	3.6%			

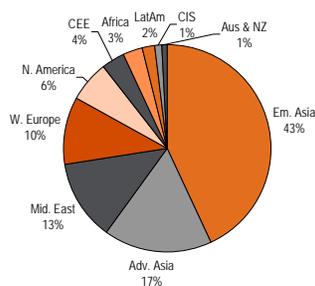
Source: Citi Investment Research and Analysis

Figure 121. Middle East – Trade Partners (% of Total Trade), 2010



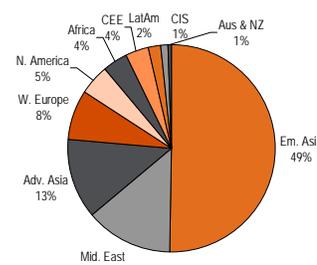
Source: Citi Investment Research and Analysis

Figure 122. Middle East – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 123. Middle East – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

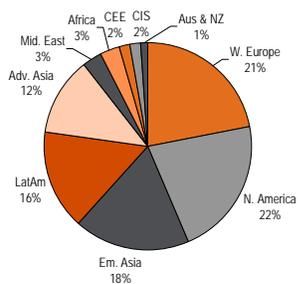
14.4.9. North America

Figure 124. North America

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	766	1,751	2,799	4,062	9,992	27,385	6.7%	6.6%	5.2%
<i>constant USD</i>	1,173	2,186	2,799	3,622	6,712	12,379	4.4%	4.5%	3.1%
<i>% of world</i>	17.5%	21.4%	14.9%	14.0%	11.0%	8.6%			
<i>% of GDP</i>	12.1%	16.5%	17.3%	19.7%	25.4%	31.6%			
Exports									
<i>current USD</i>	672	1,371	2,202	3,180	8,089	23,152	6.1%	6.7%	5.4%
<i>constant USD</i>	1,031	1,712	2,202	2,836	5,434	10,466	3.9%	4.6%	3.3%
<i>% of world</i>	15.9%	17.3%	11.7%	10.9%	8.9%	7.3%			
<i>% of GDP</i>	10.6%	12.9%	13.6%	15.4%	20.5%	26.7%			
Trade									
<i>current USD</i>	1,438	3,122	5,000	7,242	18,081	50,537	6.4%	6.6%	5.3%
<i>constant USD</i>	2,204	3,898	5,000	6,458	12,145	22,845	4.2%	4.5%	3.2%
<i>% of world</i>	16.7%	19.4%	13.3%	12.5%	9.9%	8.0%			
<i>% of GDP</i>	22.7%	29.4%	30.9%	35.1%	45.9%	58.3%			
Population									
<i>Millions</i>	281	313	344,401	359,509	401,530	446,743	42.7%	0.8%	0.5%
<i>% of world</i>	5.3%	5.1%	5.1%	5.0%	4.9%	4.9%			
GDP									
<i>trn current USD</i>	6.34	10.62	16.19	20.64	39.39	86.65	4.8%	4.5%	4.0%
<i>% of world</i>	28.9%	33.0%	26.5%	24.0%	16.5%	10.3%			

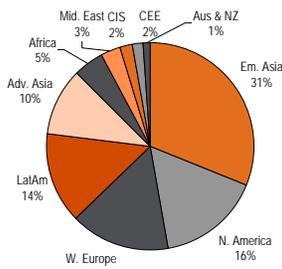
Source: Citi Investment Research and Analysis

Figure 125. North America – Trade Partners (% of Total Trade), 2010



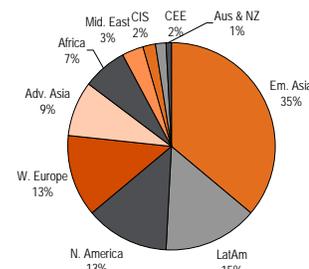
Source: Citi Investment Research and Analysis

Figure 126. North America – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 127. North America – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

