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BIS Department for Business Innovation & Skills

BIS ECONOMICS PAPER NO. 17

UK trade performance across markets and sectors

FEBRUARY 2012

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FOREWORD

Last November, Secretary of State Vince Cable and Chancellor George Osborne announced a fundamental review of what each part of Government is doing to create the best conditions for private sector growth. Trade and investment was one of the six cross-cutting themes of this first phase of the Growth Review, due to the vital role they play in driving forward growth in the UK economy.

The UK has had a persistent trade deficit over recent decades, reflecting relatively strong demand and weak supply performance in our traded sectors. Net trade has a positive impact on growth when it improves supply, either through increasing productivity or the utilisation of under-used resources. At the firm level, exports can help diversify revenue streams, expand overall sales, and drive improvements in productivity and innovation. At the same time, the more productive and innovative firms are likely to be the ones that will compete most successfully and sustainably in the international market.

This paper outlines how global opportunities are increasing, particularly supporting economic development in emerging and developing economies, and in catering for rising consumerism amongst these markets' expanding middle classes. However, there is also strong global competition, as other developed markets also look to capture these opportunities, whilst BRIC economies continue to rise up the value chain and start to compete in areas of UK specialism, namely services and high technology, high quality products. UK based firms must therefore maintain and improve their competitive advantage and actively tap into global opportunities, particularly those in emerging markets. As this paper examines, many UK firms are increasingly keen to do just that, as part of their growth strategy in the face of weak UK, EU and US demand. Government's support can be instrumental in overcoming barriers that might otherwise hinder this activity.

The new UKTI Strategy builds on the framework outlined in the Trade and Investment for Growth White Paper, setting out a practical plan of action that the Government is taking to support UK exporters and foreign investment. However, government resources are limited, so it is vital to focus policy action, including prioritising key markets and sectors. In this paper we publish evidence on global trends and UK sectoral strengths that went into determining our priority sectors. We also consider some of the key markets, and how and why trade performance and opportunities vary across markets, and across sectors within these markets. Evidence on our wider group of High Growth Markets was published in BIS Economics Paper No.8.

Amanda Rowlatt
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EXECUTIVE SUMMARY

Over the last decade UK goods and services exports have grown by an average of 2.8 per cent and 7.5 per cent per annum respectively. This growth in goods trade is slower than that of France and Germany, but the growth in services exports is faster than France.

The UK's share of global services exports is high, at 6.2 per cent in 2010, the third highest behind the US and Germany. However, the UK's share of goods exports has declined (to 2.7 per cent), as has that of other developed economies, against the surge in goods leaving China and other emerging markets each year. Some 60 per cent of UKTI trade clients are in services sectors.

However, these aggregate figures mask a variety of different patterns of specialisation across markets and sectors. Across sectors, for example, the UK provides 8.3 per cent of global communication services exports, but only 1.7 per cent of office and telecoms equipment. And across markets, the UK provides 14.9 per cent of South Africa's services imports, but only 0.5 per cent of those into Indonesia.

Amongst combinations of markets and sectors, the range of performance is even more striking. Whilst the UK's share of goods imports into Brazil is only 1.7 per cent, it accounts for 12.8 per cent of Brazil's imports of printed books and newspapers. France and Germany export substantially more pharmaceutical goods to Mexico than the UK does, but the reverse is true for pharmaceutical exports to the US.

Sectoral Trade Performance

Across service sectors, the UK's trade performance is usually above that of France and often ahead of Germany, although almost always behind the US. Services exports are contributing an increasing amount to overall UK exports, and the UK has a strong market share in most of these.

In most goods sectors, the UK's performance is close to, and sometimes above, that of France, but Germany is usually way out in front. In addition, there is a weak correlation between the goods sectors that contribute the highest value to overall UK exports, and the goods sectors where the UK has the strongest share of global exports. Manufactures such as machinery, pharmaceuticals, electrical goods and vehicles, plus mineral fuels and related products, make up the majority of UK exports, but pharmaceuticals is the only one of these where the UK has a market share above 5 per cent for the overall sector.

However, the UK does have areas of strength amongst sub-sectors within machinery, vehicles and other manufactures, particularly areas of innovation and high-technology. This paper considers UK strengths, opportunities and challenges across a wide range of sub-sectors, and finds the UK well placed

in many areas to adapt to new trends in global demand. The type of high-quality goods and services the UK tends to export will be in increasing demand in emerging economies. The UK's experience in providing public and private services, across healthcare, education and infrastructure, could be channelled into supporting development in these markets. And the UK's innovative approach to low carbon technologies and materials, new medical and scientific procedures, e-learning etc, are providing new solutions to key global challenges.

Trade Performance Across Markets

Even in areas of strength, such as financial services, the UK lags behind in some markets. We use the gravity model to explain a significant part of the difference in UK export performance across markets. The UK tends to export a lower volume of goods to markets with a lower GDP, and also markets with a lower GDP per capita, given the relatively high quality, high price nature of UK products. And the UK certainly tends to have a lower market share in more geographically distant markets. This effect of distance is exaggerated when the market is also culturally and/or linguistically different, whilst UK market share tends to be higher in distant markets with stronger cultural and historic ties, such as Hong Kong and South Africa.

Even taking account of the gravity model's predictions, the number of UK firms exporting to Latin American markets is still particularly low, especially given the scale and growth of consumption in Brazil and Mexico. The UK's market share is lower than that of France and Germany, and the ratio of trade performance in Latin America and average trade performance is also worse for the UK than for its key competitors. We find several possible explanations. One is that some UK exports are sent to Latin America via third markets – via other EU markets or the US. A second is that some UK firms have established operations in the US (potentially to a greater extent than French and German counterparts), and they export to Mexico and Brazil from there. Another is that trade performance depends on the match of the composition of products demanded by a country and that supplied by the UK. And finally, UK firms may find it harder to compete in Latin America than French and German firms, because the goods and services UK companies provide are more similar to those provided by US firms, and US firms have a distinct proximity advantage in the region.

Improving UK Net Trade

The UK had a trade deficit of -3.6 per cent of GDP in 2010, similar to levels across the last decade. The UK's highest sectoral deficits are in electrical equipment, vehicles and mineral fuels and oils. The latter makes the UK's trade balance somewhat reliant on the oil price, although less so than for France, where the high oil price appears to have been a key driver in the worsening of their trade deficit.

Given the fairly high import intensity of UK exports, and the impact of the oil price, growth in exports will need to be even higher in order to meet the OBR's forecast of lowering the trade deficit to -0.6 per cent by 2015.

Global and UK trade has recovered rapidly in 2010 and so far in 2011 and, downside risks excepted, the Ernst & Young ITEM Club forecasts UK export growth of 8.5 per cent a year over the coming decade. UK exports to the BRICs in particular are expected to grow by an average of 11.7 per cent a year, as their expanding middle classes demand increasing volumes of consumer goods and services. Exports from the BRICs, however, will also continue to increase, including those into the UK. An improvement in the UK trade balance with the BRICs will therefore require both success in China's five-year plan to rebalance its growth towards domestic consumption, and a successful rebalancing of UK growth away from consumption and imported final goods, towards exports and investment.

From the supply side, many UK firms are looking increasingly to exports as part of their growth/survival strategy. At present, 23 per cent of UK SMEs export, on par with other large EU economies**,** and nearly half of these are considering entering new overseas markets. Amongst non-exporters, the latest Small Business Survey found that 4 per cent were expecting to start exporting within the next 12 months. However, not all of them are likely to succeed in entering new markets immediately, or to export in any significant quantities. HMRC figures show a 1.5 per cent increase in goods exporters in the year to Q2 2011, compared to the previous year. Some of the barriers to exporting cited by non-exporters could be lowered by UKTI support. This includes services providing training on how to export, information on particular markets, and relevant contacts in overseas markets, to build partnerships and sales.

Opportunities and Competition

The BRICs and other High Growth Markets provide particular opportunities for UK firms to expand their overseas sales. This may be through direct investment in these markets, as well as through exports. This paper focuses on China and India as centres of future growth and consumerism, Brazil and Mexico as large markets with great opportunities but also competition from the US with its advantage of proximity, and Russia and Turkey as markets close to the EU and who in economic and regulation terms are likely to grow closer still through WTO accession and EU accession negotiations.

We also consider the extent to which UK firms are competing against the rise in South-South trade. The share of world goods trade among developing countries has more than doubled in the past two decades, and the Asia Development Bank predict that it will double again over the next two decades. China is accountable for 40 per cent of all south-south commerce. We find that UK exports tends to be concentrated more in services and also more in high-tech goods, compared to bilateral trade between the BRICs. Current BRIC-BRIC trade is dominated by exports of mineral fuels and oils, ores, and iron and steel and related articles.

Meanwhile, the UK tends to export machinery, vehicles and consumer goods and services to the BRIC markets. At present, therefore, UK exporters are still competing more against other developed economies such as the US, Germany, France and Japan, than against emerging economies. However, the BRICs are rapidly developing domestic capability and/or overseas partnerships in areas such as aerospace, automotives, transport, business services and creative and educational services. They will continue to rise up the value chain, and start providing an increasing level of direct competition to UK providers of high-tech goods, branded and luxury goods, and skilled services.

CHAPTER 1: OVERVIEW OF UK TRADE PERFORMANCE

1.1 INTRODUCTION

Over the last decade UK goods and services exports have grown by an average of 2.8 per cent and 7.5 per cent per annum respectively. This compares to 8.1 per cent and 11.4 per cent in Germany and 5.3 per cent and 5.9 per cent in France.

The UK's share of services exports peaked at 8.7 per cent in 2004, nine times its share in the world population, but has fallen back since 2007, to 6.2 per cent in 2010 (compared to Germany's 6.3 per cent share, and France's 3.8 per cent share).

The UK's share of goods exports, on the other hand, has steadily declined to 2.7 per cent in 2010. Germany's share has also declined to 8.3 per cent, and France's share has fallen to 3.4 per cent, against the surge in goods leaving China and other emerging markets each year.

However, these aggregate figures mask a variety of different patterns across markets and sectors. For example, the UK accounts for 22.8 per cent of financial services exports in the world, but only 2.6 per cent of global construction service exports. The UK provides 8.3 per cent of global communication services exports, but only 1.7 per cent of office and telecoms equipment. And the UK's share of pharmaceutical exports is substantially higher than its share of chemical exports. Meanwhile, amongst markets, 3.3 per cent of Singapore's goods exports originate from the UK, but only 1.5 per cent of Malaysia's. The UK provides 14.9 per cent of South Africa's services imports, and 14.5 per cent of Ireland's, but only 0.5 per cent of those into Indonesia.

Amongst combinations of markets and sectors, the range of performance is even more striking. Whilst the UK's share of goods imports into Brazil is only 1.7 per cent, it accounts for 12.8 per cent of Brazil's imports of printed books and newspapers. France and Germany export substantially more pharmaceutical goods to Mexico than the UK does, but more of the US's pharmaceutical imports come from the UK than from France or Germany.

This paper compiles an overview of these patterns across markets and sectors and combinations of the two, and considers how UK performance compares to key competitor countries. We also look at increasing competition from South-South trade. The paper draws on recent analysis to assess why certain patterns emerge, where UK performance could be improved, what shape future global demand will take, and where the greatest benefits from trade growth can be reaped.

1.2 AGGREGATE TRADE PERFORMANCE

The UK is the sixth largest trader in the world, and the third largest exporter of services.

In 2010, UK exports totalled US$632 billion, up 9 per cent from 2009. They accounted for 3.3 per cent of global exports. UK imports totalled US$714 billion, up 11 per cent year-on-year. These imports accounted for 3.8 per cent of world imports.

This places the UK as the sixth largest trader in the world, behind the US, China, Germany, Japan and France. It is the sixth largest importer and the seventh largest exporter. However, the UK has relative strength in services exports compared to goods exports: The UK is the third largest services exporter behind the US and Germany. It is the tenth largest goods exporter.

Table 1.1: Top Ten Global Traders and Exporters

Total Trade	Total Exports	Goods trade	Goods Exports	Services Trade	Services Exports
USA	USA	USA	China	USA	USA
China	China	China	USA	Germany	Germany
Germany	Germany	Germany	Germany	**UK**	**UK**
Japan	Japan	Japan	Japan	China	China
France	Netherlands	France	Netherlands	Japan	France
UK	France	Netherlands	France	France	Japan
Netherlands	**UK**	**UK**	S. Korea	India	Spain
Italy	S. Korea	Italy	Italy	Netherlands	Singapore
S. Korea	Italy	S. Korea	Belgium	Singapore	Netherlands
Hong Kong	Hong Kong	Hong Kong	**UK**	Spain	India

Source: WTO Trade Statistics

Key large country competitors have a higher proportion of goods in their total exports. Whereas goods account for 63 per cent of UK exports, they account for 71 per cent of US exports, 79 per cent of French exports, and 85 per cent of German and Japanese exports.

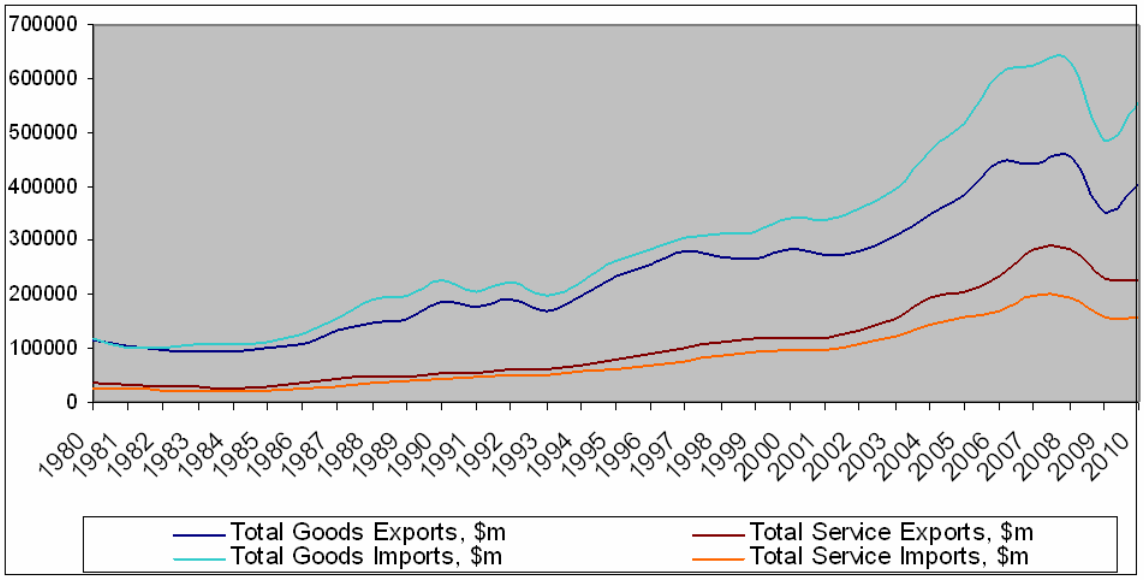
Thus, the UK's share of global services exports was 6.2 per cent in 2010, down from its peak of 8.7 per cent in 2004, but still over six times the UK's share of the world population. The UK's share of global goods exports has declined steadily against the surge in goods exported from emerging markets, to 2.7 per cent in 2010. This is still around three times higher than the UK's share of the world population.

1.3 UK TRADE GROWTH

Over the last decade, UK goods and services exports have grown by an average of 2.8 per cent and 7.5 per cent per annum respectively. This compares to growth of 8.1 per cent (goods) and 11.4 per cent (services) in Germany, and 5.3 per cent and 5.9 per cent in France.

As shown in the chart below, UK trade growth between 2002 and 2008 was significantly faster than trade growth in the 1990s, which was in turn considerably faster than in the 1980s. This acceleration was of course halted in 2009, with the greatest annual fall in both UK and global trade growth in recent history, but goods trade in particular has rapidly recovered over the last year and a half.

Figure 1.1: UK Goods and Services Exports and Imports since 1980



Source: WTO Trade Data

The UK's top export destinations remain the US, Germany, France, the Netherlands and Ireland. However, China is now the 9th largest destination by value, and India is the 11th largest. China plays an even more important role in the UK's imports, as the third largest importer after Germany and the US, with France down in 6th place behind the Netherlands and Norway.

1.4 OVERVIEW OF SECTORS AND MARKETS

1.4.1 Service Sectors

Some 60 per cent of UKTI trade clients are in services sectors. Only a proportion of these are in financial services: Financial services account for 28 per cent of total UK services exports, but business services also account for 27 per cent, and transport and travel together account for 25 per cent.

Across service sectors, the UK accounts for 22.8 per cent[1] of financial services exports in the world, 8.3 per cent of global communication services exports (9.9 per cent of telecommunications), but only 2.6 per cent of global construction services.

The UK makes up only 3.9 per cent of travel services exports, but within this, constitutes 17.8 per cent of education-related travel expenditure (amongst the 44 countries that report this). The US accounts for 59.7 per cent of education-related travel services, France only 1.3 per cent (statistics for Germany and Japan are not reported).

In health-related travel expenditure, however, the UK only accounts for 1.7 per cent, compared to 40.8 per cent for the US and 7.5 per cent for France.

In insurance services, the UK is not far behind the US, with 16.2 per cent of exports compared to 18.2 per cent[1]. Of those reported in 2009, 47.6 per cent of legal services exports came from the UK, compared to 1.9 per cent from France.

A quarter of computer and information services exports originate from India, and 18 per cent from Ireland. 7.8 per cent are from Germany, 7.2 per cent from the US, and 5.8 per cent from the UK, with only 0.9 per cent from France and 0.5 per cent from Japan. Within information services, UK exports of news agency services are nearly 100 times higher than those from France.

UK exports of education services (within personal services) are nearly 4.5 times higher than those from France. A fifth of these UK education services are exported to EU countries, the rest are extra-EU.

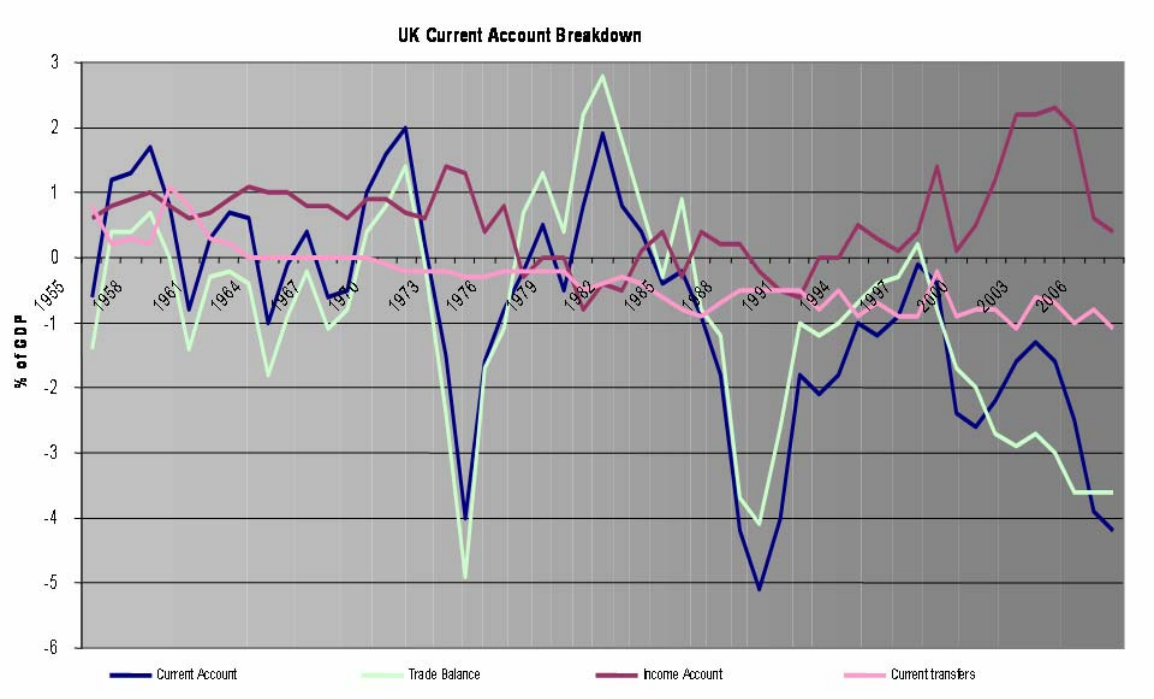
The UK has the second highest exports of personal, cultural and recreational services; 9.2 per cent of global exports, although way behind the US with 41.5 per cent. France is third with 5.7 per cent, followed by Spain.

The UK exports about four times as many architectural, engineering and other technical services as France, but half as many as Germany.

With these kinds of services, however, it is important to bear in mind that many will be provided via FDI, i.e. a base in the destination market, as opposed to providing the service from the UK. This outward FDI provides an important boost to the current account via the income balance, which has been in surplus since the 1990s, as shown below. The services trade balance has been in surplus since the 1960s.

[1] UN services trade data for 2009

Figure 1.2: Historic Trend of the Components of the UK Current Account



Source: ONS Pink Book

The majority of royalties and licence fees exports originate from the US (42.1 per cent), followed by Japan with 10.2 per cent. The Netherlands, Switzerland and Germany are also ahead of the UK, followed by France.

Of those countries reporting business and management consulting and public relations services, the UK exports three times as much as France, but only two thirds as much as China.

In terms of 'Other Business Services' (trade services, legal, consulting and public relations services, architecture and technical services, advertising agricultural and mining services and R&D), the US exports 11.6 per cent of the global total (for the 119 reporting countries). Then Germany exports 9.8 per cent, the UK 8.5 per cent, China 5.9 per cent, Japan 5.5 per cent, Singapore 5.0 per cent, the Netherlands 4.8 per cent and France 4.3 per cent.

The UK accounts for 5.1 per cent of transport services and 3.9 per cent of travel services. The largest value of UK travel services are exported to the US, where the UK accounts for 4.4 per cent of travel service imports. However, the UK holds a larger market share of travel services in Italy (8.2 per cent of imports), South Africa (8.5 per cent), India (6.8 per cent), Turkey (6.0 per cent), and Egypt (5.4 per cent). The UK's share in markets with weaker ties is substantially lower; 0.4 per cent in Colombia, 1.0 per cent in Korea, and 1.5 per cent in Indonesia.

1.4.2 Goods Sectors

The value of world merchandise trade was 22 per cent higher in the first quarter of 2011 compared to the same period of 2010, according to WTO

figures released on 1 June 2011. March was the first month the value of trade has exceeded the pre-crisis peak of July 2008.

Whilst the UK's overall share of goods exports is lower than that of key competitors, UK export performance is relatively strong in many innovative, high growth goods sectors, such as pharmaceuticals and high tech machinery, and in luxury goods such as art work and spirits.

For example, the UK accounts for 13.1 per cent of beverages, spirits and vinegar exports, 7.4 per cent of global pharmaceutical goods exports, 3.5 per cent of automotive exports, but only 1.7 per cent of exports of office and telecoms equipment.

Table 1.2: UK Share of Global Goods Exports

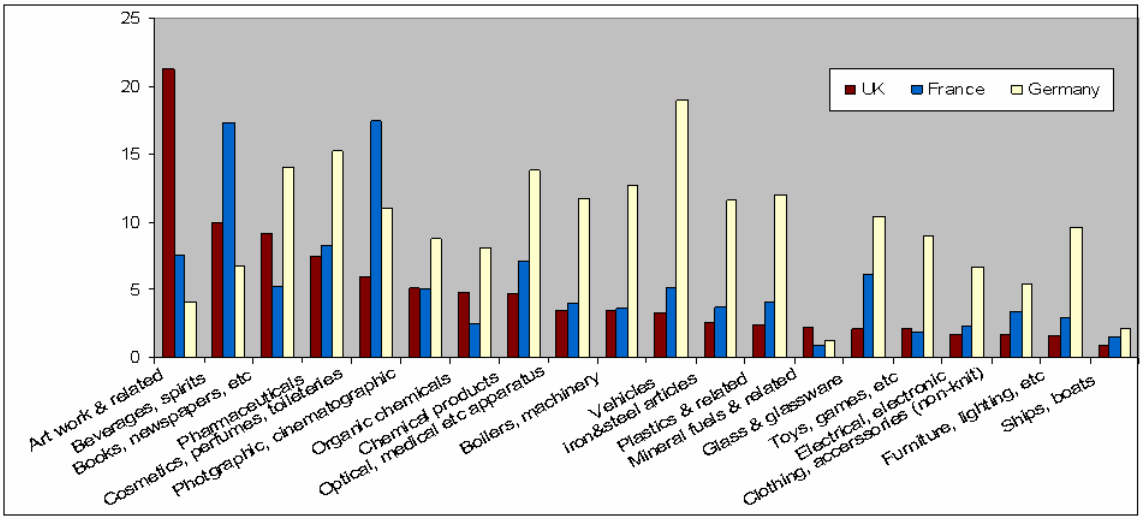
Agricultural goods 2.2%	Food 2.4%	Beverages & spirits 13.1%
Manufactures 3.1%	Machinery & transport equip 2.6%	Office & telecom equip 1.7%
Automotives 3.5%	Chemicals 5.1%	Pharmaceuticals 7.4%
Textiles 1.7%	Clothing 1.6%	Fuels & mining goodss 2.2%

Source: UN Comtrade Database

The graph below shows the UK's market share across goods sectors, compared to that of France and Germany. In most sectors, the UK's performance is close to, and sometimes above, that of France, but Germany is usually way out in front.

The UK exports twice as many printed books, newspapers and pictures as France, and five times as many as Japan, but less than Germany or the US. Germany exports twice as much sports equipment as the UK and Japan. The US exports about the same amount as these three countries combined.

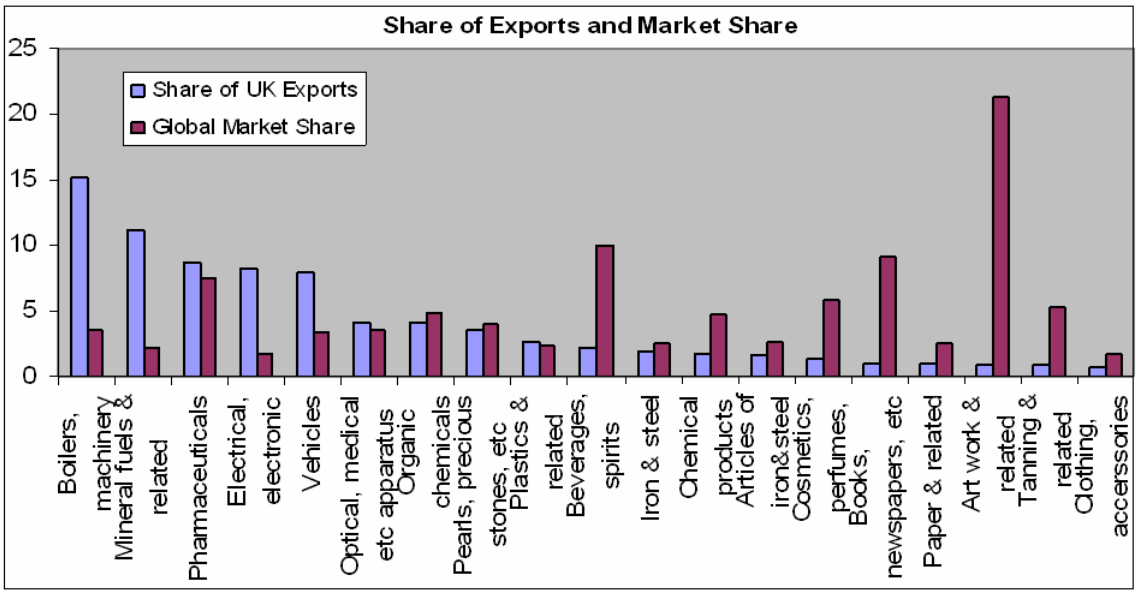
Figure 1.3: UK, French & German Share of Global Exports across Goods Sectors



Source: UN Comtrade Database

The graph below compares the importance of different sectors in contributing to overall UK exports, to the UK's share of global exports in that sector. As shown, there is a weak correlation between the two. Manufactures such as machinery, pharmaceuticals, electrical goods and vehicles, plus mineral fuels and related products, make up the majority of UK exports. Many of these sectors are quite import-intensive, but nevertheless, these exports add significant value to the UK economy in terms of output and employment.

