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What are the constraints on potential UK exporters?

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What are the constraints on potential UK exporters?

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Executive summary

The UK remains one of the world's largest exporters of both goods and services (10th largest goods exporter and 3rd largest for services), but its recent relative performance in goods exports has been disappointing. Within this report we consider the factors that might bring about a sustainable, long-run increase in UK manufacturing exports from their current level.

The value of UK manufacturing exports has risen by over £160bn in nominal terms over the last two decades, from around £91bn in 1991 to £225bn ($406bn) in 2011. The share of exports in manufacturing output has also been rising over time, from around 30% in 1991 to around 47% in 2011.

But, the growth of UK manufacturing exports has been slower than other countries. By 2009 the UK accounted for 2.9% of total world manufacturing exports, against a little under 4% as recently as 2005. Export volumes are lower than in France and Germany ($540bn and $1,207bn respectively) and the share of manufacturing exports to output has also fallen behind Germany, although it has remained broadly comparable to France and higher than the United States.

What might bring about a turn-around in these relative fortunes? In this report we approach this question by examining where the underperformance of UK exports relative to France or Germany occurs. The analysis reveals some similarities, but also some important differences (in particular with respect to Germany). We then use those patterns to consider the likely future levels of UK manufacturing exports, what the drivers of those exports will be and whether they might deliver a step-change to the rate of growth of exports. We conclude with some discussion of policy.

Products, destinations and firms

Exports can be analysed according to what is produced, the destination countries of exports, or the firms that export (the margins of trade). We summarise the similarities and differences of UK exports for each of these different margins with respect to France and Germany in Table 1.

Traditional theories of international trade would suggest that the UK should specialise in the production of goods for which it has a comparative advantage relative to other countries. The UK's comparative advantage sectors include; pharmaceuticals, chemicals, beverages and spirits, boilers and machinery and the automotive sector; in general these are high-technology products. This is similar to France but different to Germany, whose comparative advantage is in mid-technology products. The UK performs well compared to these countries on the number of products that it exports, but falls down on how much it exports.

Table 1: Products, destinations and firms - UK similarities and differences to France and Germany

Similarities	Differences
• Similar range of products • Like France a comparative advantage in high-tech products • Similar range of countries exported to • Similar proportion of firms export • Firms export a similar share of their output	• Sell less on average of each product • Germany's comparative advantage in mid-tech products • Sell less on average to each country • Small firms more likely to export and export a larger share of their output • Large firms less likely to export and export a smaller share of their output

Theory would also predict that the UK should export more to countries that are large, wealthy and close. The data confirms this is what happens. The top destination, the USA accounts for 13% of the value of exports, while the top 10 markets account for 60% of exports. The composition of the most frequent destinations has changed little over time. BRIC countries account for a small share of total trade, but that is expected. Again the gap with France and Germany is not how many countries the UK exports to, but how much it sells on average in each.

New theories of international trade indicate that not all firms should export. This is true in sectors in which the UK has a comparative advantage as well as those in which it does not. In all sectors of manufacturing there are some good firms that can compete internationally, even with China.

The export gap with France and Germany seems to occur because too few large firms export and those who do export, export too little. This is partially offset by the fact that more small firms export (those with fewer than 250 employees). Since smaller firms produce lower quantities than larger firms, the value of exports created by the additional smaller firms is not sufficient to compensate the value of exports foregone by larger firms who do not. Does that gap occur because Germany's comparative advantage is in mid-tech sectors and the UK's is in high-tech sectors? We are aware of no evidence that would allow us to answer that directly, but the fact this gap is also present between the UK and France, which have similar comparative advantages, would suggest not.

Export transactions

Studying the products that firms export to different destination countries highlights further differences (summarised in). The most important difference between the UK and Germany (Table 2) is in the lack of superstar exporters. Firms that export 10+ products to 10+ destinations account for:

- UK: for 14% of all exporting firms and 76% of the total value of exports.
- France: for 11% of all exporting firms and 76% of the total value of exports.
- Germany: for 39% of all exporting firms and 91% of the total value of exports.

German exports are therefore larger because their large firms export more products to more markets and sell in greater volumes when they do.

Table 2: Export transactions - UK similarities and differences to France and Germany

Similarities	Differences
• Similar number of small exporters to France • Small exporters account for a similar share of exports to France • Exporting firms sell to a similar number of destinations	• Fewer large exporters (selling 10+ products to 10+ destinations) than Germany • Large exporters account for a smaller share of export sales than Germany

Understanding why large UK firms achieve fewer and smaller export orders compared to German firms is clearly of some importance for the question that this report seeks to address. Unfortunately that analysis does not exist.

Evidence can be found that casts some light on this point though. This difference does not appear to be a failure to export to as many destinations as firms from other countries, nor with the mix of countries firms export to. The evidence instead points to a failure by UK exporters to find new customers or on factors such as price, quality or delivery with existing customers. For example, East Asian countries continue to buy the products that the UK produces, but from suppliers in other countries. The relative underperformance of UK exports to East Asian countries is not therefore a demand composition story, but rather about issues of competitiveness, although further work is required to understand this.

Forecasts for UK exports

The 2012 Budget outlined an ambition to more than double UK exports to £1 trillion by 2020 (from £493bn in 2011). If manufacturing exports increase in line with the ambition for total exports, this suggests manufacturing exports of around £450bn by 2020. This would require an annual growth rate of exports of 9%, very similar to the historical growth

rate between 1970 and 2011, but far higher than over the last decade. It would also require close to 80% of all UK manufacturing production to be exported. Germany currently exports 57% of manufacturing output

An alternative forecast would be to assume that the share of manufacturing output exported continues along a similar trend to that found historically. This would imply an export to output ratio of 54% by 2020 and an export value of £310bn. The annual rate of growth of (nominal) exports would be 3.6%, close to the average of the last decade, and close to forecasts for growth rate of world GDP.

Are those forecasts achievable?

Our broad conclusion is that the ambition in the Budget for UK exports is achievable only if more multi-product, multi-destination exporters are found. This requires that the future drivers of UK exports uncover superstar export products at a faster rate than before.

The most obvious future driver of UK exports is the growth of demand from other countries, for instance, of emerging markets. According to trade theory, a 1% increase in importer GDP will increase trade volumes by approximately 1%. Most forecasts suggest that world GDP growth will be in the range 3-4% per year over the coming decade, with 7% and 10% forecasted for BRIC countries. The gravity model implies UK exports are likely to increase in a similar proportion (about 3-4%), with a higher growth of exports to BRIC countries. Demand seems likely to have a positive effect on UK exports in the future, but well below rates necessary to achieve a doubling of exports.

Evidence suggests that the UK will benefit less than other countries from this growth in demand. UK exports grow more slowly than foreign demand (the sensitivity is below one-for-one) and lower than our main competitors. The good news is that the sensitivity of UK exports is comparable to other countries and is close to one in high technology sectors, where the UK has a comparative advantage.

Another activity often argued as a driver of exports is offshoring. Whilst global trade would be expected to because of offshoring, the effects on a single country are more difficult to predict, depending on the mix of tasks for which the UK has a comparative advantage versus disadvantage. There are also some expectations that this process will reverse as a result of rising labour costs in China and other offshore manufacturing locations; observed vulnerability of supply-chains to natural disasters; and technological changes such as additive manufacturing (3-D printing). This process of offshoring makes it more likely that growth in distant markets has a reduced effect on exports, reducing forecasts of export growth.

It is extremely difficult to predict which superstar products are likely to dominate exports in the future. Clearly technological change, consumer tastes and other factors all have a role to play. Recent evidence does exist to show how those superstar export products emerge though. Most trading relationships start small and have a high-probability that they will not be repeated. Those that do survive tend to grow very quickly. This mirrors experimentation in its product mix by firms more generally; firms alter their product mix in order to find their comparative advantage products.

Policy discussion

Policy intervention to help firms export is usually argued on the basis of some form of market failure. For exports these market failures occur at the level of the firm, country and export transaction, and are particularly severe for firms that are fast growing and innovative. These market failures result in lower exports than would be expected.

From what we know about export patterns these different types of market failure indicate that the need for export support will differ across firms and for the same firm across time. Firms are also likely to be repeat users of any available support.

They also suggest that the majority of export promotion support will deliver export sales that are relatively small in size and last for short periods of time, if they succeed at all. That is entirely consistent with the majority of export transactions that occur. There will however, be some interventions that yield large export values over the longer term, as some products go on to become highly successful. Its effect on aggregate exports will occur primarily through these few superstar products.

Who are the firms that are most likely to benefit from support? There is some evidence to suggest they are more likely to be relatively new to exporting (started exporting in the last 10 years), have more than 10 employees, and have a business plan that includes exports. Why these firm characteristics matter and not others, or what type of support is optimal is unknown. Until further evidence exists, this suggests that participation in any export promotion schemes should not be restricted to particular firms, products or countries.

It remains likely that superstar exports will not emerge from policies aimed specifically at exports, but instead from experimentation by firms in their product range for sale in both domestic and export markets. Only firms can uncover those products, and policy should therefore be designed such that it encourages them to do so. Factors that drive firm productivity, competitiveness, innovation and product quality (including intangible factors such as design and marketing) should therefore provide an avenue for future export growth. Export promotion policy will be effective only once the potential export products emerge.

1. Introduction

The UK is one of the world's major export nations. In 2011 total exports were £493bn, up from £404bn in 2009 and £447bn in 2010. Measured by value, this made the UK the 10th largest exporter of goods globally and the 3rd largest exporter of services. The extent of this participation in international trade has brought many benefits to the UK economy (outlined in Box 1), including those from increased specialisation in production, increased choice for consumers, rising productivity and innovation.

The comparative export performance of the UK over the last few decades paints a more mixed picture. Figure 1 shows that as a share of GDP, UK exports have remained fairly steady since the mid-1990s. This performance is similar to other countries such as France and the US, but noticeably different to Germany, China and India, where the ratio has increased. This indicates that UK exports have grown at a similar rate to GDP over this period. For Germany, China and India the relative growth of exports has been faster than GDP. A similar relative decline can be found for manufacturing exports. The value of UK manufacturing exports has risen by over £160bn in nominal terms over the last two decades, from around £91bn in 1991 to £225bn ($406bn) in 2011. But this growth has been slower than many other countries (as indicated by Figure 2) and the UK's share of global manufacturing exports has fallen correspondingly. By 2009 the UK accounted for 2.9% of total world manufacturing exports, against a little under 4% as recently as 2005. Falling export shares can also be found for France and Japan, whilst those in China, India, Germany and the US were constant or rising. Over the same period the UK has maintained its global market share for services exports (with world market share of 6.8% in 1994 and 7.0% in 2009).

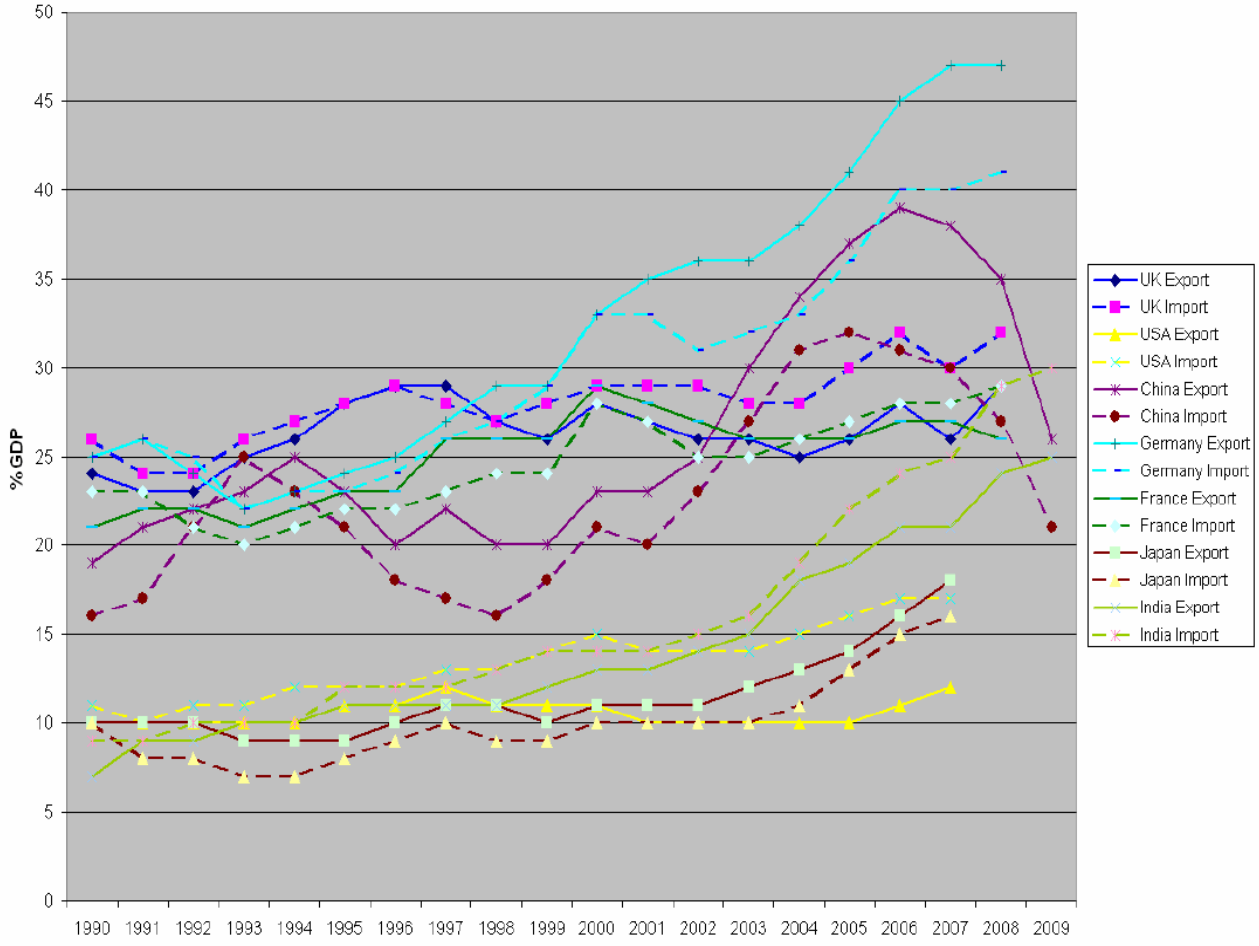
China and India are of course amongst a group of countries that have witnessed rapid GDP growth in the last few decades. Does the export performance of the UK depicted in Figure 1 and Figure 2 simply reflect its declining importance in the world economy more generally then? The evidence from Figure 3 suggests not, it is even worse. Figure 3 shows UK GDP and exports relative to world GDP and world exports. From the early 1990s the UK share of world GDP has remained relatively constant. In contrast, the UK share of world exports has fallen steadily. This indicates that whilst UK GDP growth has been very similar to the growth rate of world GDP, the growth of world exports has been faster than UK export growth. The declining share of UK exports in world exports is explained by the economic catch-up of the emerging economies, the rapid opening up of countries such as China to international trade and foreign direct investment (FDI) and the technological and policy changes that have increased the fragmentation of the production process (offshoring).

A more balanced view of the health of UK manufacturing exports can be found from studying its performance in relation to other mature economies such as France and Germany. Both of these countries export significantly more manufactured goods than the UK. French exports are around a third larger (France exports were $540bn in 2011), while German exports are about three times larger (German exports were $1,207bn in 2010).[1] But UK manufacturing output is also smaller. French manufacturing output is also about 1/3rd larger, while German output is 230% of UK output. So the UK exports less because its manufacturing sector is smaller. So a better question to ask would be is it

[1] Output of the German manufacturing sector is about 230% of the UK manufacturing sector.

less export intensive than other countries. Figure 4 displays the value of manufacturing goods exports as proportion of total manufacturing production and suggests the answer is no, at least in comparison to France and the US. In contrast to the evidence from Figure 1, for the UK the share of exports in manufacturing output has in fact been rising over time, from around 30% in 1991 to around 47% in 2011. The share of manufacturing exports to output has remained broadly comparable to France since the early 1990s, whilst falling behind Germany and remaining higher than the United States[2]. The gap between the UK and France with Germany opened up from the mid-1990s onwards[3]. The gap between exports in the UK with those in Germany will be a feature of the comparisons we make in the report and will be discussed further throughout.

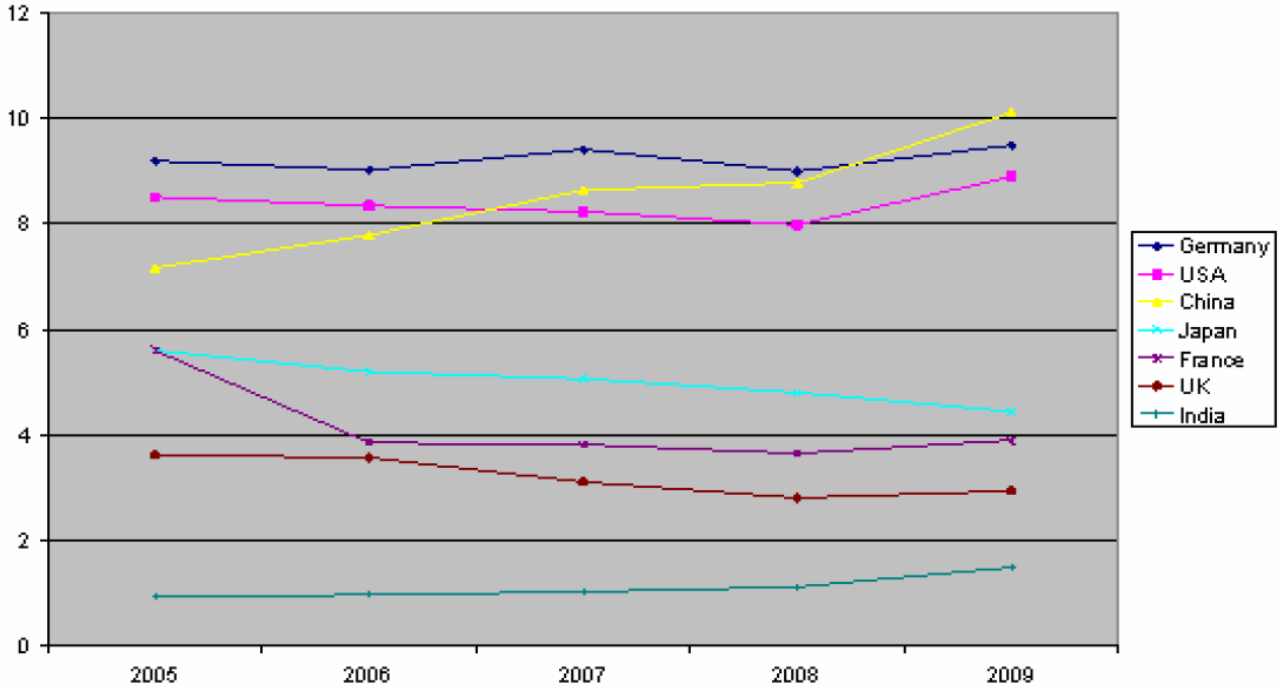
Figure 1: Exports and Imports as a Ratio to GDP



Source: BIS (2011)

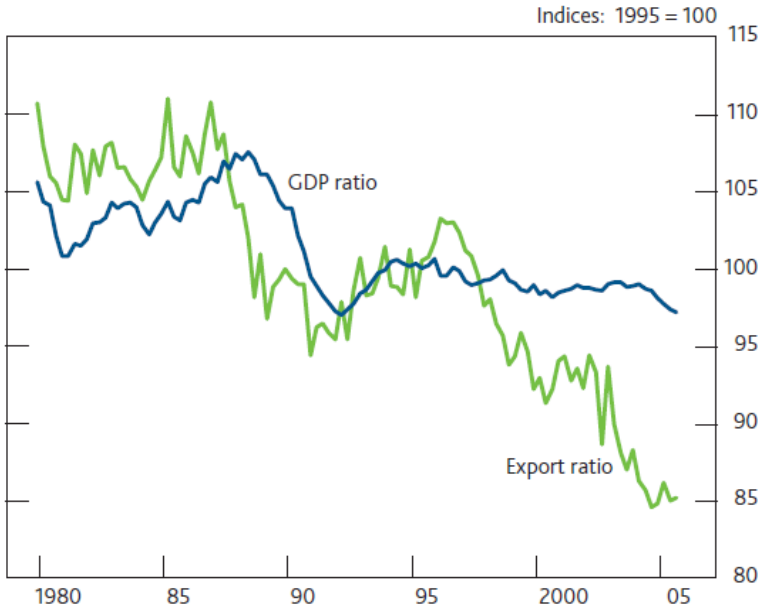
[2] Note the United States share of exports as a proportion of total output is smaller than the UK, France and Germany due to the substantially larger size of their domestic market.
[3] The reasons why Germany has outperformed both the UK and France are not well identified in the literature.

