

ECONOMICS

BIS | Department for Business
Innovation & Skills

BIS ECONOMICS PAPER NO. 13

International Trade and
Investment - the Economic
Rationale for Government
Support

MAY 2011

BIS | Department for Business
Innovation & Skills

BIS ECONOMICS PAPER NO. 13

International Trade and
Investment - the Economic
Rationale for Government
Support

MAY 2011

Contents

Contents	i
List of tables and figures	iv
Acknowledgements	viii
Glossary/Abbreviations	ix
Foreword	x
Executive Summary	xi
Export trends.....	xi
Inward investment trends.....	xiv
Policy conclusions.....	xvii
Roles for Government.....	xvii
Chapter 1: Introduction	1
Chapter 2: Recent Trends in UK Export and Inward Investment Performance	4
Introduction.....	4
Recent Trends in UK Export Performance.....	4
Explaining Changes in Exports over Time.....	11
Recent Trends in Inward Investment.....	12
Trends in the Stock of Inward FDI.....	14
Modes of Foreign Direct Investment.....	17
Trends in the Contribution of Inward FDI to UK Output, Gross Value Added, and Employment.....	18
Effects of Exporting and FDI on Employment and Wages.....	22
Conclusions.....	27
Chapter 3: Drivers of the Intensive and Extensive Margins of Exports and Foreign Direct Investment	28
Extensive and Intensive Margins of Trade.....	28

Trends in UK Firm Participation in Exporting.....	32
Characteristics of Exporters	35
Destination and Geographical Diversification of Exports.....	38
Firm Size and Exports	44
Foreign Direct Investors in the UK.....	47
Characteristics of Foreign-owned Firms in the UK.....	51
Chapter 4: Dynamic Competition Benefits of Trade and Inward Investment	55
Introduction.....	55
Dynamic Competition and International Trade	55
Dynamic competition and inward investment	57
Measures of dynamic competition effects on productivity	57
Effects of Trade on Business Survival.....	58
Exporting and Business Growth	59
Effects of FDI on Survival of Plants and Firms	62
FDI Response to the Financial Crisis	62
Dynamic Competition Effects: Conclusions.....	64
Chapter 5: The Impact of Trade and Inward FDI on Within Firm Productivity Growth, Innovation, and R&D	65
The Impact of Exporting on Within Firm Productivity and Innovation	65
Effects of Inward FDI on Productivity Growth within Firms.....	73
Other Spillover Benefits.....	78
Conclusions:.....	81
Chapter 6: Barriers to International Trade and Investment and Market Failure	83
Introduction.....	83
Market Failure	83
Market Failure Affecting Costs of Overseas Market Entry.....	85

Market Failure Affecting Expected Benefits of New Market Entry	90
Asymmetric Information.....	91
Evidence on Barriers to Exporting and Inward Investment.....	98
Evidence on the Role of Social Networks in Patterns of Trade	108
Barriers to Inward Investment.....	109
Conclusions.....	111
Chapter 7: Cost Effectiveness	114
Issues for Evaluation and Cost-benefit Analysis	114
Export Support Services: Outputs and Business Impact.....	119
Support for Inward Investment: Outputs and Intermediate Outcomes	130
Evaluation Evidence on Five Key Roles for Government.....	135
Conclusions.....	141
Chapter 8: Conclusions	143
Introduction.....	143
Export trends	143
Inward investment trends	148
Policy conclusions	152
Roles for Government	153
References	154
APPENDIX 1	165

List of tables and figures

Tables

Table 1: Percentage of UK Establishments Exporting, 2000-2006, by Size	34
Table 2: Exporting by R&D Activity	34
Table 3: Shares of Total Turnover and R&D by Ownership and Exporting Status ^a , 1997 and 2004	37
Table 4: Share of Firms that are IP Active, by Different Groups	37
Table 5: World Regions Currently Doing Business In - By Age & Size	40
Table 6: The Geographical Distribution of Export Destinations	41
Table 7: Motivations for increasing export sales	44
Table 8: Share of Total UK Exports and Turnover in 2000 and 2006 by Firm Size ..	45
Table 9: Reasons for Deciding to Invest in the UK	48
Table 10: Importance when Considering Investment in the UK	51
Table 11: Comparison of Foreign-owned and UK Establishments in the UK.....	52
Table 12: Summary of Benefits of Exporting by Innovation	69
Table 13: Employees with Previous Export Experience	94
Table 14: Barriers to Entering New Markets by UKTI Usage.....	101
Table 15: Motivations for Starting to Sell Overseas.....	102
Table 16: Summary Barriers – By Modes Used.....	110
Table 17: Barriers Overcome (A92) – By Quality of Project.....	110
Table 18: Outputs and Impacts of Trade Services over Time.....	120
Table 19: Key PIMS Measures by Business Profile.....	123
Table 20: Profile of Users and Non-users of UKTI Export Services.....	125
Table 21: Results against Inward Investment targets over time	131
Table 22: Significant Influence (All3) – By Project Quality	132
Table 23: Summary of effects.....	134

Table 24: Summary Impact of Trade services by Government Role	137
Table 25: Size Of Business – By Markets to Which Support Referred	138
Table A1: Barriers to Internationalisation by Innovation and IP	165
Table A2: Summary Barriers – By Innovation & Growth	166

Figures

Figure 1: Exports and Imports of Goods and Services as a Percentage of GDP.....	5
Figure 2: Exports of Services as a Percentage of GDP	6
Figure 3: Share of World Exports of Services (selected countries).....	6
Figure 4: Share of World Goods Exports.....	7
Figure 5: Percentage of Goods Exports to Top Three Export Markets	8
Figure 6: Number of Products Exported	9
Figure 7: UK Manufacturing Exports, by Technology Level 1990-2008.....	10
Figure 8: German manufacturing exports by technology level 1990-2008.....	10
Figure 9: Stock of Inward FDI in the UK 2000-2009	14
Figure 10: Percentage of World Stocks of Inward FDI held by France, Germany, the UK and the USA	15
Figure 11: Stock of UK Outward FDI 2000 to 2009 by Destinations	15
Figure 12: UK Stocks of Inward and Outward Investment 2000 to 2009	16
Figure 13: UK Flows of Inward and Outward Investment 2000 to 2009.....	16
Figure 14: Total Real Gross Value Added by Country (and type) of Origin, 1995-2000, in GB Manufacturing.....	17
Figure 15: Total Real Gross Value Added by Country (and type) of Origin, 1998-2002, in GB Service Sector	18
Figure 16: GB Manufacturing Gross Output, 1984-2005	19
Figure 17: GB Service Sector ^a Gross Output, 1997-2005	19
Figure 18: GB Manufacturing Gross Value Added, 1984-2005.....	20
Figure 19: GB Service Sector ^a Gross Value Added, 1997-2005.....	20

Figure 20: GB Manufacturing Employment, 1984-2005.....	21
Figure 21: GB Service Sector ^a Employment, 1997-2005.....	21
Figure 22: Percentage of European SMEs Exporting Directly 2006-2008	33
Figure 23: Productivity Distribution of Exporters and Non-Exporters in the Manufacturing and Non-manufacturing Sectors	35
Figure 24: Number of Markets – By Years Exporting	39
Figure 25: Export Intensity (Percentage of sales) in UK Exporters by Deciles, 2006	42
Figure 26: Number of Markets – By Size.....	43
Figure 27: Distribution of Total Exports by Firm Size.....	45
Figure 28: Contribution of Foreign Affiliates to Average Annual Productivity Growth and Breakdown by “Within” and “Between Effects” in the Manufacturing Sector, 1995- 2001 (percentage points).....	58
Figure 29: Whether Benefited From Economic Growth or Increasing Demand Overseas in the Last Year – Over Time	60
Figure 30: The Distribution of Domestic and Multinational Establishments in the UK in 2007 and 2008.....	63
Figure 31: The Distribution of Domestic and Multinational Establishments in the Netherlands in 2007 and 2008.....	63
Figure 32: Contemporaneous Relationships between Exporting, Innovation and R&D	71
Figure 33: Impacts on Investment in Product/Service Development	72
Figure 34: Share of PCT patents held by country 1999 - 2008.....	76
Figure 35: Taxonomy of Motivations for FDI.....	77
Figure 36: Gained Access to Prospective Customers, Business Partners or Other People You Would Otherwise Have Been Unable To Meet.....	89
Figure 37: Improved Profile or Credibility Overseas	89
Figure 38: Factors Influencing the Decision to have Never Exported or to have Stopped Exporting	104
Figure 39: Importance of Internal Barriers for Internationalisation: comparison between firms with current international activities and firms planning to begin such activities.....	104

Figure 40: Perceptions of the UK vs. Best Competitor – by Country 107

Figure 41: Evaluation logic model for UK Trade & Investment 118

Acknowledgements

This paper was developed by the UKTI Economics and Evaluation Team.

We are grateful for contributions from the following economists and analysts in BIS and FCO:

Chris Alexander

Paul Crawford

Eleanor Dodd

Dan Mawson

Brian Stockdale

Glossary/Abbreviations

GVA Gross Value Added

IP Intellectual Property

IP active: These are firms which currently hold patents or trademarks, either in the UK or overseas

MNE Multinational Enterprise

OFLIP Oxford Firm Level Intellectual Property Database

PCT Patents Patent Cooperation Treaty patents. The PCT is an international treaty, administered by the World Intellectual Property Organization (WIPO), between more than 125 Paris Convention countries. The PCT makes it possible to seek patent protection for an invention simultaneously in each of a large number of countries by filing a single “international” patent application instead of filing several separate national or regional patent applications.

PIMS UKTI Performance and Impact Monitoring Survey. A quarterly survey of UKTI clients. Details can be found at URL: www.uktradeinvest.gov.uk/ukti/pims

R&D Research and Development

SME Small and Medium Sized enterprises. These are defined as firms with up to 250 employees.

TFP Total Factor Productivity

UKTI Internationalisation survey. This is a random survey of 900 UK firms which have internationalised or are seriously considering doing so in the 12 months following interview. The first wave was carried out in 2008

User/ non-user. ‘User’ refers to firms which have used the trade services provided by UKTI; ‘non-user’ refers to firms which have not used these services.

Foreword

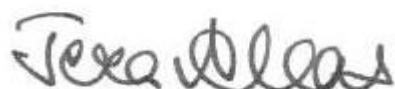
Last November, Secretary of State Vince Cable and Chancellor George Osborne announced a fundamental review of what each part of Government is doing to create the best conditions for private sector growth. Trade and investment was one of the six cross-cutting themes of this first phase of the Growth Review,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

The importance of trade and investment to growth is clear at the national level, where net exports and investment, together with consumption and government spending, determine aggregate demand. However, net exports have been a drag on UK GDP growth over the past decade. Growth in exports therefore needs to be reinvigorated, in order that net exports make a positive contribution to growth in aggregate demand. This requires UK based firms to maintain and improve their competitive advantage and actively tap into the global opportunities available to them. Government's support can be instrumental in overcoming barriers that might otherwise hinder this activity.

The importance of trade and investment is also seen on the supply side of the economy, where exporting, importing and inward investment all play a vital role in increasing innovation and productivity. Exporting enables innovative and high productivity firms to achieve a level of growth not otherwise attainable, increasing their share in the economy, strengthening innovation, and driving up average productivity growth. By bringing new ideas, new ways of doing business, competitive pressure that benefits consumers and new high productivity production capacity into the economy, inward investors also have a vital role to play in driving up average UK productivity. The benefits accrue not just to the inward investors but also to the wider economy, including suppliers, competitors, and UK consumers. Government stimulation of this activity can therefore be highly beneficial.

The new UKTI Strategy builds on the framework outlined in Trade and Investment for Growth, setting out a practical plan of action that the Government is taking to support UK exporters abroad and attract and facilitate investment in the UK. However, government resources are also limited, so it is vital to focus policy action in the most cost effective way, reaping the maximum benefits possible in terms of a sustainable increase in trade, investment, innovation, productivity and growth.

This paper outlines the wealth of economic evidence which has underpinned development of the UKTI Strategy. It provides a fresh look at the three essential elements of an economic rationale for Government intervention in this area: What are the potential benefits of exporting and inward investment, and where are the greatest benefits likely to be; where might the dynamic potential of the private sector need to be complemented by Government action to address market failures; and what are the lessons from the past as to the most cost effective forms of intervention.



Tera Allas

Director General, Economics, Strategy and Better Regulation, Department for Business, Innovation & Skills and Joint Head, Government Economic Service

Executive Summary

This paper takes a fresh look at the economic evidence relating to three necessary criteria underpinning the economic rationale for Government support for international trade and investment, focusing on support for exporting and inward investment:

- What are the economic benefits from exporting and inward investment, and where are they likely to be greatest?
- Are there market failures and other barriers which would prevent the private sector from fully realising these potential benefits unaided?
- Can Government intervene effectively to overcome these barriers, generating benefit sufficient to justify the cost?

The paper begins by providing a review of recent trends in UK export and foreign direct investment performance, and then looking at evidence on the firm level decisions and behaviours which underpin these trends. It then reviews evidence on the effects of exporting and inward investment on productivity, innovation, business growth, and employment, including the role which exporting and inward investment play in reallocating resources through a dynamic process of market competition.

A chapter on market failure and other barriers then looks at theory and evidence of business experience to identify where the dynamic potential of the private sector may need to be complemented by Government action. Finally, a chapter on evaluation draws out lessons from past experience as to the most cost effective forms of intervention, and looks at how benefits vary by client profile.

Export trends

In recent years the total value of UK exports has risen broadly in line with GDP. Rebalancing the UK economy over the coming years will require a change in this pattern, to achieve faster growth of net exports relative to that of GDP. For UK businesses, this will mean changes in two main areas:

- **Export intensity:** As more UK businesses increase the export share of their turnover, this will tend to increase the exported share of output. For most firms, this will mean exporting to more markets;
- **Export incidence:** As the proportion of UK businesses that export rises, this will also tend to increase the export share of UK output.

The evidence shows that greater **export intensity** is associated with exporting for more years, and exporting to more markets. Most firms see entry into new markets as an essential means of increasing their exports, and as an important route to business growth. Nevertheless, a great many UK firms who have been exporting for many years still export only a small proportion of their output, and export only to a small number of markets.

The **incidence of exporting** has been rising in the UK, and is greatest among firms who are innovative, R&D active, and have relatively high productivity, across all size bands. Nevertheless, the evidence shows that these characteristics explain business engagement in exporting only to a limited degree. Many UK firms have the characteristics associated with export success, but still do not export.

In terms of growth in the **value of exports**, the UK has lagged behind key competitors in high growth markets, and in its share of world goods exports. The UK exports as many products as its competitors, and to as many destinations, but generally exports smaller amounts.

SMEs¹ make a substantial contribution to the total value of exports. Within manufacturing, SMEs with 10 or more employees contribute around a third of the value of UK exports, while in services sectors the contribution of SMEs is much larger, and appears to have risen significantly in recent years.

The review of evidence suggests scope for cautious optimism in terms of the potential to increase the share of exports in UK GDP:

- UK exports are at least on a par with key competitors in terms of product quality and diversity. This suggests scope for increasing exports without adverse effects on terms of trade;
- There is still significant unrealised export potential among many UK businesses which have the innovation and productivity necessary to succeed in more export markets.

The evidence on the economic benefits of exporting suggests that realising this greater export potential would bring substantial benefits. It shows that:

- Trade is a powerful driver of productivity growth through a dynamic process of market competition, as it enables exporters to grow and gain market share, while causing weaker firms to shrink. This reallocation effect is beneficial, because exporters tend to have higher productivity and faster productivity growth, to be more innovative, and to conduct more R&D. These qualities also enable them to pay higher wages and support more sustainable employment;
- Benefits from these reallocation effects are large. In the UK, exporters have accounted for 60% of UK productivity growth. Non-exporters have contributed mainly through net exit of low productivity firms.

Exporting also has significant positive effects on the productivity, innovation, and R&D of the exporting firms. These effects occur through multiple mechanisms:

¹SMEs (Small and Medium Sized Enterprises) are defined here as having under 250 employees.