Figure 1.4: Share of Total UK Exports and Global Market Share, by Sector



Source: UN Comtrade Database

In other sectors, UK export values are lower, yet in some the UK's market share is quite high. Global export values are therefore even lower in relative terms. The sector that stands out as having both a high level of UK exports and a high UK market share is pharmaceuticals.

1.4.3 Market Share in Key Destinations

Across markets, the UK makes up 14.9 per cent of services imports into South Africa, 13.2 per cent of those into the US, 8.0 per cent of those into Turkey, 6.9 per cent of those into Singapore, 5.7 per cent of those into Hong Kong, and 9.2 per cent and 5.9 per cent of those into France and Germany respectively. However, the UK only accounts for 2.2 per cent of services imports into China, 2.0 per cent of those into Brazil, 1.9 per cent of those into Colombia, 1.8 per cent of those into Indonesia, and 1.7 per cent of those into Korea.

The UK's share of goods imports is generally lower, but is nevertheless still fairly high for EU states: 41.7 per cent of Ireland's goods imports, 7.2 per cent for the Netherlands, 5.2 per cent for France, and 4.1 per cent for Germany. The UK accounts for 3.0 per cent of US goods imports, but only 0.9 per cent of Japan's. There is a wide range in UK goods export strength across the high growth markets, with a 5.3 per cent market share in South Africa and 4.6

per cent in Qatar, but a 0.8 per cent share in China and only 0.5 per cent in Indonesia and Mexico.

Across total exports of both goods and services, the UK's market share in key markets in 2009 is given in the table below.

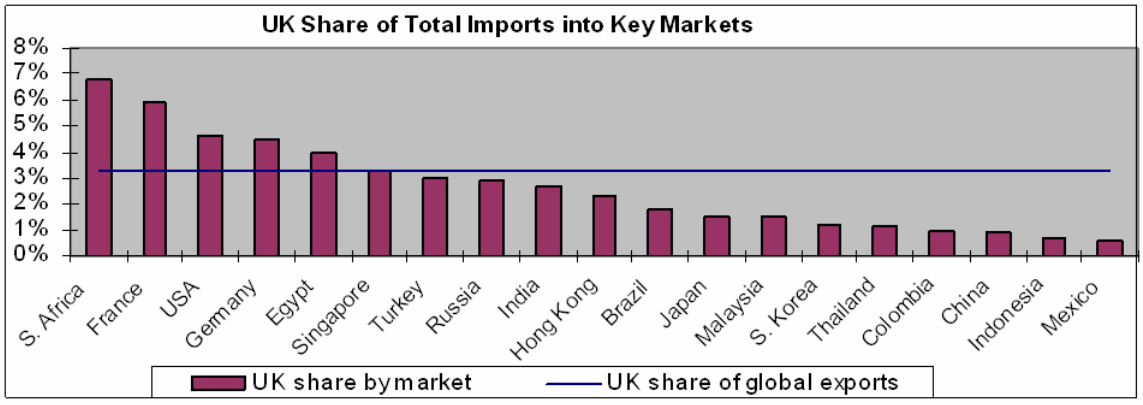
Table 1.3: The UK's Share of Exports to Key Markets

South Africa 6.8%	France 5.9%	USA 4.6%	Germany 4.5%
Egypt 4.0%	Turkey 3.0%	Russia 2.9%	Singapore 3.3%
India 2.7%	Hong Kong 2.3%	Brazil 1.8%	Japan 1.5%
Malaysia 1.5%	S. Korea 1.2%	Thailand 1.1%	Colombia 1.0%
China 0.9%	Indonesia 0.7%	Mexico 0.6%	

Data unavailable for Saudi Arabia, Qatar, UAE and Taiwan

These market shares are also compared to the UK's overall share of global exports in the graph below. As illustrated, the UK only has a share above its global average in a couple of emerging markets, namely South Africa and Egypt. The UK's market share is also likely to be above average in Saudi Arabia, the UAE and Qatar, based on goods trade, although accurate figures for services trade are unavailable.

Figure 1.5: UK Market Share across Destinations, Compared to Average Market Share



Source: UN Comtrade and Service Trade Database. Figures given for latest available year, either 2010 or 2009. Data unavailable for Saudi Arabia, Qatar, UAE and Taiwan.

Given that travel and transport constitute a substantial proportion of all service trade, it is hardly surprising that the UK is not going to hold a large share of total services imports in Asia Pacific. Nevertheless, even within other components of services trade, such as financial services, the UK lags behind in many of the more geographically and/or culturally distant markets.

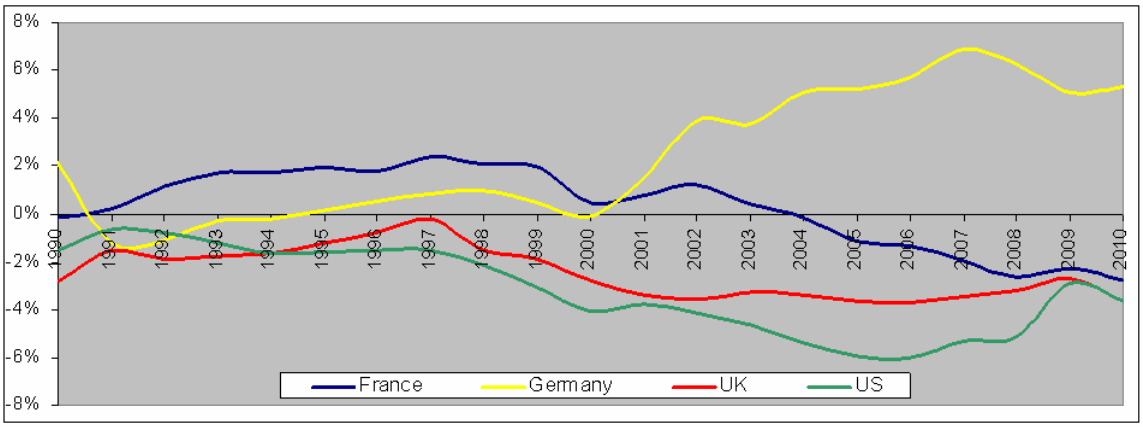
Analysis of exports to key Asian markets has shown that the UK exports nearly as many different types of goods as its key competitors, but tends to export them in lower volumes. Again, this varies considerably across sectors; the UK accounts for a massive 44.7 per cent of Korea's beverages, spirits and vinegar imports, so is obviously exporting these in high volumes. Yet for

many consumer goods, the UK tends to export slightly higher quality, differentiated and branded goods at higher prices but lower volumes. We will examine the patterns of trade in key sector-market combinations further in succeeding chapters.

1.5 UK TRADE BALANCE AND COMPARISON TO FRANCE

In 2010, the UK had a trade deficit of –US$82 billion, -3.6 per cent of UK GDP. As shown in the graph below, this is similar as a percentage of GDP to that of the US, and France's trade balance has also declined to a similar level. Germany, on the other hand, has had a strong trade surplus since 2002.

Figure 1.6: Recent Trends in Trade Balances as a percentage of GDP

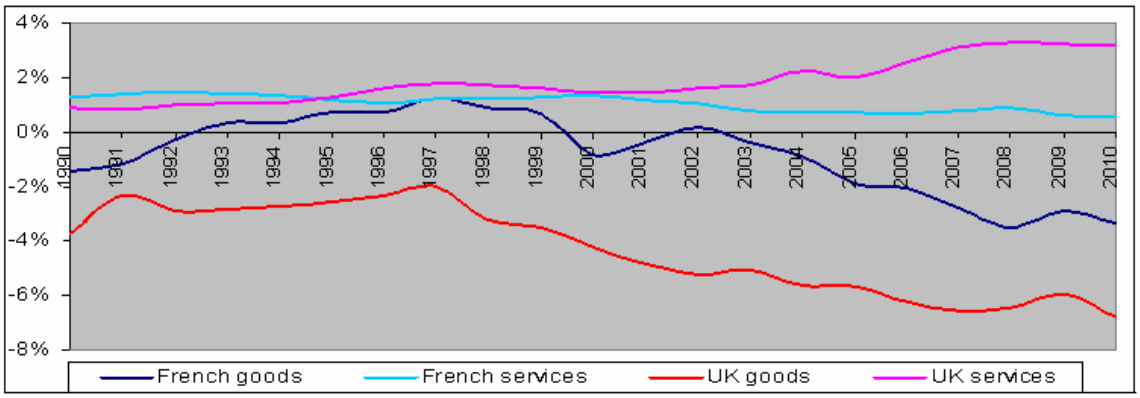


Source: WTO Trade Data

1.5.1 Goods and Services

In 2010, the UK had a goods trade deficit of -6.8 per cent of GDP, and a services trade surplus of 3.1 per cent of GDP. France is in a similar position of having a goods trade deficit (-3.3 per cent of GDP) and a services trade surplus (0.6 per cent of GDP), although the difference between the two is narrower, as shown below. The graph shows that both the UK and French goods trade balances have worsened over the last decade.

Figure 1.7: UK and French Trade Balance for Goods and for Services

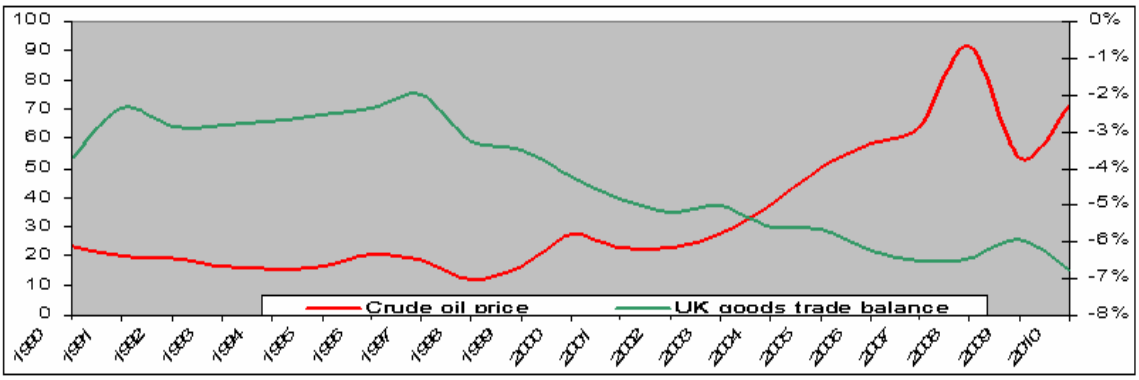


Source: WTO Trade Data

1.5.2 Goods Sectors

Disaggregating the UK's goods trade by two-digit HS codes shows that the UK has the highest deficit in electrical equipment (-1.0 per cent of GDP), and then vehicles (-0.7 per cent of GDP). The UK also has a sizeable deficit in trade in mineral fuels and oils (-0.5 per cent), making the goods trade balance somewhat reliant on the oil price. **The graph below shows a generally negative correlation between the crude oil price and the UK goods trade balance.**

Figure 1.8 Correlation between Crude Oil Price and UK Goods Trade Balance



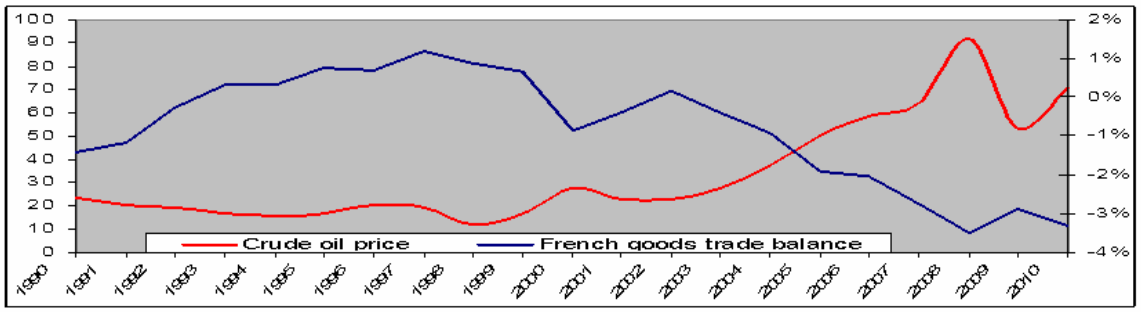
Source: WTO Trade Data and WTRG Economics. Crude oil price in US$ on left hand axis, goods trade balance as percentage of GDP on right hand axis.

The UK also has a deficit above -0.2 per cent of GDP in trade in aircraft and spacecraft, machinery, clothing and footwear, furniture, paper, plastics, wood, toys and games, and fruit. Amongst two-digit HS codes for goods, the UK only has a trade surplus above 0.2 per cent of GDP in pharmaceuticals (0.4 per cent of GDP), although the UK has substantial trade surpluses for the majority of services. In addition, disaggregating by two-digit code only gives part of the picture; there are many sub-sectors within these codes where the UK does export more goods than it imports.

1.5.3 French Comparison

Disaggregating French goods trade by two-digit HS codes, we can see that by far the highest trade deficit is in **mineral fuels, oils and distillation products;** -2.5 per cent of GDP. The price of oil and other fuels, therefore, has a significant negative effect on the France trade balance, as shown in the graph below: **Whenever the crude oil price has risen, the French goods trade balance has fallen.**

Figure 1.9: Correlation between Crude Oil Price and French Goods Trade Balance



Source: WTO Trade Data and WTRG Economics. Crude oil price in US$ on left hand axis, goods trade balance as percentage of GDP on right hand axis.

France also has a trade deficit greater than -0.2 per cent of GDP in electrical equipment, machinery, vehicles, furniture and prefabricated buildings, and clothing and footwear. The highest goods trade surplus is in aircraft, spacecraft and parts thereof, at 0.9 per cent of GDP, mainly due to Airbus exports. France also has a goods trade surplus greater than 0.2 per cent of GDP for beverages and spirits, perfumes and cosmetics, pharmaceuticals, and cereals.

CHAPTER 2: EXPORT-LED GROWTH, & THE NUMBER OF EXPORTERS

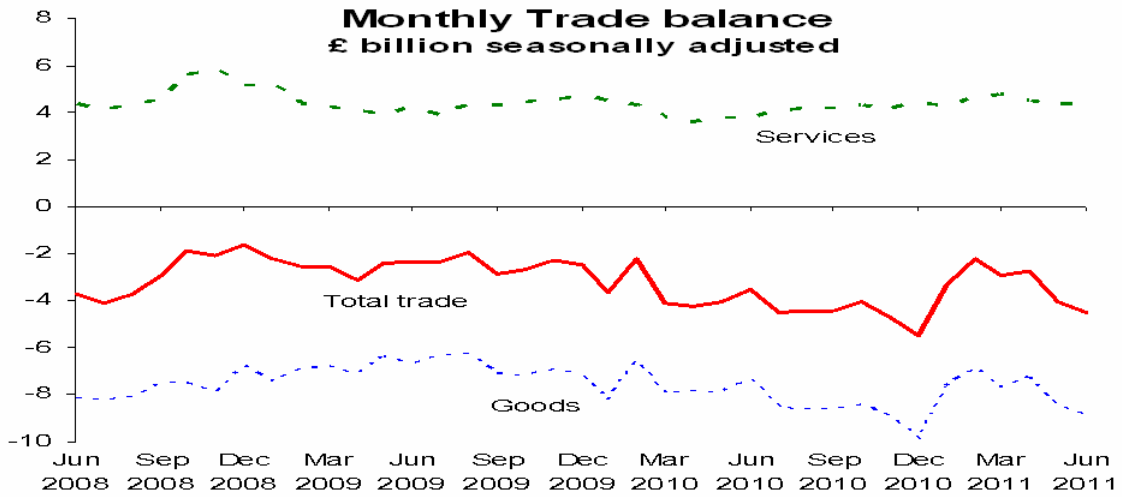
In its spring 2011 forecasts, the Office of Budget Responsibility expected the trade deficit to fall gradually from 2.5 per cent of GDP in 2010 to 0.6 per cent by 2015, driven by faster export growth and some slowdown in import growth.

There will need to be quite a marked change in the ratio of exports to imports in order to change what has been quite a consistent trade deficit across several decades now. The UK has had a trade deficit since 1986. The deficit narrowed to just –US$2.8 billion in 1997, but then rose in absolute terms every year between 1998 and 2007, to US-$96 billion in 2007. In 2010 the UK trade deficit stood at -US$82 million.

As a percentage of GDP, the trade deficit has hovered between -2.7 per cent and -3.7 per cent since 2000. As discussed in Chapter 1, the French trade deficit is now at quite a similar level, having progressively worsened since 2004, and both the French and UK trade balances have been negatively affected by high oil prices.

As the graph below shows, the trade deficit did narrow in the first quarter of 2011, compared to 2010, but we are yet to see a sustained improvement.

Figure 2.1: Recent Changes in the Trade Balance



Source: ONS

In addition, UK exports are quite import intensive, requiring even higher export growth or a shift towards greater use of domestic inputs, to make an impact on the trade balance. The depreciation of the sterling exchange rate should help domestic suppliers compete more effectively against imported

intermediate goods. This could gradually reduce the dependence on imported inputs, but probably only to a small degree. Firstly, firms will be reluctant to break established relationships with existing suppliers, and may not be able to do so until the end of an existing contract. Secondly, even with the depreciation, UK suppliers may still not be price competitive compared to those in emerging markets where labour and land costs are low. And thirdly, some UK-based firms operate in Euros or hedge against currency fluctuations, in which case the depreciation may make little difference. However, it is reasonable to expect a marginal shift towards UK suppliers.

Lowering the UK's persistent trade deficit, therefore, will need export growth to be substantially higher than import growth going forwards, with the value of imports reliant to some extent on the price of oil.

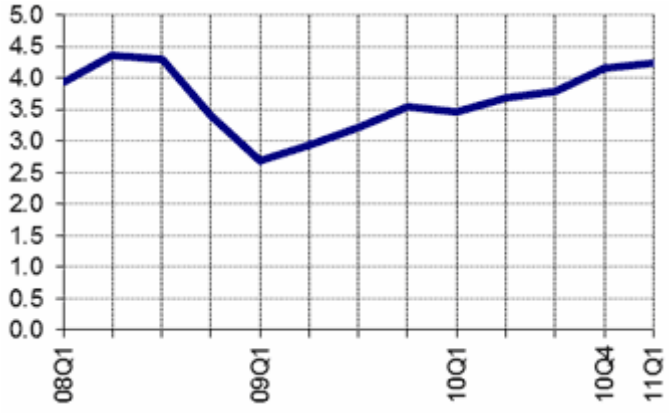
Growth in imports of finished goods should be suppressed by dampened demand from UK consumers. Whilst households remain cautious about growth and employment, and look to reduce private debt, imports of high value consumer goods are unlikely to experience such rapid and sustained growth as seen prior to 2008.

Faster export growth, on the other hand, is expected to be driven from both the supply and demand sides, as examined below.

2.1 GLOBAL DEMAND

Global trade has already recovered to pre-crisis levels in the first quarter of this year, with goods trade up 22 per cent from the first quarter of 2010.

Figure 2.2: World merchandise exports, 1Q2008 to 1Q2011, Trillion dollars



Source: WTO

This rapid growth is partly due to commodity price increases of around 30 per cent, but nevertheless, unless there is another global slowdown, world trade should continue to grow at fairly high rates.

In March, the WTO forecast that world GDP would grow by 3.1 per cent, and world trade would grow by 6.5 per cent, during 2011. The WTO are expected to lower this figure for 2011 trade growth due to weaker than expected demand in the US and EU, but demand in markets such as China and India has been even higher than expected.

Going forward, high trade growth is expected to continue to be driven by the increased trade of emerging markets. In particular, China and other Asian economies are rebalancing away from export-led growth, and seeing an increase in domestic consumption and import demand. Their middle classes in particular are increasingly demanding international brands and more innovative and high-end goods and services.

The IMF expects growth in imports into China, Korea, Bangladesh, Argentina and Vietnam to exceed 10 per cent a year between 2012 and 2016. All UKTI High Growth Markets expect import growth above 5 per cent a year.

The UK should be well placed to provide many of the higher quality goods and services demanded by the expanding global middle class. The Ernst & Young ITEM Club forecasts UK export growth of 8.5 per cent a year over the coming decade, with annual growth in UK exports to the BRICs expected to average 11.7 per cent.

At the same time, all these figures for increasing demand are exposed to the significant downside risk of a second global slowdown, and another fall in global trade. Recent figures from Grant Thornton's International Business Report (IBR) show a collapse in business optimism during the third quarter of 2011, with net global business optimism dropping from 31% to just 3%. If there was another slowdown in growth across developed markets, it would be more important than ever for UK firms to seize the opportunities continuing demand in emerging markets could provide.

2.2 SUPPLY-SIDE PUSH FACTORS

Many firms are looking increasingly to exports as part of their growth/survival strategy. Weak domestic demand and a more competitive exchange rate, coupled with the potential economies of scale, product expansion and diversification of income possible through new markets, make exports a potentially attractive way for UK firms to expand their sales.

2.2.1 The Number of Exporters

At present, 23 per cent of UK SMEs export (according to the Small Business Survey).[2] This is on par with other large EU economies such as France and Germany (smaller economies can expect to export a higher proportion of their output).

So the UK has somewhere around 275,000 exporters. However, not all of these firms are exporting consistently or in significant volumes: They may experience some years with little or no overseas sales.

In general, larger, older, more productive and more innovative firms have a higher likelihood of exporting. Innovative firms with high productivity are expected to compete best in the international market, and reap the greatest rewards from expanding overseas. BIS Economics Paper No. 5 has greater detail on these characteristics of UK exporters[3].

Hence 76 per cent of manufacturers who conduct R&D are exporters. The proportion of exporters is also higher in the capital, with 30 per cent of SMEs in London exporting.

Amongst those non-exporters surveyed, 4 per cent were expecting to start exporting within the next 12 months[4]. If they all succeeded in doing so, this could add a further 37,000 exporters. However, not all of them are likely to enter new markets immediately, or export in any significant quantities.

The rest of the non-exporters give a range of reasons for not looking to export. Many, particularly in services, do not have international or tradable products, and a number are too new or small to be considering such expansion: Some are still expanding within the UK. Others choose to remain local and are content with the level of business they gain in the domestic market. There is also a proportion of firms who might be interested in exporting, but either face financial barriers or difficulties in finding overseas customers. BIS Economics Paper No.13 looks in greater detail at these barriers, and the economic rationale for UKTI intervention[5].

HMRC records all UK goods exporters with intra-EU exports above £250,000 and any non-EU exports that go through Customs. Other the four quarters Q3 2010 to Q2 2011, they recorded a 1.5 per cent increase in the average number of goods exporters from quarters Q3 2009 to Q2 2010. Whilst not a

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[2] This refers to SMEs with at least one employee.

[3] BIS Economics Paper No.5 (2010), "Internationalisation of Innovative and High Growth SMEs "

[4] Small Business Survey

[5] BIS Economics Paper No.13 (2011), "International Trade and Investment – the Economic Rationale for Government Support"

dramatic increase, this is at least shows that on average there were more new exporters than there were firms leaving the international market over the year.

However, these new exporters will take time to make any significant impact on export volumes. It generally takes a couple of years to build up a sizeable presence in an overseas market, and not all of them will succeed in sustaining a significant volume of exports to these markets. At the same time, once they are established, the addition of new exporters can have a greater impact on UK export figures than can be achieved via long-existing exporters raising the amount they export to existing markets.

Evidence therefore suggests that we can expect an increase in the number of exporters to make a substantial impact on the UK's aggregate export figures after about five years. Over a ten year period, new exporters may make about twice as much difference to export figures as expansion by current exporters. BIS Economics Paper No.8 summarises the evidence on the contribution of the extensive margin (new exporters) and the intensive margin (existing exporters raising their export volumes) to overall trade growth[6].

2.2.2 New markets for Existing Exporters

A more immediate route by which to increase UK exports is for existing exporters to enter new markets. They may still take some time to establish in a new market, but there should be a much shorter learning and ramping up period given that they are already operating internationally.

There is also significant capacity for them to do so. Nearly 40 per cent of services exporters only export to one overseas market, despite services exporters tending to sell to more foreign markets than the average manufacturing firm[7]. Even amongst firms who have been exporting for over ten years, nearly a quarter export to only 2-5 markets[8].

The majority of exporters operate in other EU markets (74 per cent), but only 27 per cent have sales in North America, 25 per cent in the Middle East and Africa, 25 per cent in Asia Pacific, and a mere 8 per cent in Latin America.

For services, over 96 per cent export to a high income country, 35 per cent to a middle income country, 22 per cent to a low income country and 30 per cent to an emerging or high growth market. The proportion of exports destined for EU markets is particularly high for transport and retail services. Business services are relatively more likely to enter Asia Pacific markets than other services, though again exports of these services to EU markets are still higher.

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[6] BIS Economics Paper No.8 (2010), "UK trade performance: Patterns in UK and global trade growth"

[7] Richard Kneller 2010

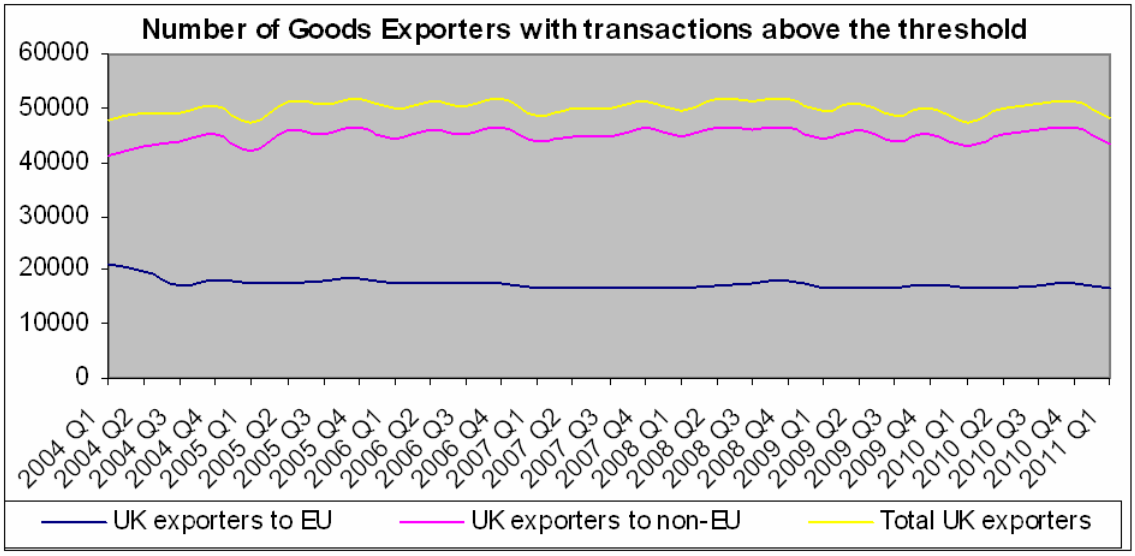
[8] Richard Harris 2011

Kneller (2010) found that 70 per cent of the variation in total services exports or imports for a given market comes from variation in the number of exporters/importers, rather than average values exported per firm.