Figure 2: Share of World Goods Exports



Source: BIS (2011)

Figure 3: UK Exports and GDP Relative to the Rest of the World



Source: Bank of England (2006)

Box 1: The gains from trade

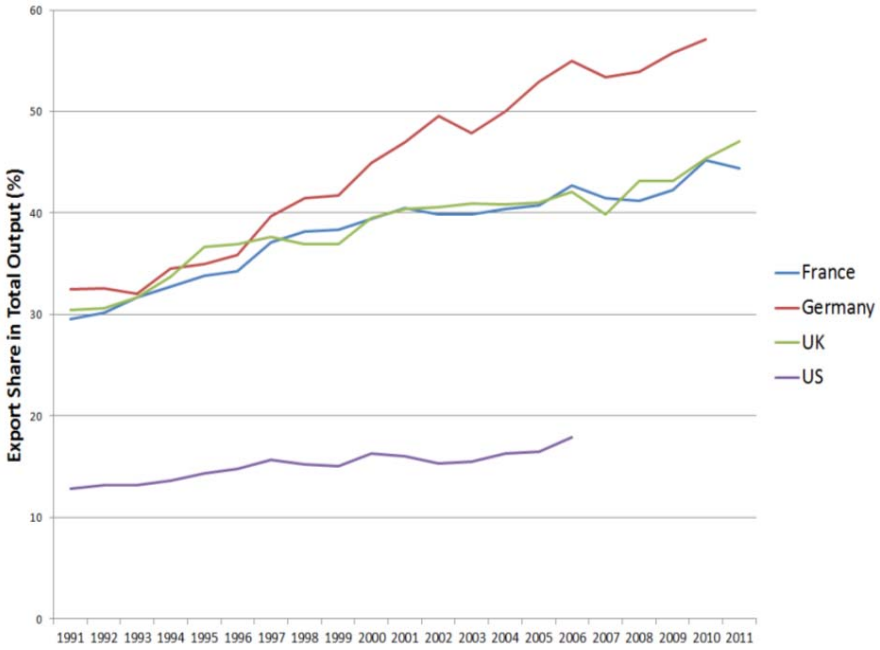
How economists think about the gains from international trade has changed over time as new models have emerged, reflecting newly discovered patterns in export and import data. Traditionally economists focused on improvements to the terms of trade (imports becoming cheaper relative to exports) that followed from countries specialising in the production of particular types of goods and services. More recently, as the importance of intra-industry trade in international trade flows grew, economists have focused on the gains from increased variety. Three sources of gains from intra-industry trade have been highlighted in the literature.

1. Economies of scale and product variety: Intra-industry trade allows firms to increase their scale of production, which lowers average costs, while giving consumers more choice and lower prices.
2. Within industry productivity change: Globalisation allows better performing firms within an industry to thrive and expand, while poor performing firms contract or shut down. This reallocation raises aggregate productivity.
3. Innovation: The development of new productivity- and profit-enhancing products and processes involves large up-front costs. Opening up to international trade allows the firm access to more markets. This makes it more attractive for some firms to make these investments, which leads to increased productivity within firms.

The economic evidence is most contentious for the last of these three effects. Until recently, a fair assessment of the evidence would have been that self-selection is the primary reason why exporters are more productive, larger, more innovative etc. than non-exporters, and there is no consistent evidence that starting to export improves these aspects of firm performance (Greenaway and Kneller, 2007). Questions have now been raised about the methodologies from which those conclusions have been drawn however, and in particular the idea that starting to export is a treatment after which the effects on firm performance can be studied. As a consequence new types of techniques have begun to be applied that do not suffer from the same problems and have generated compelling evidence of an effect on firm performance. As an example, Lileeva and Trefler (2010) examine the effects on the productivity of Canadian manufacturing plants from the NAFTA agreement with the US. They report that the productivity improvements within Canadian plants that were induced to start exporting was enough to raise aggregate productivity by around 5%.

To provide further context to that figure the effect from within industry productivity change (no. 2 above) from the same policy change was 8%: 4% from the closure of underperforming plants and 4% from the expansion of high-productivity plants. The productivity of the Canadian manufacturing sector rose by 13% as a consequence of this single policy change.

Figure 4: Export Share in Total Output against the UK's main competitors



Source: Author's calculations from OECD STAN data

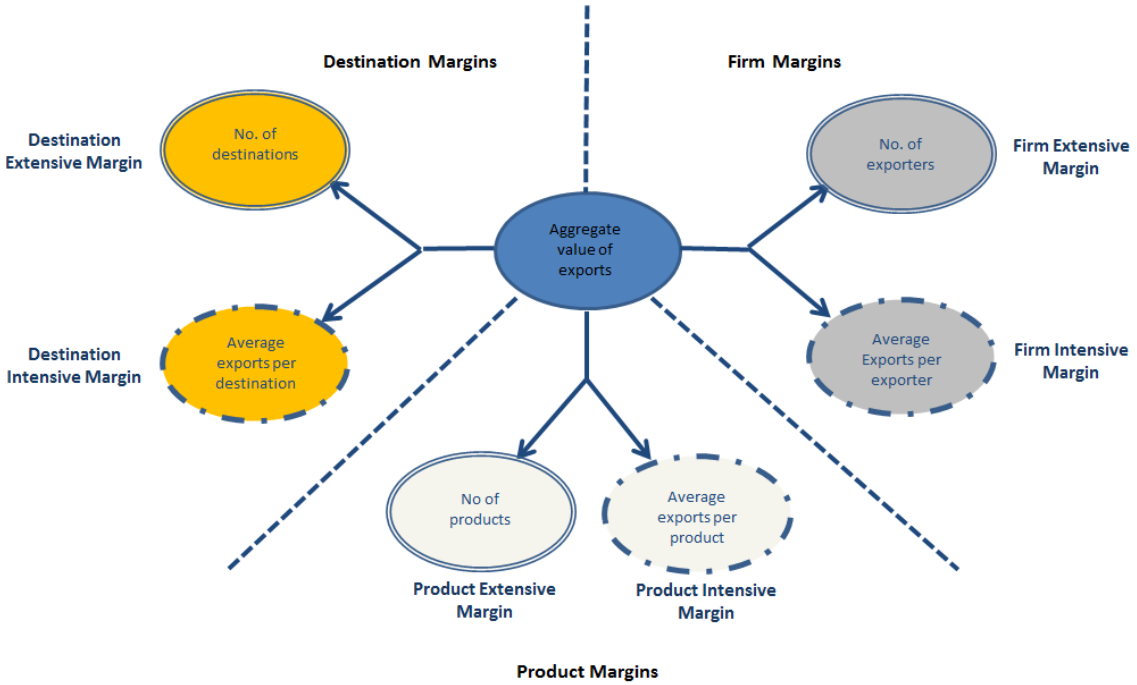
If that is the current state of play, what then might the future of UK manufacturing exports look like? Whilst a continued decline of the UK's share of world exports seems inevitable given the growth in countries such as China, India and Brazil, that does not imply falling export values, indeed their growth is a factor likely to increase total exports. What other factors might be important in this growth? What might bring about a sustainable, long-run increase in UK manufacturing exports from their current level in Figure 4? Before considering the answers to those questions, we first provide a more detailed examination of how UK exports have performed historically, alongside a comparison of that performance to other countries. From the cross-country comparisons we hope to reveal areas where the UK under- or over-performs and therefore where future changes are likely to impact, and any policy interventions that might be best targeted. We choose to compare the patterns and determinants of UK trade to those of Germany and France, our "main competitors". These two countries are chosen because they are similar economic size to the UK and a similar distance away from other countries (two factors which have a strong influence on trade patterns).[4]

Whilst Figure 4 provides useful historical evidence on the share of exported output to total output it provides only limited information for why UK exports might differ from those of France and Germany. That requires analysis of the who, what and where of exports. More formally these are known as the margins of trade. The total value of exports can be separated into a number of different extensive and intensive margins (summarised in Figure 5). We account for the total value of exports in terms of the firms, destinations and products separately. The figure shows that the aggregate value of exports is equal to the number of firms that export multiplied by the average amount each firm exports. Increases to exports must therefore occur because more firms are exporting (firm-extensive margin), and/or because existing exporters are exporting more (the firm-intensive margin). Or equivalently, changes to the value of exports may reflect an increase in the number of destinations UK products are sold to (destination-extensive

[4] As the manufacturing sector in both Germany and France is larger than the UK and so as much as possible we present evidence that accounts for this difference (as in Figure 4 we present information as ratios for example).

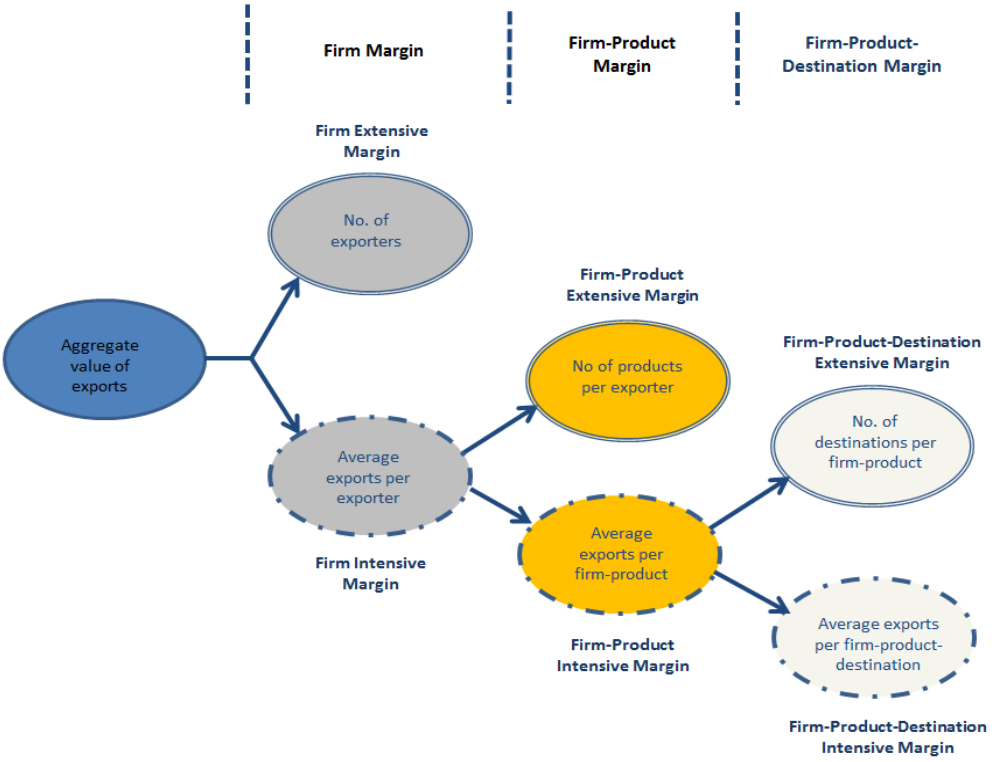
margin) are/or how much is sold in those markets (destination-intensive margin). Or finally, changes to the value of exports may reflect an increase in the number of products that the UK sells (product-extensive margin), or how much of those products are sold (product-intensive margin). As we shall see, the UK can appear very similar to France and Germany on some of these margins, and quite different on others.

Figure 5: The Margins of Trade



An alternative means through which to explore comparative export patterns is to consider trade flows entirely from a firm's perspective. One possible configuration is set out in Figure 6, where we combine firms with products and then destinations. This figure shows that the firm-intensive margin is equal to the number of products firms export (firm-product extensive margin) multiplied by the average value of exports of that product by firms (firm-product intensive margin). The firm-product intensive margin can be further disaggregated into how much firms export of a given product to each destination (the firm-product-destination intensive and extensive margins).

Figure 6: The Firm Margins of Trade



The number and overlapping nature of these various extensive and intensive margins set out in Figure 5 and Figure 6 can mean that the evidence becomes confusing. In the rest of this report we attempt to minimise this by organising the evidence according to those descriptions. That is we initially describe the evidence for countries, products and firms before focusing more narrowly on the destinations and products firms sell. We focus on firms because export promotion is organised along these same lines and because of the differences we find between the UK with France and Germany. The UK differs in how much it sells of each product and to each export market (the product-intensive and country-intensive margins), which raises the question of why (and which) UK firms are less successful at exporting. We find evidence that it is the under-performance of large UK firms that explains the gulf with Germany. Fewer UK large firms export and those that do export a smaller proportion of output, relative to large German firms. As in Figure 4, export patterns are more similar to France.

Our forecasts for UK exports are based on information from Figure 4 and are discussed in a later section. We also discuss the drivers of those future exports. Finally, we discuss the role for policy and draw some conclusions from the report.

1.1 Other explanations for Figure 4

Before describing how the UK compares along the various margins of trade we make some further discussion of Figure 4. This figure describes the value of trade in manufactured goods relative to output by firms in the manufacturing sector. A number of different factors may help to explain the rising ratio of exports to output in this figure, most obviously the decline of UK manufacturing. The increasing share of exports could be attributed to an increase in the value of exports and/or falling values of manufacturing output. The index of industrial production was the same in 2010 as in 1990 and below its peak output level in 2007, which indicates the volume of UK industrial production is

broadly unchanged in real terms over the period. This indicates all of this increase has occurred from the rising value of real exports rather than falling industrial production.

An alternative explanation for the trend in Figure 4 is the difference in the coverage of the numerator and denominator in the ratio. The numerator used in the calculation for Figure 4 considers exports of manufactured goods, whereas the denominator uses production by manufacturing firms, where this production includes both goods and services. As a number of manufacturing firms also engage in trade in services, it follows that Figure 4 is likely to understate the share of exports in total production.

How is important is this? Data from the ONS survey of services exporters (ITIS) shows that in 2005 manufacturing firms accounted for 14% of the total value of UK service exports, with the share of telecommunications exports and royalties and license fees being over 30%.[5] German manufacturing firms account for a larger proportion of German service exports, with around 20% attributed to high and low tech manufacturers and 27% if one includes motor vehicle manufacturers.[6] Including service exports of manufacturing firms in Figure 4 would mean the proportion of output exported is around 52% for the UK and 59% for Germany. So it does not seem as though services trade can explain the gulf in export shares between Germany and the UK. It also suggests that UK manufacturing firms are more service-intensive than their German counterparts.

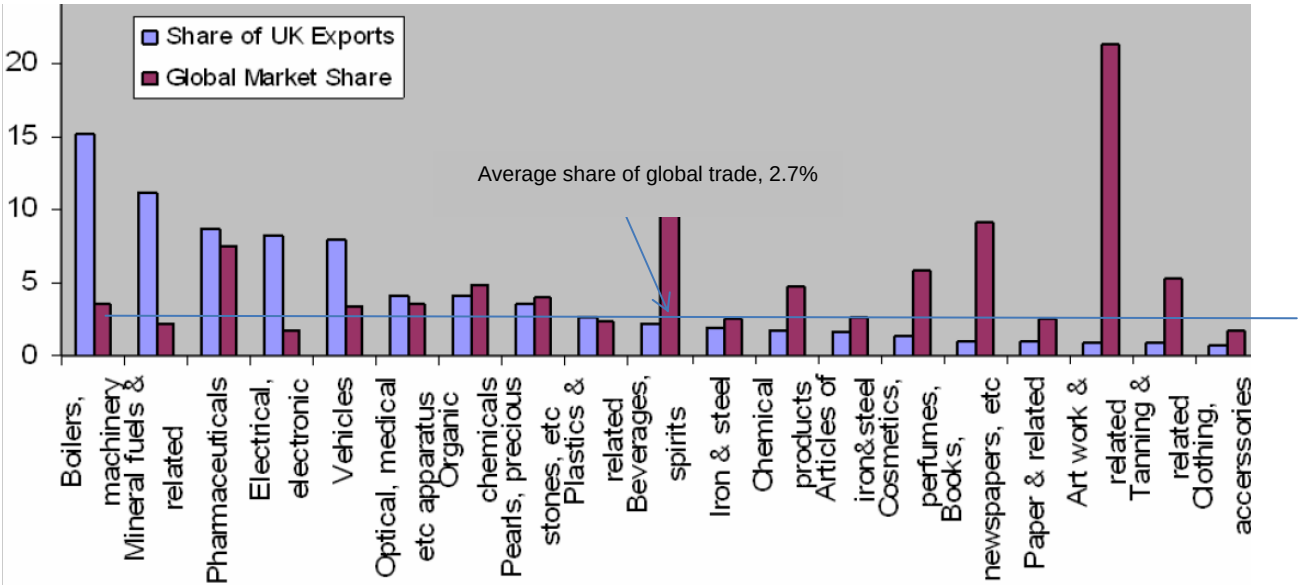
[5] Unfortunately time series evidence for the services exports of manufacturing firms is not available.
[6] The source for German service exports by manufacturing firms is Keller and Kleinert (2010)

2. The margins of trade

2.1 Product margin

Traditional theories of international trade would suggest that the UK should specialise in the production of goods for which it has a comparative advantage relative to other countries. Evidence presented in Figure 7 suggests that these comparative advantage sectors[7] include; pharmaceuticals, chemicals, beverages and spirits, boilers and machinery and the automotive sector. For these sectors the UK share of world exports is relatively large compared to its average share of 2.7% (2010 figure). Aggregated across products, about 42% of the value of all goods exports are of machinery and transport equipment. Chemicals and related products account for a further 15%, while manufactured goods classified by material, miscellaneous manufactured articles and mineral fuels account for around 10% each. The UK's comparative disadvantage is in manufacturing textiles, toys, office and telecommunication equipment. As Figure 7 also makes clear some of the UK's comparative advantage sectors account for a very small share of total UK exports, and equally there are some sectors where the UK has a comparative disadvantage that do.

Figure 7: Share of Exports and Market Share



Source: BIS (2012)

What the UK's comparative advantage sectors are differs from Germany, as we discuss further below, but as indicated by

[7] Comparative advantage sectors refer to those sectors for which the UK is has an advantage at producing relative to other countries. We measure comparative advantage by comparing the UK's world market share for each sector with their average across all sectors. Where the UK's share of world exports for a sector exceeds its average across all sectors, the UK is said to have a comparative advantage in that sector.