- Exporting stimulates productivity growth through scale economies, through learning from exporting and exposure to new ideas, and through re-allocation of resources across products to focus on the firm's comparative advantage;
- Exporting stimulates innovation and R&D through exposure to new ideas and competitors, through increasing the returns to investment in R&D, and through increased revenues, which increase the internal financial resources available to the firm for such investment.

Despite the potential benefits of exporting to the firms themselves, evidence reviewed in the paper makes clear that market failures and other barriers deter many UK firms from exporting who could potentially do so successfully. These factors also prevent many of those who do export from expanding into more new markets, and thus realising more of their export potential. It shows:

- The incidence of these barriers across firms is not limited to SMEs, nor to new exporters. Innovative and high growth firms experience greater barriers;
- Social networks, associated with historical cultural ties and common language, play a significant role in determining bilateral trade patterns. Difficulty gaining access to these networks presents significant barriers to firms of all sizes, especially for innovative firms;
- Management attitudes and limited internationalisation capabilities can be a stronger influence on the decision to export than structural factors, including productivity and R&D;
- A limited pool of UK business people with knowledge, and expertise relating to overseas markets which are culturally more remote from the UK is likely to hinder the ability of UK exporters to respond quickly to new opportunities in these markets;
- Private sector cooperation to identify and pursue export opportunities can be hindered by problems such as lack of mutual trust, or by a tendency for some members to free ride on the efforts of others, even when cooperation would bring significant collective benefits.

The paper concludes that if not addressed by appropriate policy action, these factors are likely to have a material adverse impact on the ability of UK businesses to exploit overseas opportunities, hindering the UK from realising more of its export potential.

Evaluation evidence shows that export services consistently generate high benefit cost ratios, mainly as a result of increasing export related know how and enabling firms to overcome barriers to entering new overseas markets. It also shows that export support is a highly cost effective means of generating additional business R&D, enabling firms to increase internal resources available for such investment, as a by-product of successfully helping them to gain access to new markets.

Inward investment trends

The review of recent trends showed that the UK has continued to be highly successful in attracting inward investment, with the largest share continuing to come from the US. Inward investors now account for around half UK manufacturing output, and just over two fifths of output in the services sector. Their shares in Gross Value Added and employment are lower, due to greater use of purchased inputs and relatively low labour intensity.

The increased market share of inward investment in the UK has contributed substantially to increased UK labour productivity growth, due to this lower labour intensity and higher use of purchased inputs and other resources per employee. These factors underpin higher average wages among these firms.

As total factor productivity among foreign owned firms in the UK is higher than the UK average, their increased market share is also likely to have had a positive 'batting average' effect on average total factor productivity. However, as total factor productivity of most inward investors is not greater than that of UK multinationals, expansion of the market share of UK multinationals brings similar benefits.

The dynamic competition effects of inward investment on UK business R&D are less clear. Inward investors contribute to UK business R&D broadly in line with their contribution to output, reflecting lower R&D intensity than among UK owned exporters, but higher R&D intensity than that of UK owned non-exporters. Consequently, the effect of increasing inward investment market share on average UK R&D intensity depends on which UK firms are losing market share to them.

Inward investment can also contribute to productivity growth within UK firms, either through productivity enhancing spillovers, or through management change following mergers or acquisitions. Evidence of significant productivity enhancing spillovers was found only for high quality projects, likely to be 'technology exploiting'.

Foreign mergers and acquisitions in general have not led to improvements in efficiency, as measured by total factor productivity. However, there were exceptions, and acquisitions in services sectors from outside EU and USA did show some positive effects. Foreign mergers and acquisitions have increased labour productivity, however, as a consequence of changes in the balance of resource use, decreasing labour intensity while increasing the use of capital and purchased inputs.

Most technology exploiting inward investment is likely to continue to come from countries, such as the USA, which are leading sources of new technologies as measured by international patents. US owned inward investors in the UK were also identified as having the highest productivity levels.

Looking at effects of inward investment on employment, the evidence shows that inward investment has increased demand for skilled labour in the UK, while reducing demand for unskilled labour. Thus it has contributed to a change in the structure of labour demand. The effect on wages has tended to be positive for skilled labour but negative for unskilled labour. There are important differences by type of project:

- ‘technology exploiting’ inward investment has positive effects on skilled jobs, while ‘technology seeking’ projects were associated with negative effects on skilled jobs;
- greenfield investment has a net positive effect on employment, mainly for skilled labour, while mergers and acquisitions tend to lead to a fall in employment at firm level, associated with the shift to less labour intensive modes of operation.

A key finding of the paper was thus that the potential benefits of inward investment depend crucially on the characteristics of the project. High quality projects, capable of contributing positively to productivity, UK R&D, and skilled jobs, are likely to be mainly technology exploiting, greenfield investment, most of which is likely to come from technological leaders such as USA.

The incidence and magnitude of productivity benefits was also found to depend on links and proximity to UK firms which have the absorptive capacity needed to benefit from them. In general, UK exporters are more likely to benefit from productivity enhancing spillovers, because they have the capability to do so. They are also most likely to benefit from export enhancing spillovers, including access to new knowledge and networks through linkages with a foreign investor’s parent company and its overseas subsidiaries.

These findings suggest that a national approach to Government support for inward investment is likely to be beneficial, by facilitating the best possible match between the investor’s needs and the capabilities of the business community within the UK.

Evidence on the factors which motivate FDI, and which influence FDI location decisions indicates that:

- A primary motivation for FDI is that firms have some intellectual property, or other knowledge related asset, on which returns can best be maximised via a direct presence. This type of FDI is known as ‘technology exploiting’, and appears to predominate in the UK;
- Another motivation for FDI is to be near to centres of expertise, knowledge, or research. For some, gaining access to technology may be a primary motivation. This is known as ‘technology seeking’ FDI;
- There is clear evidence of the importance of the business environment to choice of location, including a stable economic environment; favourable bureaucratic, political, and regulatory environment; good communications infrastructure; a knowledgeable and skilled workforce, and a trustworthy and ethical business culture.

The attraction of an established community of other relevant businesses was also clearly evident, with ‘*an important centre for businesses in your sector*’ being among the factors most frequently cited by investors.

The review of evidence on barriers and market failures concluded that:

- There was evidence of productivity enhancing spillovers for some types of inward investment. As these benefits are not internalised by the investor, they suggest that markets unaided would not deliver optimal levels of investment;
- Barriers faced by potential inward investors are similar to those encountered by UK businesses seeking to enter new overseas markets, with access to the right contacts and networks an equally prominent issue. Other issues with which inward investors are likely to need help include access to information not otherwise available, and guidance in navigating the legal and regulatory framework in the UK;
- Barriers to inward investment in the UK also include limited knowledge about the UK's attributes as a place to invest, and in some cases adverse perceptions of the UK. Businesses in overseas markets who feel well informed about the UK also tend to have more positive perceptions of the UK as a potential investment location.

There was also some evidence that overseas businesses which have more positive perceptions of the UK are more likely to invest in the UK.

If not addressed by appropriate policy action, these issues are likely to have an adverse impact on the UK's ability to attract optimal levels of high quality inward investment. In addition, high quality projects are less likely to fulfil their potential contribution to the UK economy if they find it too difficult to access the right networks and contacts, or to identify suitable UK owned suppliers.

Evaluation evidence showed that advice and help to inward investors is an effective means of influencing investor decisions, both with respect to locating in the UK, and with respect to scale and scope of the project. Support also has a significant influence on investors' use of UK based suppliers, involvement in joint R&D in the UK, and other linkages which are likely to be beneficial.

The influence of support is mainly due to helping inward investors to overcome barriers, for example by facilitating access to contacts and information not otherwise accessible, or by helping them to navigate the legal or regulatory framework. For high quality projects, help with access to contacts at universities, or other knowledge centres can be important.

Benefits are highly dependent on the quality of project, and on strong linkages with UK firms which have the ability to absorb new knowledge and ideas.

Policy conclusions

This review of evidence has made clear that there is a strong economic rationale for well focused Government support for exporting and inward investment. It shows that:

- There are substantial economic benefits to the UK from exporting and inward investment. As the magnitude of these benefits depends on the characteristics of the firms involved, the evidence indicates a need for a well targeted approach;
- There is evidence of market failure, and other barriers to exporting and inward investment, which would prevent the private sector unaided from fully realising these potential benefits;
- There is evidence that Government is able to intervene effectively in the areas identified. For export services, benefits to the participant firms have been quantified, and show consistently high benefit cost ratios; for inward investment, benefits could not be quantified, but there was consistent evidence of the ability of services to influence high quality investment in ways likely to benefit the UK economy.

In terms of targeting, the evidence showed that export support should be focused on firms which have the productivity and innovation characteristics necessary for long term export success, and are seeking to grow. It also cautioned against encouraging firms to export who lack the qualities necessary for sustainable export success.

The need for careful targeting was also shown to be highly important for inward investment, as the potential benefits to the UK depend crucially on the characteristics of the project. This suggests a need for policy focus on high quality projects, capable of generating productivity enhancing spillover benefits, and likely to contribute positively to knowledge intensive business activity in the UK, including R&D.

Roles for Government

In summary, theory and evidence reviewed in this paper show that there is a need for government action in the following areas:

- Strengthening the social networks which underpin international trade and investment flows, and helping individual businesses to gain access to key contact networks, by serving as a trusted intermediary;
- Strengthening the internationalisation capabilities of innovative and high-growth businesses;
- Providing access to information and advice which the private sector alone would not or could not provide, both to inward investors and to UK businesses seeking to exploit opportunities overseas;

- Facilitating beneficial co-operation among UK businesses, enabling them to work together to overcome barriers and develop potential overseas business opportunities, and to promote the reputation of the UK through showcasing UK capabilities in key overseas markets;
- Overcoming legal or regulatory barriers to market access which affect particular firms or sectors, including through political and diplomatic support, and support for open international trade and investment policy regimes.

Chapter 1: Introduction

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

The importance of trade and investment to growth is clear at the national level, where net exports and investment, together with consumption and government spending, determine aggregate demand. Although domestic consumption is by far the largest component of national expenditure, its growth has been dampened since the recession, and will continue to be constrained by the need to limit household debt. Meanwhile, government expenditure is constrained by the need to reduce public debt and the fiscal deficit. Hence, although they are smaller components of demand, net exports and investment are more important than ever as levers through which to raise growth.

As the Trade and Investment for Growth White Paper set out, *'increased trade with Europe since the 1980s has added almost £3,300 a year to the net income of the average British household'*. Within the UK's trade, however, imports have been growing even faster on average than exports, such that net exports have been a drag on GDP growth over the past decade. By 2006, the UK's current account deficit had increased to more than three per cent of GDP and was, in absolute terms, the third largest in the world after the US and Spain. Even over the last three years, as sterling depreciated in value by 25 per cent, imports have continued to outpace exports. Growth in exports therefore clearly needs to be reinvigorated, to outpace that of imports, so that net exports will make a positive contribution to growth in aggregate demand.

The importance of trade and investment is also seen on the supply side of the economy, where exporting, importing and inward investment all play a vital role in increasing innovation and productivity. Exporting enables innovative and high productivity firms to achieve a level of growth not otherwise attainable, increasing their share in the economy, strengthening innovation, and driving up average productivity growth. This reallocation effect also drives up average UK business R&D, because exporters have higher R&D intensity. Access to imports improves the competitiveness of UK companies, and can also spur innovation, as can inward investment, which brings new know-how and technology. By bringing new high productivity production capacity into the economy, inward investors also help to drive up average productivity.

The deeper complexities of the roles which exporting, and inward investment play in productivity growth, innovation, and business growth, are examined in this paper.

The IMF forecasts that the world economy will expand by \$20 trillion over the next five years, with fast growing emerging and developing economies contributing around \$11.5 trillion. World trade growth is expected to be around 7 per cent per year over the coming five years. This presents great opportunities for UK business. However, the UK's performance on exports to some of the fastest growing markets can and must be improved. From 1998 to 2008, UK exports to the eight largest emerging markets increased by just over 0.5 per cent of GDP compared to over three per cent for Germany².

The UK is among the top three recipients of FDI in the world, and has more European company HQs of overseas firms than all other EU members put together. However, the competition for FDI is growing, and the UK needs to raise its game with both traditional and new partners.

As noted in the Growth Review, businesses face a range of barriers that inhibit trade and investment, particularly trade with emerging markets. Investors in the UK often cite concerns with the UK's business environment in areas such as regulation, planning and skills, which the Growth Review is looking to address. Exporters list legal and regulatory barriers, access to contacts and culture and language as important obstacles to entering new markets. These barriers are higher for innovative firms producing differentiated goods and services, and are higher in geographically and culturally more distant markets. SMEs in particular lack an awareness of where and how to break into overseas markets, and report that they have difficulties in obtaining the support, advice, skills and capabilities, and financing needed.

The measures in the Growth Review build on the framework outlined in the Trade and Investment White Paper, by setting out a practical plan of action that the Government is taking to support UK exporters abroad and attract and facilitate investment in the UK. However, government resources are also limited, so it will be vital to focus policy action in the most cost effective way, reaping the maximum benefits possible in terms of a sustainable increase in trade, investment, innovation, productivity and growth.

It is important, therefore, to take a fresh look at the evidence on the key issues which Government will need to consider to determine how best to focus policy; to identify where the dynamic potential of the private sector may need to be complemented by Government action to address market failures; and to learn lessons from the past as to the most cost effective forms of intervention. The rest of this paper is therefore structured as follows:

Chapter Two reviews recent trends in UK exports and inward investment, including their respective contributions to GDP and employment;

² UN Comtrade database and World Economic Outlook database, IMF, 2010

Chapter three looks at the drivers of the intensive and extensive margins of exports and foreign direct investment, and at the characteristics of the firms and plants engaged in these activities;

Chapters Four and Five review evidence on the economic benefits of exporting and inward investment:

- Chapter Four focuses on economic benefits arising from their respective contributions to the process of dynamic competition, with particular respect to effects on aggregate UK productivity and R&D, and on business growth;
- Chapter Five continues the review of evidence on the economic benefits of exporting and inward investment, focusing on the contributions which these make to productivity growth and innovation within firms.

Chapter Six reviews the evidence on barriers and market failures which constrain the ability of the private sector to achieve the full potential economic benefits from exporting and inward investment.

Chapter Seven summarises recent evaluation evidence on the ability of government to intervene cost effectively to address the barriers and market failures identified.

Chapter Eight reviews the key findings, looks at the policy implications, and draws conclusions on how government support can best be focused.

Chapter 2: Recent Trends in UK Export and Inward Investment Performance

Introduction

This chapter begins with an overview of recent trends in UK export growth and performance, also looking briefly at the market destinations, product diversity, and exporter activity behind that growth. It then turns to developments in the stock of inward investment in the UK, looking at trends in source country, mode of entry, and in the contribution of the foreign owned sector to UK manufacturing and services. Finally, we review recent evidence on the respective contributions of exporting and inward investment to employment and wages.