For goods exports, the top countries of destination are Ireland, the US, Germany and France. In Asia Pacific, Australia is the top market, but Hong Kong and China, and Singapore and India are fast catching up. South Africa, Dubai and Canada are also popular markets. However, Brazil and Mexico are far less popular, despite their size. We discuss this further in Chapter 5.

Therefore, there is great scope for the majority of exporters to diversify away from just operating in the EU and the US, and to enter further markets, especially whilst demand in developed economies is subdued. Indeed, 48 per cent of exporters surveyed expect to increase the number of markets they export to[9]. This has the potential to increase UK volumes within a few years, and on a sustainable basis.

Figure 2.3: The Number of UK Exporters to EU and Non-EU Markets



Source: HMRC Regional Trade Statistics

2.2.2.1 Hierarchy of Markets

There is not a clear order of markets for individual firms to enter. For one firm UKTI supported their first two markets were Sweden and China, whilst others export to the US and Canada and never enter EU markets. Part of the role of international trade advisers is to give advice on markets that would suit a particular firm and a particular type of product.

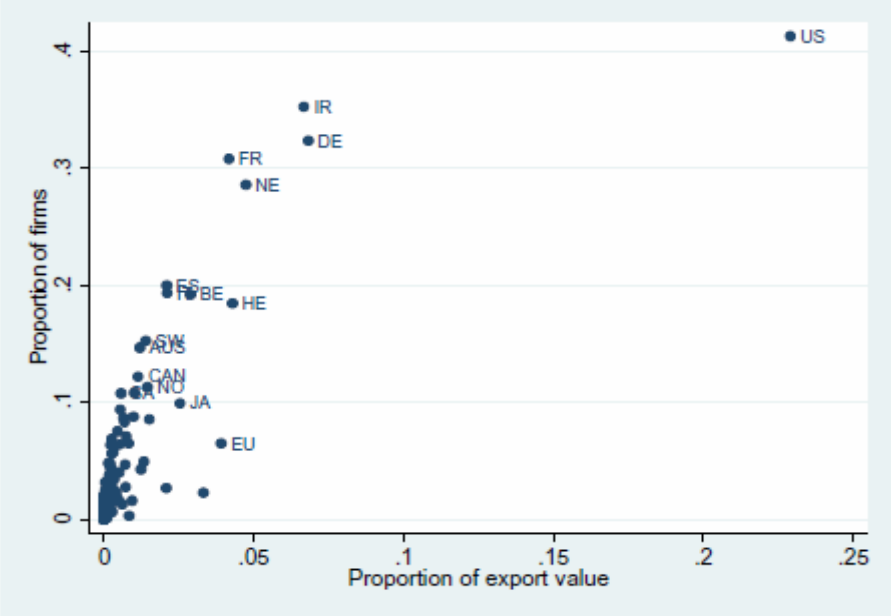
However, across all exporters, there is a vague hierarchy of markets. Kneller (2010) found that the US is the most common export destination for services exporters; over 40% of exporters export there. The next most popular

[9] Small Business Survey

destinations are Ireland, Germany, France and the Netherlands. Only after they have established a presence in these markets will the majority of firms look to more distant, less developed or smaller markets. Only exporters exporting to a large number of markets tend to be in markets where there are very few UK exporters.

Kneller also found that services exporters were more likely to be in more distant markets than goods exporters. There are higher costs associated with transporting goods to distant markets, and higher barriers associated with less developed markets (we cover the gravity model further in the next chapter). However, the relative growth in Asian, Latin American and Middle Eastern economies compared to developed EU and American markets increases the incentive for existing exporters to widen their global presence, and for some to enter emerging markets ahead of entering further developed markets.

Figure 2.4: Proportion of Firms Exporting to a Given Destination and Proportion of Total Exports to that Destination



Source: Kneller 2010

2.2.3 Number of Products Exported

There is also scope for existing UK exporters to increase the number of different products they export, particularly amongst services exporters. Within IT IS data, 30 different types of services are listed, yet by far the majority of firms export only a single one of these services; these single-service exporters account for 90 per cent of the value of exports (Kneller 2010). Only 0.3 per cent of firms export 5 different types of service, accounting for 2.5 per cent of the value of exports.

In comparison, in the US 26 per cent of firms export more than 5 services, and these represent 97 per cent of the value of exports. So there is certainly room for UK exporters to widen their range of exporters.

CHAPTER 3: THE GRAVITY MODEL AND ACTUAL PATTERNS OF UK TRADE

3.1 THE GRAVITY MODEL – PREDICTING THE PATTERN OF GLOBAL TRADE

The gravity model predicts that exports to a market should increase with the size of that market, and decrease with the distance to that market from the country of origin. It is therefore natural and to be expected that EU markets account for over 50 per cent of UK exports, given their proximity and their high levels of GDP.

There are of course many other factors that influence the extent of UK exports with a partner country, including the ease of market access - including local regulations, tariffs and other trade barriers and conversely free trade agreements, language and cultural ties, and GDP per capita, which is particularly important for UK exports, given that the high end goods and services the UK specialises in require a certain level of income.

Below we look at the extent to which the gravity model does describe UK trade and investment, and the outliers that can be explained by other factors.

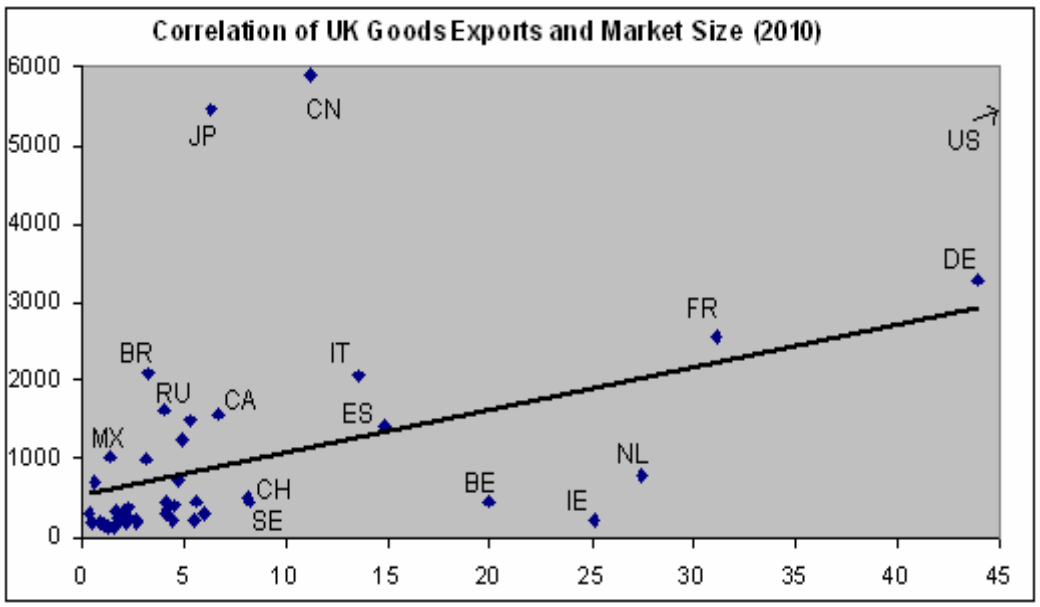
3.1.1 The Effect of Market Size

The scatter graph below plots the value of UK 2010 goods exports against the 2010 GDP of the destination market. As predicted, this is a positive correlation between the two, with a high value of exports to large markets such as the US, Germany and France.

However, two of the largest markets, namely China and Japan, stand out as having relatively low levels of UK exports. Whereas UK 2010 goods exports to the US totalled US$ 58 billion, goods exports to China were US$ 11 billion, and to Japan US$ 6 billion. As described above, this is likely to be partly due to how far these markets are from the UK, and in China's case, the low GDP per capita will also affect the demand for UK exports.

Neighbouring EU markets such as the Netherlands, Ireland and Belgium receive particularly high imports from the UK for their size, whilst exports to Brazil, Mexico and Russia are all quite low relative to the size of the market. We consider why UK trade with Brazil and Mexico is relatively low in Chapter 5.

Figure 3.1: The Correlation between UK Goods Exports and Market Size



Source: UN Comtrade for UK goods exports to each market (US$bn, x axis), IMF WEO September 2011 for market's GDP (US$bn, y axis)

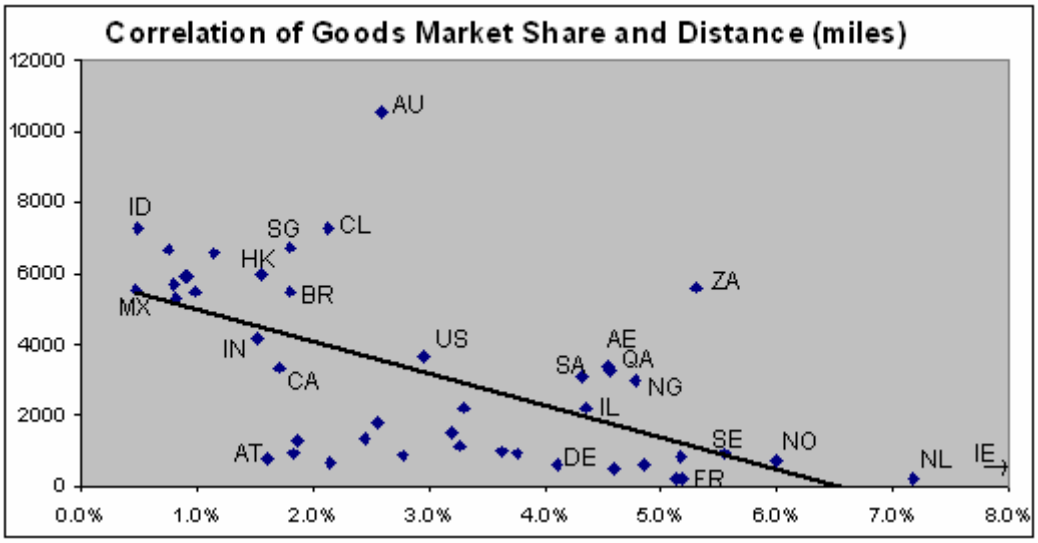
3.1.2 The Effect of Distance to Market

We now turn to the correlation between exports and distance to market. In the graph below we plot market share against distance, so that we eliminate a substantial part of the effect of the size of the market. This gives us a strong negative correlation between the two. The UK has a high market share in nearby EU markets and a low market share in distant markets such as Indonesia and Mexico.

However, there are two outliers in particular in this graph: Australia and South Africa. Both have a particularly high market share given their distance from the UK, which is highly likely to be due to historical, cultural and linguistic ties, including membership of the Commonwealth.

The UK's market share is also quite high relative to distance in Nigeria and in the Gulf States of the UAE, Qatar and Saudi Arabia. And although the UK's share is lower in Hong Kong, Singapore and Chile, it is relatively high given the distance.

Figure 3.2: The Correlation between UK Market Share and Distance



Source: UN Comtrade for share of goods imports, www.distancecalculator.globefeed.com for distances. Ireland is excluded, as UK's 42% share would have lengthened x axis, making other points less clear.

3.2 THE OUTLOOK ACROSS MARKETS

Economics growth in advanced economies has been weak over the second and third quarters of 2011, particularly given the depth of the recession, and downside risks have increased again. Global expansion remains unbalanced given that growth in most emerging and developing economies continues to be strong, with concerns about inflation and overheating in some emerging markets.

Overall, the global economy expanded at an annualized rate of 4.3 per cent in the first quarter of 2011, and forecasts for 2011-12 are for advanced economies to grow by 2.5 per cent, and for emerging and developing economies to rise by 6.5 per cent.

However, greater-than-anticipated weakness in US activity and renewed financial volatility from concerns about the depth of fiscal challenges in the euro area periphery pose greater downside risks. Risks also draw from persistent fiscal and financial sector imbalances in many advanced economies, while signs of overheating are becoming increasingly apparent in many emerging and developing economies.

Credible and balanced fiscal consolidation and financial sector repair and reform is needed in many advanced economies, and prompter macroeconomic policy tightening and demand rebalancing is required in many emerging and developing economies. More than ever, therefore, consumption is likely to grow faster in emerging economies than in advanced economies, presenting further opportunities for UK exporters in these expanding markets. The US still holds the largest trade in services, but China is creeping ahead in goods trade. Patterns in countries' trade across different goods and services sectors are discussed further in Chapter 7.

Over the next few chapters, we focus on demand in six key emerging markets. Chapter 4 looks at China and India, which between them account for 36 per cent of the world's population, with rapidly rising disposable incomes. Chapter 5 considers the question of why the large emerging markets of Brazil and Mexico are relatively unpopular amongst UK exporters and investors compared to their Asian and Middle Eastern counterparts. And chapter 6 examines two of our closest emerging markets, Russia and Turkey, and how WTO accession for Russia and the EU accession process for Turkey are opening up even more opportunities for UK firms looking to diversify out of EU markets. In each chapter we consider how demand in these markets varies across different sectors, and progress to date in grabbing these export and investment opportunities.

CHAPTER 4: CHINA AND INDIA'S EXPANDING CONSUMPTION

China and India have a combined population of 2.5 billion, 36 per cent of the global population[10]. And the proportion of these populations demanding consumer and professional goods and services is constantly rising, as their middle classes swell.

Their economies have continued to expand during the global downturn: Growth in China's GDP was 9.2 per cent in 2009 and 10.3 per cent in 2010, and India's GDP rose 6.8 per cent in 2009 and 10.4 per cent last year. China' growth is expected to remain elevated at 9.5 per cent this year and 9.5 per cent in 2012, and likewise, Indian growth is forecast at 8.2 per cent and 7.8 per cent this year and next (IMF).

4.1 CHINA'S REBALANCING

China's 12th Five-Year Plan has a strong focus on rebalancing growth from exports to domestic consumption. The priority has also shifted away from the absolute level of growth toward its quality and impact on "people's livelihood." To boost consumption, the plan targets growth in disposable income above growth in GDP, for both urban and rural residents, looking to reverse the decline in household income as a share of GDP.

Progress has been made in expanding China's social security, with significant resources allocated to improving the pension, healthcare, and education systems. In particular, a new rural social pension system has been introduced and now covers 60 per cent of counties, and the government is about to expand the existing social pension scheme to include the urban unemployed, with nationwide coverage expected by 2012. Increased healthcare spending has helped build health facilities, train personnel, and achieve near-universal coverage of basic health insurance.

Gaps still remain in the social safety net, but these measures should certainly go some way towards reducing precautionary household saving from current high levels: China's urban household saving rate has been close to 30 per cent in recent years, up from 19 per cent in 1996. Lower social contributions and reduced taxation of labour income, an expansion of employment (driven by a shift of production toward more labour and skills-intensive service industries), a more appreciated exchange rate, higher deposit rates, and access to a broader, and higher return, range of savings vehicles will combine

[10] CIA Factbook: Estimates from the US Bureau of the Census based on statistics from population censuses.

to boost household income. As households obtain a larger share of the benefits from economic growth and reduce their need for self-insurance, consumption will begin to rise faster than output and household savings will fall.

4.2 INDIA'S ECONOMIC OUTLOOK

India's growth outlook remains favourable both in the near and medium term: Investment, especially in infrastructure, is rising rapidly and consumption is buoyed by rising rural incomes and urbanization trends. The government is focused on high and inclusive growth, with economic reforms progressing slowly. Risks stem mainly from weaker global growth.

According to the Planning Commission of India, over US$492 billion of funding is needed for new power stations, airports, roads, railways, seaports, waterways and urban infrastructure over the next five years. UK companies operating in construction, infrastructural development and urban regeneration have the scope, therefore, to apply key strengths, such as sustainable development methods and cutting-edge technology, to contribute to this urban boom.

According to EIU forecasts, India is experiencing the most dramatic annual increase in foreign direct investment amongst the BRICs, from US$23 billion in 2007 to US$60 billion in 2012.

India's infrastructure development is taking place both in the established centres of New Delhi, Mumbai, Chennai and Kolkata, and in India's second tier cities and regions. Gujarat in the east and Andhra Pradesh in the west have both seen substantial recent infrastructure investment, including in manufacturing (in Gujarat). Andhra Pradesh is likely to see a surge in investment from IT and technology companies. And EIU's 2008 survey of global executives found that 40 per cent were planning to establish operation in Rajasthan[11].

India's second-tier cities are using the "green" card to attract new businesses away from cities such as Mumbai, making the argument that they're not polluted and are open to eco-friendly design and practices. Pune, for example, is quickly becoming an IT, auto-making, and industrial hub. It's also the future site of a planned "environmental township," scheduled to open by 2016.

Investment, rising rural incomes and continuing urbanisation will therefore continue to increase opportunities in India's second tier cities, not just for firms involved in infrastructure, but also for all goods and services exporters.

[11] EIU and UKTI (2008), 'Tomorrow's Markets'

4.3 UK TRADE WITH CHINA

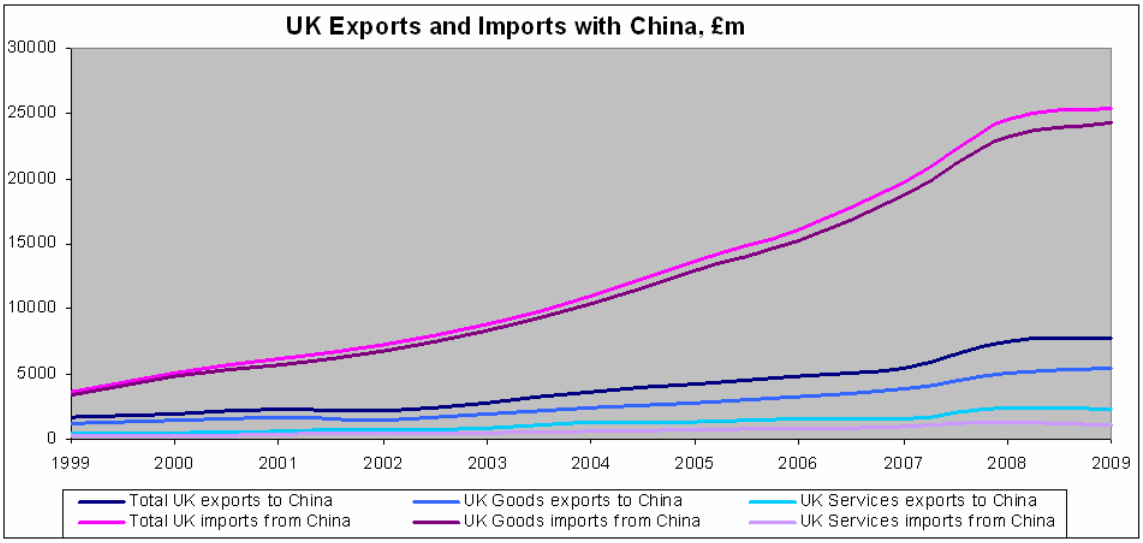
4.3.1 Trade Balance

In 2009, the UK had a trade in goods deficit with China of -£18.9 billion, and a trade in services surplus of £1.3 billion. The income account surplus with China was £768 million, and net current transfers were -£149 million. The overall current account deficit with China has risen every year of the last decade, from -£2 billion in 1999, to -£17 billion in 2009.

4.3.2 Recent Exports and Imports

UK imports from China have been substantially higher than UK exports to China throughout the last decade, with the gap widening considerably each year, as shown below. Imports from China grew rapidly every year, particularly between 2005 and 2008. UK exports China have grown at a slower pace, but nonetheless more than doubled between 1999 and 2004, and then more than doubled again between 2004 and 2008. Even in 2009, bilateral trade continued to rise, driven by an increase in goods trade in both directions, whilst there was a small decline in services trade in both directions.

Figure 4.1: UK Trade with China, 1999-2009



Source: ONS Pink Book 2010

Trade with China is dominated by trade in goods, as shown above. In 2009, goods made up 70 per cent of UK exports to China, and 96 per cent of UK imports from China. This compares to 73 per cent and 93 per cent in 1999.

Recent data for goods shows a strong recovery to pre-crisis levels of bilateral trade growth. UK goods exports to China rose by 41 per cent in 2010 from 2009, and goods imports from China were up 23 per cent.

4.3.3 Importance of the Chinese Market, and UK Share

China was the 9th largest destination for UK goods exports in 2009 (up from 10th in 2008), but only the 17th market for UK services exports in both 2008 and 2009. As an importer, China has risen to be the UK's third largest importer of goods in 2009 (up from 5th the previous year), though only the 25th largest importer of services.

UK net FDI into China was relatively low in 2008 and 2009, at £290 million and £311 million, down from an exception £1138 million in 2007. The book value of the UK's net assets in China in 2009 was £4,474 million, less than half the value of UK net assets in India (below). However, in addition to this figure is the massive £29,398 million of UK net assets in Hong Kong. Net FDI earnings for UK firms were £570 million from China and £2,163 million from Hong Kong (2009)[12].

Net FDI by Chinese firms into the UK came to £110 million in 2009, and the total stock of net liabilities was £615 million. The value of Chinese FDI stock in the UK has risen rapidly each year since 2006, when it amounted to only £99 million. Chinese income from FDI in the UK was only £35 million in 2009.

UK FDI in China and Hong Kong, therefore, earns considerably more income for the UK than Chinese FDI in the UK does for China. However, this imbalance in the UK's favour is small compared to the imbalance in trade revenue in China's favour. These figures also highlight the continuing strength of the links between the UK and Hong Kong, with many UK firms basing operations in Hong Kong, and then selling into mainland China from there.

4.4 UK TRADE WITH INDIA

4.4.1 Trade Balance

The UK had a trade deficit of -£1,460 million with India in 2009, although in 2008, the UK had a trade surplus with India of £13 million. The trade balance with India tends to vary quite a bit from one year to the next, due to the high value and erratic nature of trade in gem stones between the two countries.

4.4.2 Recent Exports and Imports

In 2010, UK goods exports to India were up 37 per cent, and goods imports from India were up 26 per cent on the year.

In services, the UK's top exports to India are transport services and then travel services, followed by business services, with financial services in fourth place. The top services imported from India are travel, followed by computer and information services, business services, and then transport services.

[12] ONS Statistical Bulletin: Foreign Direct Investment 2009

4.4.3 Importance of the Indian Market, and UK Share

India was the 18th largest destination for UK goods exports in 2009, up significantly from 13th place in 2008. For services, it is the UK's 24th market (up from 25th).

In terms of imports, India is the UK's 18th largest importer of goods (up from 19th), and the 13th largest importer of services (down from 11th).

The UK is India's 20th largest importer of goods, with a share of 0.16 per cent of goods imports into India in 2009. India's top goods importer is China, with twice as many goods exports to India as the US, the second largest importer. India's next largest goods trade partners are UAE and Saudi Arabia, followed by Germany with a market share of 4.4 per cent. France is similar to the UK, with a 1.8 per cent share of goods imports. For services imports, the UK had a market share of 4.6 per cent in 2009, just ahead of Germany (4.6 per cent) and ahead of France (3.0 per cent).

The UK also has substantial foreign direct investment in India. Net direct investment into India by UK companies amounted to £747 million in 2009. The book value of net UK assets in India was £9,310 million, which is nearly as high as the UK's stock of FDI in Belgium, and has risen from just £1,977 million in 2006. Net earnings from direct investment there were £898 million, boosting the UK's income account.

Meanwhile, net FDI in the UK by India firms amounted to a substantially lower figure of £126 million in 2009, with a book value of net liabilities of £1,841 million. This has also risen quite considerably, however, from £518 million in 2005. The net earnings of Indian firms' FDI in the UK came to £111 million in 2009[13].

Overall, therefore, total trade and FDI revenues between the two countries are fairly balanced, with trade earnings erring slightly in India's favour (depending on trade in gem stones), and FDI earnings erring in the UK's favour.

[13] ONS Statistical Bulletin: Foreign Direct Investment 2009

CHAPTER 5: WHY ARE BRAZIL AND MEXICO LESS POPULAR AMONGST BRITISH EXPORTERS?

5.1 THE ATTRACTIVENESS OF THE BRAZILIAN AND MEXICAN MARKETS

Research from A.T. Kearney confirm that most investors view Brazil as a relatively stable market compared to other developing economies, with a pro-business government that welcomes foreign investment. Thus, Brazil was ranked first in this year's AT Kearney Global Retail Development Index, up from fifth in 2010. Mexico was only ranked 22nd in this index, but in Grant Thornton's 2010 Emerging Markets Opportunity Index, Mexico was ranked fourth behind China, India and Russia, just ahead of Brazil in fifth place.

Brazil has been experiencing one of the most prosperous periods in its history. It is often the last country of the BRICs to be looked at, but opportunities for significant growth in several sectors will remain for the next 5 to 10 years.

At the same time, Brazil is the least open BRIC in terms of the proportion of trade to GDP. Total exports in 2010 amounted to only 11 per cent of GDP, and imports where only 12 per cent. This compares to export- and import-to-GDP ratios between 20-30 per cent in the other BRIC economies and in Mexico.

Mexico is therefore a more open economy in terms to trade-to-GDP, although this trade is dominated to an even greater extent by trade with the US. Given their proximity, the size of the US and Mexican economies, and the North American Free Trade Agreement, it is not surprising that trade between the two countries is high.

However, this can act as a deterrent for EU exporters looking to compete against their US counterparts. With such strong links between the US and Mexico, and such low trade costs, EU exporters are at a distinct disadvantage. And even in Brazil, the US has far stronger ties and cost advantages than EU firms.

> **The gravity model in Chapter 3 already predicted a relatively low level of trade between the UK and Latin America, and the dominant US presence means that only the most productive UK firms succeed in establishing a significant market share in the region.**

5.2 UK TRADE WITH BRAZIL

5.2.1 Trade Balance with Brazil

In 2009, the UK had a -£434 million trade deficit with Brazil. This consisted of a -£740 million goods trade deficit, and a £306 million services trade surplus. The UK has had a trade deficit with Brazil every year since 2000, but the 2009 deficit was lower than it had been for seven years.

5.2.2 Importance of the Brazilian Market, and UK Share

Brazil is yet to become one of the UK's top trade partners. It is the 27th largest destination for UK goods exports, and the 41st market for UK services exports. Likewise for UK imports, Brazil is the 26th origin for goods and the 46th origin for services.

For Brazil, the UK ranks slightly higher, as their 13th largest importer of goods in 2010, although down from 10th in 2000. China has risen from being Brazil's 11th largest goods importer, to its second largest, close behind the US.

The UK's goods exports to Brazil have increased by a rapid 153 per cent since 2000. This is similar to the 154 per cent increase in French goods exports to Brazil, and the 165 per cent increase in German goods exports to Brazil. However, these growth rates pale compared to the 1990 per cent rise in goods exports from China to Brazil between 2000 and 2010, and the 1460 per cent increase in those from India. Nigeria, Korea, Mexico and Chile have also seen rapid growth of 300-700 per cent in their exports to Brazil over the last decade.

In 2010, therefore, the UK accounted for 1.8 per cent of Brazil's goods imports, compared to 6.5 per cent from Germany and 2.6 per cent from France. 15.0 per cent of Brazil's goods imports were from the US, 14.1 per cent from China and 7.9 per cent came from Argentina.