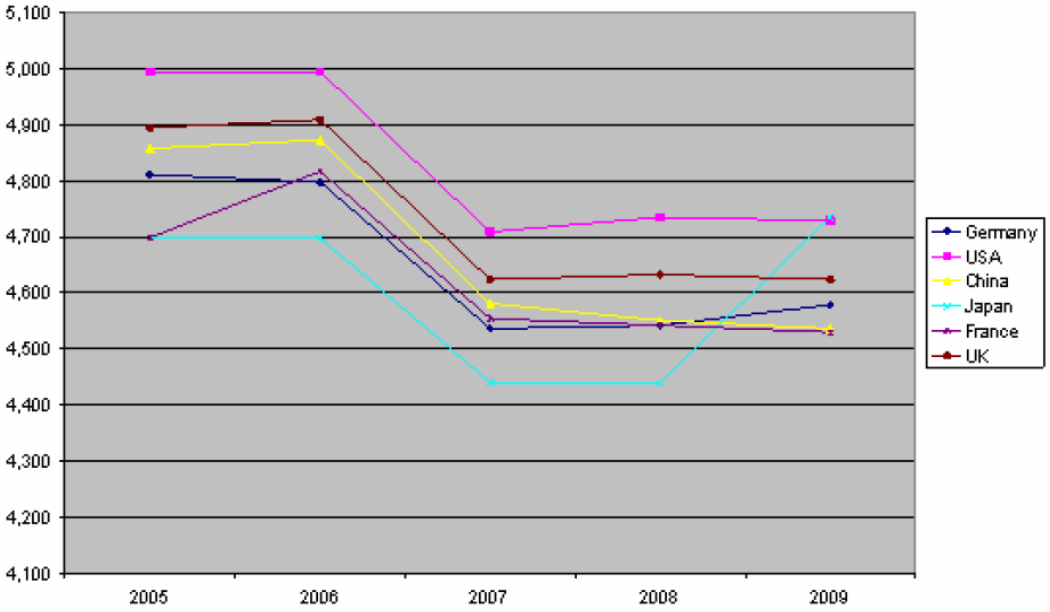
Figure 8, the number of products exported is very similar (we discuss what we mean by products in Box -2). Indeed there is relatively little variation in the number of products exported across countries. According to data at the HS 6 digit level the UK exports 4,810 different products out of a possible 5,000 manufacturing products in this classification of goods, France exports 4,745 and Germany 4,775 (Panagariya and Bagaria (2012)). The US exports more products, at 4,921, as would be expected given the larger size of their economy, but China exports 4,792 and even smaller countries such as Austria or Belgium export 4,484 and 4,799 respectively. The fall in the number of products exported for all countries (Figure 8) is due to a reclassification of what constitutes a product in the underlying data in 2007. Given that the total value of UK exports are lower than in France and Germany and the number of products sold is similar, it follows that the average value of UK exports per product must be lower. The evidence from Figure 4 suggests that this difference with France is explained by differences in the size of the manufacturing sector. It also indicates that the faster growth of exports by Germany has occurred because of faster increases to the product-intensive margin, the value of exports per product.

Box 2: Products

What is a product? There are various ways of describing international trade of different products, although all follow a similar structure. One common standard is the **Harmonized Commodity Description and Coding System** (**HS**). This is an internationally standardized system of names and numbers for classifying traded products developed and maintained by the World Customs Organization, an independent intergovernmental organization with over 170 member countries. The HS system begins by assigning goods to categories of crude and natural products, and from there proceeds to categories with increasing complexity (further sub-categories of detail). The codes with the broadest coverage are at the four digit level, but can include up to 10 digits. All countries employ the same 4- and 6-digit codes, but differ beyond that point. Six-digit products are therefore the most disaggregated for which cross-country comparisons can be made, although for individual countries statistics agencies often release 8 or 10 digit data. There are a little over 5,000 6-digit codes in use (there is some variation depending on which vintage of data are being used). We call any 6, 8 or 10-digit category a product, but call a category at the 4-digit level or higher an industry or sector.

As an example of 6-digit description. The classification for an electric oven depends on whether the oven is for domestic or industrial use. An electric oven for domestic use has a 6-digit HS code of 8516.60, while industrial ovens have a code of 8514.10. Electric domestic ovens include *Electric instantaneous or storage water heaters and immersion heaters; electric space heating apparatus and soil heating apparatus; electrothermic hairdressing apparatus and hand dryers; electric flatirons; other electrothermic appliances of a kind used for domestic purposes; electric heating resistors, other than those of heading 8545; parts thereof*. These will each have their own 8 digit code, with further sub-divisions available at the 10 digit level (to measure size or power).

Figure 8: Number of Products Exported

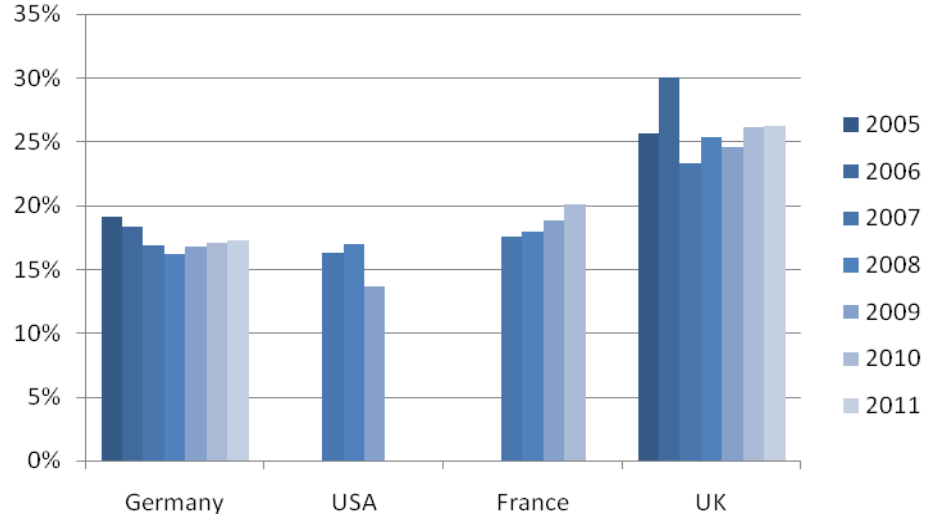


Source: BIS (2011)

The analysis of Panagariya and Bagaria (2012) also highlights that a relatively small number of these products account for the bulk of the value of exports. This occurs even at the most disaggregated level. For the US the top 2% of all exports products (just 171 different 10-digit codes) account for 46% of the total value of exports. Using data from the UN COMTRADE database we calculate the proportion of goods exports (in terms of export value) that are accounted for by the top ten products for each country at the 6 digit level (Figure 9). This figure shows that just ten products, and remember the UK exports some 4,800 different products, account for over a quarter of the total value of UK exports. This compares to around 17% for Germany, 20% for France and 15% for USA (2011 figures). UK exports are therefore more concentrated on a small number of products than our main competitors, or to put it another way, UK exports are more specialised than France and Germany. Figure 10 lists the top ten products exported by the UK in 2011. Consistent with Figure 7, motor vehicles, medicaments and aeroplane engines feature heavily in the top ten, along with petroleum products.

Comparable tables for Germany and France are reported as Figure 11 and Figure 12 respectively. For Germany motor vehicles and car parts dominate the list of the top 10 products, although medicinal items also feature. For France, again motor vehicles are the largest exports by value along with aircrafts (finished and parts) and beauty products. Also evident is the mix of finished products and intermediates. For example for the UK the 7th and 8th largest exports are parts of turbo-jets and finished turbo jets. For France and Germany exports of finished aircraft are large because they are used as final assembly locations by Airbus. Aircraft are ranked 1st for France and 4th for Germany.

Figure 9: Percentage of Goods Exports of Top Ten Products (HS 6 digit level)



Source: Author's calculations based on UN COMTRADE data

Figure 10: Top Ten UK Exports in 2011 (HS 6 digit level)

Rank	Description	Exports $bn	Share of Total UK Exports
1	Petroleum oils and oils obtained from bituminous minerals, crude	27.3	5.8%
2	Medicaments consisting of mixed/unmixed products for therapeutic/prophylactic uses	18.4	3.9%
3	Petroleum oils & oils obtained from bituminous minerals (other than crude) & preparations not elsewhere specified	15.6	3.3%
4	Light petroleum oils & preparations	13.3	2.8%
5	Vehicles principally designed for the transport of persons with spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity >1500cc but not >3000cc	10.0	2.1%
6	Vehicles principally designed for the transport of persons with spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity >3000cc	9.4	2.0%
7	Parts of the turbo-jets/turbo-propellers	8.7	1.8%
8	Turbo-jets, of a thrust >25 kN	7.1	1.5%
9	Diamonds, non-industrial, unworked/simply sawn/cleaved/bruted	7.0	1.5%
10	Whiskies	6.9	1.5%

Source: Author's calculations based on UN COMTRADE data

Figure 11: Top Ten German Exports in 2011 (HS 6 digit level)

Rank	Description	Exports $bn	Share of Total German Exports
1	Vehicles principally designed for the transport of persons with spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity >1500cc but not >3000cc	51.6	3.5%
2	Vehicles principally designed for the transport of persons, with C-I internal combustion piston engine (diesel/semi-diesel), of a cylinder capacity >1500cc but not >2500cc	51.0	3.4%
3	Medicaments consisting of mixed/unmixed products for therapeutic/prophylactic uses	37.4	2.5%
4	Aeroplanes & other aircraft, of an unladen weight >15000kg	26.9	1.8%
5	Vehicles principally designed for the transport of persons with spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity >3000cc	24.7	1.7%
6	Vehicles principally designed for the transport of persons, with C-I internal combustion piston engine (diesel/semi-diesel), of a cylinder capacity >2500cc	15.9	1.1%
7	Antisera & other blood fractions & modified immunological products	15.9	1.1%
8	Petroleum oils & oils obtained from bituminous minerals (other than crude) & preparations not elsewhere specified	12.2	0.8%
9	Gear boxes & parts thereof, of motor vehicles.	10.5	0.7%
10	Vehicles principally designed for the transport of persons, with spark-ignition internal combustion reciprocating piston engine, of a cylinder capacity >1000cc but not >1500cc	9.8	0.7%

Source: Author's calculations based on UN COMTRADE data

Figure 12: Top Ten French Exports in 2010 (HS 6 digit level)

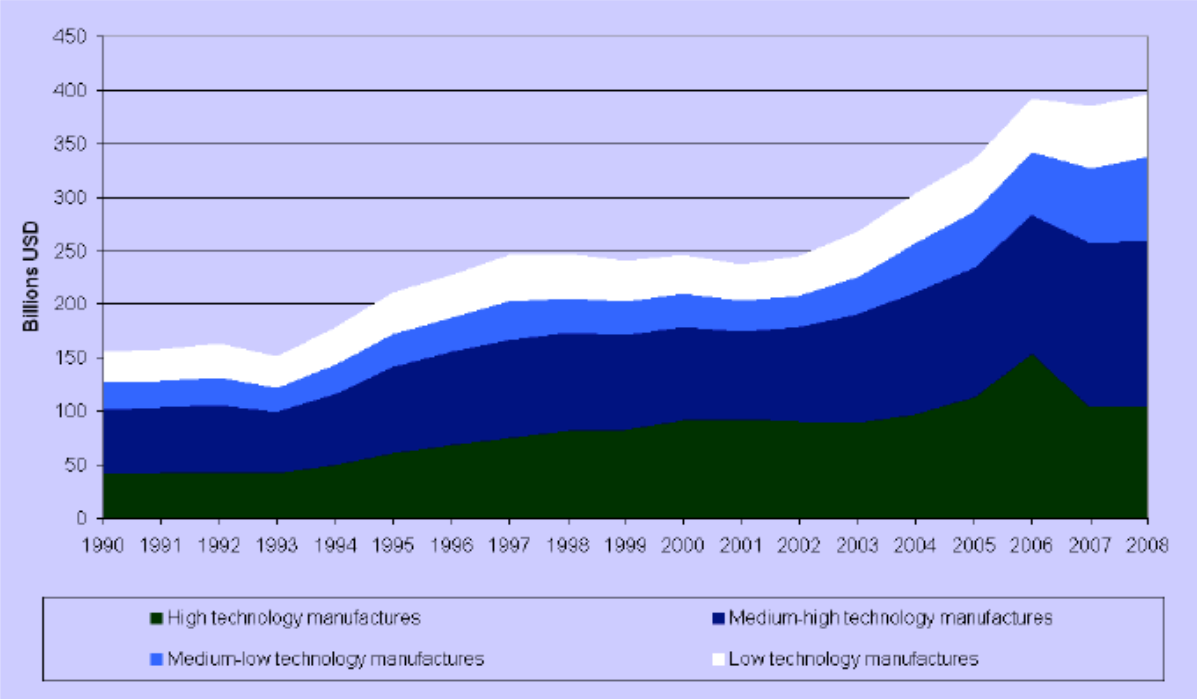
Rank	Description	Exports $bn	Share of Total French Exports
1	Aeroplanes & other aircraft, of an unladen weight >15000kg	35.8	7.0%
2	Medicaments consisting of mixed/unmixed products for therapeutic/prophylactic uses	21.0	4.1%
3	Vehicles principally designed for the transport of persons, with C-I internal combustion piston engine (diesel/semi-diesel), of a cylinder capacity >1500cc but not >2500cc	8.8	1.7%
4	Petroleum oils & oils obtained from bituminous minerals (other than crude) & preparations not elsewhere specified	7.2	1.4%
5	Other parts & accessories for the motor vehicles	5.9	1.1%
6	Light petroleum oils & preparations	5.3	1.0%
7	Wine other than sparkling wine of fresh grapes, incl. fortified; in containers of 2l or less	5.3	1.0%
8	Beauty/make-up preparations & preparations for the care of the skin, including sunscreen/sun tan preparations	5.0	0.9%
9	Parts of aeroplanes/helicopters, other than propellers, rotors, under-carriages & parts thereof	4.5	0.9%
10	Perfumes & toilet waters	4.3	0.8%

Source: Author's calculations based on UN COMTRADE data

A common method used to study at the type of goods that countries export is to classify them according to the levels of technology they embody. High income countries such as France, Germany and the UK would be expected to export more medium and high-technology products compared to low-technology ones. Examples of *high-technology* industries are aircraft, computers, and pharmaceuticals; *medium-high-technology* includes motor vehicles, electrical equipment and most chemicals; *medium-low-technology* includes rubber, plastics, basic metals and ship construction; *low-technology* industries include food processing, textiles, clothing and footwear.

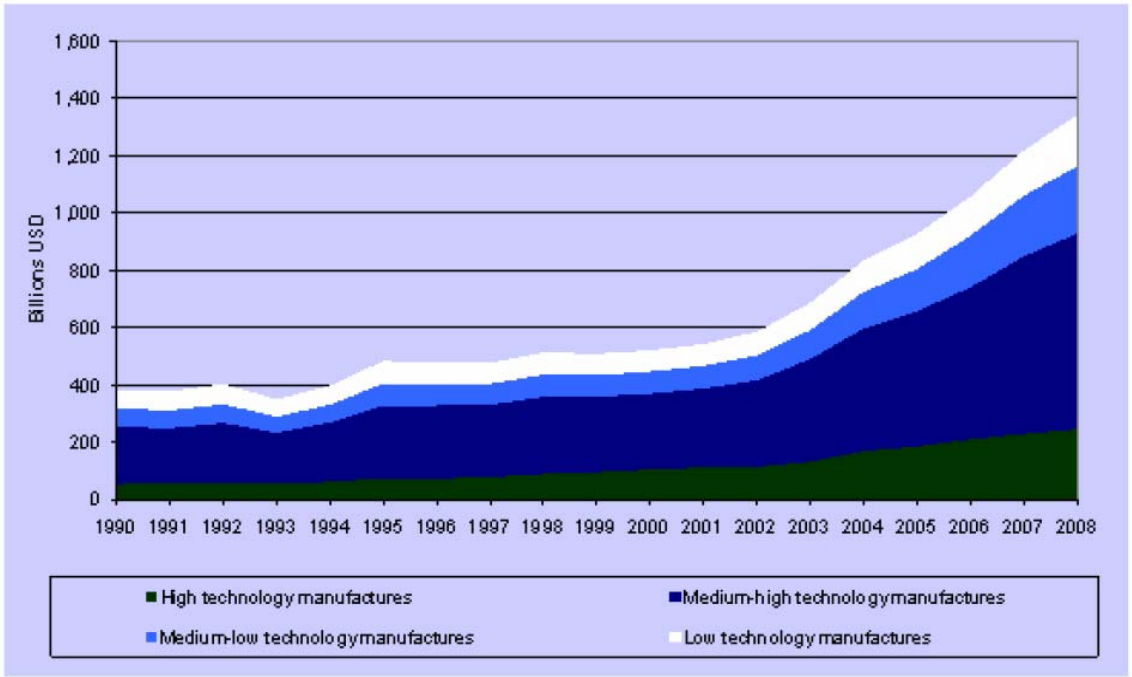
Figure 13 shows the growth of UK manufacturing exports classified by technology. High and medium-high technology exports have increased from around $100bn to $250bn (out of a total of $400bn in 2008). This is somewhat different to Germany where the growth has come mainly from medium-high-tech manufactured goods (see Figure 14). The medium-tech industries that Germany specialises in include electrical machinery and motor vehicles.

Figure 13: UK manufacturing exports, by technology 1990-2008



Source: BIS (2010a)

Figure 14: German manufacturing exports, by technology 1990-2008

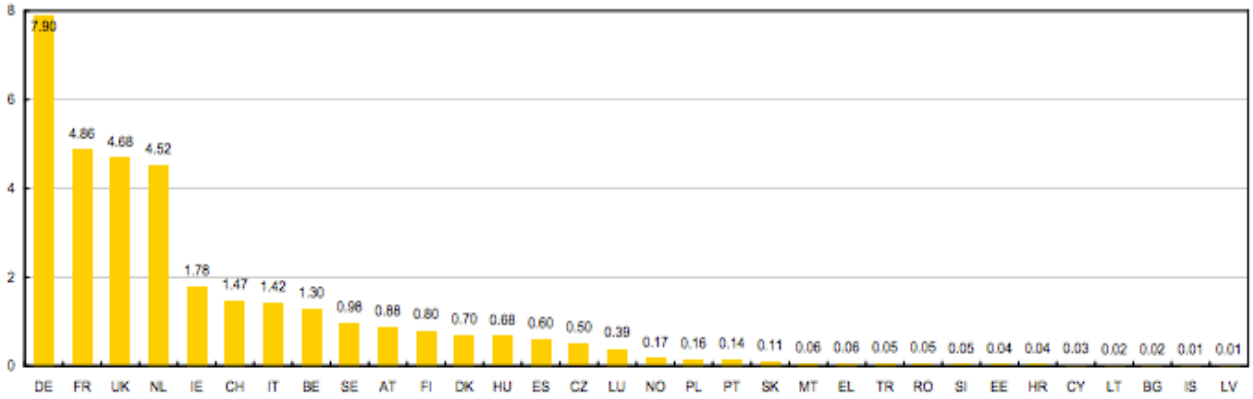


Source: BIS (2011)

Figure 15 shows the world market shares of high technology exports for EU member states. Germany has a 7.9% share of the global market; however, the German average share across all goods is of 8.3% (2010 figure). For both France and the UK, their share of world high technology exports exceeds their average across all sectors (3.4% and 2.7% respectively). High-tech manufacturing therefore appears to be a comparative advantage sector for the UK and France, but not for Germany. Given that comparative

advantage for the UK, exports of this type would be expected to grow more quickly into the future.

Figure 15: World market shares of high-tech exports for EU member states



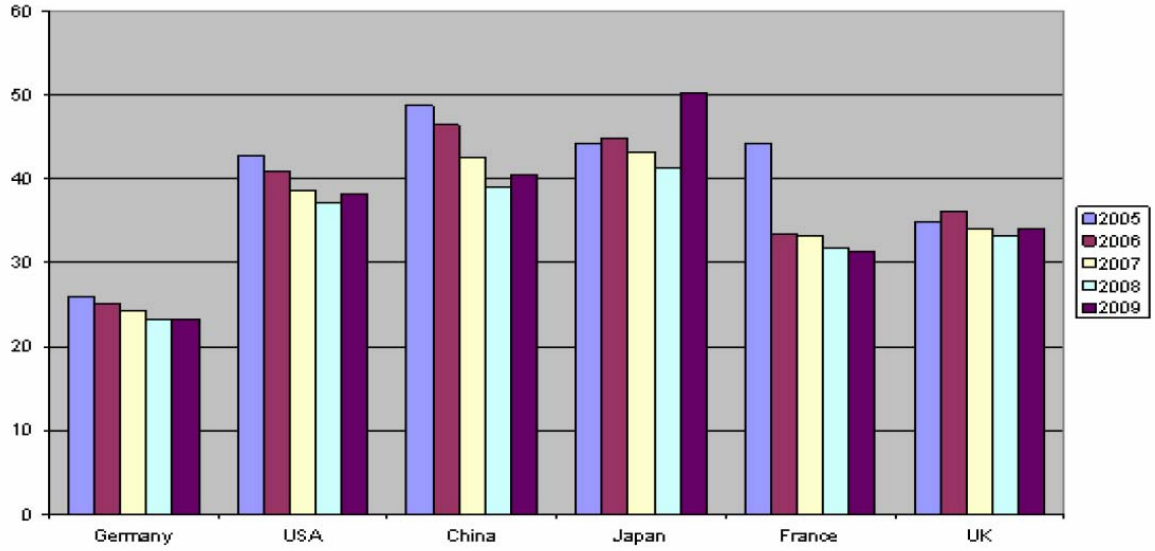
Source: Eurostat (2008)

2.2 Destination margin

Given that the number of countries is broadly fixed across time, and most countries export to most destinations, it should come as little surprise that differences in the average value of exports to a given destination (the destination-intensive margin) explains almost all of the differences in the value of exports across countries. As the level of exports is lower for the UK compared to France and Germany, it follows that the destination-intensive margin is lower. Again, explaining how much the UK exports to each destination seems more important than which destinations it exports to. The UK appears less adept at securing large export orders from countries compared to France and Germany in part because of its smaller manufacturing base. The evidence from Figure 4 indicates that in relation to France that is due to differences in the size of the manufacturing sector.