Recent Trends in UK Export Performance

A more detailed review of recent UK export performance is provided in a previous Department of Business, Innovation and Skills (BIS) Economics Paper³, and a short overview is provided in the Trade and Investment Analytical White Paper Topic 3. The overview below shows that:

- The value of all UK exports has risen broadly in line with GDP, as for France and the USA, while the export share of GDP rose for Germany. Within this, the value of UK services exports has risen faster than GDP;
- Over the past 25 years the UK has maintained its share of world services exports, while those of the USA and France have fallen. However, the UK share of world goods exports has fallen;
- The UK share of goods exports to high growth markets has lagged behind that of key developed country competitors. The UK exports as many products to these markets, but in lower volumes;
- Although the UK exports a larger number of goods products than France or Germany, the total value of exports per product is lower, and the value of total goods exports is more concentrated on the top three products;
- Cross country differences in the value of exports are driven partly by differences in the number of exporters, and partly by average values per

³ BIS (2010a)

exporter. The respective contributions of these factors to UK goods export growth has varied across markets and sectors;

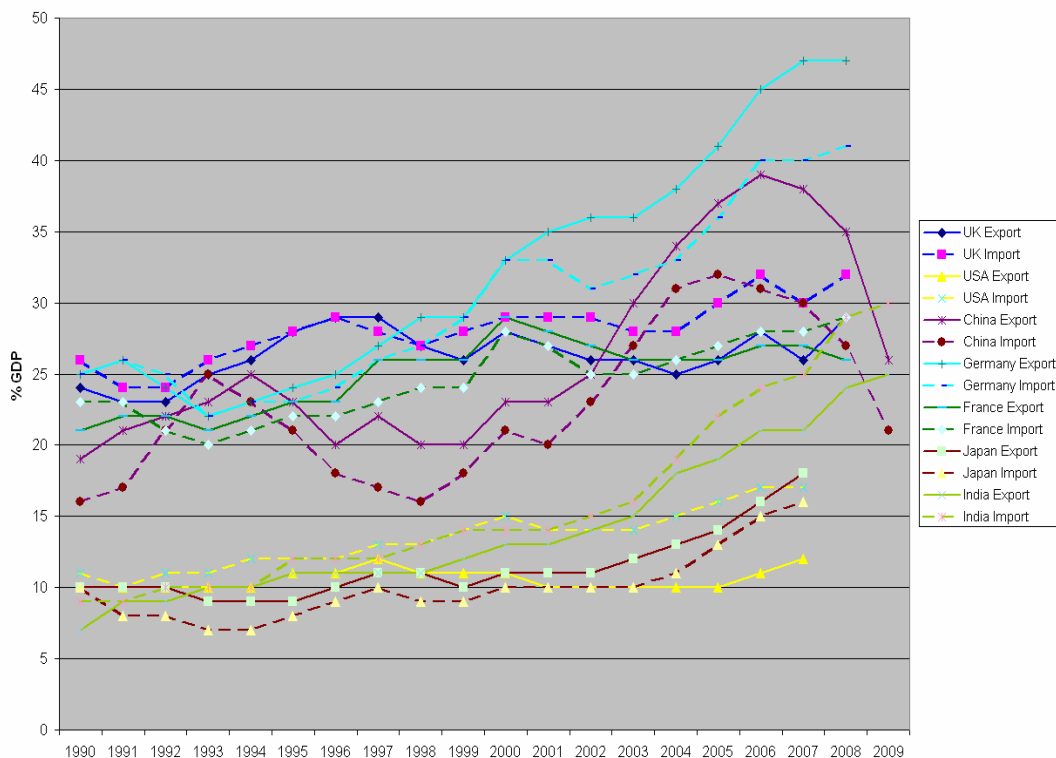
Trends in UK Export Growth and Market Shares

Figure 1 below shows that exports of goods and services as a percentage of GDP remained fairly steady over the period 1990 to 2009 for the UK, France and the USA. This suggests that over the period exports grew at a similar rate to GDP. By contrast, India, Germany and Japan experienced an increase in their exports of goods and services as a percentage of GDP, with most of this increase occurring post 2000. China presents an interesting picture, having an inverted “U” shape for the period post 2000. The sharp fall after 2007 indicates the GDP grew more than exports of goods and services. This was likely to have been influenced by the global economic downturn and may also reflect upward revisions of GDP during this period.

Exports of goods and services of the three EU countries in Figure 1 (UK, Germany and France) represent a higher percentage of GDP than those of the other countries represented. This is likely to be partly due to the difference in size of these markets, both geographically and in population, as compared with USA, India and China.

The value of imports relative to GDP follows a similar pattern to that of exports (Figure 1). However, for both the UK and USA, in most years since 1990 imports have exceeded exports as a percentage of GDP.

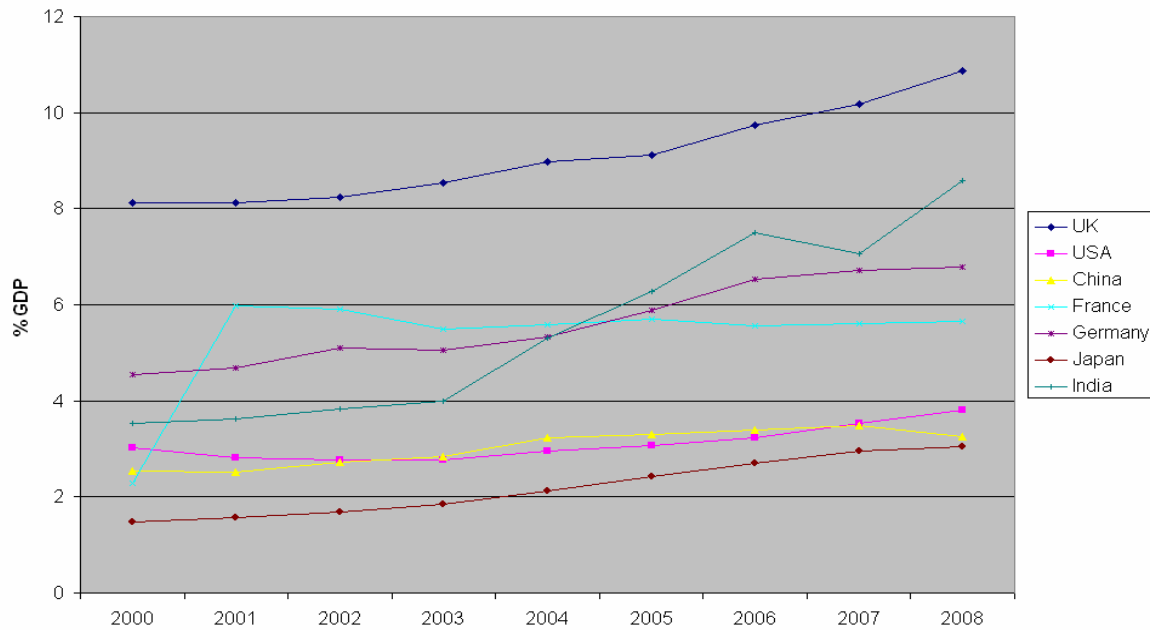
Figure 1: Exports and Imports of Goods and Services as a Percentage of GDP



Source: World Bank

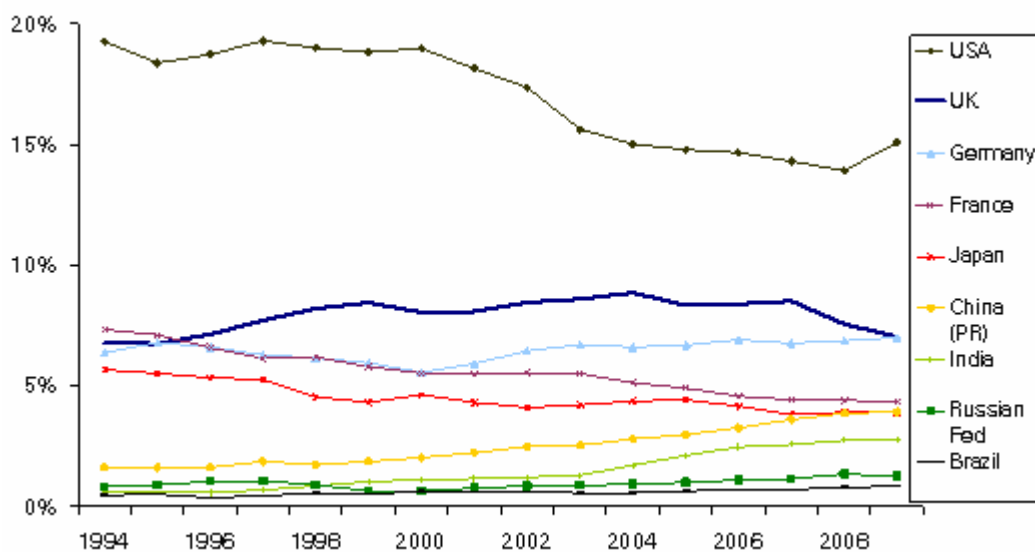
Figure 1 shows exports of goods and services combined as a percentage of GDP, in which UK exports hover around the 25 per cent mark. However, this masks the growth of services exports as a percentage of GDP during the period 2000 to 2008 (Figure 2). Thus UK goods exports fell as a percentage of GDP over this period. As a percentage of GDP, UK services exports exceeded those of the USA, China, France, Germany, Japan and India.

Figure 2: Exports of Services as a Percentage of GDP



Source: UN Service Trade Database (services exports) and World Bank (GDP)

Figure 3: Share of World Exports of Services (selected countries)

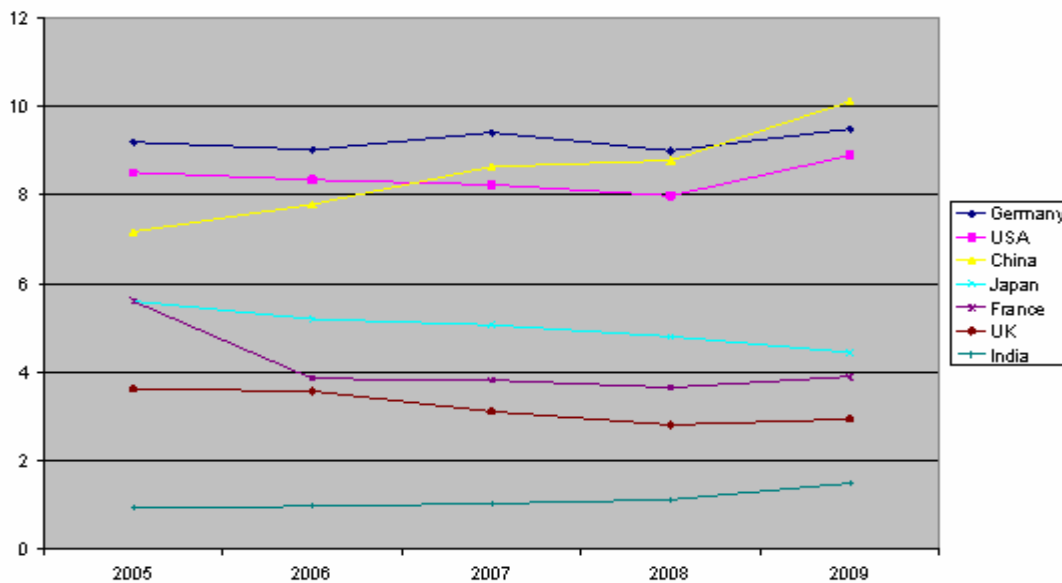


Source: International Balance of Payments, IMF, current prices.

The UK increased its world market share of service exports from 6.8 per cent in 1994, peaking at 8.9 per cent in 2004 before falling between 2007 and 2009 to 7.0 per cent. Since 1996, when it passed France, the UK has held its position as the second largest services exporter in the world. This has been despite a rise in services exports from emerging markets, notably India which has increased its share from 0.6 per cent in 1994 to 2.7 per cent in 2009 and China which rose from 1.6 per cent to 3.9 per cent over the same period. While most developed countries saw their world share of services exports fall over the 15 year period, Germany has been an exception, with its share increasing 1.4 per cent since its low of 5.6 per cent in 2000, such that it matched the UK share of 7 per cent in 2009 (Figure 3).

The trajectory of UK exports of goods is illustrated in Figure 4. Despite the value of goods exports increasing, UK exports of goods accounted for just under 3 per cent of world exports in 2009, falling from 3.6 per cent in 2005. Between 2005 and 2009 the share of world goods exports accounted for by the UK, Japan and France also fell, while that of USA, and Germany was fairly stable. However, China and India increased their share of world goods exports, with China exceeding the contribution of Germany to world exports in 2009. In total, the markets shown accounted for 40 per cent of world exports in 2009.

Figure 4: Share of World Goods Exports



Source: International Trade Centre

Analysis of UK trade across a range of sectors and markets by Eaton et al⁴ indicates that, although the UK exports almost as wide a range of products as Germany, Japan and the USA in emerging markets, it exports less of them. At the time the analysis was done (2007 when the latest data were for 2005), the authors suggested that loss

⁴ Eaton et al. (2007a)

of market share in these markets could be due to higher prices charged for UK goods, possibly related to the strong Sterling at that time, but could also indicate that UK firms were exporting higher quality goods than their competitors. The analysis concluded that some UK firms were successful at selling products in these markets at higher prices than their overseas competitors, albeit in lower quantities.

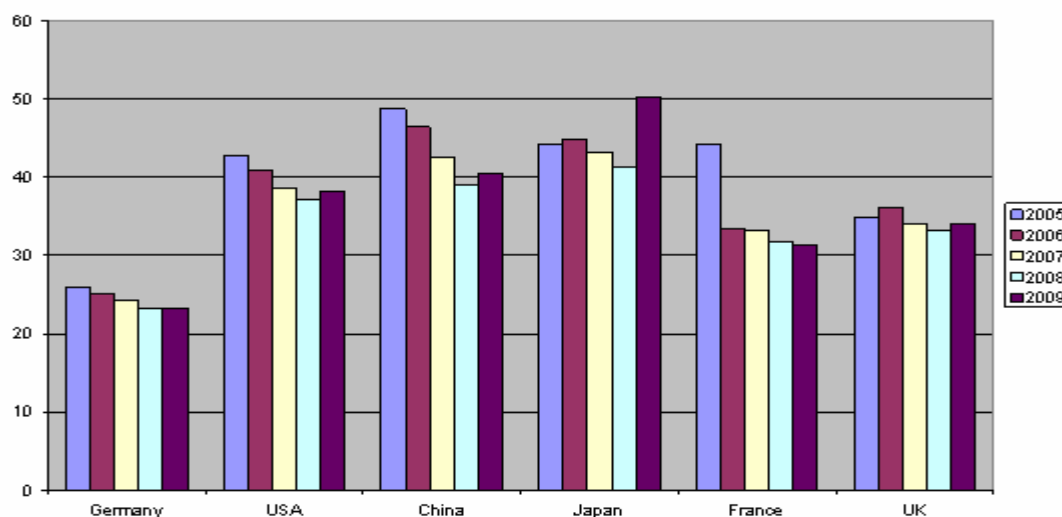
As the Eaton analysis was done at sector level, it was not possible to investigate differences in the number of exporters to these markets. As outlined below, studies have shown that the total value of exports to a market is influenced by the number of exporters to that market, as well as by the number of products.

The analysis was also not able to assess the extent to which UK firms may be serving these markets via direct investment, or via a third market. A previous BIS Economics Paper notes that sales via exports and represent a substantial share of total overseas sales for many UK multinationals, and that FDI activities are thus an important indicator of international competitiveness, in addition to export volumes. The value of outward FDI from the UK is second only to that of the US.⁵

Destination of UK exports

UK exports are less geographically concentrated than some comparator countries, but considerably more concentrated than those of Germany. Its top three export markets still accounted for 34 per cent of exports in 2009, compared with under 25 per cent for Germany. Concentration had also fallen less over the previous four years than for all comparator countries except Japan. (Figure 5).

Figure 5: Percentage of Goods Exports to Top Three Export Markets



Source: International Trade Centre

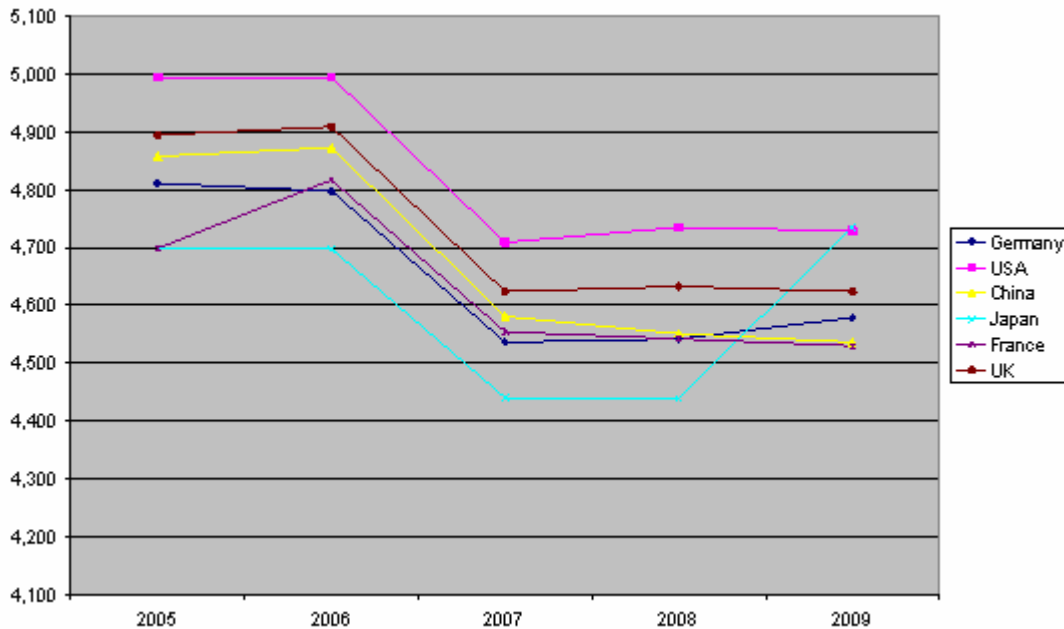
⁵ BIS (2010a)

Exports outside the EU by most EU member states are smaller than sales within the EU. However, for the UK, a higher proportion of exports is to non-EU countries (45 per cent)⁶, compared with under 40 per cent for France and Germany.