As discussed in Section 5.1, it is natural that the US should have a higher market share in Brazil, given the size of its economy, its relative proximity, and closer trade ties with the region. However, the gravity model cannot explain why the UK's market share in Brazil is so much lower than that of Germany and France. All three EU countries have market shares in Brazil below their global market shares, but the UK's market share in Brazil is just two thirds of its global share, whereas France and Germany's shares are 76% and 78% respectively of their global shares. UK goods exports to Brazil are even further behind French and German goods exports to Brazil than overall British goods exports to the world are.

Looking into UK, French and German exports to Brazil in more detail allows us to see where the UK is lagging behind, or whether there may be other explanations, such as a higher propensity for UK firms to enter Brazil via FDI, or to export to Brazil via a third market.

The UK had a strong share of pharmaceutical exports to Brazil in 2010: 8.4%, compared to 8.6% from Germany and 4.6% from France[14]. And the UK took a massive 22% share of beverages exports to Brazil in 2010, over double that of France and ten times that of Germany. The UK's mineral fuel exports to Brazil were also higher than France and Germany put together, as were exports of ships and exports of printed books and newspapers.

However, for most high value goods, other than mineral fuels, the UK is lagging behind France and significantly behind Germany. This includes machinery, electrical equipment, iron and steel and vehicles. And even for services exports, a key UK strength, the UK only exports a little more than France, and less than half as much as Germany.

The UK's share of aircraft, spacecraft and parts exports in particular was only 3.9%, compared to 31% for both France and Germany. This is likely to be due, to some extent, to the fact that the UK exports aircraft parts (wings and engines) to France and Germany, which then form part of a complete plane that is exported from there to Brazil. For some other goods and services, UK exports are sent to Latin America via the US; a higher proportion than for French and German goods, due to the closer commercial ties between the Anglophone markets.

These figures demonstrate that the UK does not have a low market share across the board, with some sectors far ahead of France and Germany. However, these sectors cannot outweigh the UK's weak presence across the majority of goods sectors, bringing down overall trade with Brazil relative to key competitors. This is exaggerated to some extent by a greater tendency for the UK to export via a third market.

Looking at FDI, we can see that net flows into Brazil from the UK have been positive between 2005 and 2009, amounting to £377 million in 2009. Total stock of UK FDI in Brazil in 2009 was £4,956 million, which is quite high and comparable to markets such as Belgium, Norway and Singapore. It is also higher than FDI into mainland China, though not nearly as high as FDI into Hong Kong, and only half of UK FDI stock in either India or Russia. So some UK firms may be entering the Brazilian market via FDI in Brazil, or FDI in the US from which they export to Brazil, but these figures are not exceptional.

Finally, the UK's market share may be relatively lower than that of France or Germany because the UK's specialisation across goods, and particularly services, is more closely aligned to that of the US than France of Germany's specialisation is. Therefore, there are more UK firms in direct competition with US firms, who have similar skills and language advantages, but also the added advantage of lower transport costs and stronger networks and knowledge of the market. German services exporters may be competing more effectively in Brazil, as they are offering a different set of skills and are in less direct competition with US providers.

[14] 2010 market shares derived from UN Comtrade data.

5.3 UK TRADE WITH MEXICO

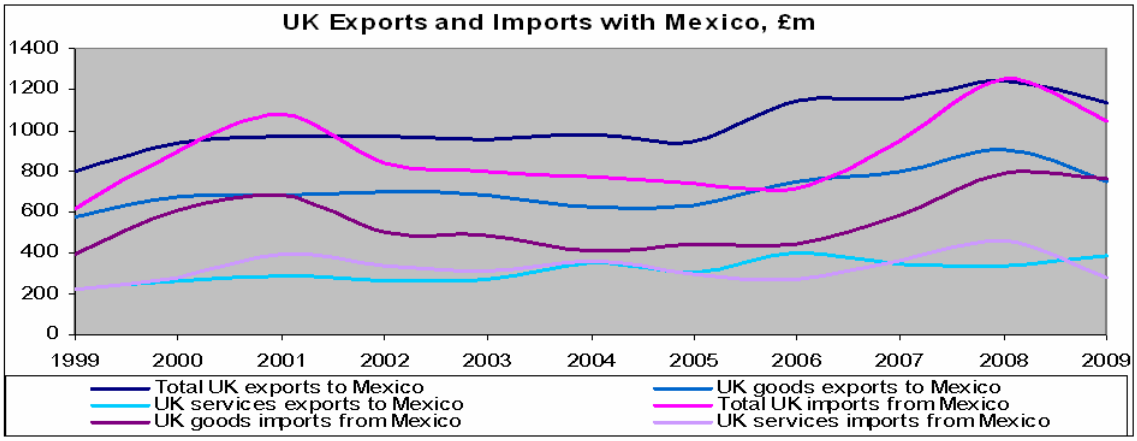
5.3.1 Trade Balance

In 2009, the UK had a trade in goods deficit of -£13 million with Mexico, and a trade in services surplus of £105 million. The income balance with Mexico was £478 million and net current transfers amounted to -£2 million. This resulted in a current account surplus of £568 million in favour of the UK. The UK has held a current account surplus with Mexico in all but one year of the last decade.

5.3.2 Recent Exports and Imports

UK exports to Mexico were fairly stable between 2000 and 2005, and then accelerated in 2005-2008, as shown below. Overall they rose by 56 per cent in pound sterling terms between 1999 and 2008, before falling back slightly in 2009. UK imports from Mexico have been more volatile, rising a total of 102 per cent in pounds sterling between 1999 and 2008.

Figure 5.1: UK Trade with Mexico, 1999-2009



Source: ONS Pink Book 2010

66 per cent of UK exports to Mexico in 2009 were goods (£753 million), 34 per cent services (£387 million), compared to a 72-28 split in 1999[15]. UK goods exports to Mexico had recovered in 2010, to £913 million, and UK goods imports from Mexico also rose significantly, from £766 million in 2009 to £966 million in 2010[16].

UK goods exports to Mexico were therefore up 21 per cent on the year in 2010, and imports from Mexico were up 26 per cent.

[15] ONS Pink Book 2010.

[16] HMRC. ONS Pink Book data for goods and services exports in 2010 is due to be published on 1 November.

In January-May 2011, UK goods exports to Mexico totalled £410 million, up from £362 million in the same period the previous year; a 13 per cent increase. UK goods imports from Mexico also amounted to £410 million in January-May 2011, up 19 per cent from £344 million.

If we assume similar rates of growth for exports and imports for the rest of the year, then UK goods exports and imports with Mexico in 2011 would total around £1032 million and £1149 million respectively. This would amount to a 37 per cent increase in goods exports from 2009, and a 50 per cent increase in goods imports: Therefore, 44 per cent growth in bilateral goods trade.

Trade in services will not necessarily have risen as fast: Whilst UK services exports to Mexico have on average grown faster than good exports, this has not been a consistent pattern across years, and UK services imports from Mexico have on average increased less rapidly than goods imports. So it is difficult to say whether services trade will have boosted or suppressed the overall rate of increase in bilateral trade.

Going forward, the annual rate of bilateral trade growth is likely to be slower, given that much of the increase between 2009 and 2011 has been recovery back up to 2008 levels. The Ernst & Young ITEM Club forecasts annual growth of 8.5 per cent in UK exports over the next decade, and 11.7 per cent growth per annum in UK exports to the BRICs. Growth in imports from Mexico, however, may remain higher than growth in UK exports, making a greater contribution towards the overall increase in bilateral trade. An increase of 8 per cent a year in UK goods exports to Mexico and 9.5 per cent a year in UK goods imports from Mexico between 2012 and 2015 (or an equivalent split) would be needed to double bilateral *goods* trade from the 2009 baseline.

5.3.3 Importance of the Mexican Market, and UK Share

Mexico is only the UK's 41st market for goods exports, and 52nd market for services exports, behind most other high growth markets, despite the size of its economy (14th largest GDP in 2010 in current US$ prices) and its overall imports of US$334 billion in 2010 (16th largest). Mexico is also only the 46th largest importer of goods into the UK. This ranking has been relatively stable over the last decade, in contrast to the BRICs, which have risen up the rankings for bilateral trade with the UK.

The US accounts for 51 per cent of Mexican imports, whilst the UK is Mexico's 14th largest importer with an overall market share of 0.8 per cent, behind key competitors such as Japan, Germany and France. Market shares for goods imports into Mexico are given below.

Figure 5.2: Top Goods Exporters to Mexico

Source: UN Comtrade database

Services only account for 7 per cent of Mexico's imports. Within these services imports, the UK has a slightly higher market share than Japan and France, but only exports just over a third as many services to Mexico as Germany, and only a fraction of those from the US[17].

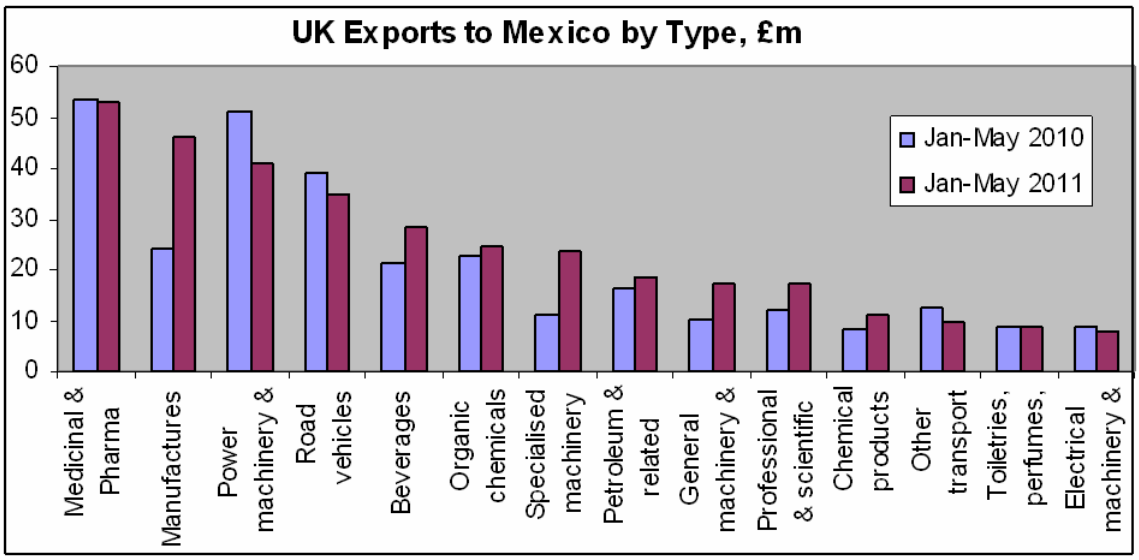
5.3.4 UK Exports to Mexico by type, and revealed comparative advantage

23 per cent of the UK's 2009 services exports to Mexico were financial services, 18 per cent were transport, 17 per cent were other business services, 16 per cent were travel, and 14 per cent were in insurance. Half the remainder were royalties and licence fees, with the rest spread across communications, personal services and government services.

Within the UK's 2010 goods exports to Mexico, 22 per cent were machinery, 15 per cent were pharmaceuticals, 11 per cent vehicles, 7 per cent beverages and spirits, 6 per cent mineral fuels, 5 per cent organic chemicals, 4 per cent electrical and electronic equipment, 4 per cent optical, photo and medical apparatus, 4 per cent plastics and 3 per cent aircraft, spacecraft and parts thereof.

[17] UN Service trade database

Figure 5.3: UK Goods Exports to Mexico by Type



Source: UN Comtrade

The UK has a revealed comparative advantage in Mexico in most services, especially financial services. The UK also has an RCA in the following goods: aircraft, spacecraft and parts thereof; beverages and spirits; pharmaceuticals; ships and boats; coffee, tea and spices; perfumes, cosmetics and toiletries; and books, pictures and newspapers. The UK has a market share below 0.8% in all other types of goods (by HS two-digit code).

Even amongst the goods where the UK has an RCA, it only has a greater market share than France for beverages, boats and books, and only has a greater share than Germany for boats. The UK does export more of some types of clothes and footwear to Mexico than France and Germany do, and the UK exports more vehicles to Mexico than France does, though a lot less than Germany. However, the UK is behind France, and a long way behind Germany, for plastics, chemicals, electrical and electronic goods, technical apparatus and games[18].

In the first five months of this year, UK-Mexico exports of manufactured articles and specialised machinery had grown particularly fast compared to the previous year, and exports of general industrial machinery and professional, scientific and controlling instruments and appliances had also grown substantially, as had beverage exports.

Over the last five *years*, UK pharmaceutical exports to Mexico have grown every year, totalling a 73 per cent increase since 2005. Exports of aircraft, spacecraft and parts thereof have also increased by 200 per cent over five years. Consumer goods exports, including personal and recreational goods and vehicles, have shown more erratic growth, but did pick up significantly in

[18] UN Comtrade database

2010. Between 2004 and 2008, financial services exports from the UK to Mexico more than doubled, and transport services also increased significantly.

5.3.5 Looking Ahead

Average GDP growth of 5 per cent per annum over the last decade, a large population of 110.6 million, a stable economy and rising consumer confidence has already led to rapid growth in the demand for consumer goods in Mexico.

This trend is likely to continue, as GDP growth is forecast at an average of 6.3 per cent p.a. between now and 2016[19], and levels of affluence amongst a young, expanding middle class will continue to grow. An increasing proportion of consumption will be imported, with an increasing proportion of middle-income and luxury goods and services amongst these imports.

The Mexican retail sector, for example, is expected to expand by 12 per cent by 2014. Mexico is the principal market for luxury goods in Latin America, representing 55 per cent of sales, ahead of Brazil and Argentina. There should be increasing opportunities for UK retailers, therefore, to target the Mexican middle class.

There should also be expanding demand for health-, education- and transport-related services, and for pharmaceuticals and medical equipment, including technical apparatus, and for English language publications and private vehicles. Financial, legal and other professional services will be required by internationalising firms, whilst more sophisticated infrastructure will require international-standard architects and designers, high quality construction and advanced telecommunication systems. An increasing relative value of leisure time will fuel the desire for higher-end recreational goods and services.

Given the size of the Mexican market and the UK's low market share, there is huge scope for UK exports to increase over time. In 2008, HMRC recorded 1,745 UK firms exporting goods to Mexico, comparable to the number exporting to Taiwan. 32 per cent of these firms were in engineering and 13 per cent in chemicals, with relatively few UK firms from other sectors entering the market and very little change in the number of exporters since 2005.

Further firms will have entered the market via FDI, particularly in services, where local staff and local marketing may be necessary. This occurs through both direct entry and joint ventures with local enterprises.

However, Latin America in general tends to receive less interest from UK exporters than Asian emerging markets, despite favourable conditions, i.e. large markets, high average income and fast, stable growth.

[19] IMF WEO April 2011

5.4 POLICY IMPLICATIONS

- **There is therefore more to do in terms of promoting the Brazilian and Mexican markets, as well as other Latin American markets. There are particular opportunities for UK exporters and investors already in the US to expand into Brazil and/or Mexico, and for firms in Brazil to expand into Mexico, Argentina, and so on. UKTI's work on high value opportunities should also help support UK firms in securing major contracts, and help forge stronger commercial links with the region.**

- **In terms of creating a more level playing field with US competitors, the EU has had a free trade agreement with Mexico since 2000, which has lowered trade costs and allowed a wider range of UK exporters to compete. The proposed EU-Mercosur free trade agreement could likewise have a positive impact on UK-Brazil trade costs, and those for other Mercosur markets such as Argentina.**

- **In addition, some UK firms have operations in the US, through which they export to Mexico, reducing their transport costs to the end market. This may not show up in the UK's figures for bilateral trade with Mexico, but nonetheless increases the UK's presence in the Mexican market and brings revenue back to the UK. UK firms may consider a variety of models, including FDI and joint ventures, to enter distant, competitive and fairly bureaucratic markets such as Brazil and Mexico, and need to be supported in finding the most successful model for their products. UK exporters also need to consider how to differentiate themselves from US competitors, particularly in services, where they may be offering a similar skills set but at a cost disadvantage.**

CHAPTER 6: RUSSIA AND TURKEY'S CONSUMERS

According to accounting firm Grant Thornton's Emerging Markets Opportunity Index, Russia ranks third among 27 emerging markets, behind China and India. The index takes account of key factors such as the size of the economy, wealth, involvement in world trade, growth potential and levels of human development.

> **Russia has a much smaller consumer base than either China or India, but it boasts a per capita GDP which is more than double that of China, and more than five times as high as India. Its per capita consumption is close to the levels of the major cities of Europe's advanced economies, making it an appealing market for many UK exporters looking to diversify out of EU economies.**

Turkey, meanwhile, has risen to sixth place in the 2010 index, behind Mexico and Brazil in fourth and fifth place, and ahead of Poland, Malaysia and Indonesia.

Turkey with its large, young and well-educated population (latest estimate 77 million), is already a member of the EU Customs Union and is negotiating for full EU membership.

The ongoing EU accession talks are also a key driver for the modernisation of Turkey's economy and business environment. Turkey is also a springboard to the markets of Central Asia & the Middle East.

> **Latest figures show Turkey still has the fastest growing economy in Europe. Growth during the year to the second quarter of 2011 was 8.8 per cent: higher than all expectations.**

There are some concerns that this level of growth may be unsustainable, and that the inability to raise sufficient FDI will lead to short term economic instability unhelpful to business interests. However, compared to other European economies, Turkey is in an enviable position, and certainly presents some of the fastest growing opportunities for exporters looking to diversify beyond the EU, but without facing a significantly different business environment and regulations.

6.1 UK TRADE WITH RUSSIA

UK goods exports to Russia have grown by an average of 23 per cent a year between 2000 and 2010, whilst imports from Russia have only grown 13 per cent a year. Imported services from Russia grew faster, at an average of 27 per cent a year, whilst services exports from the UK to Russia rose 21 per cent a year[20].

Nevertheless, goods still make up the majority (76 per cent) of UK imports from Russia, and services 24 per cent. UK exports to Russia are comprised of 58 per cent goods and 42 per cent services. Thus, the UK has a goods trade deficit with Russia, but a services trade surplus. Overall, imports from Russia amounted to US$8.6 billion in 2009, whilst exports to Russia totalled US$6.2 billion. However, the UK also had a surplus on its income account with Russia, of a comparable value to the goods trade deficit with Russia. This is partly due to relatively high levels of UK direct investment in Russia. The UK's 2009 current account with Russia, therefore, showed a small surplus.

Services trade between the UK and Russia is concentrated in financial services and business services, with the UK dominant in bilateral trade in the former, and Russia in the latter. There is also a fair amount of trade in transport and travel services, but bilateral trade in other services is low[21].

6.2 RUSSIA'S WTO ACCESSION

Russia is the largest economy in the world that is not a member of the WTO.

It is currently in final discussions with the WTO working party, to dissolve any outstanding issues, with a view to joining the WTO at the ministerial meeting in December.

This is generally viewed as a positive step, requiring Russia to abide by global trade rules while also opening its markets to more exports. However, Georgia has blocked 'formal' meetings of the WTO working party, requiring talks to proceed on an informal basis. The two countries are locked in talks over border controls.

In addition, Russia's entry would require the U.S. Congress to vote to establish "permanent normal trade relations" with Russia by removing a Cold War-era human rights provision known as the Jackson-Vanik amendment that is inconsistent with WTO rules. Failure to approve the change could put U.S. exporters at a disadvantage to other members of the WTO as Russia opens it market to more foreign trade.

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[20] UN Comtrade and service trade data

[21] ONS Pink Book 2010

6.2.1 The Benefits of Accession for Russia and its trading partners

Rutherford and Tarr[22] estimate that Russia's WTO accession will increase the value of its medium term consumption by 7 per cent, with further increases in the long term.

In terms of Russian imports, Russia has some high tariff sectors, but overall, the Russian economy is not highly protected by tariffs. Tariff reduction in Russia, negotiated as part of accession, will therefore bring greater benefits for some sectors than others. Sectors where tariffs are reduced by as much as 50 per cent should benefit from increased productivity due to an inflow of imported technology.

In terms of Russian exports, Russia already has MFN status or better with virtually all its trading partners. Increased market access for Russian exporters, and the improved treatment of Russian exporters in anti-dumping cases, will bring some gains, but these are also unlikely to be dramatic.

Where there are still significant barriers is in foreign direct investment in business services. Examples of the barriers to inward FDI that are under negotiation as part of the WTO accession are as follows: the Rostelekom monopoly on long distance telephone services; the restraints on multinational banks opening affiliates in Russia; and the quotas on multinational providers of insurance services.

Russian commitments to multinational service providers as part of its WTO accession would encourage greater foreign investment in the services sectors, giving Russian businesses improved access to the services of multinational service providers in such sectors as telecommunications, banking, insurance, and transportation. This should lower the cost of doing business and should also lead to productivity gains for firms using these services. Access to international business services within Russia will also encourage other sectors that use such services to enter the Russian market. Rutherford and Tarr estimate that 5.3 percentage points of the predicted 7 per cent increase in Russian medium term consumption would be due to liberalisation of barriers to FDI in services.

This could also really open up opportunities for UK firms, given the UK's specialism in professional services, and its high proportion of outward FDI to exports. Consortia could also benefit from the greater ability to tie UK business services in with bids for high value export and investment projects.

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[22] Rutherford, Thomas & Tarr, David "**Russia's WTO Accession:** What are the macroeconomic, sector, labor market and household effects?"

6.3 UK TRADE WITH TURKEY

More than 1,600 UK businesses are already present in Turkey, including household names such as Tesco and Marks & Spencer. And the UK and Turkey have agreed a joint ambition to double bilateral trade by 2015.

The UK's 2009 trade in goods deficit with Turkey was similar in magnitude to that with Russia. However, the UK had a trade in services deficit with Turkey, and the UK surplus on the income account was also lower, so that the UK had a £2 billion current account deficit with Turkey in that year[23].

UK services exports to Turkey, and UK services imports from Turkey, both rose by an average of 13 per cent a year between 2000 and 2009. The former amounted to US$1.3 billion in 2009, and the latter US$2.0 billion[24]. Turkish services exports to the UK were dominated by travel services, as well as fairly high transport services. The UK's top services exports to Turkey were financial services and business services, but the value of these was still low compared to the UK average: In both sectors, UK exports to Turkey only accounted for 0.5 per cent of total UK exports for those sectors.

There is plenty of scope for UK exports to, and investment in, Turkey to grow significantly over the next decade. Economic growth in Turkey is strong, reaching almost 9 per cent last year. And Turkey is already quite open for a large economy, with exports of goods and services totalling 20 per cent of GDP, and imports totalling 28 per cent of GDP[25]. This degree of openness is only just below that of the UK and France.

The young growing population, relatively high average incomes and EU funding mean there are opportunities for UK companies in a variety of sectors, including environment and water, ports, agriculture, airports, financial services, education and training and ICT.

In addition, Turkey is an important business hub in the region, and therefore makes an attractive base for exports and investment in the Middle East and Central Asia. Istanbul is already establishing itself as a regional centre for financial services.

And last, but certainly not least, closer economic partnership with the EU and alignment with EU regulations, potentially concluding in Turkish accession to the EU, will lower the barriers to trade and investment for UK firms looking to enter the market.

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[23] ONS Pink Book 2010

[24] UN services trade data

[25] 2010 trade figures from WTO, and 2010 GDP figures from IMF WEO September 2011

6.4 THE IMPACT OF TURKISH PROGRESSION TOWARDS EU ACCESSION

There are three main changes associated with Turkey's accession to the European Union:

- Accession to the internal European Market
- Institutional reforms in Turkey triggered by accession negotiations and EU membership
- Migration in response to the free movement of workers

According to research by Lejour and de Mooij (2005), Turkish accession would increase European exports by around 20 per cent, with Turkey becoming even more open and accessible to trade**. Meanwhile, consumption per capita in Turkey is estimated to rise by about 4 per cent as a result of accession to the internal market and free movement of labour.** They estimate that if Turkey succeeds in reforming its domestic institutions in response to EU-membership, consumption per capita in the country could raise by an additional 9 per cent.

Both the rise in Turkish consumption and the increased ease in trade with Turkey will significantly raise demand and lower costs for UK exporters to the market, as well as lowering the cost of imports from Turkey. This will open up further opportunities for new firms to enter the Turkish market through both exports and FDI, and to use intermediate inputs from Turkey in their supply chain.

Some of these benefits have already been realised during the accession negotiation process, as Turkish regulations gradually come into line with those of the EU, and institutional reform improves the business environment. As long as accession remains on track, further benefits will continue to be realised throughout the negotiation process and in the years following accession.

CHAPTER 7: ARE UK FIRMS COMPETING AGAINST RISING SOUTH-SOUTH TRADE?

7.1 THE RISE OF SOUTH-SOUTH TRADE

The US, the EU and Japan remain amongst the largest and most attractive economies in the world, and trade levels between them are high. However, the past couple of decades have seen a rapid rise of trade and investment between the rich countries of the North and developing economies of the South, and in particular, between South and South.

> **The share of world goods trade among developing countries has more than doubled in the past two decades, from 7 per cent in 1990 to 17 per cent in 2009. Asia accounts for roughly three-quarters of that, and China comprises 40 per cent of all south-south commerce.**

While the financial crisis still casts a shadow over many countries, India's trade with Africa has jumped to US$40 billion in the past few years. In addition, the United Nations Conference on Trade and Development estimated that, between 1996 and 2006, developing economies provided more than $17 billion of foreign investment in Africa and $27 billion of investment in Asia.

Turned away by the US, Dubai Ports World is expanding in China, India, Peru and Vietnam. Saudi Arabia's state-owned oil company is investing in refineries in China's Fujian and Shandong provinces. Industrial & Commercial Bank of China last year bought a 20 per cent stake in South Africa's Standard Bank. India's sprawling Tata Group has African investments ranging from the Taj Pamodzi hotel in Zambia, to a railroad-car and steel-fabrication plant in Mozambique.

Consultancy firm A.T. Kearney says flows of money, investment and trade are creating a multi-continental market spanning the Indian Ocean. They have dubbed this market Chimea -- Chinese and Indian know-how, money and thirst for resources ("chi"), plus Middle Eastern money and oil ("me"), plus African raw materials and opportunity ("a").

Boston Consulting Group lists 100 companies in 14 emerging-market countries that are becoming global players. Many prosper by selling to other developing countries: Revenue of India's Bajaj Auto has more than doubled over the past several years to $2.2 billion as it exports two- and three-wheeled vehicles to other emerging markets.

In his recent book, "Africa's Silk Road: China and India's New Economic Frontier," World Bank economist Harry Broadman argues, "China and India have a growing middle class, with increasing purchasing power and with an

increasing appetite for imported goods" - from Africa. The Asian giants offer Africa more than markets, though. He says Chinese and Indian companies are beginning to expand beyond oil and mining in Africa to telecommunications, food processing, textiles and construction.

Economists Cigdem Akin and M. Ayhan Kose, in a new analysis published by the International Monetary Fund, detail ways in which the "the globalization era" that began in 1986 is different from earlier decades. A major difference is that the two dozen countries they call "the emerging South" (from Brazil to China to India to South Africa) have diversified, grown and become more dependent on one another's growth and less on the North.

Nevertheless, part of the surge in trade between developing countries is down to the rise of Asia as the world's manufacturing hub, where parts and components are assembled and then shipped to western markets. To that extent, a large proportion of south-south trade still hinges on final demand in industrial countries. In addition, other countries of "the developing South" (from Bolivia to Bangladesh to Botswana) remain highly dependent on demand from the North.