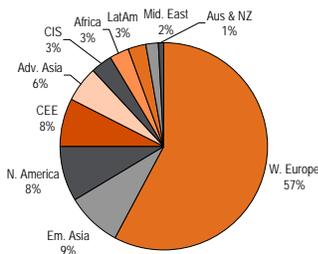
14.4.10. Western Europe

Figure 128. Western Europe

	Year						Average growth rate		
	1990	2000	2010	2015	2030	2050	1990-2010	2010-2030	2030-2050
Imports									
<i>current USD</i>	2,036	3,084	6,505	8,846	19,452	52,154	6.0%	5.6%	5.1%
<i>constant USD</i>	3,120	3,850	6,505	7,888	13,066	23,576	3.7%	3.5%	3.0%
<i>% of world</i>	46.6%	37.7%	34.7%	30.4%	21.4%	16.4%			
<i>% of GDP</i>	27.5%	36.2%	41.9%	47.0%	60.2%	71.7%			
Exports									
<i>current USD</i>	2,010	3,116	6,410	8,580	18,837	51,036	6.0%	5.5%	5.1%
<i>constant USD</i>	3,080	3,890	6,410	7,650	12,653	23,071	3.7%	3.5%	3.0%
<i>% of world</i>	47.5%	39.3%	34.2%	29.5%	20.7%	16.1%			
<i>% of GDP</i>	27.1%	36.6%	41.3%	45.6%	58.3%	70.2%			
Trade									
<i>current USD</i>	4,046	6,200	12,915	17,425	38,289	103,191	6.0%	5.6%	5.1%
<i>constant USD</i>	6,200	7,740	12,915	15,538	25,719	46,647	3.7%	3.5%	3.0%
<i>% of world</i>	47.0%	38.5%	34.5%	30.0%	21.1%	16.2%			
<i>% of GDP</i>	54.6%	72.8%	83.1%	92.6%	118.6%	141.9%			
Population									
<i>Millions</i>	376	389	398,504	404,926	417,739	420,933	41.7%	0.2%	0.0%
<i>% of world</i>	7.1%	6.4%	5.9%	5.7%	5.1%	4.6%			
GDP									
<i>trn current USD</i>	7.41	8.52	15.54	18.83	32.29	72.70	3.8%	3.7%	4.1%
<i>% of world</i>	33.8%	26.4%	25.4%	21.8%	13.5%	8.6%			

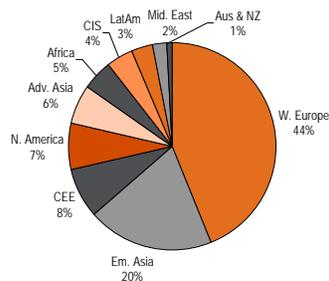
Source: Citi Investment Research and Analysis

Figure 129. Western Europe – Trade Partners (% of Total Trade), 2010



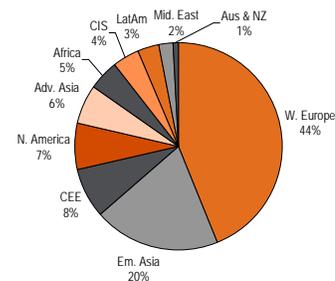
Source: Citi Investment Research and Analysis

Figure 130. Western Europe – Trade Partners (% of Total Trade), 2030



Source: Citi Investment Research and Analysis

Figure 131. Western Europe – Trade Partners (% of Total Trade), 2050



Source: Citi Investment Research and Analysis

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NOW / NEXT

Key Insights regarding the future of global trade



POLICY

The World Trade Organisation and its predecessor GATT, by concentrating on reducing tariffs in the early years, were rather successful in bringing down average tariffs, notably in advanced economies. / **As multilateral trade negotiations have lost momentum and as their complexity has grown, regional and bilateral trade agreements have flourished. Further trade liberalisation will likely be driven by regional efforts and proceed very gradually, but without a return to major protectionism.**



INFRASTRUCTURE

Today, over 80% of world trade in goods and service takes place in intra-AE trade and AE-EM trade, with intra-EM trade accounting for only 13%. / **By 2030, we expect intra-EM will trade overtake intra-AE trade and to be of comparable size to EM-AE trade by 2050. Extensions of existing trade corridors and emergence of new ones will require substantial investment, both public and private, in trade-related infrastructure and service capabilities.**



SHIFTING WEALTH

The increasing prominence of EM countries – which engage in less services trade than goods trade compared to AEs – helps explain the disparity between growth in services as a share of total trade and the larger, growing share of services in world GDP. / **As EMs industrialise and grow richer, the share of agriculture in total trade will fall and commodity exports will tend to decrease in favor of manufactures and services exports. Imports of services and consumption goods are also likely to increase.**