Composition of UK Exports

The number of products exported gives an indication of the breadth of goods exported, and is one of the factors influencing the total value of exports. Although the UK accounts for a lower share of world goods exports than the other countries shown in Figure 40, the number of products exported by the UK was higher than that of Germany, France, and China between 2005 and 2009. This suggests that, on average, the UK exported less of each product by value than Germany, France and China (and Japan between 2005 and 2008). This is consistent with the findings of Eaton et al (2007a) with respect to UK exports to emerging markets, noted above.

Figure 6: Number of Products Exported

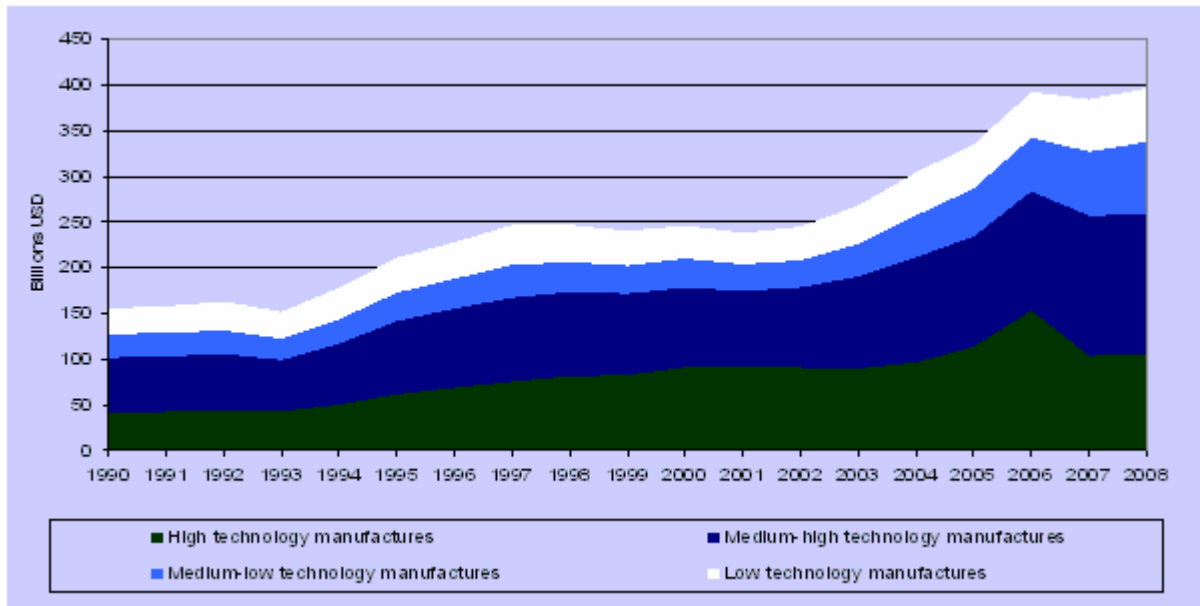


Source: International Trade Centre

Looking at the types of manufactured goods that were exported by the UK between 1990 and 2008, Figure 7 shows that UK manufacturing exports have shifted over the period towards more technology intensive goods, peaking in around 2006. Comparison with Germany (Figure 8) shows that high technology manufactures account for a higher share of exports for the UK than for Germany, while medium high technology goods exports account for a larger share of German exports.

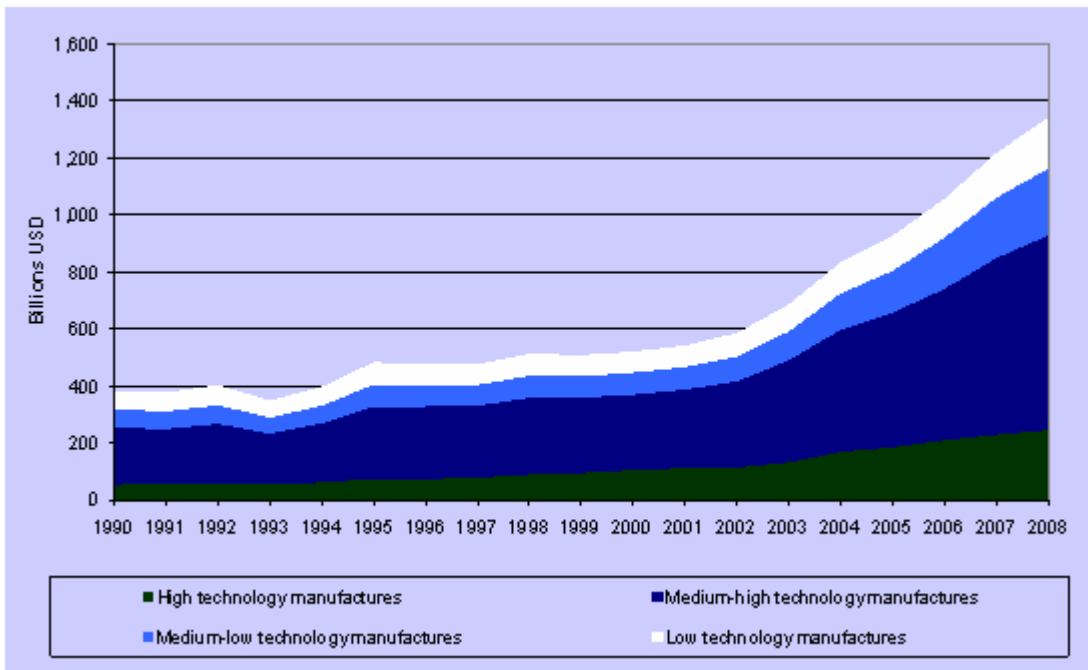
⁶ UKTI calculation using Eurostat data

Figure 7: UK Manufacturing Exports, by Technology Level 1990-2008



Source: OECD Bilateral Trade Database

Figure 8: German manufacturing exports by technology level 1990-2008



Source: OECD Bilateral Trade Database

Explaining Changes in Exports over Time

Export growth at national level, in aggregate and to particular overseas markets or regions, is driven by a combination of:

- Increases in the number of exporters, the firm “extensive margin”;
- Growth in the average value exported by individual established exporters to individual markets or at national level, the firm “intensive margin”.

A previous BIS Economics Paper⁷ shows considerable differences across markets in the respective contributions of these two factors over the period 2002-2008. In general, growth in UK goods exports to high growth markets has been relatively evenly split between an increase in the number of UK firms entering these markets and an increase in the value exported by each firm.

The respective contributions of these factors to growth in goods exports to EU markets is less clear, because there is no requirement to report these exports until they reach a threshold value. Thus a firm may have been exporting smaller amounts for some while before appearing in the data as a new exporter to the country. Subject to this caveat, goods export growth to EU markets appears to have been dominated by an increase in the number of firms exporting to these markets.⁸

There has also been considerable variation across sectors, and across markets in the differences between sectors. For Russia, India, and China, in most sectors, growth in the number of exporters made a larger contribution. By contrast, for Brazil, Saudi Arabia, and Mexico, there were more sectors in which average values per exporter made the larger contribution.⁹

In this analysis, changes in the number of exporters by sector and by market represent the **net** effect of new firms beginning to export to the market, and firms ceasing to do so. Behind these net figures, there is likely to be churn in the population of UK exporters selling into these markets. There is also likely to be differences in the **duration** of firms’ export relationships in these markets, with some firms exporting to a new market only briefly, while others continue to sell there for many years, perhaps over time expanding the range of products exported.

In the next chapter we look in more detail at evidence on the role which the duration of export relationships plays in export growth, at the role of change at the intensive and extensive margins, and at the factors which drive these changes at firm level.

⁷ BIS (2010a)

⁸ Ibid

⁹ Ibid

Conclusions

The evidence reviewed above shows that:

- The value of UK exports has risen broadly in line with GDP, as for France and the USA, while the value of UK services exports has risen faster than GDP. German exports rose faster than GDP.
- The UK share of goods exports to high growth markets has lagged behind that of key developed country competitors. The UK exports as many products to these markets, but in lower volumes;
- The UK exports as many products as its competitors, but in lower values, both to high growth markets and to the world as a whole;
- Growth in the value of UK exports to particular markets has been driven in varying degrees by increases in the number of exporters to those markets, and increases in the average value per exporter. There is also variation across sectors, and across markets in the differences between sectors.

Recent Trends in Inward Investment

The evidence reviewed below shows that the UK continues to be a leading international destination for foreign direct investment (FDI), and that foreign-owned firms now account for a substantial share of UK output, especially in manufacturing:

- The USA remains overwhelmingly the largest source of inward FDI in the UK, as well as a leading destination for outward FDI from the UK;
- Foreign-owned firms account for around half UK manufacturing output, and around two-fifths of UK services output. Employment shares are much lower due to less labour intensive methods in foreign-owned plants;
- The foreign-owned share of UK Gross Value Added (GVA) is also lower than its output share, due to greater use of purchased inputs in these plants;
- The largest share of inward FDI in the UK has been in Greenfield investment, for both services and manufacturing. However, Brownfield investment is more common than Greenfield for inward FDI from outside EU and the USA.

What is Foreign Direct Investment?

Foreign direct investment is defined as investment in which the foreign investor gains control over the investment asset (Box 1). It is measured in a number of different ways, each of which has a different interpretation:

- **The stock of FDI:** FDI stocks measure the level of cumulative FDI stock of capital investment by foreign enterprises at a single point of time. Measures of FDI stocks take account of new investment and disinvestment. They can also change due to revaluation of the existing stock of foreign-owned assets;
- **Annual flows of FDI:** FDI flows are investments by foreign enterprises made during a period of time – either by calendar or tax year. Flows measure the cross-border funds that finance FDI. They do **not** include foreign investment that is financed domestically in the host country, nor any change in valuation
- **The annual number of FDI projects:** This measure focuses on the firm or plant which is the object of foreign direct investment, whether through establishment of a new site, expansion of an existing foreign-owned site, or acquisition of an existing UK-owned plant or firm by a foreign firm.

Box 1: What is foreign direct investment (FDI)?

FDI is the international movement of capital for specific investment purposes where the foreign investor establishes a **lasting interest** in an enterprise which is resident in another country. This interest implies a long term relationship between the direct investor and the enterprise, and significant influence on management of the enterprise.¹⁰ FDI contrasts with “portfolio investment”, which is investment in financial assets without managerial control.

FDI occurs when overseas companies set-up or purchase operations in another country. FDI can be new projects, expansions of existing projects, or mergers and acquisitions activity.

Purchase of equity (shares) in a company overseas counts as FDI if 10 per cent or more of the shares are held by a foreign investor. Foreign ownership of less than 10 per cent counts as portfolio investment.¹¹

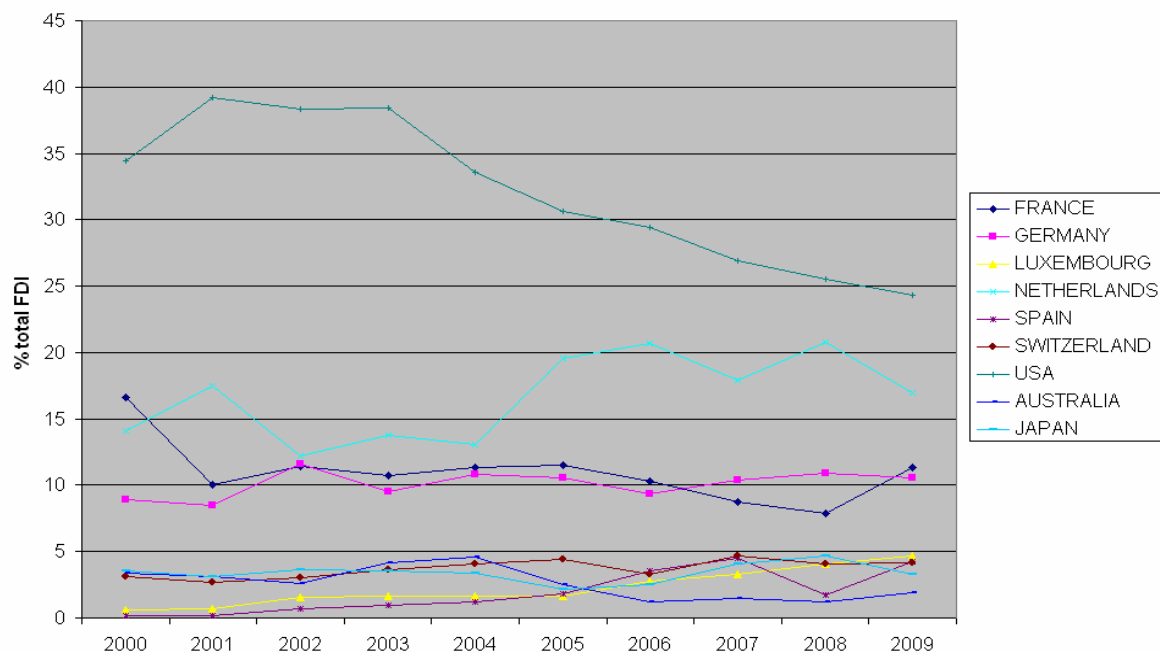
¹⁰ OECD (2008)

¹¹ IMF: <http://www.imf.org/external/np/sta/di/glossary.pdf>

Trends in the Stock of Inward FDI

Trends in the stock of inward FDI in the UK are illustrated in Figure 9, by the main source countries. This shows that while the USA remains the largest source, the value of inward FDI from the Netherlands has been rising. Investment from OECD countries accounted for over 90 per cent of UK FDI stocks between 2000 and 2009, making these countries the predominant source of investment.

Figure 9: Stock of Inward FDI in the UK 2000-2009

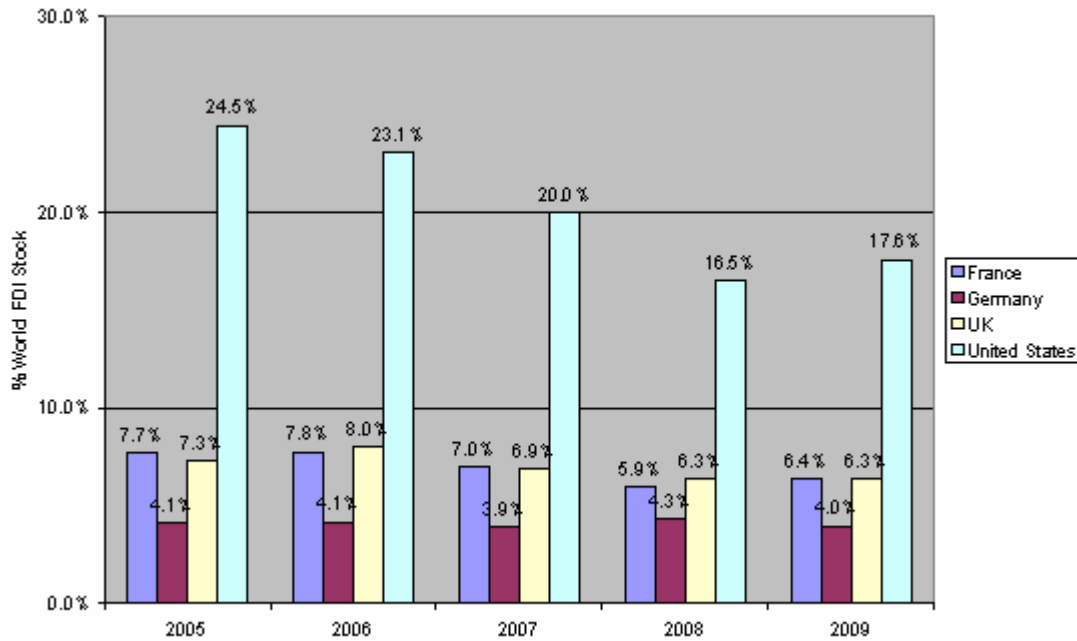


Source: ONS National Statistics UK Foreign Direct Investment

Figure 10 shows the percentage of world stocks of inward FDI held by the UK, France, Germany and the US for the period 2005 to 2009. The USA accounted for almost one quarter of world inward investment in 2005 but this had fallen to under one-fifth (18 per cent) by 2009. Germany's stock of inward investment remained steady throughout the period at around 4 per cent. Inward investment share held by the UK and France varied over the period, and like the US, reached a low in 2008. This may be related to the financial crisis which may have influenced decisions to engage in foreign direct investment over this period and may have led some investors to withdraw from some sites in these countries. In some cases this may have been either due to rationalisation of overseas sites within the firm and or due to relocation of some stages of the production process to lower cost locations.