7.2 FUTURE GROWTH IN SOUTH-SOUTH TRADE

The share of south-south trade in global trade is likely to double again in the next two decades, according to the Asia Development Bank. This growth rate could rise even higher if developing countries adapt their policies further towards south-south cooperation.

This cooperation could be hampered, however, by political concerns, particularly concerns among many emerging economies, including Brazil and India, that their export competitiveness is being eroded by China's undervalued currency and cheap goods. At the same time, many commodity exporting countries bemoan the fact that China's hunger for oil and other raw materials has increased their dependence on natural resource production and exports.

Another more fundamental issue is that barriers among developing countries are still vastly higher than those imposed by the developed world. The ADB points out that import duties on goods traded between southern countries average 6.1 per cent, compared to 2.5 per cent in the West. Non-tariff barriers are also much higher for south-south trade than for trade between developed and developing countries.

Gary Hufbauer, a trade specialist at the Peterson Institute for International Economics, notes that tariff barriers on manufactures exports between southern markets are especially high compared to profit margins of typical manufacturers. "The successful southern countries, India, Brazil, Indonesia etc, have cut their applied tariff levels significantly, but they seem to have come to a resting point, and they're not really willing to cut much more. Most of the manufacturing firms doing business in traded goods are just deathly afraid of Chinese competition. Unless China leads the way quite dramatically,

the other countries are pretty reluctant. And even if China did lead they might still remain reluctant."

The ADB is urging policies that lower trade barriers and put in place initiatives that promote final goods trade across the South. The resulting expansion in trade will also allow developing economies to move away from labour-intensive manufacturing towards high value-added manufacturing "setting them on a higher growth profile."

7.2.1 South-South Trade Agreements

The number of free trade agreements between emerging markets has increased rapidly over the last few years, opening these markets up to substantially higher south-south trade. This is by and large regional trade, much of which is trade of intermediate goods as part of a regional supply chain. However, these agreements are also encouraging emerging markets to provide an increasing amount of finished goods and services to other emerging markets.

In January 2010, four new free trade areas came into effect in Asia-Pacific, between ASEAN and Australia, ASEAN and China, ASEAN and India, and ASEAN and Korea. ASEAN already had a free trade agreement with Japan, signed in 2008, whilst ASEAN itself has been a free trade area since 1992.

China also has Closer Economic Partnership Arrangements with Hong Kong and Macau, and bilateral free trade agreements with Thailand, Singapore, Chile, Peru, Pakistan and New Zealand. And China has an Economic Cooperation Framework agreement with Taiwan.

India, meanwhile, is a member of the South Asian Association for Regional Cooperation (SAARC), along with Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka. They signed the South Asian Free Trade Area Agreement in 2004, with an aim to gradually reduce tariffs to 0-5 per cent over 3-8 years depending on the level of development in each economy.

In Latin America, Mercosur, the "Common Market of the South" has worked since 1991 to eliminate obstacles to regional trade, including high tariffs, income inequalities, and conflicting technical requirements for bring products to market. It is now the world's fourth-largest trading bloc after the EU, NAFTA and ASEAN. Like the EU, there are differing views on whether to remain focussed on economic integration, or expand the group's mandate to political affairs.

7.3 GROWTH IN TRADE BETWEEN THE BRICs

Firstly, bilateral goods trade between China and India has grown phenomenally over the last decade, from US$2.9 trillion in 2000 to US$61.8 trillion in 2010, an average rise per annum of 38 per cent.

Exports from China to India have grown slightly faster than those in the opposite direction, and experienced a much smaller decline in 2009.

Therefore, whereas in 2000 goods exports from China to India totalled US$1.6 trillion and goods exports from India to China totalled US$1.4 trillion, by 2010 exports from China to India were nearly double those from India to China; US$41 trillion compared to US$21 trillion.

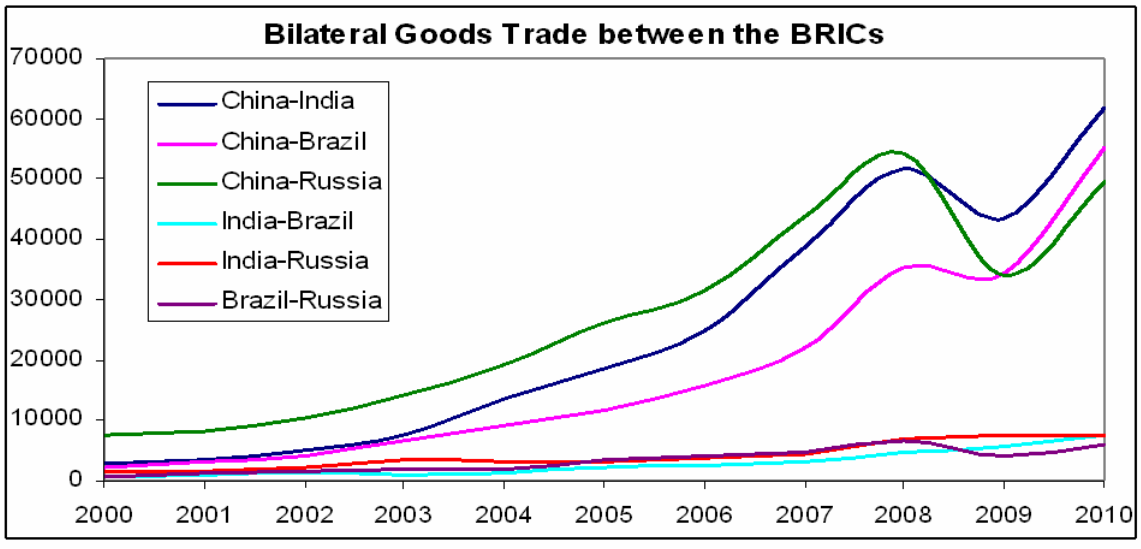
Bilateral goods trade between China and Brazil has grown *even faster*, from only a slightly lower base, amounting to US$55 trillion in 2010. In this case, however, goods exports from Brazil to China have grown faster than those from China to Brazil: In 2000, Chinese goods exports to Brazil were US$1.2 trillion and Brazilian goods exports to China totalled US$1.1 trillion. But by 2010, Brazilian goods exports to China were US$31 trillion compared to US$24 trillion in the other direction.

Goods trade between India and Brazil has also grown by an average of 35 per cent per annum since 2000, but from a much lower base, amounting to US$7.7 trillion in 2010.

Goods trade between Russia and the other three BRICs has grown slower, although still at rates significantly above those of overall global trade growth. Goods trade between Russia and Brazil grew by 29 per cent per annum between 2000 and 2010, goods trade between Russia and China increased by 24 per cent a year, and goods trade between Russia and India grew slowest; 18 per cent per annum. Whilst goods trade between Russia and China totalled US$49 trillion in 2010, Russia-India goods trade was only US$7.5 trillion, and Russia-Brazil goods trade US$5.9 trillion.

The patterns of goods trade between all four BRICs are given in the graph below (bilateral figures include goods trade in both directions).

Figure 7.1: Bilateral Goods Trade between the BRIC Economies



Source: UN Comtrade

As shown, therefore, bilateral trade flows between all of the BRICs have risen, but it is trade between China and the other BRICs that has really taken off over the last decade.

In comparison, goods trade between the UK and China has grown by 20 per cent per annum over the last decade, which is only a little below the increase in China-Russia goods trade. However, goods trade between the UK and Brazil has only grown by 12 per cent a year, and goods trade with India has only increased by 11 per cent a year.

Therefore, whereas intra-BRICs goods trade has risen by an average of 30 per cent a year since 2000, UK-BRICs goods trade has risen by an average of 17 per cent a year.

However, intra-BRICs goods trade is at least to some extent of a different nature to UK goods exports. This is evident even at the 2-digit HS code level. The UK's highest value goods exports to China are vehicles and machinery, and to India, pearls and precious stones and machinery. Meanwhile, Russia's top goods exports to China are mineral fuels, wood and ores. And Brazil's top exports to China are ores, seeds and mineral fuels, whilst India's top goods exports to China are ores and cotton. Other large exports between the BRIC economies include iron and steel, articles of iron and steel, organic chemicals, and fertilisers.

To date, China has perhaps the most similar goods exports as the UK, with machinery being one of its top exports to the other BRIC economies. However, another area of strength for China's exports to the other BRICs is electrical equipment, where the UK already has a low market share, with export levels far behind Germany and Japan. In fact overall, China's strength in machinery, electrical equipment, iron and steel articles and optical equipment places it as a greater competitor with Germany and Japan than with the UK's areas of specialism. In addition, China's exports to more developed economies, including Russia, still contain strength in clothing and footwear, where again the UK has a low market share.

If we look into goods trade at a higher level of disaggregation, we can see that within two-digit HS codes, the UK often has strength in different types of e.g. machinery than its BRIC counterparts. The UK's strengths at sub-sector level are explored in greater detail in the following chapters on sectors.

In addition, the UK has a far higher specialism in services than any of the BRICs. Repeating the exercise above for services (up to 2009 due to the lag in the services data available), gives slightly more favourable results for the UK:

UK bilateral services trade with Russia grew 22 per cent per annum between 2000 and 2009. Bilateral services trade with China grew 21 per cent per annum, and services trade with India increased by 15 per cent per annum. However, trade in services with Brazil rose just 8 per cent a year, which as discussed in Chapter 5, may be connected to the advantage similar US service providers have in the Americas.

Overall, therefore, the UK still exports a higher value of services than China, and a higher value than India, Russia and Brazil put together. China and Brazil's goods exports have increased faster over the last decade than their

services exports have, although the reverse is true for India and Russia (and the UK). But that's not to say that the BRICs are not still increasing their share of global services exports. Whilst at present they are creating the greatest competition in lower-skilled services, such as back offices services outsourced to India, they will gradually move up the value chain and start competing more with the UK's areas of specialism. This future challenge is covered in more detail in the following chapters on sectors, for example, Chapter 12 looks at China's expansion into creative services, and India's aspirations to become a global contender for educational services.

7.4 CONCLUSIONS

- **At present the UK is still competing more against other developed economies such as the US, Germany and France, than it is with the BRIC economies. UK exports tend to be more advanced, high-value goods than those traded between south economies, and the UK also has a greater strength in services than its BRIC counterparts. If anything, China currently poses more of a competitive threat to Germany and Japan than it does to the UK with its existing areas of strength.**

- **However, going forward, the BRIC economies will develop their high-tech industries and their services sectors, and south-south trade in these areas will start to compete with UK exports. It is vital, therefore, that UK firms remain innovative and adaptable, and stay ahead of the competition in the quality and relevance of the goods and services they provide. The outlook for global competition, challenges and opportunities within different sectors is covered in greater detail in the succeeding chapters.**

CHAPTER 8: EVOLVING GLOBAL DEMAND ACROSS SECTORS

Whilst the overall level of UK trade and investment activity differs across markets, the geographical variation in activity by sector is even more variable.

Different sectors have different geographic 'centres of gravity' i.e. those countries to which significant amounts of exports go to or from which inward investment comes from. Even for sectors where the UK has a strong advantage, the viability of entering different markets will depend on local regulations and restrictions, overall market access and access to contacts, the relative strengths and intentions of domestic and regional competition, and potential market growth.

In addition, even where the UK has a competitive advantage, it must work to maintain this, through innovation and adaptation to new technologies. Sectors must also respond to disruptive forces, often quite rapidly, such as security, commodity availability and climate change.

8.1 SUMMARY OF THE MAJOR MARKETS FOR DIFFERENT SECTORS

The major world markets stand out as having the greatest potential for trade, with the US still way ahead for trade in services, and China creeping ahead of the US for manufacturing. However, within goods and services, there are varying patterns across trade in specific sectors.

The US is still far ahead in high-tech sectors such as aerospace and ICT. Chinese and Indian trade in these sectors is rivalling that of EU markets and Japan, but is unlikely to catch the US up any time soon.

For consumer sectors such as agri-food and automotives, China has the highest, and increasing, levels of trade, with US, Indian, Japanese and Brazilian trade also high.

Chinese trade in energy is likely to equal that of the US by 2014, but exports and imports of consumer and leisure services, education, and pharmaceuticals and healthcare services are still far lower in China than in the US.

For retail and logistics, trade is still highest for the US, but Russia is expected to be not that far behind in 2014. Russia remains quite far ahead of China, Brazil and India, who themselves are expected to be ahead of Japan and EU markets by 2014.

Japan remains second behind the US for trade in industrial biotech, and France remains first for trade in security goods and services, just ahead of China. The UK remains second for financial trade, behind the US and ahead of Japan, with China just above Germany and France.

8.2 DRIVERS OF SHIFTING DEMAND

- The increasing global demand for health and wellbeing goods and services - both essential medical products and consumer goods to improve wellbeing, fitness and quality of life – will benefit the pharmaceuticals and healthcare sector, but also chemicals, ICT, manufacturing and retail.

- Economic instability, terrorism, global crime, unemployment, illegal immigration, emerging new diseases and food availability and access are all increasing the demand for safety and security products. The security sector is the obvious beneficiary, but also construction, energy, ICT, transport and pharmaceuticals and healthcare.

- Global networks will be in increasing demand, due to global mobility and connectivity, “always on” real time information, open source social software and networks, and global terrorism, theft and fraud. The following sectors might be expected to see expanding opportunities: ICT, transport, aerospace, automotive, construction, creative industries, education, financial services, pharmaceuticals and healthcare and security.

- An increase in specialised manufacturing organisations and techniques such as lifecycle analysis, lean etc will lead the trend towards smaller, distributed companies and subsidiaries, which will plug into different networks in the global supply chain to find and use particular technologies. All sectors will need to adapt to such trends.

- The demand for sustainability, increased regulation, resource scarcity and public perception will put pressure on corporations to reduce carbon emissions and become “clean and green”. This will affect every sector, particularly those with high energy consumption or those involved in the production of energy efficient and low carbon products.

Technology Convergence

Technology convergence will change the sectoral landscape. More technology-driven sectoral overlaps and cross-fertilisations are to be expected based on sector maturity, a greater global dispersion of resource and an increasing unification of disciplines. This can be expected to enable both a greater diversification of sector activities and convergence of technologies deployed within sectors.

The complexity inherent at the intersections of sectors may see the fastest emergence of new areas of growth, potentially allowing a 'leap-frogging' of traditional or persistent problems. Crossdisciplinary advances are highly likely, with the following technology areas anticipated to dominate:

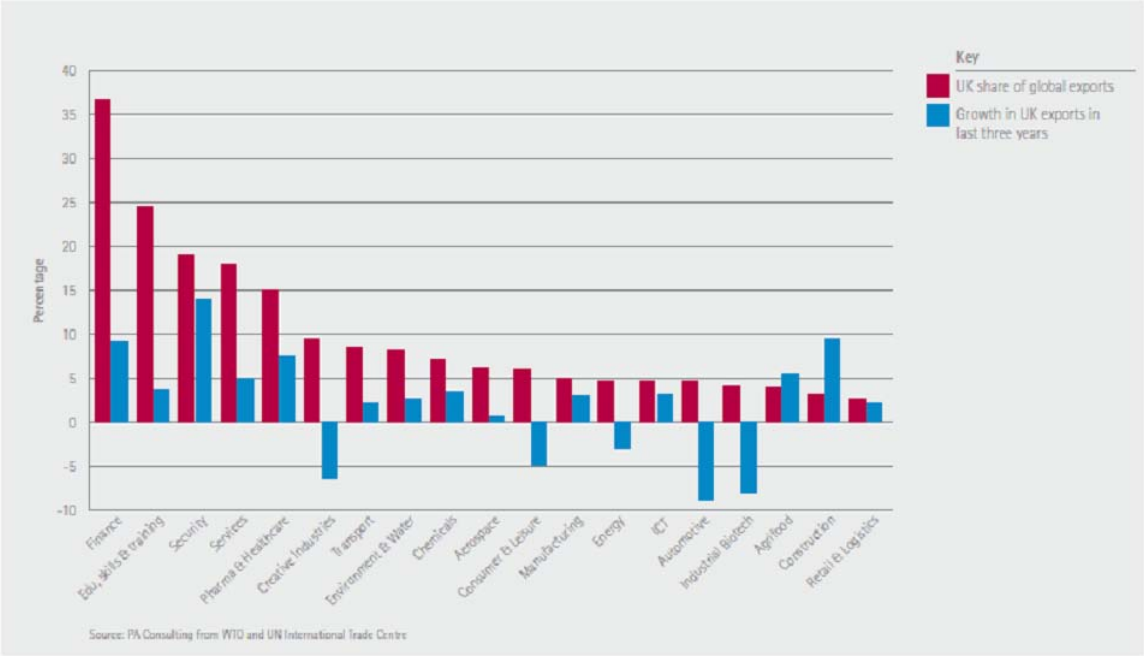
- Industrial biotechnology and pharmaceuticals
- Nanotechnology (particularly nano-science and nano-engineering)
- Materials research and engineering
- Energy generation and storage and
- Information and communication

8.3 REBALANCING, AND PRIORITISING SECTORS

As stated in the UKTI 2011 Strategy, "The UK needs to rebalance its economy away from growth built on unsustainable borrowing and government spending, and over-reliance on a few sectors, towards a more broadly based economy that builds upon our strengths across a range of innovative and high growth sectors."

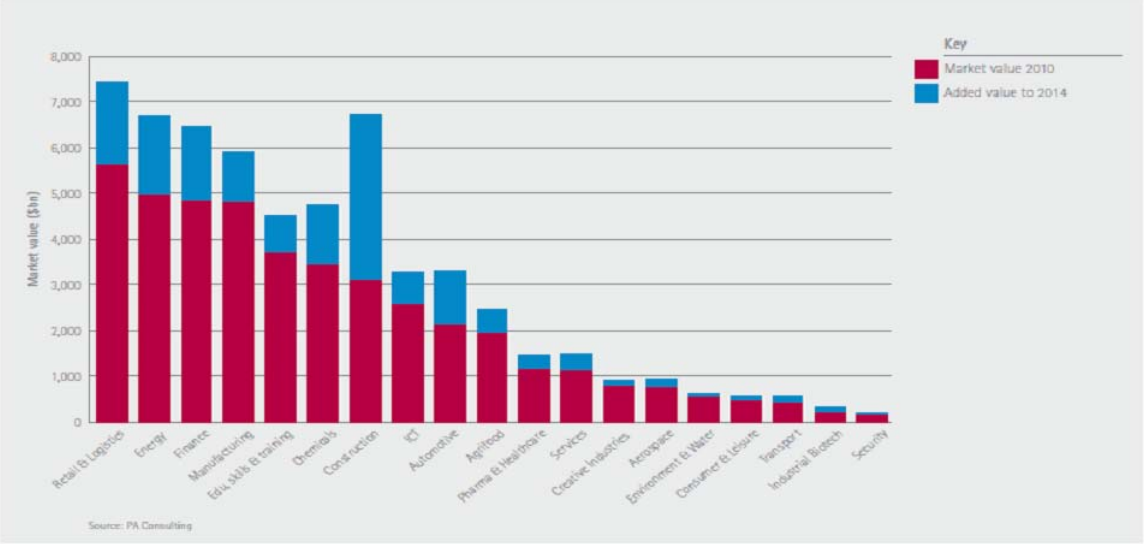
There are many areas of economic activity where the UK has a comparative international advantage or has the potential to establish one. The graph below shows the considerable share of global exports the UK holds in many sectors, as well as the growth in UK exports in most of these sectors.

Figure 8.1: UK Share of Global Exports and Recent UK Export Growth, by Sector



UKTI, in partnership with BIS, has reviewed how it targets its sector based support, to ensure value for money from its resources. This review has mapped UK capabilities against the projected evolution of global demand, across a broad range of sectors. The chart below gives a prediction of global demand in 2014 across sectors.

Figure 8.2: The Market Value of Sectors in 2010 and Forecast for 2014



Significantly the review highlights that global opportunities are increasingly generated where sectors overlap. This underlines the need for sector teams, across the UKTI network and from other Government Departments, to work seamlessly with one another to respond to global demand. A prime example is providing health and wellbeing solutions for an ageing population, as this brings together pharmaceuticals, medical devices, healthcare services, training, construction, financial services, design and technology.

UKTI will therefore focus primarily on 18 priority sectors, which fall into five groupings as shown below, all underpinned by two cross-cutting areas – Technology and Low Carbon − whose breadth means that they drive, and enable, all the other sectors.

Table 8.1: UKTI Priority Sectors, as Outlined in the 2011 Strategy

Advanced manufacturing	Defence and security	Infrastructure	Healthcare and life sciences	Services
Aerospace	Defence	Construction	Healthcare	Creative industries
Agrifood	Security	Environment and water	Industrial biotechnology	Education skills and training
Automotive		Transport (airports, marine, ports, railways	Pharmaceuticals and medical biotechnology	Financial services
Chemicals				Professional and business services
Energy				Retail
		Technology		
		Low carbon		

Source: UKTI 2011 Strategy, 'Britain Open for Business'

The UK's strength in services, especially financial services and professional and business services, is well known and documented. However, the UK also has particular strength in fields within all of the other sectors listed above, which is often under-appreciated.

In the following chapters, we consider these other sectors (excluding defence and security), and where the UK has relative strength and/or faces particular challenges, summarising some of the findings from the sectors review. We also assess UK performance across different markets, particularly large emerging markets, as well as comparing UK trade in these sectors to that of key competitors, namely France and Germany.

CHAPTER 9: ADVANCED MANUFACTURING

Engineering firms are the largest category of exporters from the UK, with over 8,000 firms exporting engineering goods to North America and to Asia and Oceania each year[26].

Here we focus on advanced manufacturing exports, particularly hi-tech exports, in which advanced economies still have a strong competitive advantage, and which have particularly high spillovers for the rest of the economy, including via technology development and dispersion.

9.1 AEROSPACE

Aerospace includes space systems and equipment, engine systems, air traffic management, airframe and wings, autonomous systems and rotary wings, and related equipment. The aerospace sector is also strongly linked with the defence and security industries, with many companies and technologies operating across all three sectors. In addition, there are many related services sectors, such as the airline services sector, providing travel services, training and recruitment services, and so on. The aerospace sector, therefore, plays a central role within advanced engineering, and provides a range of upstream and downstream opportunities for other sectors.

The UK's aerospace industry is the largest in Europe and second only to the US globally. The UK accounts for 6.2 per cent of global aerospace exports[27].

The sector is characterised by long development lead times, programme lifecycles and technological complexity, which can act as barriers to entry for competitors, making the UK's established position more significant – although high levels of state aid to competitors could challenge this.

Despite the global economic downturn, the long-term order books of the large commercial aircraft manufacturers allowed the sector to avoid the worst impacts of the recession, and there were fewer cancellations than expected. Airbus deliveries rose by 11 per cent between 2007 and 2010. Airlines began to expand capacity again last year and to request new orders, so that both Boeing and Airbus announced increased production rates by the end of 2010.

[26] HMRC figures; exporters are only counted if they have overseas transactions of goods above the threshold.

[27] International Trade Centre

The UK has been highly attractive as an inward investment location for this sector, again second behind the US, accounting for 6.8 per cent of global inward aerospace FDI[28]. This includes many of the world's leading players, e.g. EADS, Finmeccanica, Bombardier, Agusta Westland and General Electric. The UK also has significant outward FDI in aerospace, especially in the US, UAE, France, India and Poland.

In 2009, UK-based turnover was £22.2 billion (17 per cent of the global market), and new orders were £32.2 billion. Exports accounted for 70 per cent of companies' turnover. In the same year, £1.7 billion-worth of R&D was carried out in the UK.

There are 34 aerospace and defence companies in the UK1000, all of which feature in the G1000. Altogether, there are around 3,000 companies, including around 2,500 SMEs, in the UK aerospace sector. The industry directly employs just over 100,000 people, with pay scales around a third higher than the manufacturing average, and over 40 per cent above the national average. UK designed and manufactured aircraft engines (Rolls-Royce) are used by more than 600 airlines (including nine of the world's top ten), and it currently holds about 30 per cent of the civil engine market.

9.1.1 Challenges and Implications

The aerospace industry is undergoing significant changes in technology and operations, driven by airline demands for lower operating costs and challenging environmental targets. At the same time, there is evidence that overseas competitor governments are increasingly using political leverage to obtain industrial advantage, for example through trade challenges against UK and European support.

Traditional aerospace global suppliers are the US, the UK, France, Germany and Canada. Some emerging markets are also starting to increase their market share in this sector, and regionalisation and outsourcing will cause greater competition throughout supply chains. Brazil is the BRIC country competing most at a regional level, for example Embraer is now the market leader in regional jets (overtaking Bombardier), and has become a global competitor.

For market access reasons in particular, leading aircraft and equipment manufacturers are increasingly outsourcing supply, operations, manufacturing, logistics and even R&D to high value markets such as China and India. India is providing greater competition for supporting services, including value-adding niche services, throughout the supply chain, and is using industrial offsets to increase market share.

China is building on experience gained on its Regional Jet (ARJ21) and is now developing the C919 single-aisle civil aircraft that will compete against

[28] OCO/FDI Markets

the Airbus A320 and Boeing 737. At present, Airbus supply 43 per cent of the Chinese civil aircraft fleet, but the new domestic aircraft will eat into this market share. China is also increasing its profile further down the supply chain and may take some specialist work from traditional countries. For example, some wing assembly for the Airbus A320 is taking place in Tianjin in China.

Meanwhile, Russia is producing the MS-21 aircraft and Japan is developing the Mitsubishi regional jet. Mexico is also a major location for off-shoring of work, initially for North American companies, due to their proximity.

A big challenge is the extent to which the UK government can encourage R&D investment domestically to compete with that available overseas (where governments are subsidising/purchasing R&D content). The UK's National Aerospace Technology Strategy sets out priority projects, but there is a risk that some work will migrate overseas. The UK also needs to work to increase the supply of professional engineers, technicians and those with higher end skills to maintain the attractiveness of the UK for both foreign investors and domestic production.

UK aerospace companies need to further improve their manufacturing processes and their coordination/consolidation with each other to win large new orders. And they need to look beyond dampened demand in the UK and the US, and compete for opportunities in wider markets. There are major market opportunities in all of the BRIC economies, as well as other emerging markets such as Korea and Middle Eastern markets. Airbus expects carriers in the Asia-Pacific region to order at least 8,000 planes (2,800-3,000 in China) over the next 20 years – roughly one-third of the global total. There are also opportunities for diversification and collaboration around clean energy. UKTI can add significant value by helping UK aerospace firms to enter further markets and seize these new opportunities.

9.2 AUTOMOTIVES

The automotives sector includes design, engineering and manufacture of vehicles and components, including electric vehicles, and the motor trade (including retail, distribution and aftermarket services), motorsport, and construction and mining equipment.

The UK has a particularly diverse automotive sector, with over 3,000 companies ranging from luxury car manufacturers such as Bentley, Jaguar Land Rover and Rolls-Royce, to construction equipment makers such as JCB. The UK specialises in supplying parts and services to vehicle manufacturers rather than the actual assembly of final vehicles. In particular, it is a global centre of excellence for engine development and production, with a 30 per cent share of European internal combustion engine production. Nevertheless, the UK still accounts for 2.4 per cent of worldwide vehicle output and 8.7 per cent of European assembly, ranking it 4th in Europe and 12th globally. The UK ranks second in the world for premium car production and has strengths in motorsport and automotive design engineering. Overall, the sector is worth more than £11 billion to the UK economy.

The UK automotive industry is characterised by significant foreign investment and high exports. In 2009 auto exports (vehicles and parts) were £20.7 billion, which amounted to 10 per cent of UK manufactured exports. 77 per cent of all UK vehicles produced in 2009 were exported.