According to evidence provided by Panagariya and Bagaria (2012), the UK exports to 226 different countries/territories. This is a very similar number to France (224), Germany (227), the USA (221), China (208) or indeed most other countries. As with products there are large differences in the value of exports across destination. UK exports are relatively diversified across markets and the composition of the most frequent destinations has changed little over time. The top destination (the USA) accounts for 13% of the value of exports, while the top 10 markets account for 60% of exports (2011 figures). Figure 16 shows the proportion of UK exports sold to the top three destinations is broadly in line with France and USA and is more concentrated than Germany. There are some variations in which are the top three destinations for UK, German and French exports over time. In 2005 for the UK the top three were USA, France and Germany. By 2009 France and Germany had swapped places. For France the ranking in 2005 was Germany, Spain and Italy, and by 2009 Italy and Spain had swapped rankings. For Germany in 2005 the top three export destinations were France, USA and UK and by 2009 it was France, Netherlands and USA (UK was ranked 4th).

Figure 16: Percentage of Goods Exports to Top Three Export Markets



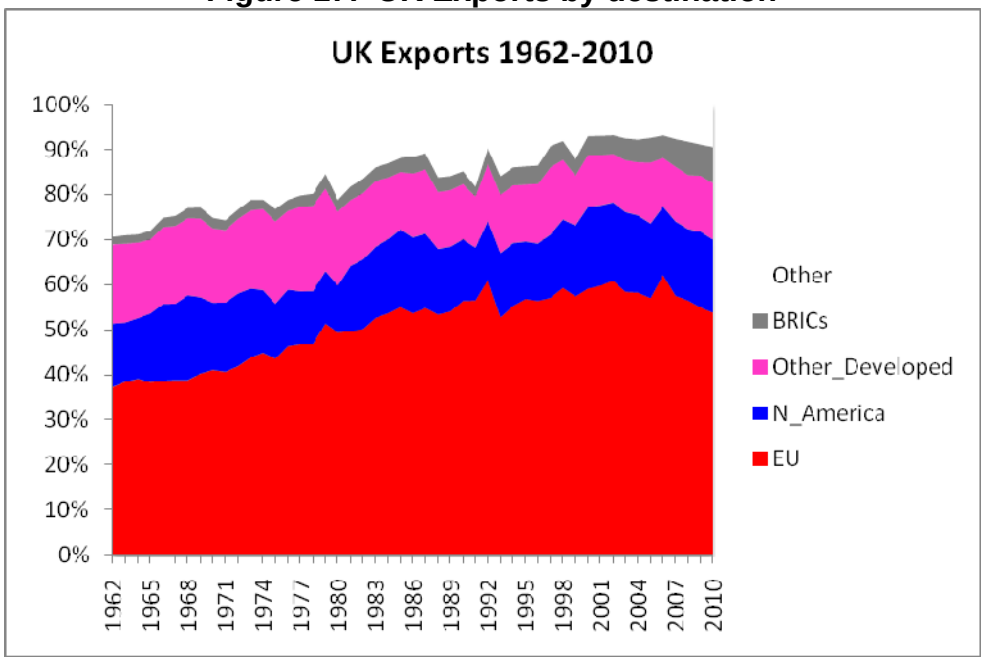
Source: BIS (2011)

Finally in this section we show how the destinations of UK (Figure 17), French (Figure 18) and German[8] (Figure 19) exports have changed over time. Given the stability of the extensive margin the evidence in this figure can be interpreted changes to the intensive margin to different destinations. There are some surprising differences across these figures. Since 1962 growth in the UK exports would appear to have come from increased trade to EU countries, where we classify countries by their current EU status. By 2005, exports to other EU countries accounted for around 45% of the total value of UK exports, compared to under 40% in 1962. This increase is explained by the liberalisation in trade amongst the European countries and rising income levels. The share of exports to EU countries has been relatively constant since the early-1990s. Also of interest in Figure 17 are exports to the BRIC countries (Brazil, Russia, India and China). As this figure makes clear, these account for a very small share of the total value of UK exports, but have been growing over time. Rapid growth in demand for UK exports from these countries in the future is therefore likely to have only a modest effect on the total value of UK exports.

For France and Germany the patterns appear quite different, in particular the growth of trade to the EU is much lower than for the UK, although it starts from a higher level. This would seem to highlight a change for the UK from trade with its former colonies (who are mostly in the 'other' countries in the figure) and towards Europe following its entry into the EU, that was not present for other European countries. It is also noticeable that UK exports are much more oriented towards North America compared to France and Germany and that there are not large differences between them in the share of exports to BRIC countries.

[8] The data for Germany is affected by its post war separation and then re-unification. UN COMTRADE has no data for Germany during the period of reunification. East German data is available only from 1985. We therefore use West German data up to 1985. East German trade data is non-negligible, for example, it is 10% of West German trade in 1985.

Figure 17: UK Exports by destination



Source: Author's calculations based on UN COMTRADE data

Figure 18: French exports by destination

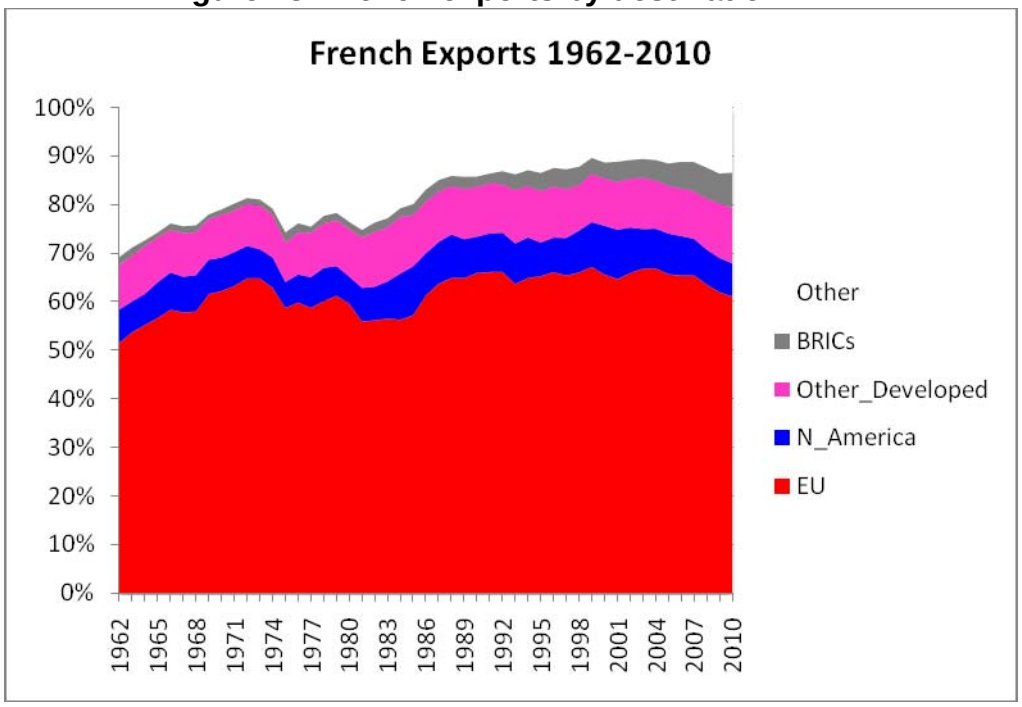
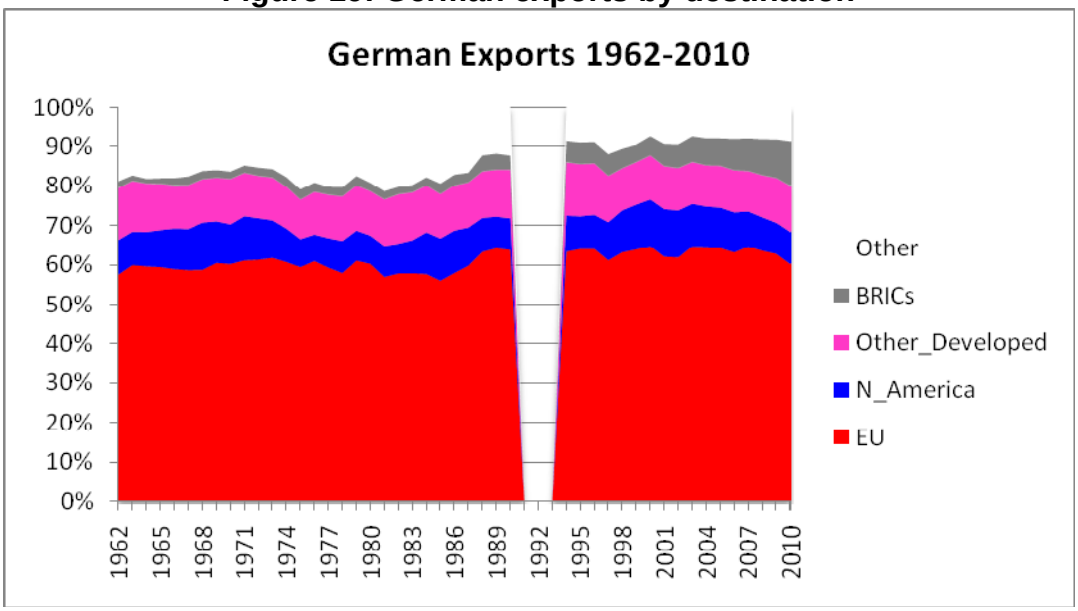


Figure 19: German exports by destination



2.3 Firm margin

In the last decade a new theory of international trade has emerged that emphasises differences in firm abilities as a driver of export patterns. In this model only the best firms in an industry can make profits from exporting, while less able firms (those with low productivity in the model) serve just the domestic market (e.g. Melitz, 2003). These new models can help to explain some patterns in the data that could not be explained by older theories of international trade. They help to explain why within comparative disadvantage sectors such as textiles, there are UK firms that successfully compete in export markets, just as there are UK firms within comparative advantage sectors such as chemicals that do not export. Put simply, these models made clear that it is firms that trade in international markets and not countries or industries.

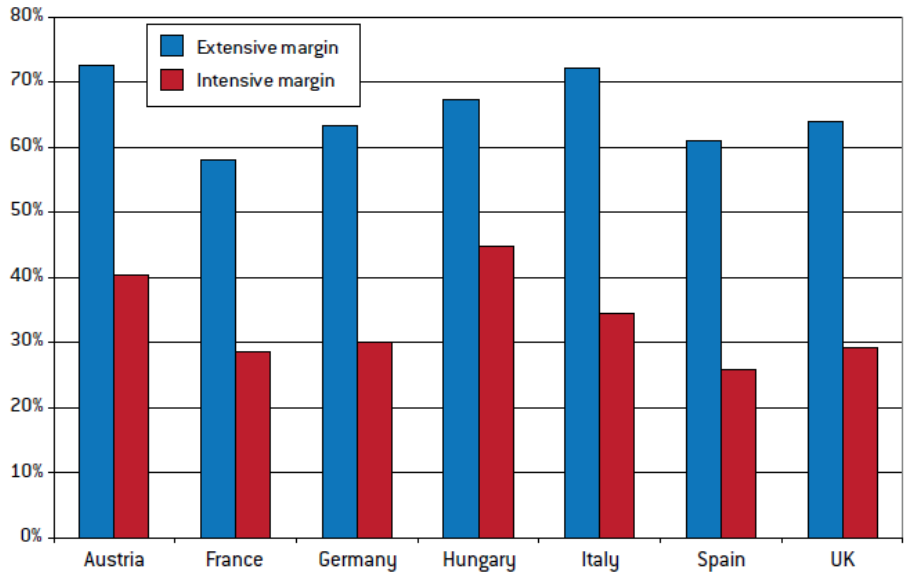
Not that one should claim these models are a complete description of export patterns. The models emphasise firm productivity as the main source of differences between firms. Yet productivity does not appear to be the full story for deciding which firms export, they differ in lots of different ways, and these other factors can help to predict which firms export. Exporters have better educated workers, are more likely to conduct R&D etc. Even if the set of firm characteristics is broadened to include these other factors, in the data it remains evident that the self-selection of the best firms into exporting suggested by these models is imperfect. There are non-exporters who have similar characteristics to those who do export, and exporters who have the type of characteristics that they would not be expected to export. This would appear to leave some room for policy to influence exports patterns by affecting the selection of the best firms into exporting, although identifying what those missing firm or demand factors that would affect this is research that still has to be done.

Unlike for countries or products, comparisons of firm export margins across countries are difficult because of differences in data quality. Statistical agencies often apply different definitions of whether a reporting unit in their survey refers to a production plant, a firm or a group of firms (and they are not always consistent across their own surveys or across time). Export patterns can therefore appear different across countries for the rather mundane reason that they are based on different underlying data. In comparing the firm

margins across the UK, France and Germany we therefore focus on research that uses high-quality, comparable data. Almost all the research we report uses either data collected by customs agencies or a comparable cross-country survey of firms (collected by Navaretti et al., 2011). Customs data contains information on all international export transactions where firm exports exceed a threshold value.[9] The customs datasets are virtually comprehensive and therefore have very good comparability across countries. The sample of firms included in the cross-country Navaretti et al (2011) survey has been explicitly designed to give a representative sample of exporting firms across countries. Where we rely on data just for the UK we rely on studies that have used data from the Community Innovation Survey provided by the ONS and where the issues around the sampling of firms are extensively discussed and appropriately weighted (Harris and Li, 2009).

Figure 20 shows for a range of countries the percentage of manufacturing firms who export (firm-extensive margin) and for exporters, the percentage of output exported (firm-intensive margin). At around 60%, the percentage of exporters appears similar for the UK compared to France and Germany. The intensive margin is also similar, with exports accounting for around 30% of sales for exporting firms. So, unlike for the product and destination margins discussed in the previous two sections, the UK firm intensive and extensive margins seem quite similar to France and Germany. That might seem curious at first, but it again highlights differences in the size of the manufacturing sector across countries. France and Germany have more manufacturing firms than the UK, but on average a similar share export and they export a similar share of their turnover. The product and country intensive margins appear larger for Germany and France because they have more firms producing and therefore exporting. That provides an additional motivation for placing firms at the heart of the comparisons we make.

Figure 20: Firm extensive and intensive margin of exports



Source: Navaretti et al (2011)

[9] For example, the UK data captures firms with exports exceeding £250,000, the German data captures firms with intra-EU exports exceeding €400,000 and extra-EU exports above €1,000 and the French data intra-EU exports above €250,000 and extra-EU exports above €1,000.

Some interesting differences exist beyond the averages in Figure 20 though. Figure 21 shows the proportion of firms who export across a variety of European countries broken down by firm size. From this table it is evident that the proportion of very small through to medium sized enterprises[10] (SME) who export is higher in the UK than France, and higher than Germany for the smallest firms (10-19 employees). Of firms with fewer than 20 employees around 55% of UK firms export compared to around 45% in France and 46% in Germany. But it is also apparent that fewer large UK manufacturing firms export compared to France and Germany. Around 81% of UK firms with more than 249 employees export, whereas the figure is 88% in France and 84% in Germany. The targeting of export promotion support at smaller and less experienced exporters in the UK might be one possible explanation for why more small firms export than in Germany and France, but that does not explain why fewer large firms export. Is this to do with the type of sectors that UK firms are involved in compared to France or Germany. According to Navaretti et al (2011) the answer is no. They find that the relationship between the share of exporters is different for the UK than other countries even when controlling for sectors. This provides a first indication that large UK firms behave differently to those in France and Germany.

A similar story emerges for the firm-intensive margin. Figure 22 shows the proportion of output that is exported (by exporting firms) broken down by firm size. The proportion of output exported by small to medium sized firms is slightly higher in the UK than France, but only larger than Germany for the smallest size category. Conversely, amongst the large manufacturing firms who do export, those from the UK export a smaller fraction of output. This difference is most noticeable in the case of France and the UK, where it is reported that UK firms export 34.2% of output compared to 41.2% in France. Therefore although overall the firm-extensive and intensive margins appear similar between the UK and our main competitors, the UK export market is over-represented by small firms both in terms of the number of exporters and the proportion of output they export. Conversely large firms are under-represented. Since smaller firms produce lower quantities than larger firms, the value of exports created by the additional smaller firms is not sufficient to compensate the value of exports foregone by larger firms who do not. That the UK and France appear similar on the aggregate export intensities despite these differences would seem to be just a coincidence. The export intensity of SMEs in the UK and Germany are similar. Consequently, the composition of our exporting firms and in particular the under-performance of large firms is likely to explain why the UK lags behind Germany in terms of the share of manufacturing output that is exported Figure 4. Does that gap occur because Germany's comparative advantage is in medium-technology sectors and the UK's is in high-technology sectors, and firms tend on average to be smaller in high-technology sectors? We are aware of no evidence that would allow us to answer that directly, but the difference between the UK and France, which have similar comparative advantages, would suggest that the answer is no.

[10] SMEs are defined as those firms with fewer than 250 employees.

Figure 21: Percentage of Manufacturing Firms who Export (Firm extensive margin)

Size class	Austria	France	Germany	Hungary	Italy	Spain	UK
10-19	69.8	44.7	45.7	58.0	65.4	51.2	54.9
20-49	63.8	59.1	65.4	64.7	73.3	63.5	62.8
50-249	88.6	75.4	78.2	79.3	86.6	76.2	76.8
more than 249	90.8	87.6	84.0	97.4	92.6	88.0	80.7
Total	72.6	57.9	63.4	67.3	72.2	61.1	64.0

Source: Navaretti et al (2011)

Figure 22: Percentage of Output Exported by Exporting Firms (Firm intensive margin)

Size class	Austria	France	Germany	Hungary	Italy	Spain	UK
10-19	26.2	23.0	25.9	30.2	30.4	21.4	26.2
20-49	33.3	27.0	28.1	43.6	34.2	24.5	27.8
50-249	55.9	33.0	33.9	53.2	42.2	33.3	33.2
more than 249	64.7	41.2	37.8	66.6	52.6	40.6	34.2
Total	40.4	28.5	30.0	44.8	34.6	25.9	29.1

Source: Navaretti et al (2011)

In the next section we provide further detail on this difference by considering the destinations and products firms export. Meanwhile Figure 23 provides information for the share of firms that export by firm size at different points in time. The figure that shows the proportion of UK manufacturing firms who export has risen from 43.9% in 2000 to 55.2% in 2006, where this rising trend has been particularly fast amongst small firms. According to Harris and Li (2009), in 2000 36.7% of firms with 10-49 employees exported, but by 2006 this had risen to 53.6%. Amongst those firms with 250+ employees the comparable figures were higher, but changed by a smaller amount over time. In 2000 72.5% of large firms exported, which had risen to 80.7% by 2006. That seems to indicate that the UK is catching up with German export patterns; a point of hope for the future perhaps.