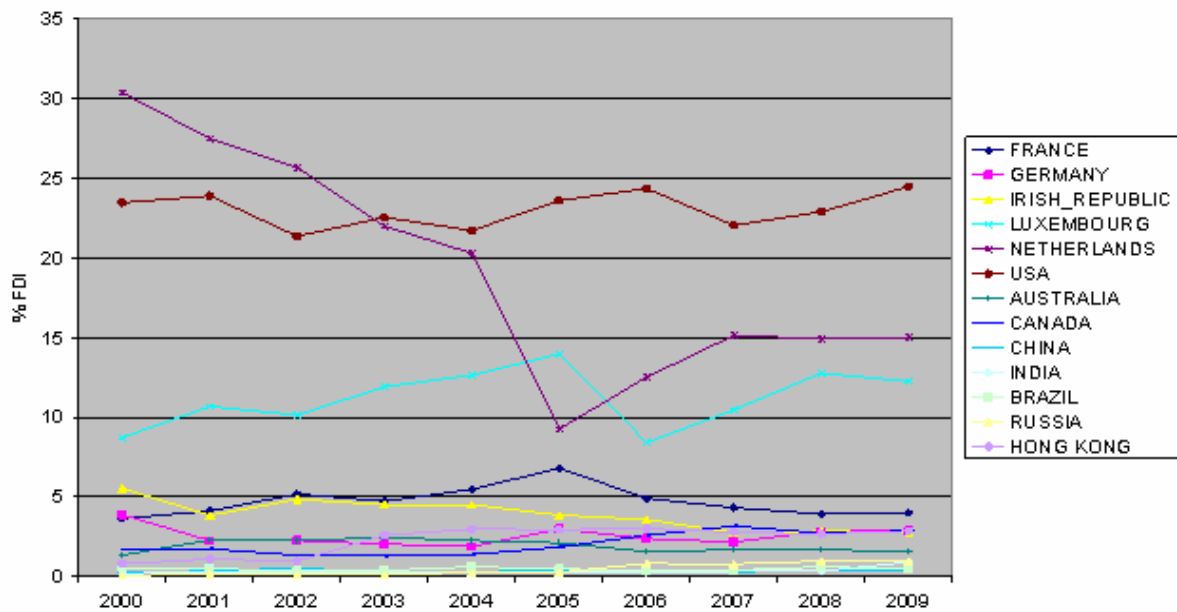
Outward FDI from the UK has a similar geographical pattern to that for inward FDI, with the USA being the number one destination for outward investment for most of the period (Figure 11).

Figure 10: Percentage of World Stocks of Inward FDI held by France, Germany, the UK and the USA



Source: UNCTAD

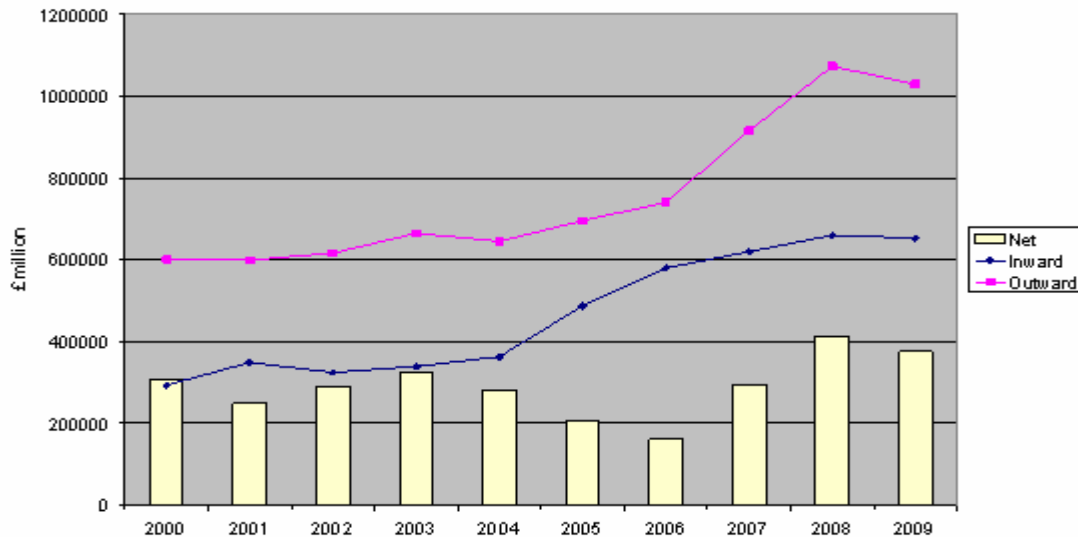
Figure 11: Stock of UK Outward FDI 2000 to 2009 by Destinations



Source: ONS National Statistics UK Foreign Direct Investment

Over the period 2000 to 2009, stocks of outward FDI exceeded those of inward FDI to the UK. Stocks of inward and outward FDI increased over the period, with outward FDI rising sharply between 2006 and 2008 before a slight fall in 2009 (Figure 12).

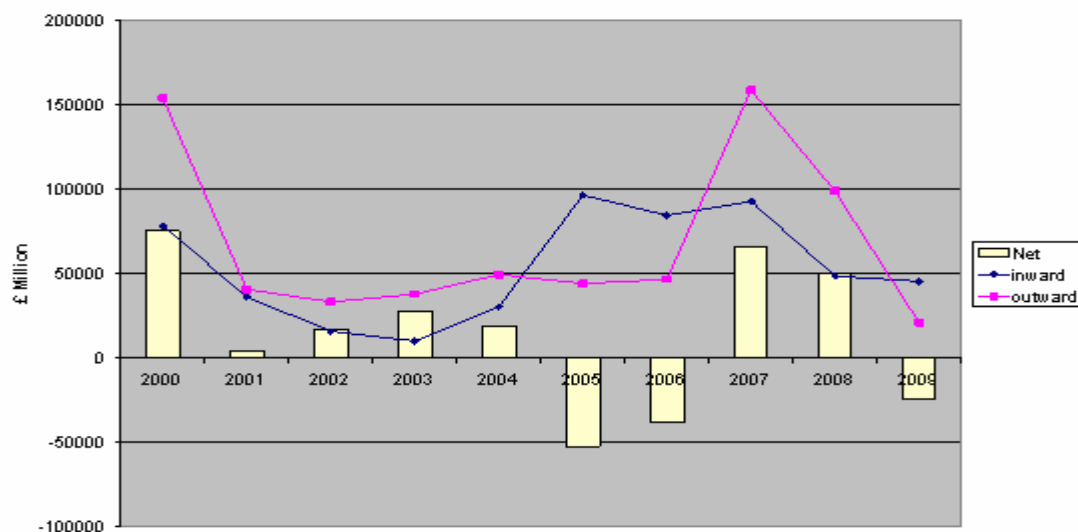
Figure 12: UK Stocks of Inward and Outward Investment 2000 to 2009



Source: ONS National Statistics UK Foreign Direct Investment

Figure 13 shows the flows of inward and outward direct investment in 2000 and 2009 and illustrates how variable these are year on year. For most of the period outward FDI flows exceeded inward FDI flows. One of the reasons for this volatility is that the majority of investment occurs through mergers and acquisitions. Large acquisitions can have a disproportionate effect on annual flows.

Figure 13: UK Flows of Inward and Outward Investment 2000 to 2009



Source: ONS National Statistics UK Foreign Direct Investment

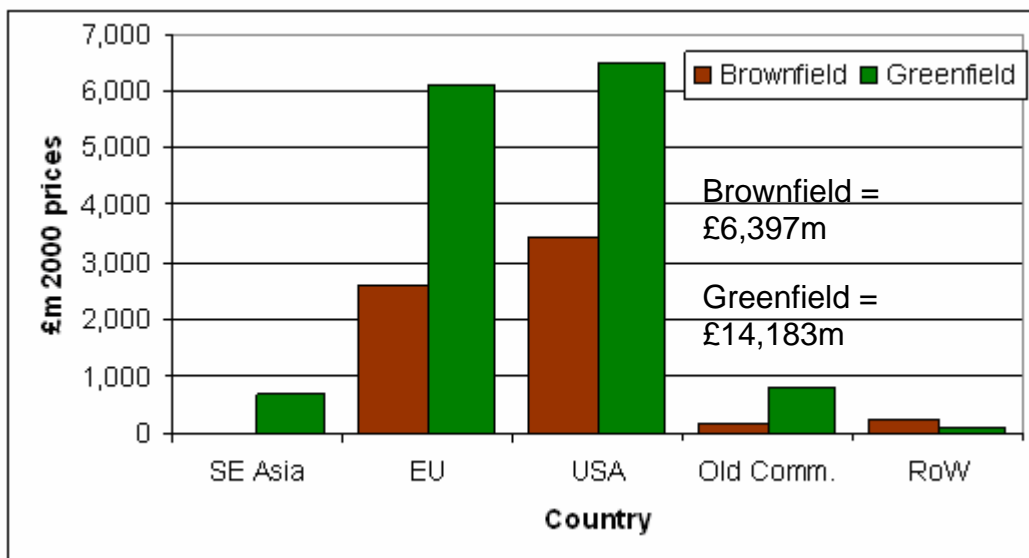
Modes of Foreign Direct Investment

The most frequent form of foreign direct investment into the UK takes place through mergers and acquisitions of UK plants or firms by foreign-owned firms (Brownfield investment). Foreign firms may also come to the UK to establish a new plant (Greenfield investment). Figure 14 shows the gross value added generated by foreign-owned plants in the UK, by nationality of ownership, for both Brownfield and Greenfield investment.

Brownfield investment is essentially a change in ownership of a firm or plant, so that at the moment at which this change occurs, it does not directly add to employment or the capacity to produce in the UK. By contrast, because by definition Greenfield investment is the opening of a new production or services facility, the investment immediately increases capital stock.¹²

Figure 15 shows that for both manufacturing and services, foreign-owned Greenfield plants contributed more to UK GVA than Brownfield plants, while those plants owned by USA firms exceeded the GVA contribution of plants owned by EU-owned firms. Plants owned by firms outside the USA and EU contributed much less to GVA; outside USA, EU, Southeast Asia and the old Commonwealth countries, the GVA contribution of Brownfield plants in services exceeds that of Greenfield.

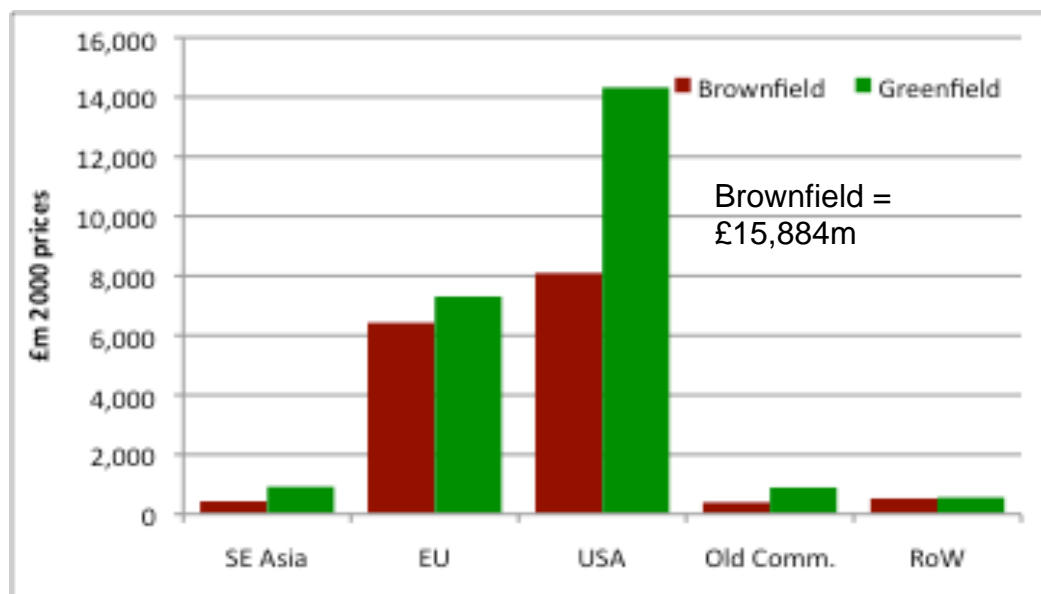
Figure 14: Total Real Gross Value Added by Country (and type) of Origin, 1995-2000, in GB Manufacturing



Source: Harris, R. (2009)

¹² Harris (2009)

Figure 15: Total Real Gross Value Added by Country (and type) of Origin, 1998-2002, in GB Service Sector



Source: Harris, R. (2009)

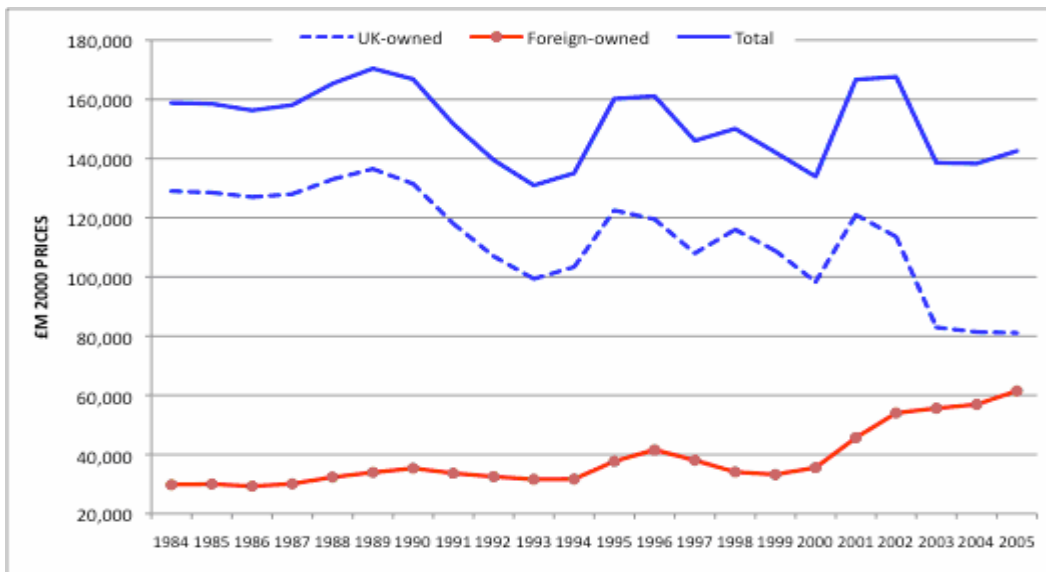
Trends in the Contribution of Inward FDI to UK Output, Gross Value Added, and Employment

Figures 16 and 17 show recent trends in the contribution of foreign-owned plants to UK output in manufacturing and services respectively. In manufacturing, as of 2005, the foreign-owned share of output had increased to nearly equal that of UK-owned plants.¹³ This average masks considerable variation across sectors with some sectors, such as automotive, overwhelmingly dominated by foreign-owned plants. For services, the contribution of inward FDI to output has also increased, but less sharply, again with considerable variation across sectors.

The share of GVA generated by foreign-owned plants, illustrated in Figures 18 and 19, is significantly lower than the output share. This reflects the fact that foreign-owned plants tend to make greater use of purchased inputs, and invest more in capital equipment, than is typical of UK-owned plants.