There are 31 automobiles and parts companies in the UK1000 and 73 in the G1000. Around 180,000 people are employed directly in the UK automotive manufacturing industry. 11 of the world's volume vehicle manufacturers have a UK presence, supported by 19 of the top 20 suppliers. In 2009, the UK produced more than 1 million vehicles and some 2 million engines.

The level of innovation and R&D is high, with the automotive sector one of the 'big five' sectors in UK R&D. The automobiles and parts sector was the fifth largest contributor to R&D in the UK1000 and the 2nd largest in the G1000 in 2008. It made up around 8 per cent of all business expenditure in R&D with £1.3 billion in 2008. Eight of the top 25 R&D investors globally and three of the top 25 UK investors are automobiles and parts companies.

9.2.1 Challenges and Opportunities

Of the 73 companies in the G1000 only one, GKN, is UK-owned, with companies from Japan, the US and Germany dominating the list. The UK lacks a recognised brand (i.e. no volume manufacturer in automotive). There is a risk that the removal of the RDAs could hit the automotive sector particularly hard as they had been champions for the industry. The UK's Low Carbon Vehicle battery capability is behind that of the US and Japan due to a lack of manufacturers. However, Nissan's plans in this area may go some way to changing this.

It is also important to recognise that the UK does have strengths in R&D in power storage/batteries. For example work on electrochemistry in St Andrews and work on batteries in Dundee - home to Axeon, Europe's largest independent battery manufacturer. As vehicle technology becomes increasingly sophisticated, suppliers are under pressure to take more responsibility for R&D. There is also a political desire to see more investment in R&D in the automotive sector in the UK, as envisaged by the Auto Council.

There are skills gaps at operator, craft and technician level and these are having a significant impact on businesses. Automotive employers need to make a major effort to upgrade the technical capability of their staff. Strong leadership is also vital to build strategies based on lean operation and advanced supply chain management.

Innovative production technology and control techniques are becoming increasingly important for competitive advantage. Key growth markets include: engine and powertrain; hybrid, electric and alternatively fuelled vehicles; advanced software, sensors, electronics and telematics; advanced structures and materials; design and manufacturing processes.

Europe is viewed by many as the likely first major market for electric vehicles. Both SAIC and Chang'An from China and Tata Motors from India have opened European technical centres in the Midlands and Tata recently announced they would assemble electric vehicles in the UK for the European market. Electric vehicles, therefore, could present significant export opportunities for the UK in the near future.

9.3 CHEMICALS

The chemicals sector includes petrochemicals, plastics, paints, fine and speciality chemicals (not including pharmaceuticals), intermediate chemicals, coatings, soaps and detergents.

> **The UK is one of the world's top chemical-producing nations (third in Europe and fifth amongst OECD countries), with a turnover of £60 billion, and £43 billion of UK exports. It is one of the largest manufacturing industries in the UK, with one of the highest growth rates and as such is a significant provider of jobs and creator of wealth for the UK.**

Despite a statistical decline in employment over the last decade, in line with manufacturing as a whole, both the relative value of the sector and its productivity have risen. Turnover has grown 60 per cent in the last decade, whilst value added per employee has risen to £74,700, nearly twice that of the UK manufacturing average.

There are 3,111 chemical companies. Data from 2007 indicates there were about 132,000 employees in the sector. The industry deals with heavy, bulky, volatile and hazardous materials, some of which are difficult to transport. As a result, chemicals manufacturing has proved somewhat resilient to off-shoring and has grown in the UK around the supply of raw materials (for example, North Sea Oil or salt), and around the end user (other manufacturers, including upstream chemicals manufacturing). In addition to the bulk chemical sub-sector, low volume, high value, fine and speciality chemicals form an important part of the industry now and more importantly for the future.

9.3.1 Opportunities and Challenges

There are significant low carbon opportunities for this sector, for example lightweight materials for cars, aeroplanes and construction, through to new agri-chemicals and next generation bio-fuels. The ICCA has shown how innovations in the chemical industry enable twice as many savings in greenhouse gas emissions downstream. Projections suggest this could rise to four times or greater by 2030.

There are also strong linkages between petrochemicals and industrial biotech. As a sector whose products are globally traded on price, it faces particular challenges around the relative cost of energy (which can comprise a significant portion of total costs in the production of, for example chlorine and fertilisers). It is hard for these costs to be passed on to the end user in the way they can in other sectors. As an energy intensive industry there are also

threats from issues around energy security and the burden on the sector from the impact of environmental legislation and regulation.

Supply chain resilience is also considered poor in the UK, with a closure in one part of the supply chain able to have a damaging 'domino-effect' on others. There is also a range of challenges around workforce skills, including a lack of skills and knowledge required for process improvements. In recent decades the industry has become less R&D intensive, although the R&D investment of the top UK chemicals companies is on a par with Aerospace and Defence.

9.3.2 Competition

The UK is a relatively strong competitor in the chemical sector, alongside other major European countries and Japan, the US, Canada and Korea. The UK's market share as an exporter in this sector is 7.1 per cent[29], with 73.3 per cent of firms classed as innovative[30]. The UK accounts for 2.3 per cent of global FDI in chemicals, and 10.5 per cent of FDI in Western Europe[31].

China has become a global competitor in chemicals, supplying organic chemicals and fertilisers to other emerging economies. Brazil, Russia and India are also presenting competition through joint ventures and acquisitions of 'Western firms', rather than developing competing domestic capability. In the longer term the BRIC countries will develop greater capability and challenge for extended global market share. Middle Eastern countries are also developing large commodity production facilities located near to raw materials, giving them the advantage of lower transport costs.

9.3.3 Drivers of Demand

The key trends driving the chemical industry are:

- Natural Resources and the Environment: The portion of the world's population suffering from water scarcity is increasing dramatically. The chemical industry is one of the significant users of water. It will need to re-design its processes to reduce their water usage.

- Globalisation: Cash rich government funds and companies from the Middle East and Asia are investing in Western companies to acquire knowledge and brands, resulting in longer, more global supply chains, and more foreign competitors threatening local markets.

[29] International Trade Centre

[30] BIS 'First findings from UK Innovation Survey 2009' March 2010

[31] OCO/FDI Markets

- Major Shifts in Consumption Patterns: Today about 70% of consumer spending is concentrated in North America, Europe and Japan. But 10 years from now, about 80% of the middle-income consumers will live outside of these economies.

- Shift in End-User Choices: There is a clear polarisation of consumption in the chemical industry. For example, consumers can now choose between a basic, cheap wall paint or a premium one with special properties such as water resistance.

- Regulation: Regulation will continue to influence the development of the chemical industry. One example is Europe's REACH (the Registration, Evaluation, Authorisation and Restriction of chemical substances) regulation.

- Demographics: Population shifts will have major consequences. In developed countries, chemical industry workers are retiring, leaving companies without experienced managers to take over leadership roles. Developing countries have a high percentage of young people, but many of these economies need further development to compete in the chemical industry.

9.4 AGRI-FOOD

Agri-food is the UK's largest manufacturing sector and contributed £80.5 billion to the economy in 2007 (6.8 per cent of the total), with £13.2 billion of food exports in 2008 (£31.6 billion of food imports). It employs 3.6m people with 196,000 food chain enterprises ranging from large retailers to small cafés, and makes a significant contribution to rural communities.

> **The UK is regarded globally as a world leader in agri-food technology and innovation, particularly in areas including food safety, traceability, functional foods and science, innovation and novel foods, food supply chain, science and research and development (e.g. soil and animal sciences) and high tech and high value (genetics breeding, marine/fisheries and nutraceuticals).**

The food (and drink) sector accounted for over 4 per cent of the total R&D spend reported in the 2009 annual BIS R&D Scoreboard. Due to the highly competitive nature of the industry, there are over 1,500 new products introduced each quarter. This mix of product and process innovation is a core strength of the sector.

Another key strength of the agri-technology sector is the level of expertise it has in developing sustainable solutions. Agri-science, for example, plays a key role across a range of industries in to help manufacturers provide alternative raw materials that can be recycled. In addition, the UK is a world leader in researching endemic and exotic animal diseases, including Avian influenzas, and many UK companies operate globally in the field of provision of animal feed expertise.

Another area of UK strength is in the processing of food. The UK processing and packing machinery market is made up of over 500 companies and employs around 12,000 people. The UK has strength in the area of automation and robotics, improved product quality, improved product consistency, and the development of packaging technologies. In particular the UK has shown to be well advanced in the tackling of environmental issues such as waste management which has driven the move towards automation and robotics. The UK is growing its presence in this area, with markets developing in USA, Germany and Italy.

9.4.1 Challenges and Opportunities

With predictions around population growth, global concerns over nutrition and human health, and lengthening of food supply chains, there are opportunities for the UK agri-food technology sector in trading the expertise outlined above internationally, and securing inward investment.

Climate change is predicted to have a serious impact on food production. The industry will need to adapt to these changes, while meeting increasing demand, via innovation, including growing new crops. In addition, there are significant opportunities in delivering low carbon solution within the Agri-food industry, but the UK has some way to go in reducing carbon emissions throughout the supply chain; almost a fifth of greenhouse gases come from the food chain, with farming accounting for the largest share.

There is a growing trade deficit for food and drink in the UK, rising from £2.6bn in 1995 to £9.9bn in 2007. This impacts on the UK's ability to increase its food independence, and is an ongoing concern in terms of the environmental impact of transporting food great distances. There is also a need for further international investment and collaboration to enhance agri-food research.

The UK is an attractive HQ location for food and drink companies, as UK consumers lead the market in Europe in their uptake of new fashions, ways of shopping and sensitivity to "scares" (e.g. artificial colours). US companies are already well represented in the UK, but there are further inward investment opportunities for Asian companies in particular.

9.4.2 Competition

The UK is not considered one of the main agricultural exporters, with countries such as the US, Brazil, Canada, Mexico, China and European countries, such as the Ukraine, having a much larger agricultural landmass and a much greater market share.

Direct trade competitors vary across the sector. In agri-food technology, the UK's biggest competitors are from the EU (including Netherlands and Germany), USA, Canada, Australia and New Zealand. Many of these other governments are providing significant support to help their agri-food technology companies enter new markets. However, the UK should benefit from the WTO aspiration to remove all agricultural export subsidies by 2013.

UK exporters should also look to capture increasing demand across the globe for higher standard luxury and healthy food and drink products.

Inward investment in agri-foods is governed by the relative economic growth of the host economy. The fast-growing BRICs and developing countries are providing an increasingly prosperous market for agri-food producers, becoming direct competitors to Europe, the US and Japan for investment. That said, the UK should remain an attractive market for luxury food products and the health and well-being sector.

CHAPTER 10: HEALTHCARE AND LIFE SCIENCES

Global demand for life sciences goods and services is driven by many factors, such as:

- **Long life expectancy with public awareness about health and disease**
- **Demand for higher life quality with new disease prevalence (e.g. cancer and cardio)**
- **Obesity**
- **Epidemic risks**
- **The cost of care (which pays for performance and is supported by technology).**

10.1 PHARMACEUTICALS AND HEALTHCARE

This sector is classified as; the discovery, development and production of both small molecule pharmaceuticals and biopharmaceuticals, and related technologies (e.g. drug delivery); regenerative medicine and advanced therapies; medical devices and technology (including dentistry, medical diagnostics, animal health, e-health); research services (including management of clinical trials) ; and healthcare systems and hospital services (including patient management IT based services specific to healthcare).

Under this classification, the UK holds a 14.9 per cent share of world exports, and a 5.0 per cent share of world FDI. A high 80.7 per cent of UK firms in the sector are classed as innovative[32].

10.1.1 UK Strengths

> **The UK is a world leader in life sciences (pharmaceuticals, medical biotechnology, and medical technology), ranking second in the world after the US, and has established itself in future growth areas such as regenerative and stratified medicine.**

The NHS is a unique selling point for the UK, and adds to the UK's attractiveness as a base for life sciences, with vast patient databases for clinical trials and investigations. The NHS also has a role as an established model of healthcare provision when looking to offer solutions to emerging

[32] BIS 'First findings from UK Innovation Survey 2009'

economies. Plus, the UK health sector has had a strong reciprocal relationship with the bio-science/technology and pharmaceutical industries.

Pharmaceuticals

The UK Pharmaceuticals Industry is the fourth largest in the world. It had an annual turnover of £15,184 billion in 2008, with a GVA of £8.64 billion. The average GVA per employee was £192,070, compared to the UK manufacturing average of £53,680. Exports totalled £21.3 billion in 2009, accounting for 10.5 per cent of global pharmaceutical trade. Drugs which originated in the UK took a 16 per cent value share of the world's top 100 selling drugs in 2008.

UK pharmaceutical industry R&D expenditure was £4.3 billion in 2008, and the UK has two corporations in the global top ten. Altogether, the pharmaceutical manufacturing industry in the UK employs 45,000 people in 375 companies.

Medical biotechnology

The UK's medical biotechnology sector leads Europe in the number of drugs in all stages of clinical development and the UK also has considerable strengths in the growing genomics field. This sub-sector comprises around 780 companies in the UK, with a combined annual turnover of around £4.2 billion, representing an estimated 9 per cent of the global turnover and 30 per cent of the total European turnover. The sector employs 24,000 people representing an estimated 25 per cent of the total for Europe.

Medical technology

The medical technology sub-sector generates around £10.6 billion of turnover. BIS metrics for the medical technology sector show a high level of international UK trade in the sector, a net balance of trade to the UK, and significant venture company activity (up to 2007). The UK sub-sector comprises around 2,800 companies, the majority of which are small and medium enterprises (SMEs), employing 52,000 people.

Measured by turnover for production of medical devices, the UK is a major force in Europe, although the profile shows less year-on-year growth than other major nations (Germany is by far the dominant country in medical technologies).

The medical technology field has much start-up activity, indicating that there is scope for many new products through translational innovation from other sectors such as automotive. And there is an emerging market for low-cost, high-tech medical technology products in India and China.

FDI

The UK is Europe's top location for investment in pharmaceutical and biotechnology research and development. The pharmaceuticals and biotechnology sector was the largest contributor to R&D in both the UK1000 and the G1000 in 2008. There are 134 pharmaceuticals and biotechnology firms in the UK1000 and 116 in the G1000. R&D spending by companies in the UK pharmaceuticals sector is highly concentrated: GlaxoSmithKline and AstraZeneca continued to dominate R&D with a combined contribution of 75 per cent of the sector total, and 27 per cent of overall UK1000 R&D spending (based on their global R&D spend).

10.1.2 Challenges and Competition

Some global pharmaceuticals companies are deterred from operating in the UK by factors such as high tax and regulation. There has consequently been some shift in R&D away from UK centres of excellence towards locations such as Switzerland. Routine R&D work is being moved to BRIC countries, with India and China in particular looking to move up the value chain and capture more advanced R&D.

There is also a gap in early stage funding in the UK. Innovative ideas are coming out of universities and the clinical environment, but commercial expertise is missing, and there has been a gap in the UK venture capital industry since the recession. Hence there is a lack of investment in biotech, pharmaceuticals, diagnostic regenerative medicine and stem-cell therapy. The UK is losing ground to Denmark, the US and Israel here. There is also a challenge in scaling up tissue, engineering and stem cell therapies.

Recent developments in 'life sciences' have raised concerns about the UK's position as a world leader. The UK's share of global patient enrolment in clinical trials dropped from 6 per cent in 2000 to 2 per cent in 2006. The pharmaceutical sector is facing a patent "cliff", equivalent to $140 billion in sales, as several major drugs come off patent over the next few years. For medical biotechnology companies, challenges in accessing finance have the potential to limit growth. Business and leadership skills are vital to the commercial success of SMEs, particularly medical technology companies who need to build relationships with clinicians within the NHS to support the development of new and innovative medical technologies.

The manufacturing end of the sector will move to lower cost geographies but this will hit the US, France or China more than the UK. The advanced research end of the market will be safer in the short term but will eventually be threatened by increasing capability and intention in BRIC countries.

Key competitors therefore include:

- Switzerland - a traditional hub with an attractive business environment / tax rates
- India will increase its export capability along the manufacturing end of the supply chain
- China and Australia will continue to dominate the Asia-Pacific market
- The US, France and Japan, alongside the UK, will continue to dominate the Western market

10.1.3 Future Opportunities

Higher consumerism and greater interest in personal well-being in emerging economies will significantly raise export opportunities in the sector, particularly in healthcare products and services. This will be furthered by ageing populations, urbanisation, and a potential cultural shift towards Western medicine. In addition, rising rates of obesity, alcohol consumption and high levels of smoking will also add to the demand for health services. This demand will need to be met through innovative healthcare solutions.

There are opportunities to provide better and more effective healthcare through the advancement of bioscience and healthcare and through supporting the development of large health infrastructure projects taking place throughout the world. Individual healthcare will be advanced through drug discovery, genomics, tissue engineering, new biomaterials, continued development of micro-scale and nano-scale systems, and ICT solutions. New techniques, drugs and imaging technologies will provide less invasive medical procedures, requiring shorter recovery times.

10.1.4 Implications

Looking to the future, the UK has the opportunity to position itself as a centre of excellence in advanced pharmaceutical and health products. However, to succeed the UK needs to:

- **Make more of the excellent legacy in UK higher education and research in health and pharmaceutical, exploiting it as a catalyst to attract people and investment**
- **Make the UK a more attractive location (by reducing legislation and regulation) for early phase clinical trials**
- **Focus on keeping advanced manufacturing capability in the UK, competing with BRIC countries in markets where levels of science and automation significantly reduce the impact of cheaper workforces.**

A sustainable health care system will need to focus on primary and secondary prevention, with health care providers constantly adapting their services to rapidly changing threats and technology. Some commentators have predicted that the next twenty years in medicine will see as much change as the last two hundred.

10.2 UK EXPORTS OF MEDICINAL AND PHARMACEUTICAL PRODUCTS OVER THE LAST FEW YEARS

Exports of medicinal and pharmaceutical products form an important proportion of UK trade, accounting for 8.5 per cent of UK goods exports in 2010 (44 per cent of total chemical goods exports). This amounted to £22 billion in revenue for firms based in the UK[33].

Medicinal and pharmaceutical goods exports also held up well during the global slowdown, growing 18 per cent in 2008, 18 per cent in 2009 and 9 per cent in 2010. This compares to total UK goods exports, which rose 13 per cent in 2008, fell 10 per cent in 2009, and then recovered by 17 per cent in 2010 (in pound sterling values). Overall, pharmaceutical and medicinal goods exports were 40 per cent higher in 1Q2011 than in 1Q2008, whereas total goods exports were 22 per cent higher, and total chemical goods exports were up 25 per cent.

10.2.1 Destination Markets

51 per cent of UK medicinal and pharmaceutical product exports are sent to the EU27, 26 per cent to North America and 11 per cent go to Asia and Oceania. Only 3.2 per cent are sent to Latin America and the Caribbean, and 3.6 per cent to the Middle East and North Africa.

Amongst individual markets, by far the largest proportion is exported to the USA (23 per cent). 10 per cent is exported to Germany and 9 per cent to France. Of the BRICs, China accounts for 1.9 per cent and rising, Brazil 1.5 per cent, Russia 0.5 per cent but India only 0.1 per cent. UK medicinal and pharmaceutical goods exports to China were 199 per cent higher in 2010 than in 2007.

10.2.2 Market Share

The UK accounted for 8.4 per cent of global pharmaceutical goods exports in 2010. This compares to Germany's market share of 16.4 per cent, the US 10.4 per cent, France 8.5 per cent and Japan 0.9 per cent.

The UK's market share varies across different destinations; the UK's share of 2010 pharmaceutical imports into key markets is given in the table below:

[33] HMRC's UK Trade Info Database for trade in goods

Table 10.1: UK Share of Pharmaceutical Exports to Key Markets

US 9.2%	Germany 6.4%	France 6.4%	Japan 7.2%
China 5.7%	India 3.5%	Brazil 5.8%	Russia 4.8%
UAE 12.5%	South Africa 8.1%	Indonesia 5.5%	Mexico 4.4%

Source: UN Comtrade. UK market share in 2010, except for India, where most recent data is 2009.

10.2.3 Related Products

The UK also has a relatively strong market share in related products, such as medical instruments and healthcare equipment, although again it is usually behind key competitors.

In 2010, the UK accounted for 3.1 per cent of global exports of instruments and appliances used in medical, surgical, dental or veterinary sciences. This compares to a massive US share of 28.9 per cent, Germany 14.7 per cent, Japan 5.5 per cent and France 3.9 per cent.

For equipment using x-rays, and alpha, beta and gamma rays, the UK was also behind key competitors. The UK's share in 2010 was 4.5 per cent, Germany 28.9 per cent, the US 23.2 per cent, France 10.1 per cent and Japan 9.5 per cent.

The UK compares better against competitors for exports of medical wadding, gauze and dressings, with an 8.1 per cent share of global exports. Germany's share is 12.4 per cent, the US 9.6 per cent, Japan 4.3 per cent and France 2.8 per cent. Also, for medical, dental, surgical and veterinary furniture, the UK share is 4.0 per cent, Germany 22.1 per cent, the US 20.6 per cent, France 2.9 per cent and Japan 2.5 per cent.

In terms of growth, UK exports of healthcare equipment grew by a total of 81 per cent between 2002 and 2008. Both the number of UK healthcare equipment exporters and the average value exported by each firm rose substantially, especially to the BRICs, as shown below (the first figure gives the percentage increase in the number of exporters, the second figure is the percentage increase in the average value exported by each firm, between 2002 and 2008):

Table 10.2: Growth in Number of UK Healthcare Exporters and Average Value Exported by Market, 2002-2008

Russia	China	India	Brazil	Qatar	Turkey	S.Africa	S.Korea
96/188	84/45	70/132	14/102	75/14	52/144	38/17	35/32
Saudi	**US**	**German**	**Mexico**	**Indonesia**	**Japan**	**UAE**	
20/21	24/33	28/5	50/20	26/74	3/105	8/57	

Source: UKTI analysis of HMRC goods trade data, divided into sectors by EPA, BIS

10.3 INDUSTRIAL BIOTECHNOLOGY

Industrial biotechnology is the application of biotechnology for the manufacturing, processing and production of chemicals, materials and energy. It is used in the chemicals and pharmaceuticals sectors, as well as downstream sectors that use chemicals in their products or processes (e.g. construction and automotive, cosmetics, detergents, paints, adhesives, papermaking, and biodiesel). In particular, there is increasing interest in the use of biotechnology for the production of energy, chemicals and materials from renewable resources.

The sector therefore includes; genetic engineering, fermentation technology, biotransformation, enzyme technology, in-silico modelling, structural biology, bioinformatics, and biosensors.

10.3.1 Strengths and Opportunities

Increasingly scarce resources will likely result in further drives to raise energy efficiency and low-impact, resource efficient manufacturing techniques for all products. Industrial biotechnology may find accelerated application as a result, in sectors such as agri-food and low carbon energy.

> **The OECD Futures programme concluded that biotechnology can play a significant if not the major role, in addressing what are considered the most serious challenges to world economies and societies over the next decades.**

The UK market, whilst currently small by comparison with other more established sectors, has significant potential. Biotechnology in the chemical sector alone is estimated to grow from the current £4 billion per annum, to £12 billion by 2025, mirroring the global market growing from the current £150 billion to £360 billion over the same period.

The UK currently accounts for 4.1 per cent of global exports, and 2.0 per cent of world FDI. UK firms in this sector are highly innovative, with 80.7 per cent classed as innovative in the UK Innovation Survey 2009.

The UK has a strong research base, underpinning industrial biotechnology in areas such as microbiology, molecular and structural enzymology, and biochemical engineering. Although UK industry has applied biotechnology mainly for healthcare technologies, a small but increasing number of companies develop processes to produce biomass-based chemicals and materials.

A number of measures have been taken to strengthen the UK's capabilities in this sector, building on its strengths in life sciences and healthcare biotechnology. The UK has established good conditions for industrial biotechnology to reinforce the biotech sector. There is recognition of the potential of industrial biotechnology to make UK manufacturing industries more competitive and its role in reducing emissions and environmental pollution. The discovery and development of new industrial biotech processes

and bio-products are being supported through a combination of governmental support, innovative institutes and companies, and collaborations.

10.3.2 Challenges and Competition

The UK has the capability to become one of the world leaders in industrial biotechnology. However, there are still several weaknesses, which need addressing. These include a lack of dedicated funding programmes for industrial biotechnology research, a lack of chemists with biotransformation experience and know-how, and not enough spin-out activity and capitalisation on expertise/discoveries. Compared to their continental European counterparts, the UK chemical industry is less advanced in industrial biotechnology.

Future competition will come from nations with mature R&D sectors (Germany, the US, etc), and from countries with particular sector strengths (Brazil in chemicals, China in automotives, the US in health, and so on). Over the long term, the BRICs are likely to build up further expertise, but this will take some time.

CHAPTER 11: UK BRANDS ON EVERY HIGH STREET: Retail and Consumer Goods and Services

This chapter examines the opportunities for the UK retail sector and consumer and leisure sectors overseas, what the key sub-sectors are, and the emerging markets that are already attracting international brands.

11.1 RETAIL

- **Retail is a key sector of employment for one in nine of the UK workforce, and with the current economic squeeze on middle and lower class incomes in the UK, retailers targeting this market should be considering overseas expansion as part of their growth strategy.**

- **Emerging markets are growing over twice as fast as developed markets, expanding their urban middle classes, who have increasingly similar needs and aspirations to those already served by UK retailers.**

- **International markets will grow quickly both for luxury goods and for a range of middle class goods. Luxury goods are projected to grow 50 per cent by 2015. Global markets for Food and Fast Moving Consumer Goods, Hardline and Leisure and Fashion have all been achieving rates of growth (4.7-6.5 per cent) higher than those projected for the UK market. And UK retailers are already among the largest global operators in each of these product sectors.**

- **The leading emerging economies are key markets for international retail. Brazil, India, China, Russia and Mexico all have large populations, rising GDP and expanding urban middle classes. While there are different barriers in each case, UK retailers are already successful in each of these countries. Practical barriers relating to supply chain logistics as well as legal ones of limits on foreign ownership, repatriation of profits and availability of visas, are inhibiting increased penetration in foreign markets by UK retailers.**

- **UKTI and BIS are working with retailers on trade barriers within individual countries, as well as UKTI posts assisting retailers of all sizes and sectors, often by organising contact with prospective local partners to make market visits effective.**

- **The value of support in overcoming information and contact barriers is illustrated by the case studies at the end of the chapter, with small accessory designers through to leading international hypermarket and supermarket retailers receiving support in entering new markets. However these successes could be better communicated through trade associations and events organised to prompt more retailers to start operations in priority countries.**

- **The success of UK retailers in fast growing emerging economies leads to both repatriated profits and an increasing global profile for UK brands. The UK has world leading retailers and supply chains, and adding to these will further the confidence in, and profile of, the UK product.**

11.1.1 The UK Retail Sector

The UK has the sixth largest retail sector in the world by sales, and in the UK the retail sector directly accounts for 8 per cent of UK GDP and is a key route to market for other sectors of the economy, notably the food industry. Turnover[34] was £285 billion in 2009, of which gross value-added was £68 billion, and the sector employs 2.9 million people (one in nine of the UK workforce).

While retail is a major UK employer, most retailers are very small; three out of four retail enterprises have fewer than five employees and 92 per cent have fewer than 10 employees. However, a tiny proportion of larger retailers account for most of the employment in the sector; the 0.25 per cent of retail enterprises with 250 or more employees employ two-thirds of those working in the sector.