Figure 23: Percentage of UK Establishments Exporting, 2000-2006, by Size

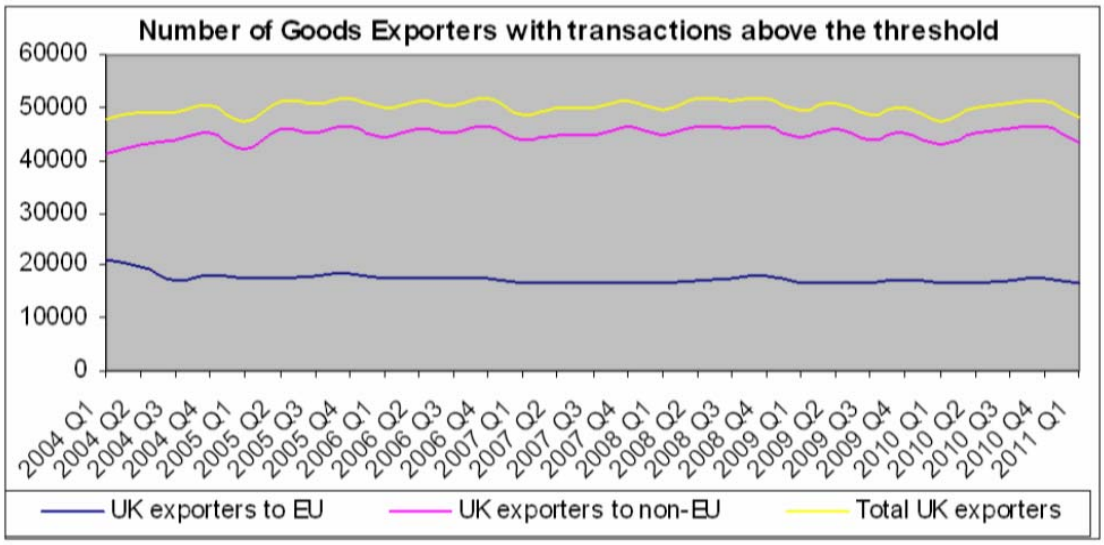
Employment size	Manufacturing			Services		
	2000	**2004**	**2006**	**2000**	**2004**	**2006**
10-49	36.7	39.4	53.6	15.4	18.6	27.7
50-249	64.2	65.6	76.0	21.9	25.7	32.0
250+	72.5	72.9	80.7	25.3	28.9	32.6
Total	43.9	47.0	55.2	15.6	19.9	24.5

Source: Harris and Li (2009)

As an aside, it is worth noting that the increase in the share of exporters in Figure 23 could be attributable to an increase in the number of exporting firms or a decrease in the total number of manufacturing firms, or both. Evidence from Figure 24 shows the number of firms that export has been constant since 2004. This would indicate that the rising proportion of exporting firms in total firms has occurred largely because of a decline in the total number of manufacturing firms, rather than an increase in the number of exporters. This contrasts for France where there does appear to have been a decline in

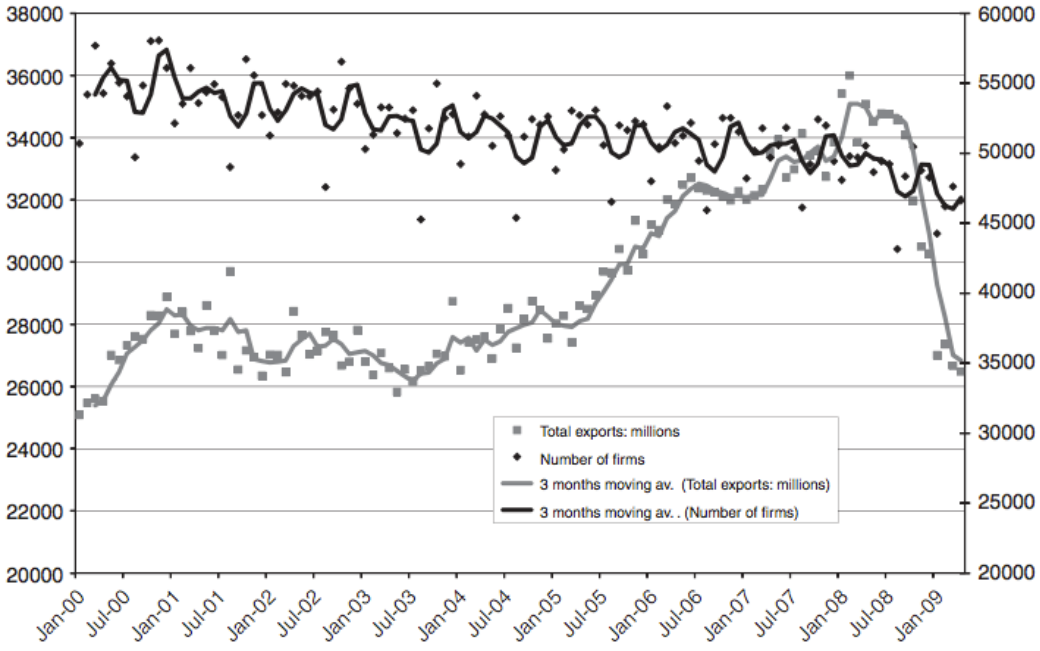
the number of firms that export (see Figure 25). Conversely French exports have grown over the same time frame, particularly when excluding the recent credit crunch period. This would indicate that the firm-intensive margin has been even more important for growth in French exports.

Figure 24: The Number of UK Exporters to EU and Non-EU Markets (with exports exceeding £250,000 threshold for EU trade)



Source: BIS (2012)

Figure 25: Total value of French exports and total number of French exporters 2000-2009



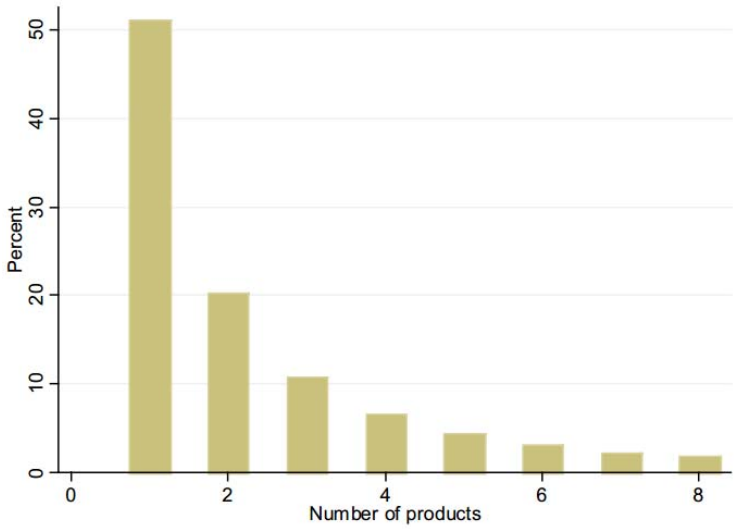
Source Bricongne et al (2012)

2.4 Firm-product margin

A summary of the evidence so far would appear to indicate that the UK sells a similar number of products to a similar number of destinations, but in smaller volumes compared to France and Germany. There are differences in exports by small and large firms between the UK, France and Germany, with small firms being comparatively more important for UK exports and large firms for German exports. In the next two sections we drill down further to consider the comparative patterns in what firms export to where. To be consistent with the layout in Figure 6, we begin by considering what they export. Unfortunately evidence does not exist for the UK on this margin and so while some discussion is useful we are unable to say much on this point.

As described in Figure 6 the firm-intensive margin (how much firms export) can be further extended to add information on products, how many products they export and how much of each product they export (the firm-product extensive and intensive margins). Again it would appear that the intensive margin is the more important. Two facts about the firm-product extensive margin support this view. Firstly, most firms produce many more products than they export (Iacovone and Javorcik, 2010). Most firms export just a single product, even when products are defined in a very disaggregated way. According to data for France reported in Figure 26, 50% of firms export just one product, while a further 20% export two (and a further 10% of firms export 3 products). Firms who export a large number of products are very much in the minority.

Figure 26: Number of Products exported by French Exporters



Source: Berthou and Fontagne (2008)

Secondly, even amongst firms that export multiple products it is usual for just one product to account for the majority of export value. Figure 27 shows for US firms, the share of total firm output accounted for by each of the firm's individual products. Amongst firms that produce 10 products, on average just one of these accounts for nearly 50% of total sales. This dominance of the main product rises as the number of products the firm produces falls. For example, of firms that produce two products, the average split is 80:20.

Figure 27: Average Share of Firm Output accounted for by each product

Average percent of output	Number of products produced by the firm									
	1	2	3	4	5	6	7	8	9	10
1	100	80	70	63	58	54	52	50	48	46
2		19	21	22	21	21	21	20	20	20
3			7	9	10	11	11	11	11	12
4				4	5	6	7	7	7	7
5					2	3	4	4	5	5
6						2	2	3	3	3
7							1	2	2	2
8								1	1	2
9									1	1
10										1

Notes: Columns indicate the number of products produced by the firm. Rows indicate the share of the products in firm output, in descending order of size. Each cell is the average across the relevant set of firm-products in the sample. Sample includes all firms producing at least ten products in the 1987 to 1997 censuses.

Source: Bernard et al (2010)

2.5 Firm-product-destination margin

Each export transaction involves a buyer, a seller, a product and a destination country. The most disaggregated data that is usually available is that on the products that firms export to each destination (as in Figure 6). At this level of detail further differences in patterns of trade between the UK, France and Germany can be uncovered. According to data from the HMRC data lab displayed in Figure 28, the majority of firms export a small number of products to a small number of markets. According to the information in the table, 59% of exporters export between 1 and 4 products to between 1 and 4 markets. Most exporters are focused on a small number of products to a few core markets. In contrast, those big firms that export lots of different products, which were identified as important for any explanation of differences compared to Germany, are rare. In the figure it is reported that only 14% of all exporters export 10 or more products to 10 or more markets. Figure 28 also shows that even though they are rare, they account for a very large share of total export values. The distribution of the value of exports is very different to the distribution of the number of firms that export. The value of exports is overwhelmingly skewed towards the minority of large firms that export many products to many export markets. Firms that export 1-4 products to 1-4 destinations accounted for 59% of all exports, but just 4% of the total value of exports. In contrast, the 14% of firms that exported 10+ products and 10+ destinations account for 89% of the total value of exports. These are the export superstars. Or, to use an alternative piece of evidence: HMRC data shows that in 2010 just 1% of UK firms account for 70% of total export value; with the top 5% accounting for 90%. That piece of evidence is worth bearing in mind when considering the likely impacts of policy on total exports. Unless the policy stimulates the superstar exports the impact on aggregate exports is likely to be modest.

Figure 29 provides the counterpart of Figure 28 for French manufacturing firms, while Figure 30 provides similar information for German firms. For France, the figure shows that firms who export more than 10 products and to more than 10 destinations again represent the minority of firms, only 11% of all exporters. However these same firms account for the majority of the value of exports, 76%. That is similar to the UK. For German exporting firms we find the familiar skewed distribution, a minority of large firms account for the majority of exports (see Figure 30), but also some differences with respect to the UK and France. The evidence in this table indicates that German firms are far more likely to export more products and to more countries than firms in France or the UK. In West Germany 39% of exporting firms sell 10+ products to 10+ destinations, which account for 91% of the total value of exports. In the UK these large volume exporters accounted for 14% of firms and 76% of total value. The figures for East Germany are slightly lower than for the UK. Exports for the combined Germany are therefore larger in the aggregate than the UK because its large firms export more products to more markets and sell in greater volumes when they do. It seems reasonable to conclude from this evidence that this explains the export gap between Germany with France and the UK in Figure 4.

Some recent evidence does show how those superstar export products emerge. Most trading relationships start small and have a high-probability that they will not be repeated. Those that do survive tend to grow very quickly, usually growing along the destination margin. So new exporting relationships (i.e. the extensive margin) account for a small export value initially but become more important over time. Superstar products therefore emerge because of experimentation in products and markets by firms. This matches evidence for the product mix of firms more generally. Firms change their mix of products frequently. In the US, half of firms change their mix of products every five years (Bernard et al, 2010a). This translates into a rapid turnover for export products. The idea of comparative advantage works within firms as well as across countries and industries.

Figure 28: Distribution of UK exports over products and markets

Share of UK exporters in 2010 (total number of exporters 77,774)

	Number of countries			
No. of products	**1 to 4**	**5 to 9**	**10+**	**Total**
1 to 4	58.6	3.12	1.44	63.16
5 to 9	7.53	5.17	3.25	15.96
10+	3.28	4.09	13.51	20.88
Total	69.41	12.39	18.2	100

Share of UK exports in 2010 (total exports: £255bn)

	Number of countries			
No. of products	**1 to 4**	**5 to 9**	**10+**	**Total**
1 to 4	3.6	1.8	6.93	12.33
5 to 9	1.13	1.45	5.89	8.47
10+	1.3	2.28	75.63	79.21
Total	6.03	5.53	88.45	100

Source: HMRC

Figure 29: Distribution of French Exporters over product and markets

Share of French exporters in 2003 (total number of exporters 99,259)

	Number of countries			
No. of products	**1**	**5**	**10+**	**Total**
1	29.61	0.36	0.22	34.98
5	0.76	0.45	0.62	4.73
10+	0.95	0.89	10.72	18.57
Total	42.59	4.12	15.54	100

Share of UK exports in 2003 (total exports: 314.3 billion €)

	Number of countries			
No. of products	**1**	**5**	**10+**	**Total**
1	0.7	0.08	0.38	1.86
5	0.3	0.08	1.06	1.97
10+	0.28	0.45	76.3	81.36
Total	2.85	1.55	85.44	100

Source: Mayer and Ottaviano (2008)

Figure 30: German firms that export 10 or more goods to 10 or more countries

	Number of Enterprises	**Share in total trade (%)**	**Share in all enterprises (%)**
West Germany	4,678	91.1	39.1
East Germany	439	67.8	22.4

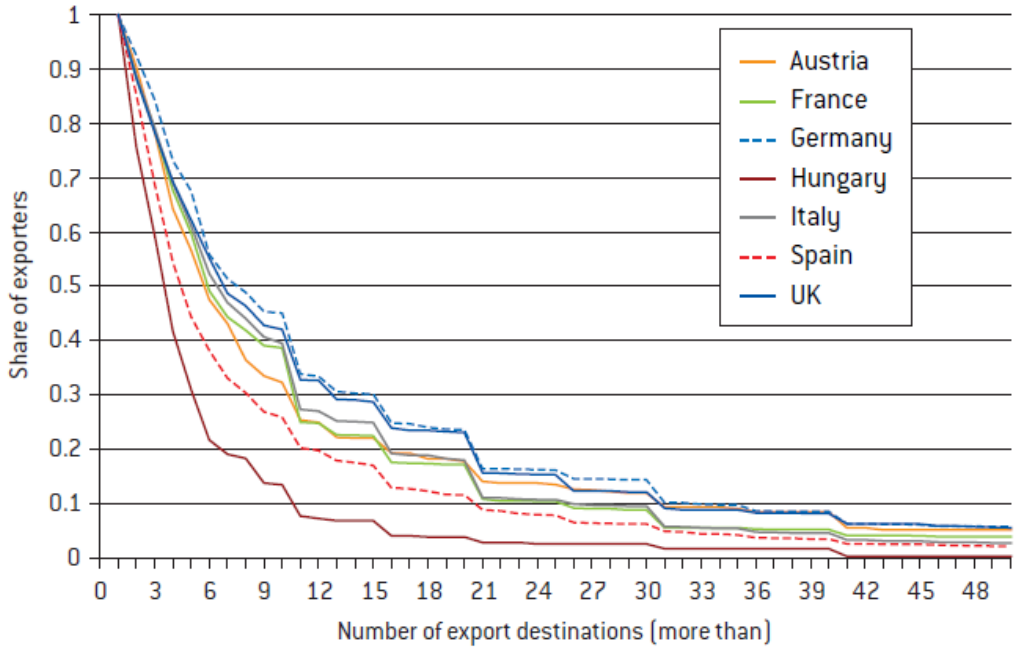
Source: Wagner (2012)

3. Why do UK firms export less than German firms?

Understanding why large UK firms are less likely to export compared to German firms and achieve fewer and smaller export orders when they do is clearly of some importance for the question that this paper seeks to address. Is it due to some inherent characteristic of the policy environment of the UK compared to Germany, or some other UK or German specific factor? Is it due to the industries that they specialise in, which for the UK tended to be high-technology sectors and Germany medium-technology? Or the countries they sell to? Given the relationship between size and exporting, is it due to the size distribution of firms in those countries? Or is it some other weakness within firms, perhaps their management, or the perceived quality of the products that they produce? Unfortunately the piece of research that answers all those questions has never been undertaken and we are left instead to review a disparate array of evidence that might cast some light on this.

In order to focus the discussion we begin by ruling out some possible explanations. Firstly, the difference does not appear to be a failure by UK firms to export to as many destinations as firms from other countries, indeed the UK does rather well on this. Figure 31 shows the number of destination markets exported to by firms from seven European countries. The figure shows that in all countries the majority of firms serve only a small number of export destinations and only a small number of firms export to a large number of markets. For example, only 20% of UK exporting firms serve twenty or more destinations, with 50% of firms serving seven destination markets or fewer. In terms of our main competitors, UK firms export to more destinations than French firms and a comparable number of markets to German firms. A similar outcome is found when we examine the same question but for firms of different sizes (Figure 32). This figure shows that UK firms, irrespective of their size class, export on average to more destinations than French firms, and that they are not much different to Germany. UK firms with between 10-19 employees sell on average to 9 countries, compared to German firms' 7, while the largest firms (249+ employees) sell on average to 27 countries, just 1 less than the average German firm of the same size.

Figure 31: Number of export destinations for exporters, by country



Source: Navaretti et al (2011)

Figure 32: Average number of export destinations of exporting firms by country and size

Size Class	AUT	FRA	GER	HUN	ITA	SPA	UK
10-19	5	7	7	3	8	5	9
20-49	8	9	12	4	10	8	12
50-249	18	14	18	6	17	12	18
More than 249	32	24	28	14	29	23	27
Total sample	12	11	11	5	11	8	13

Source: Navaretti et al (2011)

Is it then something to do with the size distribution of firms of the UK or its industrial structure compared to Germany? As we discussed the UK exports more intensively high-technology products and Germany mid-technology ones, while large firms export more than small ones. Again the evidence suggests only a limited role. In Figure 33 we report a counterfactual exercise from Navareti et al (2011) that imposes the German industrial and size structures on other countries including the UK. For some countries the changes are large. For Spain for example their estimates suggest that this would increase the share of firms that export by 4.3% and how much they export by 2.7%. But for the UK the effects are small; the corresponding figures are 0.6% and 0.4%. This reflects the fact that the export intensity of UK firms is more similar to Germany than are Spanish firms, and that the sectors it specialises in plays a limited role.

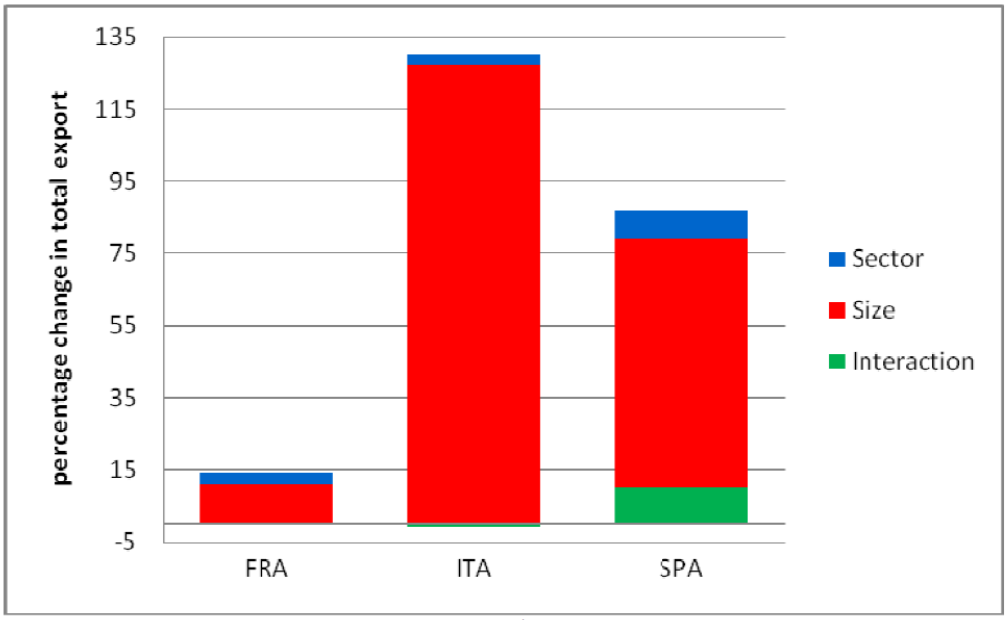
Those are values for the average firm however. Calculating the effect on total exports from these counterfactuals yields a very different outcome for some countries. Whilst Navareti et al (2011) do not perform this for the UK they do so for France, which as we have seen has some similarities with the UK in terms of its comparative advantage in high-technology goods (although there are differences in the average size of firms). We report the outcome from this exercise in Figure 34. This shows that for Spain the

small increases in the share of firms that export and their export intensity reported in Figure 33 would translate into a large increase in aggregate exports of around 80%. For France the figure is 14%, where this mostly comes from differences in the size distribution of firms rather than any sector specific effect (that Germany has more car manufactures for example). Information from Navaretti et al (2011) suggests that the average firm size is smaller in France than the UK, which is on average smaller than for Germany. It would seem likely therefore that the gain to the UK from having a size or sectoral composition similar to Germany would be less than the 14% reported for France. A bigger gain would come from getting those bigger firms to export more products and to more destinations.