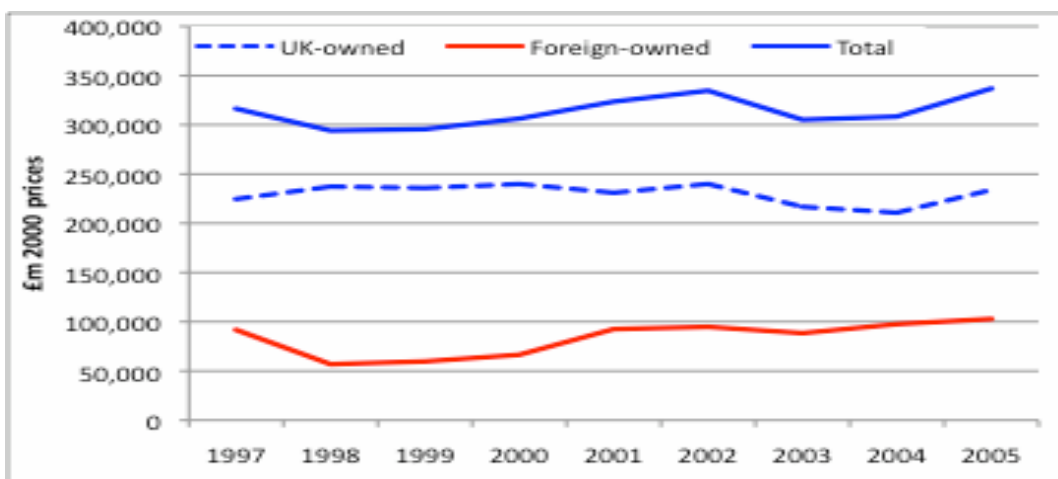
The relatively greater use of capital and purchased inputs in foreign-owned plants is reflected in relatively lower labour intensity. Hence the share of foreign-owned firms in total UK employment, illustrated in Figures 20 and 21, has been growing much less quickly than their share in output.

¹³ Harris (2009). At the time of the study 2005 was the latest year for which ONS data were available.

Figure 16: GB Manufacturing Gross Output, 1984-2005

Source: Harris (2009)

Figure 17 shows gross output in the services sector. The analysis did not cover the whole services sector but was restricted to those elements of the sector in which inward foreign direct investment (FDI) accounted for more than 10 per cent of industry GVA and more than 1 per cent of all foreign-owned GVA.¹⁴ Over the period 1997-2005, GVA of UK-owned plants increased around 4 per cent, while GVA increased over 12 per cent in the foreign-owned sector.

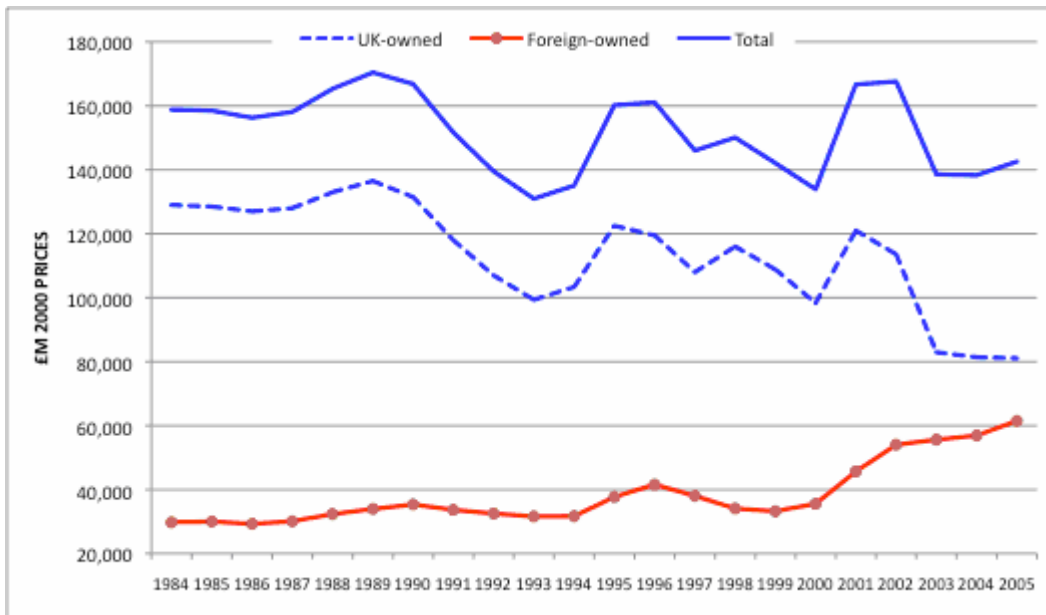
Figure 17: GB Service Sector^a Gross Output, 1997-2005

^a Source: Harris (2009) Only includes certain sectors (see text for details)

¹⁴ Note, the ARD does not cover most of SIC's 65 – 67 (financial intermediation) and therefore these sectors have been omitted as well.

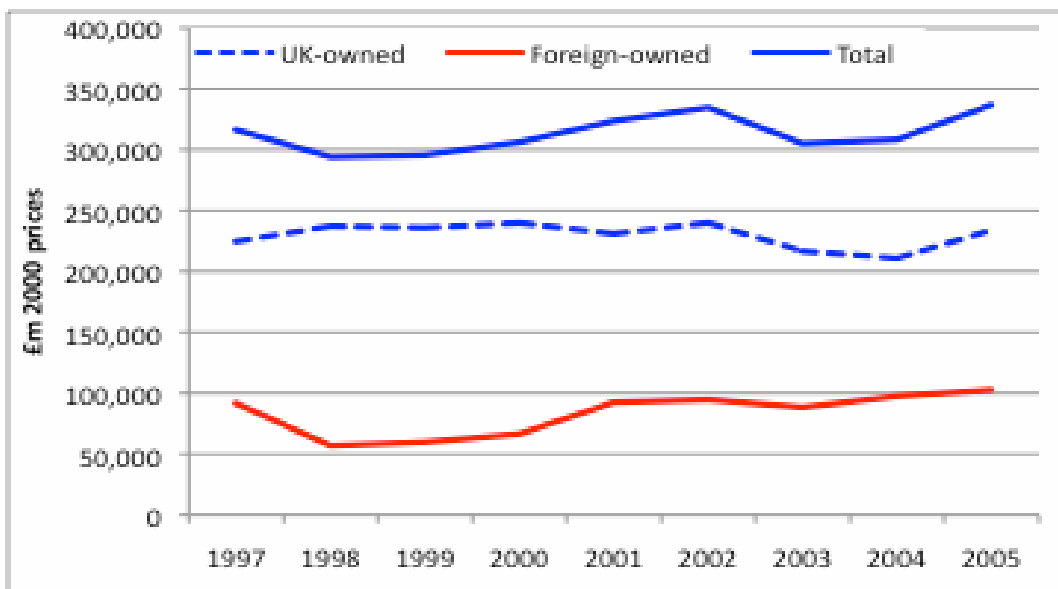
Like manufacturing, the greatest difference in the foreign-owned sector between the results based on gross output and GVA is the greater use of intermediate inputs by the subsidiaries of multinational enterprises (MNEs).

Figure 18: GB Manufacturing Gross Value Added, 1984-2005



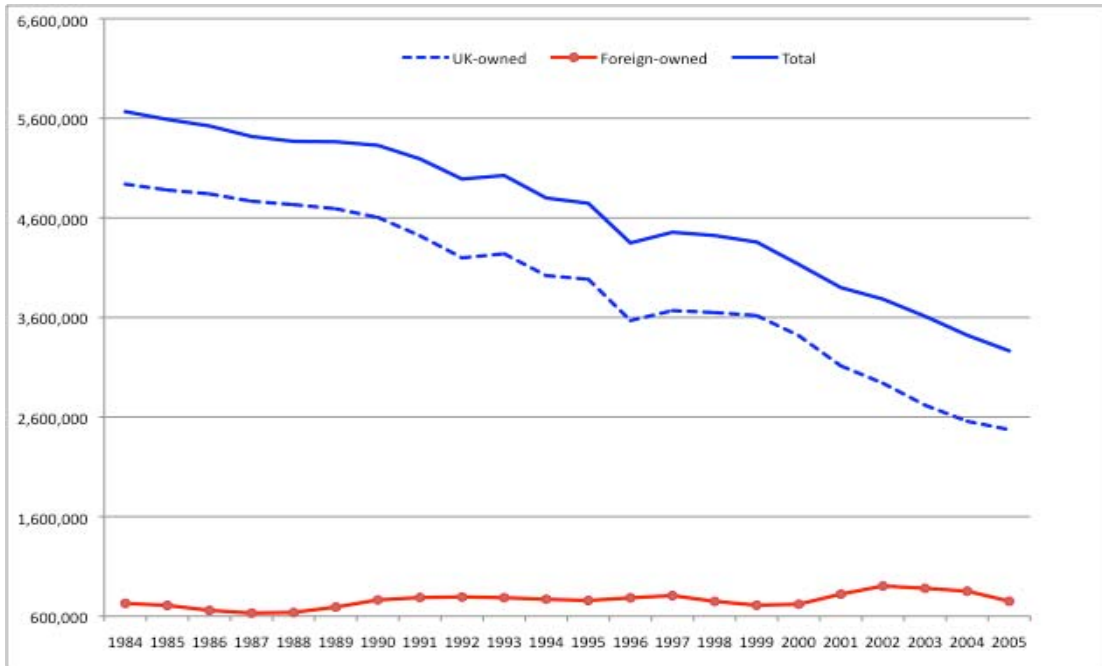
Source: Harris (2009)

Figure 19: GB Service Sector^a Gross Value Added, 1997-2005



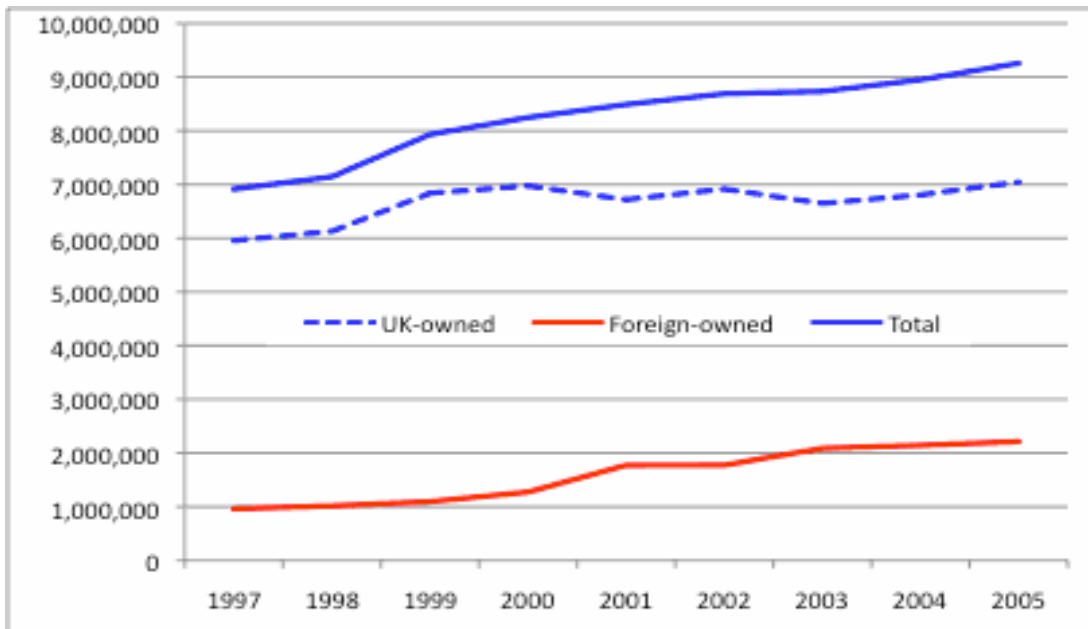
^a Source: Harris (2009) Only includes certain sectors (see text for details)

Figure 20: GB Manufacturing Employment, 1984-2005



Source: Harris (2009)

Figure 21: GB Service Sector^a Employment, 1997-2005



^a Source: Harris (2009) Only includes certain sectors (see text for details)

Conclusions

- The UK has continued to be highly successful in attracting inward investment, with the USA continuing to be much the largest source;
- The largest share of inward FDI in the UK has been in Greenfield investment, for both services and manufacturing. However, Brownfield investment is more common than Greenfield for inward FDI from locations outside EU and the USA.
- Inward investors now account for around half of UK manufacturing output, and just over two-fifths of services sector output. Their shares in Gross Value Added and employment are lower, due to relatively low labour intensity.

Effects of Exporting and FDI on Employment and Wages

In this section we look at recent evidence on the effects of exporting and inward investment on employment and wages.

Exporting and Employment

Many studies, including studies for the UK¹⁵, have shown that exporting firms tend to be larger, and hence to employ more people. Since exporting firms also tend to have higher productivity, stronger financial performance¹⁶, and greater probability of survival,¹⁷ these jobs are also likely to be more sustainable.

A study carried out for BIS in 2007, estimated that in 2004 (the latest year analysed), UK exports of goods and services embodied around seven million jobs,¹⁸ roughly 27 per cent of the total workplace jobs of 30 million¹⁹. The number of jobs embodied by exports was estimated to have fallen steadily between 2000 and 2004 from eight million in 2000 (23 per cent of the total).²⁰ This jobs decline occurred despite

¹⁵ Harris and Li (2010); Kneller et al, (2010).

¹⁶ Greenaway et al. (2007)

¹⁷ Harris and Li (2007), Kneller et al (2010)

¹⁸ Riley (2007)

¹⁹ ONS Labour Force Survey 2004 <http://www.statistics.gov.uk/statbase/TSDdownload2.asp>

²⁰ Riley (2007)

continued growth in exports from £276,866 million to £ 303,796 million in 2004,²¹ equivalent to 27.6 per cent and 25.3 per cent of GDP respectively.²²

Comparisons by industry for the years 1997 to 2004 indicate that the number of jobs embodied in manufacturing exports fell over this period, while those of services exports increased.²³ By contrast, goods exports grew over the period by 11 per cent, although not as fast as services exports 72 per cent.²⁴

There is evidence that employment growth tends to be stronger in exporting firms. For the UK, evidence from the BIS SME Barometer has consistently found stronger employment growth among exporting firms. For example, in June 2009, 19 per cent exporters were employing more staff than a year previously, compared to 11 per cent non-exporters. Some 45 per cent of exporters had recruited new employees in the past 12 months, compared to 31 per cent of non-exporters. Successive waves of the Barometer during the recent downturn also found that exporting firms performed more strongly in terms of maintaining employment levels and recruiting new staff.

Evidence for other countries suggests a similarly positive association between exporting and employment growth. Employment growth has been found to be higher in exporting plants in the US than in non-exporting plants.²⁵ Analysis of Belgian data found that starting to export and stopping were associated with an increase and decrease in employment respectively. These effects were greater for larger firms.²⁶

Evidence from surveys of UK exporters who have received help to begin exporting, or to enter a new market, shows that some of the effects of new market entry on business growth translate into job growth. Evidence from surveys carried out during 2009-2010 of exporters using UKTI trade services shows that around 43 per cent had either created or safeguarded jobs, with 23 per cent reporting that the support would enable them to create new jobs²⁷.

Exporting and Wages

On average, exporting firms pay higher wages than non-exporting firms.²⁸ These higher wages are underpinned by the higher productivity typical of exporters, discussed in Chapter 3. Controlling for other changes in plant characteristics, a US study found that plants which started to export increased wages, while those which stopped exporting reduced wages.²⁹

²¹ ONS (2010) Pink Book

²² ONS (2008, 2008)

²³ Riley (2007)

²⁴ Riley (2007)

²⁵ Bernard and Jensen (1995)

²⁶ Pisu, (2008)

²⁷ OMB (2010b)

²⁸ Kneller et al (2010), Schank et al (2010)

²⁹ Bernard and Jensen (1995)

Findings from Germany suggest that there can be a significant export wage premium for workers in the highest skill categories, but that lower-skilled workers may receive lower wages in firms which export.³⁰ For Germany, wages have not been found to increase in response to beginning to export. This suggests that the higher wages observed in German exporting firms are due to self-selection of more productive, better paying firms into exporting, rather than being a consequence of export activities.³¹ This is consistent with theoretical models in which larger, more productive firms invest more effort in recruitment, so have workforces of above average ability.³² Higher wages may also help firms to retain staff who have acquired significant tacit knowledge about the firm's products or processes.³³

Conclusions

The evidence reviewed on exporting and employment has shown that:

- Exporting firms support stronger employment growth and higher wages. This stronger employment performance is underpinned by their higher productivity and stronger business growth.
- Employment in exporting firms was more resilient during the economic downturn, suggesting that jobs in these firms are also likely to be more

Inward Investment and Employment

Taking other firm characteristics into account, foreign firms in the UK are on average 87 per cent larger than the average domestic firm in terms of number of employees,³⁴ although smaller than UK owned multinationals.³⁵

Employment in the foreign-owned sector has been rising more slowly than output, for both manufacturing and services. This is because labour intensity tends to be lower in foreign-owned firms, resulting in lower employment relative to output.