The UK recession has hit retailers hard, especially where discounters are attracting consumer attention with new internet channels. 2009 saw an unprecedented drop in retail spending in the UK, and the average growth to 2014 is only projected at 2.4 per cent per annum[35]. Online retailing is expected to continue to grow quickly at 11.9 per cent a year, adding to the pressure on non-food retailers, who only expect growth of 1.6 per cent a year. Food sales are expected to grow 3.4 per cent per annum, but margins on food retail, even amongst large supermarket chains, are tight and all are looking to diversify into the non-food sector.

[34] Excludes fuel and motor vehicle sales

[35] Verdict: UK Retail Forecasts & Sector Summaries to 2014, November 2010

While growth is continuing in certain niches of retail, overall, the UK is a relatively mature market and medium and large-sized UK retailers are looking overseas for higher growth in emerging economies.

11.1.2 World Situation

Retailers are looking at overseas markets because of the growth of middle classes in those countries and their growing spending power. Economic power is shifting to emerging markets as by 2025, six emerging economies (Brazil, China, India, Indonesia, South Korea, and Russia) will account for over half of global growth[36]. Emerging economies are growing on average 4.7 per cent p.a. while developed economies are only growing 2.3 per cent p.a. Also, as they are at a different point in the economic cycle, they are seeing their countries shift from exports to the West towards satiating (and creating) consumer demand in their own countries. This represents a shift in the relationship between the developed and developing world which would be advantageous to UK retailers.

This increasing wealth of emerging markets and shift in the global ecomomy is creating a much larger global middle class. The global middle classes, defined as those making $10-20 a day, are expanding from 430 million in 2000 to 1.2 billion in 2030[37], with China and India alone making up two thirds of that expansion.

It is not a given that increasing wealth in the world will lead to more consumption of Western goods or services. As outlined in Chapter 7, south-south trade between emerging economies is rapidly expanding, and many consumer goods, particularly low-tech, non-branded and non-luxury goods will be provided by fellow emerging markets. For example, Brazil and Argentina supply soya to China middle classes.

However, the west retains a niche in term of the prestige of British, European, US and Japanese brands, and the sometimes high cost coupled with the guaranteed authenticity of items sold in big shops give the buyer of these goods the cache that developing market brands do not have at this stage. The internationally wealthy are both consuming more and aspiring to buy Western brands. Both luxury goods and efficient middle class shopping experiences are attractive for emerging market consumers.

[36] World Bank: Global Development Horizons 2011—Multipolarity: The New Global Economy, May 2011

[37] World Bank: Global Economic Prospects 2007: Managing the Next Wave of Globalization, Dec 2006

11.2 GLOBAL PROSPECTS FOR KEY SUB-SECTORS

11.2.1 Luxury

Luxury retail is projected to grow 50 per cent by 2015, driven mainly by growth at 14 per cent p.a. in Asia Pacific (excluding Japan)[38]. While Europe is the main market, it will decline to 35.2 per cent of world sales due to its slower growth rate of 7.3 per cent. Japan is expected to grow at only 1.7 per cent, and is expected to decline to 7.9 per cent of global sales by 2015.

We have observed Luxury retailers responding to this trend by opening direct outlets and partnerships in emerging markets, particularly in the Asia-Pacific region and Brazil. For example, Burberry bought 43 stores in China previously operated by a franchisee, and now runs direct operations in Brazil, China, India and the Middle East.

Luxury retailers are also opening some stores in Europe. This is partly to service tourists, including those from emerging markets. Luxury goods will also benefit from an 8.4 per cent p.a. growth in the group of wealthy Europeans with more than $300,000 of financial assets.

11.2.2 Middle class product sectors

The expanding global middle class also presents opportunities in non-luxury everyday goods. UK retailers who have developed distinctive brands and formats that service the needs of urban middle class customers can efficiently deliver the same service to emerging market consumers.

Different product sectors can all be the basis for successful international retailers as demonstrated by analysing the product mix of the biggest 250 global retailers[39]. This is a highly international group where 147 (60 per cent) operate in more than one country. Most of these retailers are specialised into one of three broad product groups, deriving over half their sales from that range.

The largest proportion of both retailers and sales is focused in Food and other Fast Moving Consumer Goods (FMCG), which accounts for over half of the global retailers and over two thirds of global sales. As a consequence these retailers tend to be larger, with the staff and capability to support internationalisation, but is also the group which is the least international. Over half of FMCG retailers are present in only one country, and on average they are only present in about 4.4 countries.

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[38] Verdict: Global Luxury Retailing, January 2011

[39] Deloitte: Leaving home: Global powers of retailing 2011, January 2011

Table 11.1: Characteristics of the Top Global Retailers

Product sector	Retailers in top 250, 2009	Sales in top 250 retailers, 2009	Number of countries	Retail sales CAGR (2004-9)
Food and other Fast Moving Consumer Goods	55.6%	68.0%	4.4	6.5%
Hardlines and Leisure	21.2%	15.3%	9.2	5.0%
Fashion	14.0%	7.5%	17.5	4.7%
Diversified	9.2%	9.2%	9.3	6.1%

The CAGR is a global figure (which includes growth from domestic and foreign sales) from the Deloitte global retailers annual publication[40]. Although we have managed to get international contribution for most of the UK retailers for one year only, 2009, there is not yet history for a trend. Given the low growth rates in UK and the leading historical presence of these retailers in the UK, much higher growth rates are likely to be largely due to international sales.

The definitions for Hardlines & Leisure and Diversified comes from the Deloitte report41. Hardlines & Leisure includes retailers such as Kingfisher, where over half the sales are in categories such as DIY, furniture, computer games and music. Diversified includes retailers such as M&S where none of the 3 categories is more than half of sales.

Differences in taste and other cultural features such as service level expectations between countries can make international expansion hard. However, this product sector is relatively resistant to recession and should be looking to expand.

The second largest group is what is called ‘Hardlines and Leisure’. This category represents around a fifth of retailers and a sixth of sales globally. These retailers are more international than FMCG, and on average sit in around nine countries. However, this product area has been badly affected by the collapse of the housing market in the US and Europe, and has achieved slower sales growth recently.

The third largest group is the Fashion sector. These retailers tend to be the smallest among the global top 250, since they represent 14 per cent of retailers and 7.5 per cent of sales, but they are also the most international, in an average of 17.5 countries each, although their presence in many of these markets may just be a flagship store. This is due to a growing internationalisation of styles developed by highly organized, multinational retailers. This is the group that has been worst impacted by recession, although the 4.7 per cent global growth rate is still far higher than equivalent growth in the UK market.

[40] ‘Leaving home: Global Powers of Retailing 2011’, Deloitte, 2011

[41] Ibid, p. G26

Finally, a substantial group of retailers are classed as 'diversified' which equates to them deriving less than half their sales from any one of the product groups. This group is around one eleventh of both retailers and sales. They are more international than FMCG, being represented on average in around nine countries, and they have also achieved almost as high a growth rate as FMCG over the past 5 years.

All of these retail product sectors, therefore, show evidence that international operations can be effective. The growth rates being achieved by the larger global players are better than forecasts for the same sectors in the UK.

11.3 LARGE UK RETAILERS' INTERNATIONAL EXPERIENCE

Some UK retailers are already achieving faster growth through their overseas expansion. The majority of UK retailers ranked in the top 250 largest in the world are active in many countries and enjoying higher rates of growth than those predicted for the UK home market[42].

Table 11.2: The Overseas Operations of the UK's Top Retailers

Retailer	Rank 2009	Format	# countries	% sales from foreign operations	Retail sales CAGR (2004-9)
Tesco	#4	Hypermarket/ Supercentre	13	33.2	10.9%
J Sainsbury	#28	Supermarket	1	0.0	5.7%
WM Morrison	#34	Supermarket	1	0.0	5.0%
Kingfisher	#52	Home improvement	8	58.5	4.7%
Marks & Spencer	#53	Department store	39	10.3	3.7%
DSG Intl	#64	Electronics specialty	28	53.2	4.9%
Cooperative	#66	Supermarket	1	0.0	16.6%
Alliance Boots	#74	Drugstore pharmacy	7	59.4	9.0%
John Lewis	#80	Department store	2	n/a	7.0%
Home Retail	#88	Other specialty	3	0.0	Ne
Next	#158	Apparel/footware specialty	32	n/a	3.8%
Iceland Foods	#214	Supermarket	2		9.0%
Primark	#215	Apparel/footware specialty	6	56.3	21.9%

[42] Deloitte: Leaving home: Global powers of retailing 2011, January 2011

These UK global leaders are active in all of the product sectors outlined above, and clearly the experience of having served established UK middle classes is applicable to many overseas markets.

11.4 KEY OVERSEAS MARKETS

Large emerging countries are ranked as some of the top destinations for international retail as new urban middle class consumers develop their spending power. This section reviews some key overseas markets and how UK retailers are already entering these markets. Based on evidence we received from UKTI Posts about opportunities for UK retail in their countries, we have examined in detail a selection of those countries and sought further evidence to allow us make a comparison between them and their opportunities.

Table 11.3: AT Kearney Global Retail Development Index

Country	2011 rank	2010 rank	Change
Brazil	1	5	+4
Uruguay	2	8	+7
Chile	3	6	+3
India	4	3	-1
Kuwait	5	2	-3
China	6	1	-5
Saudi Arabia	7	4	-3
Peru	8	9	+1
UAE	9	7	-2
Turkey	10	18	+8
Lebanon	11	NA	NA
Egypt	12	13	+1
Albania	13	12	-1
Russia	14	10	-4
Kazakhstan	15	NA	NA
Indonesia	16	16	0
Morocco	17	15	-2
Philippines	18	14	-4
Tunisia	19	12	-7
Sri Lanka	20	NA	NA
Malaysia	21	17	-4
Mexico	22	19	-3
Vietnam	23	14	-9
Colombia	24	26	+2
Argentina	25	NA	NA
South Africa	26	24	-2
Panama	27	NA	NA
Dominican Republic	28	23	-5
Iran	29	NA	NA
Bulgaria	30	19	-11

Source: AT Kearney 2011

Brazil is ranked number one in the 2011 AT Kearney Global Retail Development Index. This index ranks countries on their growth, the riskiness of the country, market saturation and time pressure before retail competition increases[43]. Brazil is highly favoured because of its natural resources, large urban population and surging retail sales. GDP growth of 5 per cent is expected until 2013, and the 2014 FIFA World Cup and 2016 Olympic Games should attract $50 billion worth of investments. The country has had a stable centre-left Government for the past 8 years, and while inflation is now a risk, the pro-business attitude has attracted real estate investments in shopping malls. Accessorize, Burberry, Farfetch and TopShop already operate in Brazil, and Debenhams may also enter the market.[44]

However, competing in Brazil is not straightforward, given the scale and adaptability of local competitors. Carrefour posted a $722 million loss in 2011 and received an offer to acquire their local business from the local hypermarket competitor, Pao de Azucar.

India is ranked fourth in the 2011 index, and has generally ranked in the top three over the past few years. Growth rates of 8.7 per cent in GDP are predicted to 2016 and the population of 1.2 billion includes a growing urban middle class. Only 7 per cent of the $435 billion retail market is organized in Western style retail chain operations, although in some sectors, such as clothing and apparel, organised retail is 31 per cent of the market. Both local and international retailers are now focussing on second tier cities, as salaries and aspiration levels there rise and real estate prices are still low. UK retailers including Body Shop, Bookers, Burberry, Debenhams, Jimmy Choo, Marks & Spencer, Next, Tesco, Tie Rack, and Waitrose all operate in India. However regulation in India complicates international retail access by requiring single-brand retailers to enter through an Indian partner or a joint venture. Multi brand retail is currently forbidden to wholly foreign companies, although there have been recent steps to liberalise this.

China is ranked sixth in the 2011 index, and has also ranked in the top three over the past years. GDP growth of 9-10 per cent a year and a world leading population of 1.3 billion have created a local retail market worth $2.1 trillion, roughly half the size of the US market. The current Chinese five-year plan calls for a shift of resources towards domestic consumption, which is expected to increase consumer spending by $100 billion per year. UK retailers including Burberry, Gap and Tesco already operate in China, but competition in the largest first tier cities is already forcing retailers to explore second, third and even fourth tier cities.

Russia is ranked fourteenth in the 2011 index. Their large population of 141.9 million have rising disposable incomes, and their retail sector of $1.15 billion is

[43] AT Kearney: Retail global expansion: A portfolio of opportunities (June 2011)

[44] p.6, Retail Global Expansion: A Portfolio of Opportunities. The 2011 A.T. Kearney Global Retail Development Index.

expected to become the largest in Europe if it continues its 10 per cent Compound Annual Growth Rate (CAGR) as expected over the next five years. UK retailers operating in Russia include Accessorize, BHS, Dorothy Perkins, Joseph, M&S, Miss Selfridge, Monsoon, Next, and Top Shop. However retail in Russia is hampered by political instability, with local competitors able to stop acquisitions by international retailers via lobbying. Logistics are complicated by long distances between major cities, slow queues at ports and borders, and poor infrastructure.

Mexico is ranked 22nd in the 2011 index. GDP growth of 5.5 per cent, a large population of 110.6 million and rising consumer confidence is expected to expand the retail sector by 12 per cent by 2014. Mexico is the principal market for luxury goods in Latin America, representing 55 per cent of sales, ahead of Brazil and Argentina. UK retailers already in Mexico include Accessorize, Clarks, and Thomas Pink, but the saturation of the larger cities is forcing retailers to look at second tier cities to find desirable real estate. Retailers also need to offer credit facilities to the large sector of low-income consumers.

11.5 IMPLICATIONS: PRIORITY SUBSECTORS AND MARKETS

- **There are strong international prospects both for Luxury and each of the middle-class product sectors (Food and Fast Moving Consumer Goods, Hardlines and Leisure, Fashion and Diversified). However the support services required may differ by product sector. FMCG retailers tend to be much larger, and may have their own international specialists handling the kinds of market intelligence and introductory services that UKTI can provide to smaller retailers. Smaller retailers, particularly in fashion and in hardline and leisure goods are more likely to need support in understanding demand in distant markets, and in making the contacts required to set up direct or indirect outlets.**

- **The top five priority markets are Brazil, India, China, Russia and Mexico. These are the largest population emerging markets picked out of a list of 30 prioritised by AT Kearney[45] on the criteria of market attractiveness, market saturation, and time pressure.**

- **In addition to the emerging powers of the BRICs (Brazil Russia India China), Mexico and the CIVETs (Colombia Indonesia Vietnam Egypt Turkey South Africa), there are also continuing opportunities in countries with awareness of UK brands and open to free trade in South East Asian, the Middle East, and countries neighbouring the European Union.**

[45] P.5 http://www.atkearney.com/images/global/pdf/Retail_Global_Expansion-GRDI_2011.pdf

11.6 CASE STUDIES

UK retailers already make use of UKTI services, including inward and outward missions that bring together key government decision makers, and obtaining one-to-one support from its network of Posts overseas.

The examples below illustrate the range of interventions from very small companies to the largest global retailers, covering a range of luxury and other product sectors.

Case Study 1: Clippy

Clippy is an accessories and stationary business run by a mother-and-daughter team. They design innovative, customisable handbags, make-up bags, umbrellas and stationary accessories. UKTI assistance has helped them double export-turnover in 2009-10, including £45,000 of new deals directly resulting from a market visit to Japan. As the founder explained:

“The giftware market is really struggling. From September to Christmas the market is buoyant, but outside those peak times demand is much lower. We had to go global. I’ve had to modify the product and take the manufacturing abroad so our margins can come down. The recession really hit us hard, but internationalising has helped us weather the downturn by forcing us to streamline our business.”

Through the Passport to Export and Tradeshow Access Programme exhibitions, the company securing distributors in Netherlands, Italy, and Turkey. They then went on to sign-up for the Gateway to Global Growth programme to target the Japanese market.

To prepare for visiting the market, they commissioned an OMIS to facilitate introductions to key partners and obtain bespoke market intelligence. The founder had about 15 meetings, which resulted in their most successful overseas venture to date, taking $45,000 worth of orders in six months and signing a distributor and contracts with retail outlets to stock their products.

Case Study 2: TM Lewin

TM Lewin, the traditional London shirtmaker has with 81 stores and 11 concessions in the House of Frazer department stores. The company has been sending shirts around the world since 1905, and currently ships to 163 countries, with Australia, the US and Germany as the main destinations. UKTI assistance via seminars and an OMIS has resulted in a franchise partner in Singapore opening 5 stores.

As the CEO explained, “We discussed various options with our ITA and Singapore quickly emerged as the ideal country from which to test our new overseas retail strategy. Most of the population speaks English, the fashion is very similar to fashion in the UK, and there is a large population of expats who would be familiar with our range. The OMIS confirmed that this was a market worth pursuing, so we made plans for a visit to see for ourselves first hand and find a franchise partner.”

Their visit to Singapore resulted in a franchise deal with Jay Gee Melwani. TM Lewin has even designed a new shirt designed to suit local needs, which a slimmer fit and shorter body than the UK. “Finding a partner like Jay Gee Melwani has been key to our success in Singapore. Like TM Lewin in the UK, the company has a long history in Singapore, and is a well respected force in the local market. We are delighted with the way they have actively promoted our products, and fitted out the stores.”

Case Study 3: Tesco

Tesco is the largest and most international UK retailer, with 2,545 stores in the UK and a further 2,463 stores around the world. UKTI has helped them explore different regions of China and form local government relationships. One example is a recent Prime Ministerial visit to the Happy Valley store in Beijing as part of his recent trade delegation to China.

Tesco entered China in 2004 through a joint venture with Ting Hsin, an existing Chinese retail operator. The International Corporate Affairs Director explained: “UKTI trips have been a great way for us to explore regions where we do not yet have a presence. For example, on recent visits to Anhui and to Fujian we met representatives from local government, which may have been harder to arrange by ourselves. Joining a group visit like this also helps us to raise our profile, especially in places where people haven’t yet heard of Tesco. A delegation headed by the British Embassy carries a lot of weight, and attracts attention.”

11.7 CONCLUSIONS

- **The strong growth being achieved by some UK retailers overseas contrasts with the difficult situation faced by those only in the UK home market.**
- **From UKTI research we have found that retailers want help from government to address administrative capacity and infrastructure issues in emerging economies:**
- **Developing intelligence and data on market opportunities;**
- **Building government to government and cultural relationships;**
- **Making commerce more productive by capacity building (including customs), infrastructure and skills (in liaison with BIS);**
- **Preferential treatment for visas for staff in partner/franchise businesses.**
- **These are areas where UKTI can work across Government to make internationalisation easier.**
- **In addition, the implications in Section 11.5 show that regular UKTI support in entering new markets should prioritise small retailers lacking their own international networks, and where appropriate, should encourage them to enter large emerging markets.**
- **UKTI is already helping retailers of all sizes and sectors, and is looking to build a more strategic focus in partnership with trade associations to disseminate the UKTI message and broaden the range of retailers assessing overseas markets and entering them successfully.**

11.8 CONSUMER AND LEISURE GOODS

Consumer and leisure goods include; leisure and sports equipment, jewellery, tableware, cosmetics, stationary, home decorations, gift products, travel accessories, and garden and pet products.

11.8.1 UK Strengths, Challenges and Opportunities

The UK has a strong tradition in this area based on long term disposable wealth, appetite for luxury goods and innovation.

High end goods linked to retail brands, having a provenance with an appealing narrative, or covered by a Royal warrant, have significant potential in the growth economies. Many SMEs in these sub-sectors are innovative, spending considerably on R&D. Categories where the UK has a reputation for

innovation include outdoor clothing and equipment, equestrian goods, pet care and gardening.

Evidence would suggest that the UK market is still growing, despite recent economic conditions reducing disposable income. The UK continues to attract inward investment across the consumer and leisure industries. With a strong domestic base and innovative products, therefore, UK firms should be well positioned to exploit opportunities around the world: They already account for 5.9 per cent of global exports[46], and 7.0 per cent of global FDI in the sector[47].

However, disposable income in the UK's key export markets for consumer goods – the EU and the US - has also been squeezed over the last three years, with households increasing their cautionary saving. Meanwhile, disposable income is ever increasing in emerging economies, with a corresponding rise in demand for luxury/material goods, and for services such as air travel. The challenge for UK firms, therefore, is to build on experience in developed markets to increase their market share in emerging economies.

Traditionally strong competitors are the US, France and Australia, with the BRICs and other emerging markets also accounting for a large market share. The UK is a gross importer in this sector, whereas China, India and Mexico are all gross exporters of basic consumables.

Further drivers beyond rising disposable incomes will also have a positive impact on the sector, creating export opportunities. A desire for greater control over personal wellbeing and health should be positive for sports equipment and related services in particular. The London Olympics and Paralympics should increase the UK's association with sports and leisure activities in the global market. Automation and technology convergence should create opportunities to reduce production costs and introduce increasingly sophisticated products, e.g. using nano-tech in materials, whilst business integration brings greater opportunities to connect customers directly to overseas suppliers. Urbanisation in emerging economies should also increase the proportion of income populations spend on consumer and leisure activities.

UK leisure and consumer goods exporters, therefore, need to seize these opportunities to expand their range of overseas markets. They should continue to innovate to provide more advanced products than those from emerging market competitors, and sports equipment providers should use the London Games to strengthen their global profile.

[46] International Trade Centre

[47] OCO/FDI Markets

CHAPTER 12: CREATIVE INDUSTRIES & EDUCATIONAL SERVICES

The creative industries and educational services are both sectors in which the UK has a strong global advantage, and in which the UK benefits from several common factors: English as the working language; the multicultural nature of the UK population; world renowned education and training institutions, openness to foreign teachers and students; a strong pool of skilled labour, particularly in services; good international travel connections; and strong home-market demand for a wide variety of entertainment and educational goods and services.

In this chapter we consider the importance of the creative industries as a whole, and then some of the sub-sectors in which the UK has a particular advantage, before turning to the educational sector and how it both attracts foreign students and exports its goods and services abroad.

12.1 THE CREATIVE INDUSTRIES

The creative industries are wide ranging, from mass produced publications, music and games, to one-off pieces of art work, to very niche design services. The sub-sectors include advertising, architecture, content-computer/video games, screen (film, TV, radio, animation), music, performing arts, publishing, art market, crafts, design, designer fashion, furniture design, textiles and ceramics, digital content, and museums.

The creative industries account for an important and increasing proportion of UK output and exports. **According to NESTA, the creative industries contribute more than £50 billion to the economy every year and generate important spillover benefits for other sectors, helping to create innovative products and services.** DCMS identified the creative industries as contributing 6.2 per cent to GVA in 2007, which is significant considering the relatively small labour pool. In 2007, exports of creative services totalled £16.6 billion, representing 4.5 per cent of all UK goods and services exports. 33 per cent of the total creative industries exports were contributed by the software, computer games and electronic publishing sub-sector.

There are an estimated 157,400 creative industry companies, excluding sole-traders. The vast majority of firms are small, with fewer than 10 people and there are a further half a million sole-traders or freelancers. When these are included, there are about 1.5 million people employed in these industries and a further half a million in creative occupations in other industries.

Creative services employment has experienced unprecedented growth in recent years, growing at 2 per cent, compared to a 1 per cent average for the whole economy. Around two-thirds of creative industry businesses are contained within two sub-sectors; software, computer games and electronic publishing (75,000 firms) and music and the visual and performing arts (31,200 firms).

The UK also has very strong, world renowned creative education and training institutions (such as Central St Martins), and for key sub-sectors e.g. architecture, the UK is an attractive and valuable place to have worked.

Overall, the UK is highly regarded in the global creative industries market – as a leader in several sub-sectors and with a reputation for excellence on the world stage in others (consistently in the top four achieving countries). The UK has the largest creative sector in the EU, and relative to GDP probably the largest in the world. The UK accounts for 9.4 per cent of the sector's exports[48].

In particular the UK:

- Has the largest producer of TV and radio content in Europe, with only the US generating more value from TV exports.
- Has the largest publishing industry in Europe, exporting more books than any other publishing industry in the world.
- Has the largest number of computer games studios in Europe, and is the third largest producer in the world.
- Leads the world's ranking for advertising excellence and is the third biggest globally after the US and Japan, with London the European hub of choice for major agencies.
- Is second – to the US – in the global film market, with increasing box office receipts.
- The UK is the third biggest market for music in the world; only the USA and Japan are larger. The UK is the second-largest exporter of music repertoire, after the US. In the USA itself, the UK is the second-largest source of repertoire, after US home-grown artists.
- Is rated fourth in the world for design behind only the US, Japan and Korea.
- London is one of Europe's top four fashion cities, along with Milan, Paris and Rome.

[48] International Trade Centre

The sector is also likely to continue to be a strong source of economic growth over the next five years.

The sector shows significantly higher values of innovation and creativity than other UK enterprises (70 per cent compared to 55 per cent[49]). Also the sector, with the relatively new Digital Creative Industries growing in importance, is an important stimulator of innovation in the wider economy. The UK is an early adopter of new technology and communication: UK consumers show high levels of take-up of new networks and devices, creating a market which encourages innovation in new content, services and applications. UK 12-18 year olds are especially active in creating and sharing online content compared with the rest of the world; social networking, online auctions and online shopping are particularly important among this age group in the UK. Finally, the UK has a very significant, global opportunity to showcase the full range of its creative industries at the 2012 Olympic Games.

12.1.1 Challenges and Opportunities

The presence of trade associations within the sector is highly fragmented, with much of the industry (particularly on the design side and to an extent on the screen side) lacking a coherent trade association structure and support for the sector both domestically and internationally.

Digital technology developments are transforming how creative content / products are generated and distributed. Beyond just new technical skills, digital platforms and processes require the development of new business models, flexible and adaptive management and visionary creative leadership. The importance of learning the skills to use technology cannot be overstated, and staff need to embrace the collaborative working enabled by new techniques.

Many areas of the Creative Industries have long been characterised by an oversupply of potential new entrants. This has seen a high level of voluntary or unpaid working, with nearly half the workforce in creative media reporting having worked unpaid in order to get into the industry. The mismatch of applicants' skills to the needs of the job is a common issue, and work experience is often a much greater priority than academic qualifications. Across many sub-sectors within the creative industries, skills in short supply from new entrants relate directly to new and digital technology including production skills for multi-platforms, understanding of intellectual property legislation, management and leadership, and commercial acumen to monetise content.

Key threats to exporting content are piracy; the need to develop new business models relevant to the digital world; and political moves such as protection of domestic music and film or censorship. Globalisation is intensifying competition, but similarly offers UK firms new markets in which they can

[49] BIS 'First findings from UK Innovation Survey 2009', March 2010.

compete. Asian markets including Korea, Taiwan, Hong Kong, Singapore and China are looking to develop more sophisticated product and industrial design and advertising and communication channels for their exports, providing opportunities for UK firms to provide support across a range of sectors. India is investing in entertainment industries, and UAE, India and South Africa are providing direct competition in designer fashion markets. Some governments, such as Canada, use instruments including tax breaks and co-production agreements to support their creative sector, which is proving a particular threat to the screen and computer games sectors.

The US, Canada, Australia, Germany, France and Japan are therefore the UK's current direct competitors. Developed countries still account for 90 per cent of music and audiovisual exports, 80 per cent of publishing/printed media exports and 70 per cent for visual arts. Emerging markets such as China and India are yet to catch up technologically in most sub-sectors, with the exception of design and animation; emerging and developing economies account for nearly 50 per cent of new media and design exports; a significant proportion of these are from China.