Figure 33: Counterfactual exercise, share of firms export and export intensity

Country	**Share of firms exporting**			**Share of export over turnover**		
	Weights		Difference	Weights		Difference
	Own	German		Own	German	
AUT	51.8	53.1	1.3	40.4	41.5	1.0
FRA	44.4	46.7	2.3	28.5	29.8	1.3
GER	44.0	44.0	0.0	30.0	30.0	0.0
HUN	49.1	48.5	-0.6	44.8	46.1	1.3
ITA	63.5	66.0	2.5	34.5	35.7	1.2
SPA	47.9	52.2	4.3	25.9	28.6	2.7
UK	55.7	56.2	0.6	29.1	29.6	0.4

Figure 34: Percentage change in total exports from applying German size-sector structure on other countries



Source: Authors' elaborations from EU-EFIGE/Bruegel-UniCredit dataset

Is it instead something to do with the mix of countries firms export to? Figure 35 compares the number of exporting manufacturing firms active in various destination markets across six European countries. Almost all firms export to the EU15, with 92.3% of UK exporters selling to at least one EU15 country. That is comparable across other

European firms. Where the UK does differ is in the proportion of firms that sell to other EU (non EU 15) and 'Other Europe', which is lower compared to France and Germany. However, as more UK firms export to the US and Canada than our competitors this does not seem to offer a complete explanation. Or at least the answer is not as simple as saying the UK export too little to region X and therefore export policy should be targeted there. UK goods have a greater appeal in some destinations than others. Any explanation for why that occurs needs to go beyond simple geographic ones.

Figure 35: The Geographical Distribution of Export Destinations

Country	EU15	Other EU	Other Europe	China India	Other Asia	US Canada	Central South America	Others
AUT	94.2%	49.9%	46.8%	16.4%	17.7%	22.5%	7.1%	12.4%
FRA	92.5%	36.8%	41.8%	22.0%	27.0%	31.6%	14.7%	30.6%
GER	93.1%	47.9%	52.7%	27.9%	25.9%	36.8%	16.4%	16.6%
HUN	82.0%	50.1%	24.1%	1.6%	5.2%	6.9%	0.7%	4.3%
ITA	89.6%	41.0%	49.7%	17.7%	23.6%	30.5%	19.3%	24.2%
SPA	92.6%	27.6%	26.6%	10.8%	14.3%	18.4%	29.6%	24.0%
UK	92.3%	33.7%	33.7%	25.9%	31.6%	44.5%	15.0%	35.1%

Source: BIS (2011)

3.1 Price and product quality

Whilst Figure 35 seems to suggest that UK firms are as successful in exporting to emerging markets as French and German ones, closer examination indicates that the UK exports less to low-GDP, low-per capita income countries than would be predicted by a gravity model of international trade (see Box 3 for an explanation of the gravity model). Eaton et al (2007) consider UK exports to twelve emerging markets (including the BRIC nations) in comparison to Germany, France, Japan and the USA. Over the period 1994-2005 they found that the UK lost market share relative to these competitor countries in eight of twelve emerging markets. Where the decline export values were most pronounced, it was typically because of a fall in the volumes exported. Unit values were found to have increased, but this was insufficient to offset the fall in export volumes.[11] Consistent with this, Beltramello et al (2012) decomposes aggregate export growth over the period 1995 to 2007 into the contribution from new and old products and new and old destinations (see Figure 36). Whilst this not include information on firms it shows that for the UK, existing products sold to existing destinations account for approximately 80% of export growth. This is less pronounced than our main competitors, for example in the case of the United States, France and Germany the figure is nearly 90%. That points to a conclusion that existing exporters are failing to find new customers in old destinations or are failing to keep sales with existing customers.

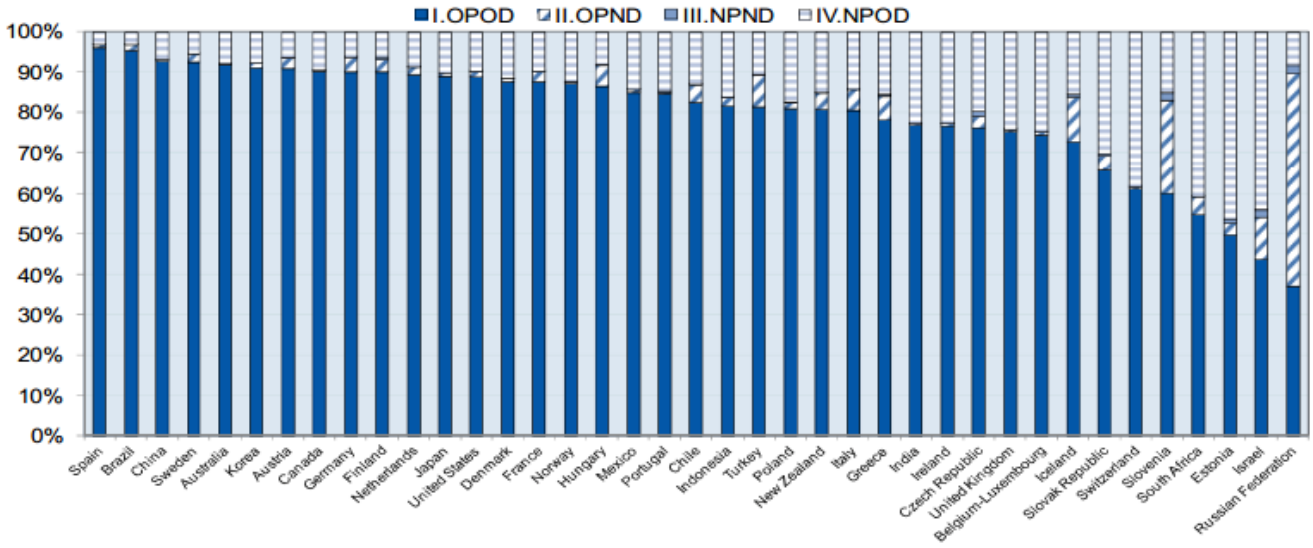
Is that due to some consideration of price, quality or delivery? Eaton et al (2007) concluded from their analysis that East Asian countries continue to buy the products that the UK produces, but from suppliers in other countries. The relative underperformance of

[11] As the authors themselves note, they do not have information on firms and so cannot be sure that this has something to do with the composition of firms or quality. Both quality and differences in price are features of recent theories of firms and international trade.

UK exports, at least to East Asian countries is not a demand composition story, but rather about issues of competitiveness. This echoes a conclusion from Bank of England (2006) who report evidence which suggests that UK firms are price-takers, they tend to follow the prices set by foreign competitors and are less able to pass on cost increases. They suggest from this that the value of the exchange rate may be an important factor for UK firms and an over-valued exchange rate will tend to reduce their market shares. More generally it suggests that UK firms are less able to differentiate their products from their main competitors and therefore maintain market share in the presence of rising costs.

There is not overwhelming evidence to support the hypothesis that price, quality or delivery are inhibiting factors for UK exports though. Figure 37 presents evidence from a survey run by UKTI on the attitudes towards UK firms by foreigners. The evidence in this figure suggests that the UK is perceived relatively well in terms of the business environment and connections and less well in terms of innovation/creativity and quality/value/delivery compared to other countries. On the latter measure the UK is ranked last of the five countries surveyed by UKTI. That said, the gap in its scores for innovation/creativity and quality/value/delivery compared to France, Germany and the US appear quite small.

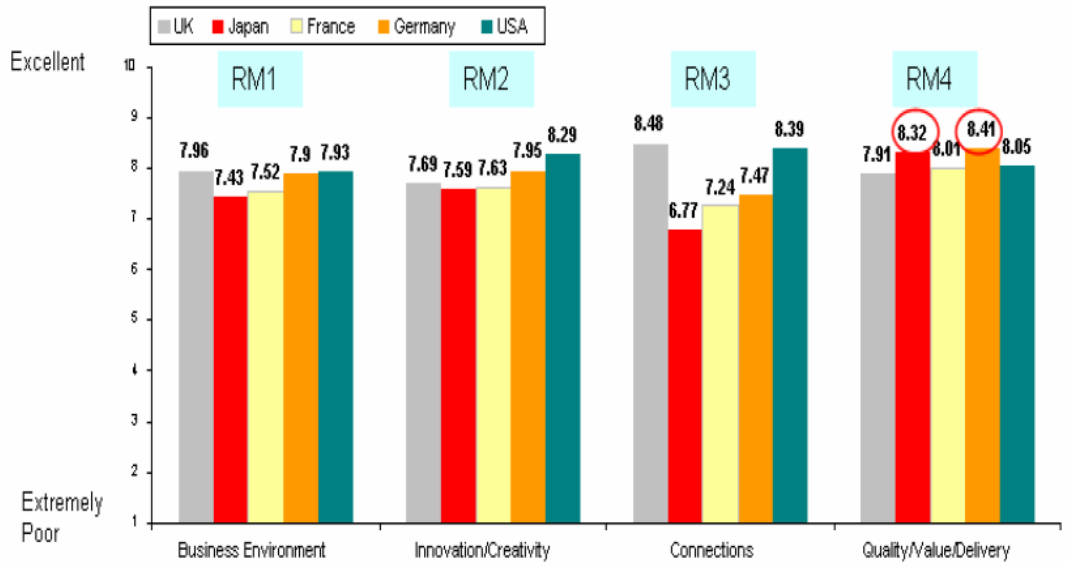
Figure 36: Decomposing export growth 1995-2007 into product and destination margins



Note: OPOD = 'Old Products' to 'Old Destinations'; OPND = 'Old Products' to 'New Destinations'; NPND = 'New Products' to 'New Destinations' and NPOD = 'New Products' to 'Old Destinations'.

Source: Beltramello et al (2012)

Figure 37: Foreign perceptions of the UK and her main competitors



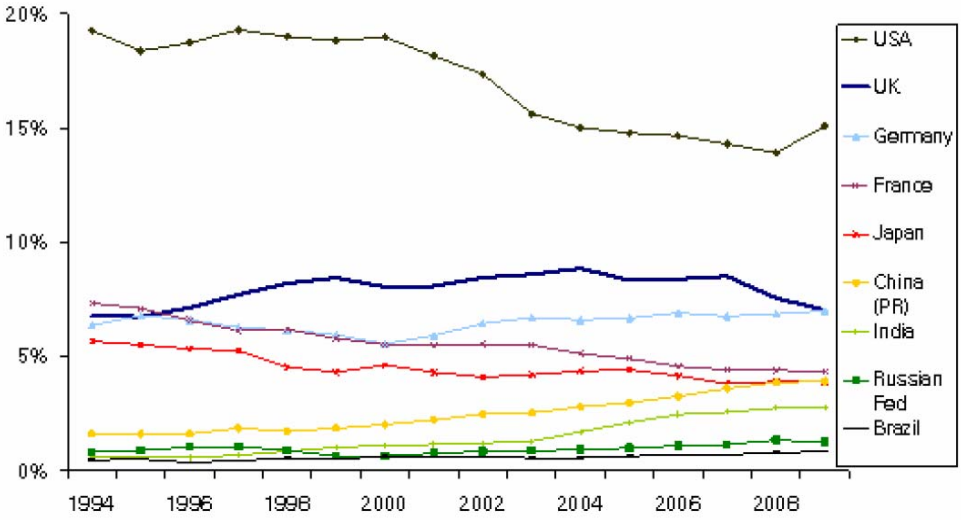
Source: BIS (2011)

3.2 Trade in services and manufacturing firms

An additional aspect of the question about competitiveness of UK exports often discussed in the literature is in relation to the bundling of services along with manufactured goods, or the servicification of exports as it is sometimes called. Before discussing the (limited) evidence on this point we first make clear the literature that we intend to cover here. Services can matter for the export performance of firms within the manufacturing sector because they are bundled with manufactured products as part of the product itself, or because they are used as an intermediate input in production, for example for the distribution or marketing of goods. We discuss the former now and the latter in the next section.

In principle the servicification of manufactured goods ought to be an area of potential comparative advantage for UK manufacturing firms and this is indeed what we find. Over the decade between 1998 and 2008 UK services exports overall increased 156% to $288bn (BIS, 2011). Unlike goods exports, service exports from the UK were approximately equal to the growth of world trade in services, such that the UK maintained its share of world exports (Figure 38). The UK's share of world exports was 7.0% in 2009.

Figure 38: Share of Total World Service Exports



Source BIS (2011)

In Figure 39 we report the value of service exports by type of service (the columns) and the industry of the exporter (the rows) for 2005 from Kneller et al (2010). The numbers in this table are taken from the ONS survey on service exports (ITIS), which is the most detailed source of information on service exports for the UK. One feature of this survey worth noting is that it does not include data on all service types. Data on travel and transport is covered by the International Passenger Inquiry; data on banking, financial and legal services can be obtained from Bank of England surveys; and higher education is covered by Higher Education Statistics Agency. It therefore does not cover some of the service inputs that are used in manufacturing and that we discuss in the next section. We list the services that are covered in Figure 41.

ITIS does include the service exports of manufacturing firms however. According to the data from ITIS, in 2005 service exports by UK manufacturing firms were £18bn,[12] which were just over 14% of total UK service exports. Of this UK manufacturing firms were responsible for around 1/3rd of all exports of technical and royalties and licence fees. The value of business services exports was also large. Manufacturing firms account for 10% of all business services exports, but these account for 45% of the total value of service exports in the ITIS survey. Have these exports by manufacturing firms grown in importance over time? Unfortunately, the evidence does not exist on that although there is evidence for Swedish manufacturers that the share of services in total turnover has risen 25 per cent between 1997 and 2006 for enterprise groups and nearly doubled for stand-alone firms (Lodefalk, 2010).

According to the data reported in Figure 40 the share of service exports by German manufacturing firms is higher than the UK. In Germany manufacturing firms account for 25% of service exports, where 5.7% are from firms producing motor vehicles, 4.6% is from low tech manufacturing firms and 14.3% is from high tech manufacturing firms. But the German manufacturing sector is larger than the UK so does it follow that German firms are more service intensive than UK firms? Some back of the envelope calculations suggests the answer is no. Total German and UK service exports are approximately equal in size (Figure 38), which when combined with the numbers from Figure 39 and

[12] £18bn calculated as 14.38% of total UK service exports of £128bn (ONS Pink book, 2012).

Figure 40 on the share of total service exports accounted for by manufacturing firms implies that exports of services by German manufacturing firms are approximately 175% of the UK value. German manufacturing output is about 230% of UK manufacturing output. This gap is therefore smaller, suggesting that actually UK firms are more, rather than less, service intensive than German firms. This is consistent of course with the UK comparative advantage in the production of services. The bundling of services along with goods is generally viewed as an indicator of quality and therefore is harder to square with evidence on price and quality.

Figure 39: Share of UK Service Exports by Industry of the Firm, 2005

Type of Service Industry of the Firm	Business services	Telecomms. Services	Technical services	Other services	Trade between related enterprises	Royalties and license fees	*Share of total exports*
K Real estate, renting and business activities	62.96	50.25	56.59	31.19	54.80	42.60	56.44
D Manufacturing	9.93	2.73	30.16	2.68	15.22	33.49	14.38
G Wholesale and retail trade	5.00	3.04	4.32	1.08	11.47	20.48	6.82
J Financial intermediation	19.05	0.11	0.00	0.00	1.61	0.00	8.97
O Community, social and personal services	1.98	7.26	0.72	48.12	0.50	2.78	3.51
I Transport, storage and communications	0.61	36.02	2.59	0.58	3.77	0.42	6.72
Share of total exports	45.90	15.34	13.92	2.20	13.32	9.31	

Notes: The cells refer to the share of total services exported of a particular type (e.g. technical services) by firms from a particular industry (e.g. manufacturing). The columns therefore sum to 100%. The totals refer to the share of total exports. The data refer to Sample A in Table 11 for 2005.

Source: Kneller et al (2010)

Figure 40: Share of German Service Exports by Industry of the Firm, 2005

Industry	Exports (bn. Euro)	Share (%)	E+I Share	Imports (bn. Euro)	Share (%)	E+I Share
Primary	0.25	0.3	96.0	0.27	0.3	85.2
Motor Vehicles	5.6	5.7	100.0	4.0	4.5	81.5
Manufacturing low-tech	4.0	4.6	97.7	9.1	10.3	76.8
Manufacturing high-tech	12.4	14.3	98.4	10.8	12.3	91.5
Wholesale & Retail	2.5	2.9	82.8	3.3	3.7	35.5
Construction & Utilities	1.1	1.3	97.3	0.7	0.8	55.4
Transports	18.0	20.8	96.1	11.4	12.9	67.8
Finance, Insurance & Communication	21.1	24.4	99.1	25.9	29.4	95.0
Business, R&D & Computer	22.7	11.5	94.5	7.9	9.0	79.4
Holdings & Oth. Serv.	70.9	14.1	98.4	14.7	16.7	88.7
Total	86.4	100.0	97.2	88.1	100.0	83.5

Note: E+I firms: firms that export and import services.
Sources: MIDI (2007), BoP (2009), authors' calculations.

Source: Kelle and Kleinert (2010)

Figure 41: Types of Service Exports

Aggregate Service Types (10)	*Disaggregated Service Types (38)*
Business Services	Legal services
	Accounting and auditing
	Management consulting and public relations
	Advertising
	Market research and polling
	Property management
	Procurement
	Publishing services
	Recruitment and training
	Other business services
	Operational leasing
R&D	Research and development
Financial Services	Insurance: Premiums
	Insurance: Claims
	Financial services
	Auxiliary services
Affiliated	Management charges
Telecommunication Services	Telephone services
	Postal services
	Computer services
	Information services
Technical Services	Architectural
	Engineering
	Surveying
	Agricultural services
	Mining services
	Other technical services
	Waste treatment and depollution
	Other on-site maintenance
Construction	Construction services
Cultural Services	TV and radio related services
	Other cultural and recreational services
	Health services
Royalties and Licences	Payments/Receipts for the use of intangible assets
	Payments/Receipts for the outright purchase or sale of intangible assets
Trade Related Services	Merchanting
	Earnings from trading in commodities
	Any other trade in services not shown elsewhere

Source: Breinlich and Crisculo (2011)

3.3 Services as inputs

Services can also be used as intermediate inputs in production. But how might this explain a difference between the UK German manufacturing exports? Until recently most economists would have assumed it probably doesn't. Some new evidence has begun to change opinions.

The clearest evidence of the importance of services as an intermediate input used by manufacturing firms is for distribution and sales. Recent research in international trade has started to quantify the extent to which exporters choose to export indirectly through an intermediary firm, rather than providing these services themselves. As one could probably have guessed, many of these intermediaries are specialist wholesale or retail

firms. But the data also show that on a frequent basis they are other manufacturing firms (this has become known as carry along trade in the recent literature).