The net effect on total employment of new jobs created within the foreign-owned sector reflects the extent to which recruits to these jobs had previously been employed. Evidence for the UK suggests that inward investors tend to recruit new staff from the pool of the employed, rather than from the unemployed.³⁶ To the

³⁰ Klein et al (2010)

³¹ Schank et al (2010)

³² Helpman et al (2010) Klein et al (2010)

³³ Schank et al (2007)

³⁴ Hijzen et al(2010)

³⁵ Griffith et al (2004)

³⁶ Driffield et al (2008)

extent that foreign-owned firms tend to offer higher wages than UK owned firms, this suggests that there may be some labour market “crowding out” of UK firms.³⁷

Estimates of the indirect employment effects of foreign direct investment in the UK suggest that, for every five jobs created by inward investment, roughly one job is lost by UK firms due to these crowding out effects.³⁸ Nevertheless, this suggests that Greenfield inward investment has a net positive effect on total employment.

Foreign mergers and acquisitions, by contrast, are associated with a fall in employment at firm level in the UK.³⁹ Plant level analysis suggests that employment rises in plants which survive takeovers, but that takeovers increase the probability of plant closure.⁴⁰ Quite soon after foreign mergers or acquisitions involving a multi-plant firm, one or more plants tend to be closed down, implying a process of restructuring of the firm.⁴¹ This process tends to involve a shift to a less labour intensive mode of operation, increasing the use of purchased inputs and other complementary resources. These changes result in increased labour productivity, but lower overall employment for a given level of the firm’s output.

Inward Investment and Wages

Overall, foreign-owned firms in the UK pay higher wages, on average 37 per cent more than domestic firms. However, comparing firms on a like for like basis, the difference falls to 30 per cent; when the comparison is between wages paid to individuals with similar characteristics, the gap falls again, to 12 per cent.⁴²

Analysis of the effect of foreign ownership on wages by skill level suggests differences according to whether employees are unskilled or skilled. Skilled workers tend to receive higher wages from foreign-owned firms. This may result from a tendency to bid wages upwards, in the process of recruiting skilled workers from other firms. Conversely, inward investment is associated with a negative impact on the wages of unskilled workers.⁴³

There is also evidence that, where technology transfer occurs from inward investors to domestic firms, this leads to an increase in the demand for skilled labour from the domestic firms, and a positive influence on wages for these skilled workers.⁴⁴

Demand for skilled and unskilled workers in the UK is also influenced by patterns of purchasing among inward investors. Recent research suggests that inward investors which purchase from UK-owned firms across the country tend to increase demand

³⁷ Driffield, et al (2008)

³⁸ Driffield (1999)

³⁹ Hijzen, et al (2010); Schiffbauer et al (2009).

⁴⁰ Harris (2009)

⁴¹ Harris (2009)

⁴² Hijzen et al (2010)

⁴³ Bailey and Driffield (2002)

⁴⁴ Driffield and Taylor (2000)

for unskilled workers among their suppliers in upstream sectors. On the other hand, where inward investors are purchasing inputs of higher technology, this can instead increase demand for skilled workers, leading to an increase in wages for this group.⁴⁵

There is some evidence that foreign mergers and acquisitions are associated with higher wages⁴⁶ but there is variation by sector and home country of the acquiring firm.⁴⁷ However, there is evidence that workers who were in the firm prior to the merger or acquisition may not experience an increase in wages post-acquisition: Low skilled workers experienced a small negative impact on their wages, while semi-skilled and high skilled workers experienced no effect on their wages.⁴⁸ However, when workers moved from domestic to foreign firms, their wages did tend to rise.⁴⁹

Conclusions

In summary, evidence on the effects of inward investment on employment and wages in the UK has shown that:

- Inward investment has been leading to a change in the structure of labour demand in the UK, overall tending to increase demand for skilled labour while reducing demand for unskilled labour. This trend is underpinned by the less labour intensive modes of operation, and higher labour productivity, which characterise foreign owned firms.
- Greenfield inward investment has a net positive effect on employment, mainly for skilled labour.
- Foreign mergers and acquisitions are associated with a fall in overall employment at firm level. In multi-plant firms, while some plants may be closed post acquisition, employment in surviving plants may increase.
- The effects of inward investment on labour demand and wages depends partly on the nature and extent of inputs sourced from UK firms, and on whether there is technology transfer to UK firms.
- The effect of inward investment on wages and employment in the UK tends to be positive for skilled labour but negative for unskilled labour.

⁴⁵ Driffield et al (2010)

⁴⁶ Harris (2009)

⁴⁷ Harris (2009) and Girma and Gorg (2007)

⁴⁸ Hijzen et al (2010)

⁴⁹ Hijzen et al (2010)

Conclusions

This chapter has reviewed recent trends in exporting and inward investment in the UK. It has shown that:

Exporting

- UK export performance, except in services, has lagged behind that of key developed country competitors, both for the world as a whole, and with respect to exports to high growth markets.
- The relative weakness in UK export performance is not associated with selling fewer product lines than key competitors, but rather to lower average export values per product category.
- Growth in the value of exports, as a whole, at product level, and to individual markets, is driven by the number of exporters, as well as by average values per exporter.
- Exporting firms make a major contribution to sustainable job growth, showing stronger employment growth and higher wages than non-exporters. This stronger employment performance is underpinned by their higher productivity and stronger business growth.

Inward investment

- The UK has continued to be highly successful in attracting inward investment, with the USA continuing to be much the largest source.
- Inward investors now account for around half UK manufacturing output, and just over two-fifths of output in the services sector. Their shares in Gross Value Added and employment are lower, due to greater use of purchased inputs and relatively low labour intensity.
- The largest share of inward FDI in the UK has been in Greenfield investment, for both services and manufacturing. However, Brownfield investment is more common than Greenfield for inward FDI from locations outside EU and USA.
- The effects of inward investment on labour demand and wages depend both on the type of investment, and on the nature and extent of inputs sourced by inward investors from UK firms.
- Inward investment has been tending to increase demand for skilled labour while reducing demand for unskilled labour, contributing to a change in the structure of labour demand in the UK. The effect on wages and employment thus tends to be positive for skilled labour but negative for unskilled labour.

Chapter 3: Drivers of the Intensive and Extensive Margins of Exports and Foreign Direct Investment

As identified in Chapter 2, export growth is influenced both by the number of firms exporting (extensive margin) and the amount exported by these firms (intensive margin). This chapter begins by looking more closely at what change at the intensive and extensive margins means for individual firms, and at the evidence on the respective contributions of these changes to export growth. We then look at trends in UK exporter activity, at the characteristics of exporters, and at some of the factors which influence the business decisions behind this activity. Finally we examine the factors influencing the decisions of firms as to whether to engage in foreign direct investment, and, if so, in which market, and then look at the characteristics of foreign owned firms in the UK.

Extensive and Intensive Margins of Trade

Export growth at national level, in aggregate and to particular overseas markets or regions, is driven by a combination of:

- Increases in the number of exporters, the firm “**extensive margin**”. The firm extensive margin can be interpreted either at the level of individual export markets, or at the level of national trade;
- Growth in the average value exported by individual established exporters to individual markets or at national level, the firm “**intensive margin**”.

For individual firms, in turn, the value of exports can be increased in several ways:

- **Entering new markets.** Survey evidence shows that most UK exporters see expansion into new markets as a necessary route to increasing their total exports. This view is supported by the fact that firms which export more, also tend to export to more markets.⁵⁰
- **Increasing the value of exports to the same export markets.** This in turn can be achieved either by increasing sales of the same products, or by beginning to export new products to their established export markets.

⁵⁰ OMB Research (2010a)

Recognising these various possibilities, researchers sometimes focus on investigating the number of “product-firm” combinations, either in total national exports, or with respect to exports to particular markets. However, this means that what is described as change at the “extensive margin” in one context, would be described as “intensive margin” in another. For example, a firm which is already an exporter to China increases its exports by beginning to export a new product to China. This would be an increase in the “firm intensive margin”, but would be counted as a change at the “extensive” margin by a study which is focusing on new firm-product combinations.

Similarly, studies which use sector level data may define the “extensive margin” in terms of the *number of products* sold. These studies then refer to growth in the value of each *product* sold as the “intensive margin”. While the “**product intensive margin**” would be the same as the “**firm intensive margin**” if each firm sold only one product, in practice growth in the “product intensive margin” is likely to be partly due to increases in the number of companies selling that product, as well as increases in the average value of the product sold by each company.

Some studies focus instead on the number of **product-country combinations**. For example, as noted above, the UK exports a relatively large number of products. Each time a given product is exported to a new market, or a new product is exported to an established UK export market, this would count as an increase in the “**product-country extensive margin**.” Clearly, this change could be achieved either by:

- **Established UK exporters increasing the number of exported products, or the number of markets to which they export.** In most cases this is likely to be associated with growth in the firm’s overall exports – increase at the “firm intensive margin” – but in some cases the firm may be seeking to replace sales lost elsewhere, with no gain to its overall exports;
- **Changes in the population of exporting firms.** Since companies new to exporting are likely to begin by selling relatively small values, in the short term this effect is likely to be modest.

The studies reported below use a combination of these definitions.⁵¹

Explaining Export Performance at a Snapshot in Time

For the UK, a recent study of **services exports** (Kneller et al 2010) found that some 70 per cent of the variation in total UK services exports across markets came from variation in the number of firms that exported to that market (**extensive margin**). The remaining 30 per cent occurred through increases in the average value of the transactions per firm (**intensive margin**).

⁵¹ Firm level studies for the UK are not available as researchers do not yet have access to firm level HMRC data.

A study of the USA analysed the drivers of variations in goods exports to different markets at a snapshot in time and found that the majority of the variation (77 per cent) was driven by the extensive margin (defined as a combination of the number of firms exporting, the number of products exported and the fraction of all possible firm-product combinations to an export market for which trade was positive).⁵²

The importance of the product extensive margin is also highlighted by a study which used sector level data to explain differences in exports. Larger and wealthier countries export more, and 60 per cent of this difference was found to come from variations in the number of goods exported.⁵³

Explaining Changes in Exports over Time

Evidence from a study of the US suggests that the respective contributions of the extensive and intensive margins to growth in the value of exports vary over time.⁵⁴ In the short run, the intensive margin was the main driver of export growth, while the impact of firms starting and stopping exporting on US export growth was negligible.⁵⁵ Analysis of similar data from Portugal found that changes in product-country combinations were more important in the short term in explaining changes in export growth than the number of firms starting and stopping export activity.⁵⁶

However, looking at longer periods, these studies both found that over time the extensive margin became more important. Looking at two five-year periods, the US study found that the intensive margin contributed 53 per cent and 46 per cent respectively while over a ten year period its contribution fell to 35 per cent, with the extensive margin rising to contribute 65 per cent. The extensive margin was predominately driven by new firm-product-country combinations, rather than by change in the total number of US exporters, which contributed just 24 per cent.⁵⁷

A study of Hungarian data found that the relatively small contribution of the extensive margin to short term changes in total exports is due to firms which are beginning to export, or ceasing to export, tending to be relatively small.⁵⁸

Duration of Export Relationships

Increase in the total number of exporters depends both on the number of companies beginning to export in any given year, *and* on the duration of their export activity. Research shows that many firms begin to export and then cease to do so after a

⁵² Bernard et al (2009)

⁵³ Hummels and Klenow (2005)

⁵⁴ Bernard et al (2009).

⁵⁵ Ibid

⁵⁶ Amador and Oromolla (2008)

⁵⁷ Bernard et al (2009)

⁵⁸ Gorg et al(2008)

short time. Accordingly, there is churn in the exporter population. This also applies to growth in the population of firms exporting to a given market.

Studies have also looked at how the duration of export relationships contributes to the value of exports, both at firm level and at sector and country level. At all levels, studies find evidence that many export relationships are of short duration, and that these contribute relatively less to total exports than long relationships.

A study of Hungarian data found that new product-country combinations, and those which were coming to an end, tended to be relatively small compared with those which were persisting over time.⁵⁹

Other studies have also found that in the long run, the importance of the extensive margin is influenced by the export relationships which endure.⁶⁰ In addition, there is evidence that firms which started to export, and were successful at doing so, tended to enjoy rapid export growth, so that over the course of a decade, these new entrants contributed significantly to export growth.⁶¹

At sector level, there is evidence that the **duration of export relationships** is more important than the number of **new export relationships** in explaining cross country variation in the level of total exports. A study of manufacturing exports from 46 countries between 1975 and 2003,⁶² defining an export relationship as a product sold to a given market, found that:

- Most export relationships are short lived, with around 50 per cent lasting less than two years.⁶³ New export relationships accounted for only a small share of total exports, with **long duration relationships** accounting for most;
- The EU 15 and the USA both showed a higher incidence of longer duration export relationships than was found for developing countries, but **not** a higher incidence of new relationships;
- Developing countries would have higher export growth if they were able to increase the duration of export relationships.

A study of the countries supplying German imports reports similar findings. Only around 10 per cent of trade relationships in 2004 had been in existence for more than

⁵⁹ Gorg et al(2008)

⁶⁰ Eaton et al (2007b); Amdaor and Opromolla (2008);

⁶¹ Eaton et al (2007b); Amador and Opromolla (2008)

⁶² Besedes and Prusa (2005) For the USA, about 53 per cent of product-country export relationships failed within two years, but 20 per cent lasted at least 15 years.

⁶³ For the USA, about 53 per cent of product-country export relationships failed within two years, but 20 per cent lasted at least 15 years.

ten years. The German study also highlighted significant differences across products and countries in the duration of export relationships.⁶⁴

Conclusions:

- Cross country differences in the value of exports, as a whole, at product level, and to individual markets, are driven by the number of exporters, as well as by average values per exporter.
- Larger export values are associated with exporting for longer, and selling into more markets;
- Larger export values at national level are associated with exporting in more firm-product-country combinations;
- Growth in the pool of exporters, in total and to individual markets, depends on the **duration** of export relationships as well as the number of new firms entering export markets. Many export relationships are short lived, as companies export only for a short time, or export to a given market only for a short time. Short relationships contribute little to export growth.

Trends in UK Firm Participation in Exporting

As set out in BIS Economics Paper 5, there is no single comprehensive source of data for the UK which identifies firms which export or are engaged in international activity. However, there are several surveys which provide estimates. These vary in their coverage of the business population. The findings indicate that:

- Around 20 per cent of all UK SMEs (including firms with no employees) export.⁶⁵ This is slightly under the EU average of 25 per cent (Figure 22).⁶⁶ Among firms with ten or more employees, the proportion of UK firms exporting is around 30 per cent;
- The percentage of firms which export has increased over time from 26.1 per cent in 2000 to 30.6 per cent in 2006 (Table 1). The increase has occurred

⁶⁴ Nitsch (2007)

⁶⁵ 2007/8 Annual Small Business Survey (ASBS) is a survey of firms with up to 250 employees, i.e. small and medium sized enterprises (SMEs).