There are large and increasing global opportunities for competitive, innovative firms. The global market for trade in creative products has enjoyed unprecedented growth in recent years. The value of world exports of creative-industry goods and services reached $424 billion in 2005, compared with $227 billion in 1996, according to UNCTAD. Exports grew 8.7 per cent a year between 2000 and 2005, increasing the industry's share of total global trade to 3.4 per cent in 2005.

This upward trend is likely to continue throughout the decade, given the positive prospects for global demand. Exports of creative goods are currently higher than those of creative services, but the latter having been growing faster in recent years.

12.2 MUSIC EXPORTS

The UK hosts four major recorded-music businesses, around 3,600 indie labels, and over 2,000 recording companies and 1,000 professional record producers in the UK, working in more than 300 studios.

In volume terms, the UK has the largest music market in Europe, and the third largest in the world. UK music exports are worth around US$2 billion each year. The money made by UK artists overseas increased by almost £27 million between 2008 and 2009, from £139.8 million to £166.6 million. International royalties earned by UK acts have more than doubled since 1999, while overall global earnings for UK songwriters and composers have grown by over 250 per cent.

It is an industry in which the UK has a strong home market advantage, with the highest per-capita consumption of music-related products in the world, and a number of internationally renowned music festivals and events. The UK has also adapted to online sales of digital music, aided by the English language.

12.3 ARCHITECTURAL SERVICES

The UK is one of the world's leading centres of architectural expertise. It is renowned for its architectural creativity and innovation, with UK-based architects increasingly acclaimed for their experimental, versatile and futuristic techniques and technologies. They are particularly pioneering in the area of low-carbon and sustainable architectural design, and are at the forefront of ecologically friendly, energy efficient buildings.

Examples include Foster + Partners, whose Masdar City development in Abu Dhabi will rely entirely on solar energy and other renewable energy sources. Other industry specialisms where UK architects excel include urban regeneration; transport infrastructure, such as the extension and development of major railway and metro stations; the design of sporting venues and facilities; residential and office architecture; and the design of high-profile civic buildings.

UK architectural firms of all sizes are finding success at home and overseas. The UK construction industry is the second largest in the EU, and exports more than £7 million worth of services each year.

12.4 EDUCATIONAL SERVICES

> **The education, training and skills development activities of the UK represent both an investment for the country, supporting economic endeavours across sectors, and also constitute a sector of the economy in its own right.**

In June this year, BIS published a report by London Economics that UK exports of educational services in 2008/09 were estimated to be £14.1 billion. The London Economics report uses the framework of earlier studies which were commissioned and reported by the British Council in 2004 and 2007. The last British Council study reported educational exports of £31bn for 2003/04, but excluding consultancy services, which are not generally considered to be part of the education sector, this reduces to about £13 billion.

A copy of the latest BIS report is at:
http://www.bis.gov.uk/assets/biscore/higher-education/docs/e/11-980-estimating-value-of-education-exports.pdf .

12.4.1 Strengths and Opportunities

The UK has a well-established education and training system, and a strong global brand. The UK accounts for 24.5 per cent of global exports in this sector[50], and 28.6 per cent of global FDI[51]. The UK dominates the European education market, with 66.7 per cent of FDI in Western Europe.

There are particular areas in which the UK has great strength: Teaching and Learning Resources, including educational ICT; Educational publishing; Qualifications and quality assurance and English Language Training.

Technical and Learning Resources

The UK has a strong international reputation for the high quality and effectiveness of the hardware and software it produces to support learning at all levels, from pre-school to post-graduate and research. Many UK companies are at the forefront of technology and software development. As the use of ICT and digital technology grows, especially in schools, the UK's expertise and experience in this field is in strong demand.

Educational publishing

The UK has the oldest, best-established and most highly-regarded educational publishing industry in the world. UK publishers are also at the forefront in the fields of digitalisation and digital asset management, allowing them to respond effectively and quickly to changing global demands, especially in emerging economies.

Qualifications and quality assurance

The UK has a reputation for the excellence of its academic, vocational and professional qualifications, and the rigour with which its validating bodies can bring to overseas institutions seeking to improve their standards

English Language Training

The UK is the world leader in the provision of ELT. Students find that UK providers offer high quality – and quality-assured – courses and products which can be delivered in the UK, or internationally through e-learning. The market for ELT is growing rapidly.

Corporate Training

There is a rapid expansion in the global market for training aimed at executive level operatives in medium to large companies and corporations. In areas such as management training, leadership, asset management etc, the UK's

[50] International Trade Centre

[51] OCO/FDI Markets

universities and private sector consultants offer a wide range of quality-assured training and development. The UK is a world leader in the provision of specialist Business English.

School operation and educational consultancy

The UK is a leading source of operational expertise for school creation, development and management, with specialist organisations able to deliver high-quality UK-style education across the world, in many cases using the National Curriculum, suitably adapted to accommodate local culture. Likewise, UK consultants have been hugely successful in offering support to local firms and governments, to create schools and educational institutions in the UK style.

Special Needs

The UK is a world leader in the development of teaching and learning resources for children and adults with learning difficulties, including the severely physically handicapped.

Sustainability

The UK's Building Schools for the Future programme has created a legacy of expertise in "green" school design, fit out and operation. Additionally, UK companies have pioneered the use of "green" teaching and learning resources.

Overseas students

The fees generated by overseas students are a significant foreign exchange earner for the UK, as well as further spending related to living in this country during their studies. There is also a vast amount of money being spent internationally by companies and organisations on management training/HR development: This is a prime market for the UK's corporate trainers.

12.4.2 Challenges and Competition

Despite significant progress in skills development over the last decade, the UK still has room for improvement in terms of *workforce skills*. Relative to our key competitors, we have too few businesses in high skill, high value added industries, too few high performance workplaces and are creating too few high skilled jobs. For example, 60 per cent of German manufacturing industry involves high technology and medium-high technology products and services whereas the equivalent proportion is only around 40 per cent in the UK.

Where the UK does have a strong position is in innovative teaching and learning products and technology. Few countries are thought likely to be able to compete on the combination of intellectual input, technical expertise and creativity in developing teaching and learning products and their methods of delivery. The US and Canada are therefore the main competitors for training, educational publishing and high-end products. Germany and France have

strong education/training cultures, but tend to struggle in English-speaking markets.

However, the relatively high cost of UK products and services means that some emerging economies compete on lower-end educational products, and will threaten the UK's position in some price-sensitive markets. Countries such as India and Malaysia have aspirations to become international education providers, and other emerging markets with a strong English-speaking tradition, e.g. Singapore, can compete locally.

The slowing of investment in mainstream education and private sector training in the UK means that more companies will need to look overseas for business, and the UK is in a strong position to benefit from increased demand for private education in emerging economies. Increased international travel and the internet have both expanded the range of options for long distance and overseas learning, and technology convergence within and across sectors is leading to heightened skill requirements.

CHAPTER 13: GLOBAL INFRASTRUCTURE

This chapter considers the building blocks of global infrastructure; construction, energy, waste and water management, and transport and marine. There are global opportunities across all of these sectors as emerging markets invest in more sophisticated infrastructure and all markets adapt to climate change and scarce resources. These can range from helping to construct new international airports, to establishing sustainable water, waste and energy solutions, to providing luxury marinas for the world's super-rich.

13.1 BUILDING BRIDGES: THE CONSTRUCTION INDUSTRY, INCLUDING BUILT ENVIRONMENT

The year of the London Olympics and Paralympics gives the UK construction industry a unique opportunity to showcase its range of strengths, from modern infrastructure to innovative design, to low carbon solutions. And with dampened demand in the UK and the rapid construction of infrastructure and buildings in emerging markets, including low carbon builds, accessing the global market is more important than ever.

Construction in this context includes; construction products, material, contracting and services (e.g. architecture, engineering, master-planning (including city level), facilities management) in relation to residential, commercial and industrial buildings, regeneration, low carbon/green buildings, roads and bridges, built environment, and infrastructure (including the building of ports and airports).

The output of the UK construction industry in 2009 has been estimated at £106,692 million. This includes a fairly even split between new work and repair and maintenance work. These figures do not include related professional services or the informal sector, both of which would add a further 10-15 per cent to the output value of the sector. Employment in the sector has been estimated at 4,182,000 jobs. There are also an estimated 27,947 professional services firms operating in the sector. This includes architects, civil and structural engineers, building services engineers, surveyors, project and real estate managers, planners, etc.

Trade in knowledge intensive professional services (architects etc) has been estimated as accounting for £3.3 billion in exports (2008) and £1.8 billion in imports (2008). The former figure is likely to underestimate the value of exports, as projects lasting over twelve months are counted as outward investment rather than exports. The latter figure may also underestimate imports, due to irregular sampling and the exclusion of small firms.

13.1.1 Global Opportunities and Competition

Construction will continue to increase across the world, but emerging economies will see much greater growth than mature economies, and infrastructure construction will increase more than non-residential construction. Large infrastructure projects in emerging markets, therefore, present the greatest opportunities for high value exports and outward investment for UK firms.

However, there is an increasing trend in emerging markets to use domestic providers where they are strong, and to support growth in domestic markets where they need strengthening. The domestic construction industry is rapidly developing in markets such as India, Poland and Russia, and China is already a major global construction competitor. So UK firms are facing increasing competition from domestic suppliers in these markets, even though the range of opportunities may also be increasing. UK exporters and investors must innovate to remain competitive and to offer a higher quality service.

In addition, for large scale, technical projects where sophisticated design, skills and equipment is required, the UK is competing against traditional US and EU competitors seeking to protect and expand their own trade. The US is the main existing competitor that will look to similar global markets, whilst Spain, Germany and France will be seeking to export capability for which demand has reduced domestically. Within the Asia Pacific region, Japan and China are also fierce competitors.

An area of particular expansion within the construction industry is the use of recycled materials in new builds. With global resources becoming increasingly scarce, the ability to innovate and use different materials, as well as provide low carbon solutions, will be vital to compete internationally.

13.2 ENERGY

The energy sector is classified here as including; biomass, fuel cells, geothermal sources, hydrocarbon fossil fuels, carbon capture and abatement technologies, hydroelectric, nuclear power, solar, tide transmission, distribution and storage including intelligent grid management, micro-generation, wave, and wind.

This description does not capture the full value of services associated with this sector from an operational perspective. The UK is particularly strong in all forms of related engineering, design, project management and consulting. Many of these services sit under other sector classifications such as manufacturing, construction and professional services, but are fundamental to the strength and capability of the UK energy sector, and should not be overlooked when considering the importance of the energy sector in the UK. We also treat Low Carbon as a field affecting all sectors across the economy, rather than just energy specifically. Many low carbon technologies and drivers are creating innovative products, processes and firms in the UK, which could be prominent on the world stage over the next decade.

Government policy is fundamental to the pipeline of investor interest in the UK energy sector. For example, the development of the offshore wind market-place is linked to the retention of Renewable Obligations Certificates and government support for the development of port infrastructure. Likewise, the introduction of Feed-In Tariffs has driven the solar and small wind market place.

13.2.1 Oil and Gas

The UK's strong position in the global oil and gas sector is demonstrated by the approximately $10 billion in oil and gas equipment and services being exported each year. The UK oil and gas industry is likely to remain an important player in the world energy scene for decades to come.

The UK's specific strengths include project management, major contracting, design engineering, asset and operational management, design and manufacturing of advanced equipment, research and development, training and education, professional and financial services. All delivered with a total commitment to health, safety and the environment.

The UK ranked 11th globally for crude oil production, supplying 97% of all UK oil demand and 73% of gas demand in 2007. Oil and gas together met over 70% of UK primary energy demand in 2008. GVA in this sub-sector is closely linked to the price of oil, and is consequently high at an average of £725,000 per employee[52].

The industry employs approximately 30,000 people in direct oil and gas extraction. More widely, the industry estimates the sector includes 600 employers and a supply chain workforce of close to 300,000 in 500 companies. It also employs a large proportion of mechanical engineers. The gas utilisation part of the industry employs up to 123,700 people and the distribution aspect of the industry employs 18,500. The UK is developing into a gas hub with different supplies of gas and LNG from continental Europe. This industry rests on a solid knowledge base, with a tradition for academia, engineering and professionalism.

13.2.2 Wind and Wave Power

A good deal of the UK's capability in offshore wind and tidal and wave energy is due to the transfer of knowledge and technology from the UK's North Sea oil and gas industry. UK-based engineering contractors who developed much of the technology and expertise needed to put oil and gas production infrastructure in place in this challenging environment are now leading the way in doing the same for offshore wind infrastructure and other marine renewables. They continue to innovate, developing new concept designs.

[52] UKTI Oil and Gas: http://www.ukti.gov.uk/export/sectors/energy/oilgas.html

The world's first commercial-scale tidal energy system, SeaGen, was installed in Strangford Lough, Northern Ireland, in July 2008, with financial assistance from the UK government. The UK has also developed the world's first commercial wave farm which began operation off the coast of Portugal in September 2008.

The UK Government announced in the *UK Renewable Energy Strategy* its commitment to developing a Marine Action Plan. The objective of this is to set out a vision for the sector to 2030. The Action Plan will be wide ranging and look at the full range of challenges, barriers and opportunities facing the wave and tidal sector.

These industries are in their relative infancy but the UK is felt to be emerging as a sector leader. In 2007 wind energy overtook hydropower to become the UK's largest renewable generation source, contributing 2.2 per cent of the UK's electricity supply, with on-shore wind comprising the bulk of this. Latest figures suggest this is now more than 3 per cent and rising.

An industry estimate in 2009 suggested world markets in wind, wave and tidal energy could be worth £200bn each over the next 20-30 years and that the UK could capitalise on its current lead in these areas to dominate the markets. Up to 75 per cent of the value of offshore wind projects was addressable by UK firms with relatively low barriers to entry, but capturing the remaining 25 per cent would require assembly of turbine nacelles in the UK and a strong domestic component supply chain.

13.2.3 Emerging Technologies

The UK is currently investing in research and development into Carbon Capture and Storage (CCS). This technology traps carbon from coal or gas underground, and is a key component of carbon reduction for the future. Similarly, the sector is investing in improvements to locally distributed energy, shifting from big power stations to local energy supply e.g. local authority, town and estate.

Leading energy and manufacturing companies are undertaking R&D in emerging energy technologies in the UK, working with local organisations and benefiting from its Centres of Excellence such as the New & Renewable Energy Centre (NaREC).

13.2.4 Power

The greatest scope for increasing the use of renewables in absolute terms is argued to lie in the power sector. In the New Policies Scenario, renewables-based generation is forecast to triple between 2008 and 2035 and the share of renewables in global electricity generation to increase from 19% in 2008 to almost one-third (catching up with coal).

World electricity generation is expected to reach almost 34,000 TWh by 2030, with the addition of just over 5000 GW in generating capacity. Global investment in coal and gas fired generating capacity between now and 2030 is

expected to be in the vicinity of $3 trillion. This suggests the sector offers a large long term opportunity for innovative businesses with low carbon solutions.

The UK's power sector is well positioned to benefit from the scale of growth both in terms of power needed and from investment required to meet this challenge. There are thousands of companies active in the sector, from a multitude of SMEs to some of the UK's biggest and most high profile companies.

UK exports of power equipment and services currently total around US$6 billion per year. The UK power sector is also at the forefront of effecting the transition to a low-carbon economy by developing technologies and services to combat emissions.

13.2.5 Challenges

There will be significant levels of retirements, specifically in technical and engineering roles, over the coming decade in the gas, power and water industries.

In the wind and wave sector the UK has been asked (by the European Commission's 20 by 2020 programme) to cut its greenhouse gas emissions by 16 per cent and to increase the use of renewable energy to 15 per cent. Meeting these targets will require a step change in renewables infrastructure development. Some 60,000 employees are thought to be required in the wind, wave and tidal stream industries, including 10,000 offshore construction and operation jobs.

13.2.6 Competition and Opportunities

All G20 exporters will face increased competition from the vast amount of investment being made by China, and to a lesser extent India, in green and clean technology and energy. At the same time, their demand for energy has increased, so these markets also provide substantial opportunities for innovative UK exporters and investors.

The UK currently holds a share of about 4.7 per cent of global energy exports[53], and accounts for about 5.0 per cent of energy FDI (22 per cent of Western Europe's energy FDI).

[53] International Trade Centre

13.3 ENVIRONMENT AND WATER

This sector encompasses waste and pollution management, including air pollution control and recycling; contaminated land and remediation; water supply and sanitation; environmental instrumentation monitoring and analysis; and energy generation from waste.

The waste management and recycling sectors combined are valued at £11,343 million, while the eater and waste water sector is £7,974 million. It is estimated that the waste management and recycling sectors employ some 141,000 across 6,200 companies, while the water sector employs about 166,500 people across 2,600 firms.

13.3.1 UK Strengths

The UK has strength across a number of fields within the environment and water industry, which are expanded upon below. The UK holds a 8.1 per cent share of world exports in the sector, and a 6.5 per cent share of world FDI.

Air Pollution Control (APC)

The demand for expertise in air pollution control is high, due to international climate change agreements driving the need for effective implementation of APC measures across the globe.

The UK is especiallly strong in this area due to its early enforcement of anti-pollution legislation and effective implementation of APC related EU directives. In particular:

- The UK has a significant number of companies with expertise and experience in the design, manufacture, installation, operation and maintenance of APC technology, as well as consultancy services.
- The UK has a particularly strong particulate emissions monitoring industry.
- The UK also leads in the development of technology to reduce emissions from diesel engines and from black carbon or particular matter.

Contaminated land and remediation

The Contaminated Land and Remediation industry is worth between £1billion and £1.5 billion per year. The UK has well known expertise in the re-use and regeneration of contaminated and derelict land for a range of industrial sites. The UK can therefore offer expertise in a range of services relating to contaminated land.

Environmental consultants and lawyers in the UK have a good understanding of different regulatory regimes across the globe and how these impact on liability, resulting in significant corporate mergers and acquisitions activity involving environmental liability transfer being concluded through London financial markets.

Environmental monitoring, instrumentation and analysis (EMIA)

The UK is seen as one of the world leaders in this field. The UK's strengths in EMIA have evolved as a response to regulatory, financial and sociocultural requirements. For example, the requirements set out by the EU in its Water Framework Directive and the Environmental Liabilities Directive, and consumer demand for environmentally friendly products and services.

This has led to the design and development of a diverse range of cost-effective environmental measurements, and indicators to inform the assessment and management of risk. It has also led to the requirement for organisations to prove their environmental credentials through mechanisms such as corporate social responsibility reporting.

In response to these market drivers, the UK has developed particular expertise in the following key areas:

- Instrument certification
- Emissions monitoring industry
- Monitoring of water, wastewater and industrial effluent
- Soil pollution including Rapid Measurement Tools

Waste management and recycling

This industry in the UK is particularly innovative in the way that it has responded to the requirement to offer low carbon solutions to the management of waste. The implementation of the Waste Framework Directive (2008) has driven UK businesses to provide a range of innovative solutions to effective waste management. The UK is strong in the development of innovative technologies and expertise in the following areas:

- Waste collection system and the services around these systems
- Material recycling facilities
- Mechanical Biological Treatment
- Composting and Anaerobic Digestion
- Landfill Engineering and Technologies, such as monitoring systems, etc.

- Waste to Energy (development of thermal treatments such as pyrolysis and gasification)

The UK has also developed a particular expertise in developing integrated legal, financial and waste solutions, which has made it a key player in the international market in this field.

Waste to energy

Waste to Energy combines waste management and the recovery of renewable energy in the form of electricity and/or heat from residual waste and is a growing sector within the UK: In 2009 a total of 477 Waste to Energy projects provided 58% of the UK's renewable energy provision. The UK has particular expertise in waste to energy via extraction, due to the UK's strong Health and Safety culture and a waste management history steeped in landfill disposal.

The UK also has an active sector of waste to energy consultants and of providers of advanced thermal technologies including pyrolysis, gasification and gas plasma technologies and has strong expertise in the use of project finance and public private partnerships to deliver public infrastructure, including waste management and waste-to-energy facilities.

Water and waste water treatment

UK companies involved with the water sector such as utilities, contractors, consultants, equipment manufacturers, lawyers and financiers, have a long history of working successfully in world markets and between them generate over £3bn of business annually overseas. The UK is well placed to share its skills and knowledge with the rest of the world. Drawing on 30 years' experience of developing sustainable integrated water resource management techniques, the sector now boasts an industry which in world terms is excellent.

The UK looks to obtain maximum benefit from the available resource, delivering a sustainable solution to water provision and waste water treatment and re-use. UK expertise is therefore well placed to deliver solutions to international clients to help meet the United Nation's Sustainable Development Targets for water.

13.3.2 Challenges and Opportunities

Investment in R&D is low for the UK sector generally, and highly variable between companies. Comparisons of international data suggest that the UK is responsible for fewer innovations per capita than other countries such as Australia, Germany, the Netherlands, Spain and the US.

There is also a perception that UK SMEs are reluctant in some instances to export to emerging markets (i.e. BRIC countries), preferring instead to work with EU and North America which have more regulated markets (similar to that in the UK).

The environment and water sector, including waste management and water supply, will become increasingly significant in the immediate and long term future. However, short term demand in developing countries will be met more by international aid agencies and third sector consortia than by global export of expertise. Where demand for global expertise does exist, it will tend in the medium term to be met by traditional engineering countries such as the UK, Germany, France, the US and Canada. As with other sectors, different countries will have strengths in different sub-sectors, for example Japan and Germany are strong in terms of incineration.

As waste management and water supply become greater and more global problems, and aid in emerging markets decreases, the demand for expertise will increase. This will provide opportunities across technical, financial, institutional and social development areas. At the same time, though, BRICs and other emerging economies are building up recent experience from developing their own capability in this sector, and will increase the competition for development projects.

New construction technologies are fundamentally changing the shape of the environment and water industries, and exporters need to adapt to these changes, as well as adapting to climate change and the demand to reduce carbon emissions. The sector plays a key role in a new set of thinking around Agrifood, Aerospace, Automotive, energy generation, energy distribution, energy storage and the environmental impacts of products. This emerging global sector is called Cleantech. The definition of Cleantech is products and services that optimise the use of natural resources, while reducing ecological impact, and adding economic value by significantly lowering cost and improving profitability.

A recent report by the UN on World Water warned that the combination of climate change, population growth, and increased demand for food, energy and biofuels meant that in a little more than two decades, 47 per cent of the global population would be living in areas of high water stress. There will be increased demand for improved water infrastructure, and considerable investment is likely in this area. There will also be increasing demand for infrastructure protection, as water becomes a more precious global commodity.

It is likely, therefore, that there will be high demand for UK water and waste management across the globe in the medium to long term. UK firms need to look beyond developed markets, and to form stronger consortia, to compete successfully for large infrastructure projects, which can include elements from construction, energy, and water and waste management.

13.4 TRANSPORT AND MARINE

Here we consider the transport and marine industries together, encompassing; airports (operations and maintenance), ports, rail, road (freight), shipping, and marine. Associated products and services include; architectural design; civil engineering; project management; construction; security systems; specialist equipment manufacture and commissioning; privatisation; operations; maintenance and training.

13.4.1 Strengths and Opportunities

The UK is regarded as a global centre for transportation expertise, with world-class know-how and experience in sectors such as airports, ports and railways.

Airports

The UK airports industry is felt to have been at the forefront of airport development for the last 100 years. Its strengths cover all the main disciplines, including: architectural design; civil engineering; project management; construction; security systems; specialist equipment manufacture and commissioning; privatisation; operations; maintenance; and training.

The UK airports sector is felt to be securing its international status with robust, pioneering responses to today's key industry challenges. UK expertise is argued to be enabling operators around the world to incorporate the UK's renowned environmental expertise in sustainable solutions in their own airport projects, including: CO2 reduction; energy reduction; efficient water management; noise reduction; and air quality improvements. Scientists and IT specialists are developing advanced systems to deal with ever-changing security threats. As the first country in the world to privatise its airports, the UK has also become the global leader in airport commercialisation.

The sector is dynamic. Terminal 5 at Heathrow is felt to have transformed the passenger experience and is influencing best practice. Bristol Airport is aiming to be the greenest major airport in the country. The need to accommodate anticipated growth in freight and passengers has triggered detailed plans in the UK for further airport expansion and the optimisation of runway use.

Ports

UK ports are felt to be among the most competitive in the world with leading industrial working practices and flexibility of operation. UK Ports are felt to be leading the way in adopting security and environmental practices and technology to meet the global threat of terrorism and climate change. The UK is felt to be a "one stop shop" for overseas buyers when looking to develop and deliver port projects. UK expertise is felt to include the generation of ideas and vision, engineering ingenuity and the fiscal and management skills. Sector expertise is felt to cover: port management; equipment suppliers; security companies; engineering consultants; lawyers; and bankers.

The Ports sector includes companies who are part of a wide range of UKTI sectors including financial services, security, marine, publishing, education & training, ICT, environment, oil and gas, engineering and construction.

Rail

The UK rail industry has a global reputation for delivering innovative products and services to rail systems and projects around the world. UK strengths are felt to lie in specialist services such as: finance; safety; regulation; signalling; systems integration; engineering; operations and design. The UK also produces technologically advanced products that improve the safety and efficiency of rail operations in many countries.

According to the World Rail Market Study published by the Association of the European Rail Industry (UNIFE), and compiled by Boston Consulting Group, the three-year average of the 2007–09 total rail supply market is estimated at €136 billion. Steady growth of 2.0% to 2.5% annually is expected until 2015-16.

Underpinning everything is a commitment in the sector to improving the sustainability of rail transport, from the use of cleaner, more energy-efficient technologies and practices to improving performance, affordability and accessibility.

Marine

Total UK Sales Value for 2007/8 for Marine is estimated to be £61.7bn. This comprises numerous subsectors. For example: general ship building and repair; industrial and engineering vessels; international navies and coast guards; passenger ships and ferries; and small boats and personal water craft. A total of 29,000 companies are estimated to operate in the sector with employment estimated at 635,000.

13.4.2 Challenges

There is a particular threat to UK transport exports from other countries providing 'tied-aid' in the transport sector. In rail, meanwhile, the UK lacks an obvious 'flag-carrier' (equivalent to SNCF or DB) for UK goods and services.

The sector needs specific technical skills at Level 3 and above. Up-skilling Level 2 employees is key to getting the higher-level skills employers need. There is a demand for graduates with relevant degrees, including naval architects and marine electrical engineers capable of using the latest technology and materials in design. For the UK marine sector to compete globally it is felt it needs to increase training in business improvement techniques, supply chain management and project management.

13.4.3 Competition

The UK is well positioned in the airport sector deploying the traditional business model for managing entire operations across several geographies.

Competition in this sector will continue to come from other European nations (Netherlands, France, Denmark, Italy) the US and Canada. Emerging competition is coming from joint ventures that are challenging the traditional business model by offering greater development capability. These are typically consortia made up of firms from across several countries; both the above competitor countries and Singapore, Germany and Spain.

Other sectors within transport are dominated by the traditional engineering and infrastructure nations such as Germany, US, China, Australia, Canada, as well as Korea, Japan, Spain and France in the rail and port sub-sectors. For the marine industry the major leisure competitors are Italy, the US, the Netherlands and Germany; and commercial competitors are South Korea, Vietnam and China.

Across each transport sector, nations with strong domestic capabilities will seek to exploit them on a regional and global level, for example Denmark in shipping and India in rail. The BRIC economies will present increasing regional competition, and in some cases global brands.

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