Why would some exporters choose to distribute their own products, while others allow others firms to do it for them? A natural starting point would be to assume that exporters choose the trade/distribution technology that minimises costs. Intermediaries may help the produce reduce contracting or matching frictions between buyers and sellers, which may be a particular feature when selling some types of products or in some foreign markets (Antràs and Costinot, 2010; Rauch, 1999, 2001). Those choices may also differ across firms within the same industry. Firms who choose to export indirectly tend to be smaller, less productive than those who export directly (Ahn et al, 2011, Davies and Jeppesen, 2012), while those who act as intermediaries tend to be large. One firm on each side of the transaction therefore tends to be large (Blum, Claro, and Horstmann, 2011): large manufacturing firms sell to lots of small foreign customers, whereas small manufacturing firms sell to large wholesaling/retail firms or use other manufacturing firms to export. This suggests that the costs of distribution and sales may be particularly significant for smaller exporters. It also suggests that a successful distribution and wholesale and retail sector may affect the number of firms that export and how much they export, as would the number of large exporters.

Whether trade intermediation or carry-along-trade is different in the UK compared to Germany and this is enough to over-turn the differences in their export patterns is not known, and until that evidence exists one would perhaps not want to overstate its importance. Is it possible to generate this evidence? The most detailed source of information on service exports for the UK is the ITIS survey but it does not report exports of distribution of services.[13] The role of wholesalers and retailers as exporters of manufactured goods could instead be identified from the HMRC customs data, although that research has yet to be done. Measuring-carry-along trade looks possible, but even more difficult. To measure carry-along-trade would require information on both the products that firms produce along with those they export. No existing UK dataset includes such information.

Elsewhere in this report where the analysis cannot, or has not yet, been done for the UK, we have relied on evidence for other countries instead. Unfortunately, this would appear to be of limited value in this case as significant cultural factors appears to be present. In some countries such as Japan and China for example, trade intermediaries have played a historically important role. According to Jones (1998), in Japan trading companies account for over 40% of exports and over 70% of imports, while Feenstra and Hanson (2004) report that Hong Kong intermediated over 50% of Chinese exports. In countries that might be expected to be more similar to the UK, the presence of wholesalers and retailers in trade data are typically less pronounced. For example, according to data from Bernard et al (2010c) US wholesale firms account for 35 per cent of US exporters, but only 8 per cent of export value. The evidence on carry-along-trade is restricted to Belgium, but does seem to be an important factor. It was found that in the Belgian manufacturing sector more than three quarters of the products exported by manufacturers and one quarter of export value are in goods produced by another firm (Bernard et al, 2010b). If those figures carry over to the UK and Germany then to put it mildly, this has evidently been a much neglected issue in the international trade literature.

[13] As far as we are aware it is not possible to use the information from the IPI to identify carry along trade, as this survey does not report the value of transport service exports sold by manufacturing firms.

As a final point this has some implications for the discussion of exports between the UK, France and Germany. The existence of trade intermediaries such as wholesalers and retailers, does not affect the total value of exports of course, but it does affect who is identified as the exporter. Some firms will be classified as non-exporters when they are in fact indirect exporters, so that the ratio of exporters to non-exporters is too low. It also raises the possibility that exports will be viewed as more concentrated in a small number of firms than is actually the case; superstar exporters are actually less common than suggested by the evidence in Figure 28. They are instead exporting the products that others have produced.

3.4 Offshoring and multinational firms

A final aspect of the difference in export patterns between the UK and Germany might be related to the additional ways large firms participate in international markets in the two countries. In addition to being an exporter, a firm can set up a production or sales facility in a foreign market, it can undertake FDI, or it can outsource production of components or final assembly to a different firm overseas, it can offshore.

At the simplest level we might think of FDI as a substitute for exporting. In practice FDI and exporting have been found to be complements, firms who export more are also more likely to be involved in FDI. Firms outsource the production of the goods and services that they use as intermediate inputs in order to reduce costs and/or raise the quality of the goods and services that they require. When this production is relocated overseas it is known as offshoring and when it returns it is known as reshoring (or onshoring). Offshoring has been an influence of the patterns of trade since the invention of just-in-time manufacturing in the early 1980's and has continued with further technological advancements in the transportation sector through the increased use of ICT. The higher costs associated with establishing and running international production networks means that only the best firms in an industry, the biggest and the most productive, tend to import and export intermediate inputs. But what determines the mode of offshoring, whether to use FDI or another firm to produce the input or conduct final assembly? The economics literature suggests that FDI occurs when the buyer of the input makes the investments that have greatest importance in its production, whereas outsourcing occurs when it is the producer of the input that makes those important investments. The firm might also prefer FDI if it fears the leakage of its technology to other firms.

The superstar exporters are therefore very likely to be multinational firms involved in FDI or international outsourcing (offshoring). This indicates that both are likely to be an important factor in trade flows. How important they are is a little harder to answer, in part because the UK customs data does not identify which firms are multinationals. Kneller and Pisu (2004) report that in 1996 UK multinationals accounted for 33% of exports by manufacturing firms (they account for 28% of output), while foreign multinationals accounted for a further 10% (they accounted for 5% of output). They also note that these are trends that have been rising over time. Using a better quality of data for the US, Bernard et al (2010a) estimate that in the year 2000, 95% of total exports were by multinational firms, where about 1/3rd of these were to other parts of the same firm (an indicator of offshoring).

How does FDI and international outsourcing compare between the UK, France and Germany? We can find no evidence regarding how these firms respond to variables that might determine the choice of location such as policy or wages, nor how this feeds back

onto export behaviours. There is some evidence from Navaretti et al (2011) on the share of firms engaged in these types of activity though, where this study is unusual in including information on FDI together with international outsourcing (labelled IO in the figures). Measured by the share of firms that undertake FDI or offshore the UK appear similar to France and Germany; the shares are 8.7%, 8.2% and 9.2% respectively. Of greater significance would appear to be the share of firms involved in FDI or IO across firm size class. Here the shares are similar for most size classes, but much lower for the UK for firms with 250+ employees. According to the evidence reported in Figure 42, 38.4% of German firms with 250+ employees are involved in FDI or international outsourcing compared to 23.3% for the UK. In contrast to that, the share of firm turnover from imports that come from IO or FDI is higher in the UK though, 45.4% versus 31.7% and 31.1% for France and Germany. UK firms are less likely to use FDI/IO but use it more intensively when they do.

A further difference that Navaretti et al (2011) note between Germany and the other European countries is the tendency for German firms to use FDI rather than international outsourcing. Of those firms involved in either FDI and/or international outsourcing, the share of German firms only involved in FDI is 57%. For the UK the corresponding figure is 50% and in France it is 33.5% (a further 8% of German firms, 12.6% of UK firms and 12% of French firms engage in IO and FDI). This may of course reflect a desire to protect technology leakage by German firms, a source of their technology advantage, but Navaretti et al (2011) argue FDI and international outsourcing tend to be used for different purposes in these countries. According to their data FDI is predominantly used for sales in foreign markets, either the ones where the affiliates are based or other foreign markets. Again that difference may be important, and it is interesting to speculate whether it has a relationship with carry along trade. That the large German firms are geared towards sales in foreign markets and they provide export assistance to smaller firms. Blum et al (2009) discuss the role of multinational firms in trade intermediation. Those differences are worthy of future investigation.

Figure 42: Share of firms doing FDI and/or IO by country and size class

Size Class	AUT	FRA	GER	HUN	ITA	SPA	UK
10-19	5.9	5.3	3.5	4.7	3.6	2.0	5.7
20-49	5.6	5.7	7.6	3.0	5.8	3.8	6.7
50-249	22.1	13.6	13.0	2.8	12.9	8.3	14.2
More than 249	40.9	30.8	38.4	12.7	32.4	25.7	23.3
Total	11.1	8.2	9.2	4.0	6.2	4.2	8.7

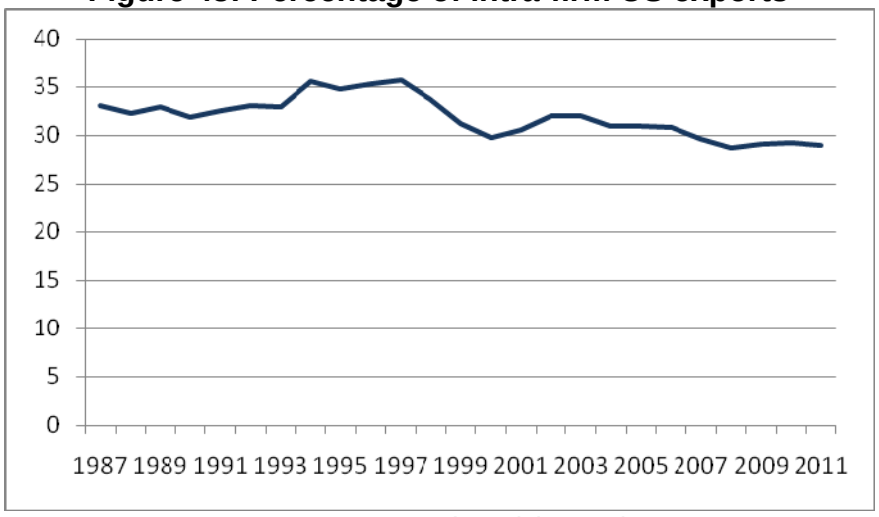
Source: Navaretti et al (2011)

Finally in this section we note that even though offshoring are a feature of trade data it effects on exports are complicated. Whilst offshoring would be expected to increase world trade in general, its effects on the exports of a single country depend on the mix of tasks for which the UK has a comparative advantage versus disadvantage (the share of non-consumption goods in total exports has actually fallen only slightly between 1990 and 2011). The effect on trade could be negative, if production is moved elsewhere, or positive, if the UK-part of production occurs near the end of the production chain (as an example see the importance of aircraft manufacturing in French exports in Figure 12 owing to the Airbus final assembly facility near Marseille). It might also have stronger

effects on the service sector, as evidenced by the changes in the location of many headquarters to the UK.

To demonstrate the uncertainty of the effect on exports, Figure 43 shows the proportion of the total value of US exports that was to foreign subsidiaries of US firms. Multinational firms are heavily involved in offshoring and so it is insightful that the share of intra-firm exports in total US exports has if anything declined over the last two decades. Offshoring has not led trade in intermediate inputs by multinational firms to increase beyond the growth in exports as a whole, at least for US multinational firms.

Figure 43: Percentage of intra-firm US exports



Source: Bernard et al (2010a)

4. What is the future of UK exports?

Our broad conclusion from the first part of the report is that once the smaller size of the UK manufacturing sector is taken into account, on most measures it performs similarly to France. That is, it is a successful exporter of manufactured goods. The exceptional performer is Germany, where this difference is explained by the performance of its large firms. It has more export superstars then the UK and France. But what is the likely future of UK exports? That depends on what are the future drivers likely to be? We separate our discussion into three groups. In line with the above we first discuss country, firm and then product factors, which we can think of as capturing the underlying economic factors that might lead to an increase in exports. Finally we present some forecasts for UK exports.

4.1 Country factors

Historically the growth in UK exports in the post-war period has been driven mainly by exports to EU countries. This increase in the share of UK trade accounted for by European countries has reflected both reductions in trade costs, for example the reduction in policy induced barriers to trade during the creation of the single market, and rising GDP levels. The gravity model describes how countries that have a large economic mass (large GDPs) and that are close (the distance between them are small) will tend to trade with each other in larger volumes than pairs of countries that are economically small and are separated by a large distance. One set of estimates calculated by Mayer and Ottaviano (2008) are reported in Figure 45. The data used to construct this figure are transaction level international trade data (firm-product-destination) for France (1998-2003) and Belgium (1996-2004). These are then aggregated and the gravity model is estimated. The results reported as the red-diamonds in the figure match the expectations; the coefficients have the expected signs and values. According to trade theory, a 1% increase in importer GDP will increase trade volumes by approximately 1%. Empirically this prediction finds support in the estimates of Mayer and Ottaviano (2008). They find a 1% increase in importer GDP increases trade by 0.93%.

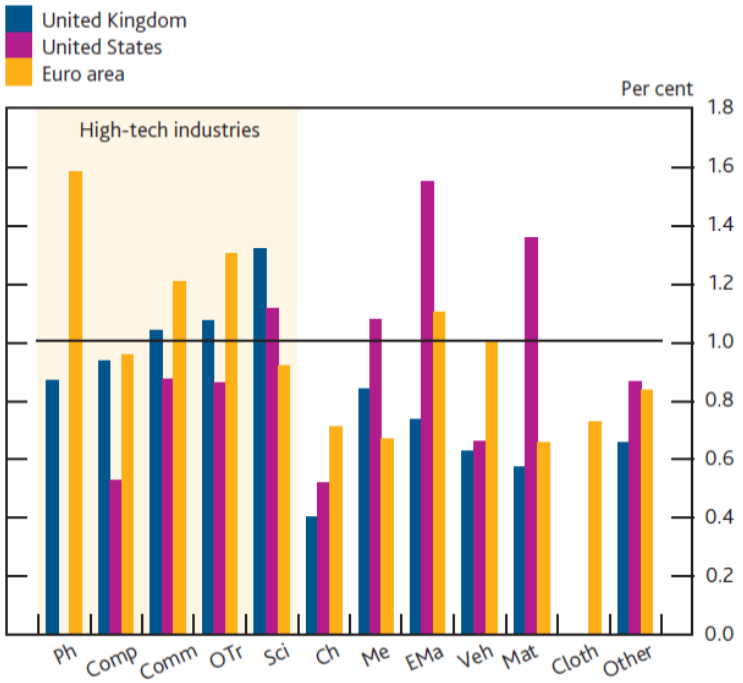
Most forecasts for world GDP growth are in the range 3-4% over the coming decade, although for the BRIC countries GDP is forecast to grow at between 7% and 10% per year. The gravity model implies total UK exports are likely to increase in a similar rate (about 3-4%). The fast rate of growth of exports to BRIC countries will be offset by slower growth to other countries. As exports to the BRIC countries are dwarfed by exports to the EU (8% and 54% respectively in 2011), a relatively modest growth in demand across the EU would still have a larger impact on total UK exports.

Given the emphasis on firms, products and destinations in the discussion so far an interesting question is how these changes in demand will translate into changes in the number of firms that export to each destination, the number of products sold by each of these firms and the value of the export transaction of each product. The disaggregated nature of the data used to construct the estimates in Figure 45 allows this decomposition to be done. Of the 0.93% increase in trade for each 1% increase in the income of the importer, the figure can be used to estimate how much of that change comes from changes to the number of firms that export to that destination, the number of products those firms export and how much they export of that product to that destination. According to Figure 45 the effect of income (exporter or importer) comes mainly through changes to the number of firms that export. The number of exporters (firm-destination

extensive margin) will increase by about 0.55% for every 1% increase in importer GDP. The number of products (firm-product-destination extensive margin) will increase by about 0.50% for the same change in importer GDP. The average value of each product these firms export (the intensive margin) is actually expected to fall. That last result is particularly interesting given the disparity between UK and German export performance was found to be driven by the intensive margin, how much they export of a product to a particular destination. In the future the evidence indicates that it is likely that more UK firms will export to emerging markets and the range of products they export will also rise.

As well as changes to the composition of exports across countries we might also anticipate changes to the composition of export products. The UK's comparative advantage in high-technology sectors indicates that this will be a main source of export growth, but how much stronger are these effects expected to be? Figure 44 compares the responsiveness of trade volumes to world GDP across a range of sectors for the UK, USA and Euro area. The good news from this figure is that the sensitivity of UK exports are typically highest where the UK has a comparative advantage, high technology products, although note these are around one rather than consistently above one, as would be required were the growth of exports to far exceed world GDP growth. Evidence from Bank of England (2006) therefore indicates demand factors will tend to reinforce the relative importance of these comparative advantages sectors in the future.

Figure 44: Responsiveness of export volumes to a 1% change in world demand

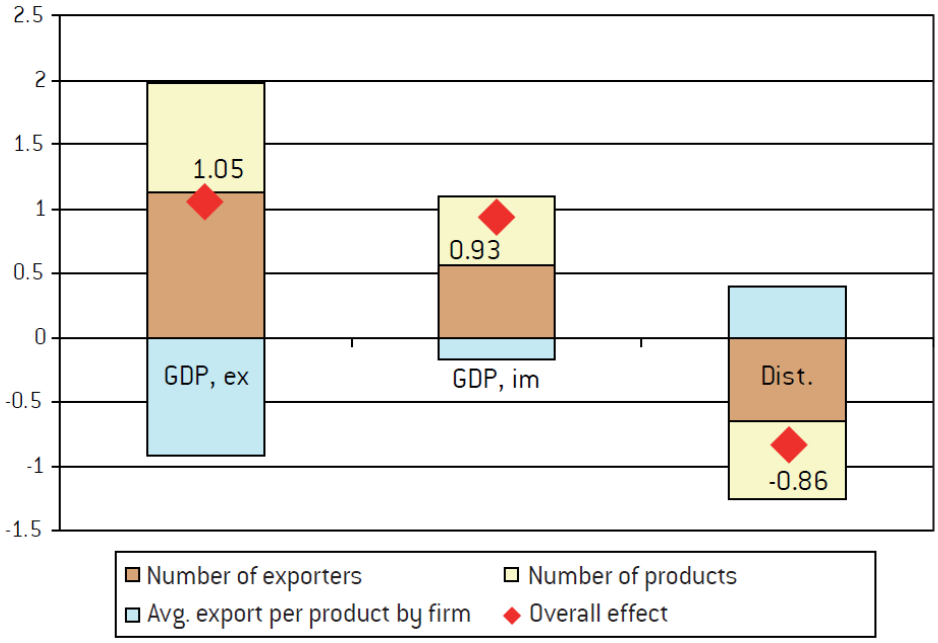


Source: Bank of England (2006)

A historically important determinant of UK exports has been changes to trade policy. Research has shown that the removal of policy barriers, for example through removal of tariffs as part of free trade agreement (FTAs), can have a substantial effect on trade. Baier and Bergstrand (2007) consider a wide range of FTAs across the world and find that on average joining an FTA doubles bilateral trade after 10 years. The UK has eliminated policy barriers with her major trading partners for some time though. Whilst some policy barriers between EU countries and others still exist, given the typical

importance of these destination markets and the distance involved, it is likely the future potential for trade creation will be relatively limited. Perhaps more likely are positive effects on trade from the reduction in non-tariff barriers such as regulation and standards, as well as from liberalisation of trade in services. That is if these liberalisations can be secured.

Figure 45: GDP, Distance and the margins of trade



Source: Mayer and Ottaviano (2008)

Box 3: The gravity model

The gravity model is an equation that explains trade flows between pairs of countries. Shown to be consistent with a number of different theories of international trade, the model predicts that pairs of countries that have a larger combined economic mass, they have larger GDPs, trade in larger volumes compared to pairs of countries with a small economic mass. Similarly, pairs of countries that are geographically and culturally close, whether they are a short distance apart, share a border, a language, or some colonial link tend to trade more with each other than pairs of countries that are distant. These few variables can explain most of the patterns of trade between countries, which helps to explain why this model is viewed as the workhorse empirical model in international trade.

4.2 Firm factors

The recent availability of firm-level micro data has highlighted the importance of firm characteristics in determining trade flows. Firms are heterogeneous and the characteristics of the firms that export are different from those who do not. Firms who export are typically more productive, more skilled labour intensive and more capital intensive (e.g. Bernard et al, 2007; Wagner, 2007) and within the set of exporters, the more productive firms export more products to more destinations and export larger volumes to each market (Bernard et al, 2010a). It follows that as these characteristics improve, exports will rise accordingly. Encouraging improvements in the productivity of UK firms (reductions in inefficiency or increases in technology), or the quality of inputs

they use (skilled labour, services such as design sales or support, components etc.) will therefore have an effect on UK exports. In Figure 23: Percentage of UK Establishments Exporting, 2000-2006, by Sizeit was noted that the share of UK firms that were exporting has risen over time, possibly because of this improvement in the characteristics of firms. This is an area where additional policy support towards supporting manufacturing firms more generally would yield positive benefits for exports.

Some view a more rapid increase in exports as being likely to occur because of the continued fragmentation of the production process. Whilst it is possible to imagine a continuation of the trend towards greater use of offshoring, more recently predictions have been made that the process of outsourcing production overseas might be reversed, at least for the production of some types of product. Reshoring might occur as labour costs increase in China and other locations used to offshore manufacturing, or because of the threat to supply-chains from natural disasters or political interventions. Technological changes such as additive manufacturing (3-D printing) could also lead to some offshore production returning to the UK. 3D printers operate by building objects layer by layer from a raw material much as the way inkjet printers layer ink onto paper. One of the interesting features of this technology is that unlike traditional mass-production, the fixed capital costs and need for stocks of components are much lower. There is an argument that this would encourage manufacturing to locate close to centres of design and innovation and will reduce the importance of economies of scale as a factor in the location of some types of manufacturing (a gain from trade listed in Box 1). For products that use this new technology, growth in distant markets would seem likely to have a reduced impact on exports as a result and trade may instead become more regionalised. Indeed this technological change along with higher costs in traditional locations used for offshoring seems likely to be a factor that causes increased trade between developed countries, even without rapid growth in demand. Given the potential for growth in the use of additive manufacturing, the extent to which the UK can act as a hub for design and innovation i.e. in the use of this technology, the more likely its exports are to benefit from this change.

4.3 Products

It is extremely difficult to predict which products are likely to dominate exports in the future, what the future superstar products are likely to include. Clearly technological change, consumer tastes and other factors all have a role to play.[14] Whatever they turn out to be, UK companies need to be ready to respond to those demand and technological changes and ensure that they deliver competitively priced high-quality products. Those are of course not just concerns that are specific to exports. These new products may be more likely to occur in sectors in which the UK has a comparative advantage, or in sectors expected to have future strong growth in demand, such as biotechnology or environmental technologies, but they could in principle also occur in comparative disadvantage sectors.

A final factor that has been identified as a possible driver of UK manufacturing exports is the rising complementarity from services. The distinction between the goods and service products is becoming increasingly blurred. We noted earlier that a significant proportion of manufacturing firms engage in trade in services. In some cases this will reflect the

[14] BIS (2010) identifies Life Sciences, automotive, electronics, food and drink, aerospace, space, composites and low carbon as manufacturing industries which could benefit from the expected changes in global and domestic demand.

provision of headquarter services to foreign affiliates, particularly where production has been offshored. In others the export of services is likely to be complementary to the traded good. For example, Rolls-Royce provides maintenance services along with their aircraft engines. Future attempts to increase UK manufacturing exports should recognise the comparative advantage that the UK has in services and attempt to increase the servicification of UK manufacturing exports. Growth of the UK service sector may therefore be a factor which helps to drive UK manufacturing exports in the future.

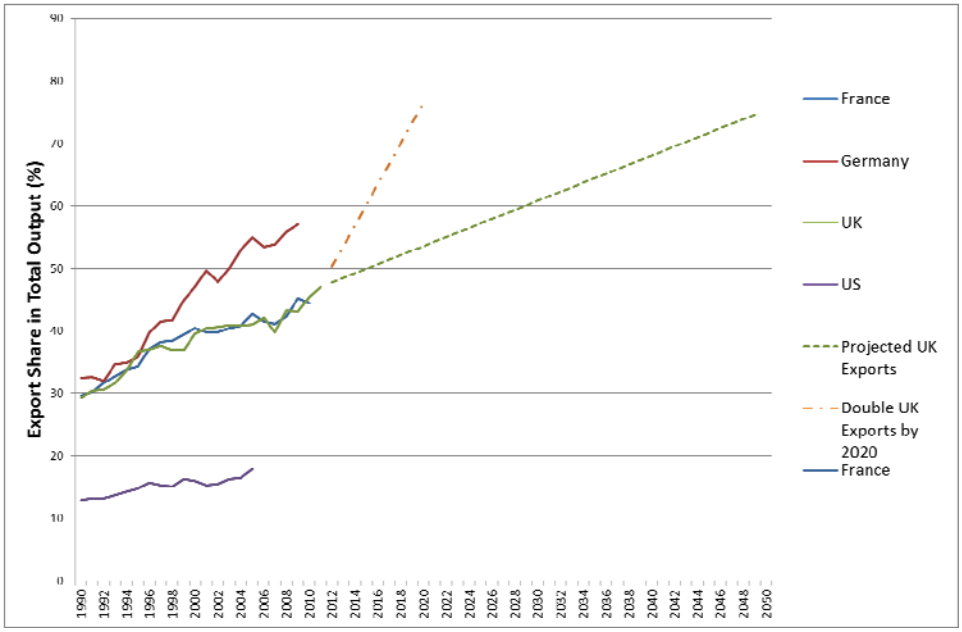
4.4 Forecasts for UK exports

The 2012 Budget outlined a commitment to double UK exports to £1 trillion by 2020 (they were from £493bn[15] in 2011). This implies growth of total exports of around 9% per annum until 2020. These are consistent with recent predictions by the Ernst & Young ITEM Club who forecast UK export growth of 8.5% per annum over the coming decade, with growth of exports to BRIC countries of 11.7%. To provide some historical context to those estimates; this rate of growth is very similar to the growth rate of exports between 1970 to 2011 (calculated in nominal terms), although over the last decade the average rate of growth of UK exports has been much lower, at 2.8% per annum, and 3.8% per annum for manufactured goods. Note for services it was 7.5% (BIS 2012). To make that point clear: growth of the nominal value of exports has slowed during the low inflation environment of the last decade, the growth of the real value of exports less so. The Budget commitment and Ernst and Young forecasts are therefore for rapid growth in real export values.

Assuming that manufacturing exports increase in line with those for total exports, the projected rate of growth necessary to double manufacturing export values is significantly faster than the rate of growth of manufacturing output over the last few decades (or any future forecasts), thus implying a rising share of exports to total output. If manufacturing exports increased in line with the Budget commitment for total exports this would suggest exports of £450bn by 2020 (in nominal terms). The current share of UK manufacturing production that is exported is currently around 47% (see Figure 46 below). If UK manufacturing were to double by 2020, taking into account projected inflation over the next eight years[16] and assuming no change to real output of the manufacturing sector (as has occurred over the last decade), this would suggest an export ratio of over 78%. That is close to 4/5^{ths} of all UK manufacturing production would need to be exported to double exports by 2020. If service exports by manufacturing firms are added to this then the projected increase in the export ratio would be to 87% by 2020 (from 52% in 2011), which would suggest an export value of £504bn. Given that our most successful main competitor (Germany) currently exports 57% of manufacturing output (59% when adding services exports) the target to double exports appears particularly challenging to meet. We view this as an upper-bound of the likely forecasts that we present in Figure 46.

[15] Source: ONS Pink Book, 2012.
[16] Using projected CPI inflation rates from Office for Budgetary Responsibility as of March, 2012.

Figure 46: Forecasts for the Share of UK Manufacturing Exports to Total Output



Our lower bound forecast for UK manufacturing exports assumes that the growth of exports presented in Figure 46 continue along a similar trend to that found historically. The rising trend of exports to manufacturing exports over the last 20 years has been caused by rising demand, falling trade costs, increased imported intermediate inputs, technological changes within manufacturing and to transport and communication technologies, improvements in firm characteristics, product innovation and offshoring. Even though the world economy has experienced a period of rapid globalisation, the effect on the share of exports in total manufacturing output in Figure 46 is very clearly a linear trend.

On average, over the last 20 years the ratio of exports to manufacturing output has increased by around 0.7 percentage points per year. Projecting forward this would imply an export to output ratio of 54% by 2020 and an export value of £310bn (59% with services, generating an export value of £342bn). At current trends manufacturing exports would double (£450bn) by 2032, some 12 years after the upper-bound forecasts, and reach £800bn by 2050. This rate of growth of nominal exports implied by this forecast is 3.6% per annum, close to the average of the last decade, and close to forecasts for growth rate of world GDP discussed above. This forecast is given by the green line in Figure 46 and forms the lower bound of our estimates. It also forms the estimate that we view as the more likely outcome. In the earlier discussion of the future drivers of UK exports, we could find many factors which suggest that who exports, and what and to where, is likely to change significantly in the future, but nothing to suggest that this will fundamentally change the aggregate pattern described by Figure 46.

5. Policy discussion and conclusions

BIS (2011) provide a detailed discussion of the rationale for government intervention to aid exporters and exporting (summarised in Box 4). Naturally, much of that discussion focuses on the role of market failures and in particular the barriers to exporting faced by fast growing and innovative firms. BIS (2011) argue that for these firms the incidence and intensity of barriers to entering export markets are particularly large. The evidence presented in BIS (2011) suggests that market failures occur at the level of the firm, because of barriers to export market entry, at the country level, because of the weak institutional setting of some countries along with non-tariff barriers such as regulation and standards, as well as at the level of the export transaction, because theirs exist difficulties in aligning the needs of buyers and sellers.

Box 4: Roles for Government (BIS 2011)

- Provision of information where it would not otherwise be available at an appropriate cost;
- Facilitating beneficial private sector cooperation;
- Strengthening the social networks and institutions which underpin private sector activity in trade and investment, especially in culturally distant markets;
- Helping businesses overcome barriers to market access, including through political and diplomatic support;
- Supporting investment in building up the pool of business knowledge and skills relating to doing business in overseas markets.

One source of evidence on the relative importance of various barriers to exporting can be drawn from surveys of firm perceptions, although as noted in BIS (2011) it should not necessarily be inferred from the perception of a barrier to trade that there is a corresponding market failure.

Figure 47 reports the barriers to trade across UK exporters. As already discussed legal & regulatory are the most frequently cited barrier to trade. The table also lists barriers such as resource and language, which are internal to the firm, as commonly cited barriers to trade.

Figure 47: Barriers to Entering New Markets

The table shows the % firms reporting very significant barriers (% giving ratings of 4-5), using a 1-5 scale, where 1 – not difficult, and 5 – extremely difficult	Total	
	Production	*Services*
Base: All exporters	287	552
Types of barriers		
Legal & regulatory	42%	40%
Customs	30%	25%
Contacts	32%	25%
Information	18%	15%
Resource	22%	19%
Language & cultural	19%	19%
Bias	18%	17%
Number of barriers		
At least one barrier	70%	64%
- One	17%	17%
- Two	16%	15%
- Three	11%	12%
- Four or more	25%	20%
No significant barriers	30%	36%

Source: BIS (2010c)

Kneller and Pisu (2008) show how variables such as export experience (measured by the number years they have been exporting and the share of turnover exported) as well as firm characteristics (measured by size, whether they are owned by an MNE) are correlated with the number of times firms identify a barrier to exporting. Using data from a UKTI survey that covers both exporters and non-exporters, and users and non-users of UKTI support, the results from regressions for the number of barriers from this research are reported in Figure 48. There were a total of 12 questions on the barriers to exporting asked in the survey, 5 of which were about networks and marketing,[17] 3 were about procedural issues and exchange rates[18] and 4 about cultural barriers.[19] On average firms reported they faced about 4 (out of 12) barriers, which approximately equated to 2 for networks and marketing barriers and 1 each of the barriers relating to procedural and exchange rates and cultural factors. The figure also shows how these barriers change with the export experience of the firm (significant differences are denoted by the numbers in bold).

For the total number of barriers Kneller and Pisu (2008) found that firms with 2-10 years of prior export experience report significantly more barriers than firms that are new to exporting or are very experienced exporters. That is the number of barriers actually rises with experience, at least initially. This is consistent with the idea that barriers to exporting occur not just at the firm level, but also at the firm-destination-product level. There are also some interesting differences across the types of barrier. Networks and marketing barriers fall as the firm becomes more experienced at exporting, whereas procedural and cultural barriers rise and peak when the firm has been exporting between 2-10 years. The authors also find that there is little or no correlation of these barriers with the size of

[17] These were: Obtaining basic information about an export market; Identifying who to make contact with in the first instance; Building relationships with key influencers or decision-makers; Establishing an initial dialogue with prospective customers or business partners; The marketing costs associated with doing business in an overseas market.

[18] These were: Dealing with legal, financial and tax regulations and standards overseas; Logistical problems; Exchange rates and foreign currency.

[19] Language barriers; Cultural differences (not language); Not having an office or site in an export market; A bias or preference on the part of overseas customers for doing business with firms established in their own country

the firm or ownership. It would seem from this evidence that the types of barrier, and therefore the type of support needed by firms, changes according to the type of market-product they are trying to enter and that it is not just simply a case of providing firms support in order to enter their first export market or support to small firms. On the back of such evidence UKTI have introduced a new export service called 'gateways to global growth' which targets these more experienced exporters.

Figure 48: Estimated Number of Barriers to Exporting and Export Experience

Barriers to exporting	Total	Networks and Marketing	Procedural and Exchange Rates	Cultural
Maximum	12	5	3	4
Mean	4.2	1.8	1.1	1.3
Export Experience				
First Market	**4.14**	**1.94**	0.99	1.21
2-5 years	**4.37**	**1.90**	1.07	**1.36**
5-10 years	**4.59**	**1.81**	**1.26**	**1.45**
10-20 years	**3.88**	**1.60**	1.16	1.13
20+ years	3.29	1.30	0.97	1.04

Source: Kneller and Pisu (2008)

Comparing the barriers reported by firms who succeeded in entering the export market and those who did not gives an indication of which barriers are important to start exporting. For UK firms Kneller and Pisu (2011) found that key barriers were a lack of information about the market or foreign contact, cultural differences and a lack of foreign presence. Of interest for the last of these, the Budget 2012 includes an ambition to secure temporary private sector office space for new UK exporters in high growth countries where such services are difficult to obtain. Alternative evidence for possible information asymmetries can be found from the literature on demonstration effects. The presence of other firms that export the same product to the same destination significantly raises the probability that others will start to export (e.g. Koening et al, 2010), although the size of the effects are relatively modest.

We are aware of no evidence on the effectiveness of export promotion for the UK beyond that detailed in BIS (2011). We instead draw on the patterns to export behaviour discussed in earlier sections of this report to note the frequency with which any interventions are likely to succeed and how strongly those interventions are likely to affect aggregate exports. The pattern of exports we have uncovered would tend to suggest that the majority of export promotion support will deliver export sales that are relatively small in size and last for short periods of time, if they succeed at all. That is entirely consistent with the majority of export transactions that occur. There will however, be some interventions that yield large export values, consistent with the fact that some products go on to become highly successful. Export promotion therefore can help 'export superstars', and indeed its effect on aggregate export outcomes will occur primarily through these few superstar products. The answer to a question of whether export promotion affects the rate at which these superstars are found is not known, but there is some evidence to suggest that some factors can help to predict who benefits. Breinlich et al (2011) use UKTI survey data to investigate the characteristics of firms that are more likely to report very high returns to UKTI support (defined as more than £500,000 of additional profits). They find three characteristics that strongly predict which firms were more likely to identify these effects. These were whether the firm had been exporting less than 10 years; had more than 10 employees; and had a written business plan that

includes overseas sales.[20] Highly innovative firms were also more likely to identify these large benefits from export support, but these effects were not consistently significant. Why those characteristics of firms, and not others, matter, or whether it is because the type of support provided is optimal for those firms is unknown. As successful exports products emerge through the experimentation of firms in their product-mix, until further evidence exists, this suggests that participation in any export promotion schemes should not be restricted to particular firms, products or countries.

What about other recent changes to policy? Alongside the ambition stated in the 2012 Budget to double UK exports, was an intention to expand the overseas role of UK Export Finance to enable it to develop finance packages that could help UK exporters secure opportunities identified through UK Trade and Investment's High Value Opportunities programme; and to continue to increase UK Export Finance's regional presence in the UK to support small and medium sized businesses seeking trade finance. Evidence exists to suggest that access-to-finance and the terms of available finance are a relevant factor for the firm intensive margin and therefore that this will have a positive effect on UK exports.

Financial frictions affect export behaviour because of the longer delays in receiving payment compared to serving the domestic market, because of asymmetries in the information held by each party in the transaction and because of differences in the legal framework of countries. Credit constraints are likely to be a particular burden for small firms who are less able to raise finance externally and have smaller internal working capital (Damijan et al, 2010). There is also evidence to support the view that finance matters for exports. Credit rationed Italian firms have 38% lower average export values than non-credit rationed (Minetti & Zhu 2011) and there is similar evidence for Chinese firms (Manova et al, 2011; Berman and Hericourt 2010). Besedes et al (2011) also report that the effects of finance on exports are short-term in nature, affecting product-destination combinations for 2-3 years. For the UK Guariglia et al (2007) report that firms with better financial health are no more likely to start to export, but strong evidence that exporting improves the financial position of the firm. The effect on the survival of UK firms can be found in Gorg and Spaliara (2009).

That leaves unanswered the question as to whether there are policies that would help the UK to close the export gap relative to Germany. Unfortunately, we can find no study that provides a definitive answer to why that gap occurs in the first place and therefore have little evidence on which to argue for any particular type of policy support. Further investigation of this issue is needed first. It is also probable that superstar exports will not emerge from policies aimed specifically at exports at all. Superstar export products are most likely to emerge from experimentation in products to be sold in both domestic and export markets. Policy intervention should therefore be designed such that it makes the investment in new products more likely, and more likely to succeed when it occurs. Only firms can uncover those products, and policy should therefore be designed such that it encourages them to do so. Export promotion policy will be effective only once the potential export products emerge. This again indicates that factors that drive firm productivity, competitiveness, innovation and product quality (including intangible factors such as design and marketing) are likely to be important and that policy should be designed that encourage these.

[20] It is likely that the significance of this variable is explained by its correlation with unobservable characteristics of the firm such as managerial ability. A causal effect from this variable should not be inferred.

5.1 Conclusions

The UK is a large and historically successful exporter of manufactured goods and services. It is likely to remain so in the future, even if other countries export in greater volumes and it falls down the rankings.

The key reason for the difference in how much it exports compared to France and Germany, its main competitor countries, is the size of the manufacturing sector, which is smaller in the UK. The French manufacturing sector is about a third larger and German manufacturing over twice as large. It follows that the primary means through which a sustainable, long-run increase in UK manufacturing exports is likely to be achieved is for there to be more firms in this sector of the economy or for the output of existing firms to be larger. Put simply, this sector needs to grow in size. If that does not occur, then an increase in exports can come only from existing firms exporting more.

There is some scope for greater exports amongst existing firms. A greater share of small and medium sized UK firms export more often and export more compared French equivalents, but in both Germany and France, a greater percentage of large firms export compared to the UK. An even bigger difference compared to Germany is that they have more very successful exporters, those firms who export lots of products to lots of destinations in large volumes. That difference does not exist compared to France. This makes Germany an exceptional exporter. Why that occurs is not well understood but there is some evidence pointing to the role of price/quality and competitiveness issues for UK manufactured goods and that more German firms do FDI, where this FDI is primarily aimed at supporting overseas sales.

From an aggregate perspective our preferred forecast for UK exports look like a continuation of past trends, such that by 2050 they are forecast to be £800bn, compared to £225bn in 2011. This forecast would seem more achievable than the ambition to double UK exports by 2020 made in the Budget, unless the manufacturing sector increases rapidly in size (something it has not done for the previous decade) and these new firms are more export intensive than the current stock of firms. At a disaggregated level high-technology exports are expected to make up an increasing share, supported by the UK's comparative advantage in services. Growth of demand in emerging markets is expected to drive up exports to those regions, while technological change (3-D printing) and offshoring will ensure growth of exports to developed markets such as Continental Europe and North America.

Export promotion policy in the UK would seem well aligned to help UK firms achieve their export potential, although finding why the export deficit for large firms exists would seem like a priority. Any export assistance is likely to mirror export patterns more generally. There will be many short-term, low-volume exports and a few large, sustainable export sales. Ideally export promotion would be targeted at firms, products and markets where the large exports are more likely, but the reasons they occur are not well understood, even by the firms themselves. More recent policy changes such as the extension of finance to exporters should also be expected to act positively on UK exports.

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