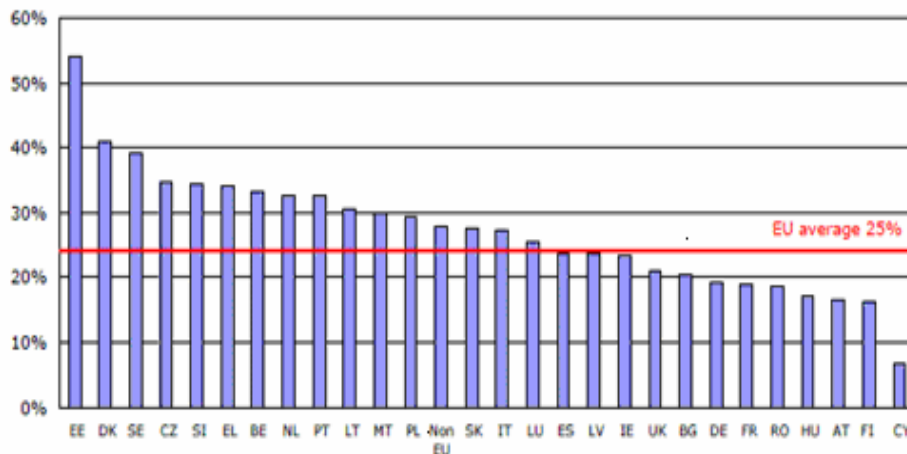
⁶⁶ EIM (2010)

across most sectors, including services,⁶⁷ partly due to higher survival rates among exporters;

- The percentage of firms exporting is much higher in manufacturing (Table 1),⁶⁸
- The percentage of firms exporting increases with firm size, especially among manufacturing firms. In 2006, among services firms, there was little difference in the proportion of firms exporting by size band (Table 1);⁶⁹
- Innovative and R&D active firms are more likely to export in all size bands⁷⁰.

Table 1 shows the percentages of UK firms exporting by size band in 2000, 2004, and 2006. The figure for 2006 for manufacturing (55.2 per cent) closely matches that for the UK from a recent survey of European manufacturing firms of 55.7 per cent.⁷¹

Figure 22: Percentage of European SMEs Exporting Directly 2006-2008



Source: Survey 2009, Internationalisation of European SMEs EIM/GDCC (N=9480).

Table 2 shows R&D activity in exporting and non-exporting firms in the UK for 2004 and 2006. In both years, firms which conduct R&D are more likely to export, and firms which export are more likely to conduct R&D. For example, in 2006, 43.5 per cent of manufacturing firms undertook R&D, 33.1 per cent both exported and undertook R&D. The other 10.4 per cent (representing nearly a quarter of those doing R&D) undertook R&D but did not export. Thus the table also shows that many UK firms match the R&D profile of exporters but do not export.

⁶⁷ Harris and Li (2010)

⁶⁸ Ibid

⁶⁹ The Community Innovation Survey (CIS). This is a survey of firms which have at least 10 employees at the time of sampling. Data for CIS5 refer to 2006.

⁷⁰ Ibid

⁷¹ Navaretti et al (2010)

Table 1: Percentage of UK Establishments Exporting, 2000-2006, by Size

Employment size	Manufacturing			Services			Total		
	2000	2004	2006	2000	2004	2006	2000	2004	2006
10-49	36.7	39.4	53.6	15.4	18.6	27.7	22.9	22.9	32.9
50-249	64.2	65.6	76.0	21.9	25.7	32.0	42.6	37.0	43.7
250+	72.5	72.9	80.7	25.3	28.9	32.6	51.5	42.1	46.1
Total	43.9	47.0	55.2	15.6	19.9	24.5	26.1	25.7	30.6

(figures are percentages)

Source: Harris and Li (2010) Data for 2000 are from CIS 3, 2004 from CIS 4, and 2006 from CIS 5.

Table 2: Exporting by R&D Activity

	Do not export	Export	All
2004 (CIS4):			
<u>Manufacturing</u>			
No R&D	39.2%	21.8%	61.1%
Undertake R&D	13.8%	25.1%	38.9%
Total	53.0%	47.0%	3.428^a
<u>Non-manufacturing</u>			
No R&D	64.9%	11.4%	76.3%
Undertake R&D	15.2%	8.5%	23.7%
Total	80.1%	19.9%	12.486^a
2006 (CIS5):			
<u>Manufacturing</u>			
No R&D	34.5%	22.0%	56.5%
Undertake R&D	10.4%	33.1%	43.5%
Total	44.9%	55.1%	2.933^a
<u>Non-manufacturing</u>			
No R&D	60.6%	12.9%	73.4%
Undertake R&D	14.9%	11.7%	26.6%
Total	75.5%	24.5%	11,758^a

^a Total number of observations

Source: Harris and Li (2010)

Characteristics of Exporters

This section provides an overview of the firm characteristics associated with exporting. These characteristics influence the role which exporting firms play in the growth of UK productivity and prosperity. They also influence the propensity of firms to export, and the nature of their exports, and hence will influence export growth at the intensive and extensive margins.

Productivity

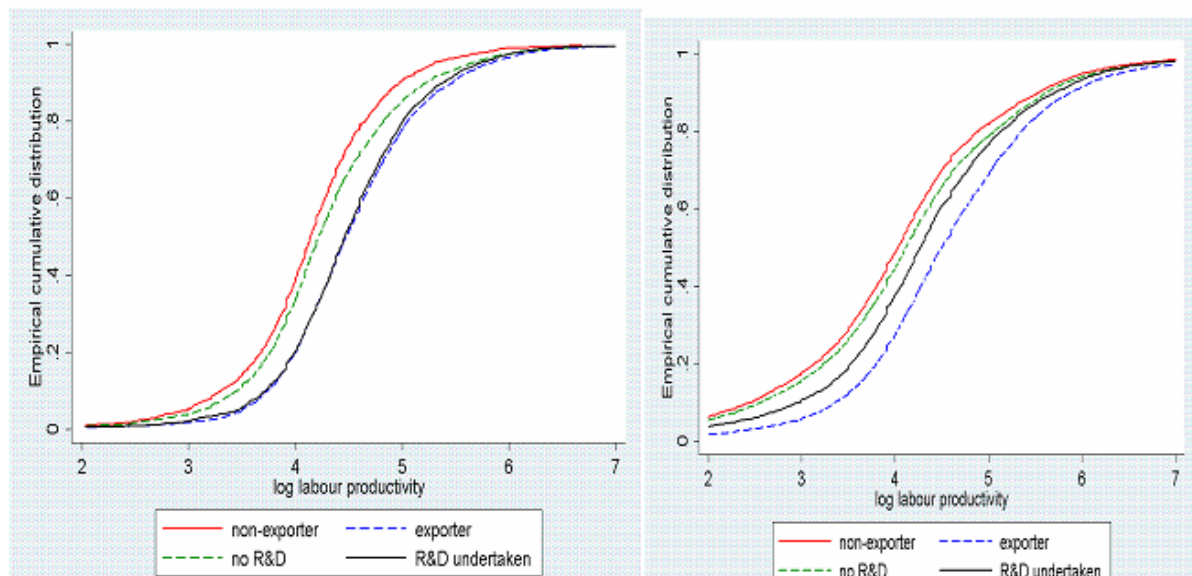
Many studies have found that exporters in both manufacturing and services sectors are generally associated with higher productivity than firms which do not export (Figure 23).⁷² Among UK firms which export services, those in at least ten markets have higher productivity than those in fewer markets.⁷³

There is also evidence that firms which both export and import perform better than those which only trade in one direction.⁷⁴ Those firms which engage in foreign direct investment tend to be the most productive firms.⁷⁵

Figure 23: Productivity Distribution of Exporters and Non-Exporters in the Manufacturing and Non-manufacturing Sectors

Manufacturing

Non Manufacturing



Source: Harris and Li (2010)

⁷² Wagner (2007); Harris and Li (2010); Kneller et al (2010)

⁷³ Kneller et al (2010)

⁷⁴ Kneller et al (2010)

⁷⁵ Helpman et al (2003) FDI is often undertaken in addition to exporting.

These findings are consistent with the theory that there are barriers to export market entry which only better performing firms are able to overcome. Theory suggests that this is because exporting incurs a fixed entry “cost”, and that firms which can absorb or overcome these costs are expected to be those which are most productive.⁷⁶

However, in practice, there is considerable heterogeneity in productivity levels of firms among both exporters and non-exporters, as illustrated in Figure 23. The figure also shows that there are many non-exporting UK firms with productivity levels which match those of exporters.

Econometric evidence for the UK indicates that firms also increase their productivity after entering export markets.⁷⁷ However, firms which began to export, and later ceased to do so, were found to suffer a productivity fall.⁷⁸

Absorptive Capacity

“Absorptive capacity” is the ability of a firm to identify and make effective use of knowledge and ideas from external sources. Studies have shown that this plays an important role in successful business growth,⁷⁹ and in innovation performance. Research for the UK shows that exporters have higher absorptive capacity, and that this difference increased between 2004 and 2006.⁸⁰ Firms which co-operated with organisations overseas on innovation were also more likely to export.⁸¹

Innovation and Research and Development

Firms which export are more innovative and more likely to engage in research and development (R&D) than those which do not. Table 3 shows that the proportion of business R&D accounted for by UK-owned exporters is nearly twice their output share, while the R&D share of non-exporters is much lower than their output share.⁸²

There is also evidence that firms which export are much more likely to hold IP. A study of Intellectual Property (IP) and UK exporting firms found that, in a sample of SMEs, 1.9 per cent of these firms held patents. However, among SMEs which were active in overseas markets, 10.5 per cent held patents (Table 4).⁸³

Studies of the links between innovation and exporting suggest that causality runs in both directions, as discussed in Chapter Five.

⁷⁶ Bernard et al (2005).

⁷⁷ Harris and Li (2007); Greenaway and Kneller (2007) See discussion in Chapter 5.

⁷⁸ Harris and Li (2007)

⁷⁹ Bessant et al (2005)

⁸⁰ Harris and Li (2010)

⁸¹ Harris and Li (2009)

⁸² Harris and Li (2006a)

⁸³ Rogers and Helmers (2010)

Table 3: Shares of Total Turnover and R&D by Ownership and Exporting Status^a, 1997 and 2004⁸⁴

	(real) turnover		(real) R&D spending	
	1997	2004	1997	2004
UK-owned non-exporter	40.0 <i>(64.5)</i>	37.0 <i>(44.1)</i>	2.6 <i>(27.4)</i>	9.5 <i>(32.3)</i>
UK-owned exporter	44.0 <i>(25.3)</i>	43.0 <i>(26.5)</i>	87.9 <i>(44.2)</i>	72.8 <i>(43.2)</i>
FO-owned non-exporter	4.0 <i>(3.7)</i>	6.0 <i>(11.1)</i>	0.2 <i>(11.3)</i>	4.3 <i>(4.2)</i>
FO-owned exporter	12.0 <i>(6.5)</i>	14.0 <i>(18.3)</i>	9.3 <i>(17.1)</i>	13.3 <i>(20.3)</i>
Total	100 <i>(100)</i>	100 <i>(100)</i>	100 <i>(100)</i>	100 <i>(100)</i>

^a Figures in italicised parenthesis are based on *CIS3* data for 2000 and *CIS4* data for 2004 (see Tables 3.7 and 3.8 in Harris and Li, 2006a)

Source: Harris (2008) (*CIS4*) weighted *FAME-BERD* database

Table 4: Share of Firms that are IP Active, by Different Groups

Group	Share of firms that are IP active (2000 to 2007)				
	Patents	EPO or WIPO	UK Trade Marks	Community Trade Marks	Community Designs
Active SMEs	1.9%	1.4%	6.2%	2.5%	0.4%
Number of firms	4,389	3,212	14,121	5,684	966
SMEs with overseas turnover	10.5%	8.0%	22.7%	12.1%	2.3%
Number of firms	1,827	1,386	3,947	2,101	395

Source: Rogers and Helmers (2010)

⁸⁴ Harris (2008) The table shows that the share of real R&D spending by UK-owned exporters (using *BERD-FAME*) was over 80 per cent in 1997, and just over 70 per cent in 2004. Estimates based on *CIS* give a similar picture relating to export intensity, but a very different picture of the distribution of R&D across sub-groups. This is due to difference in coverage between the *BERD* and *CIS*, and across waves of the *CIS*. Both sources show that UK-owned exporters dominate UK business R&D.

Financial Performance

Exporters show stronger financial performance than non-exporters. Theoretical models predict that firms with better financial performance, i.e. those facing fewer liquidity constraints, will be more likely to be exporters.⁸⁵ This is consistent with evidence from French firms.⁸⁶ However, other econometric studies have found that firm financial performance does not affect the likelihood that firms will begin to export.⁸⁷ A study of UK firms found that improved financial performance is an outcome of exporting rather than a determinant of export market entry.⁸⁸

Destination and Geographical Diversification of Exports

The amount that firms export (intensive margin of trade) is influenced both by the number of markets that firms sell to, and the number of products which they export. This section looks at the number and type of markets to which firms export.

Born Global and Stages Model

The traditional “stages” model of exporting firms suggests that firms first sell to the domestic market. When they start to export, they start with the easiest markets such as those which are proximal in terms of language, culture and physical distance. Over time they enter more difficult and psychically⁸⁹ more distant markets.

However, there is a growing literature which focuses on “born globals”. These are firms which internationalise very early in their development. These firms tend to be innovative and to operate in niche markets for which the domestic market is not sufficiently large, or in markets which are global in nature.⁹⁰ A fuller discussion of these firms is available in BIS Economics Paper 5.

Figure 24 illustrates findings from a survey of internationally active firms, and shows a link between the number of years exporting and the number of export markets, consistent with the discussion of the “stages model”. Firms exporting for over ten years are much more likely to be in 20 or more markets.⁹¹

Nevertheless, the chart also shows considerable diversity across exporters, with nearly a quarter of long term exporters selling to only 2-5 markets. A significant number of firms exporting only 2-5 years export to 11-20 or more markets,

⁸⁵ Chaney (2005)

⁸⁶ Bellone et al (2008)

⁸⁷ Arndt et al (2009); Greenaway et al (2007)

⁸⁸ Greenaway et al (2007)

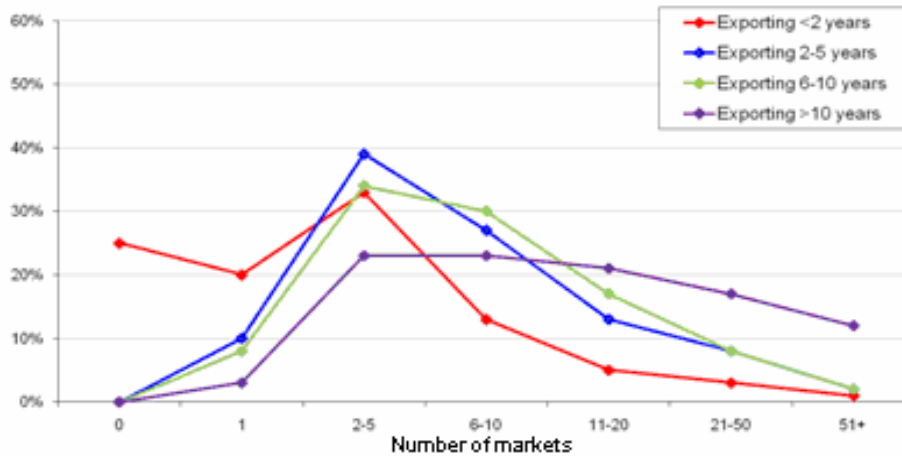
⁸⁹ The term ‘psychically’ different is used rather than physically so as to include other factors

⁹⁰ Chetty and Campbell-Hunt (2003)

⁹¹ OMB Research (2010a)

suggestive of the “born global” model. Just under half of those interviewed were planning to increase the number of markets to which they were exporting.⁹²

Figure 24: Number of Markets – By Years Exporting



Base: All respondents (Base, Don't know/refused)

<2 years (185, 0%), 2-5 years (219, 1%), 6-10 years (214, 1%), >10 years (270, 1%)

Source: OMB (2010a)

Choice of Export Markets

A recent survey of internationally active UK firms provides evidence on their export destinations (Table 5). Europe was found to be the most popular export destination, with 87 per cent of surveyed firms active in these markets. The percentages of firms which are active in North America, Middle East & Africa, and Asia Pacific are all around 45 per cent, while the percentage for Latin America is much lower.

However, when these results are analysed by age of firm, those established for up to five years are more likely to be active in North America (38 per cent) than in Asia Pacific or the Middle East & Africa. This gives some evidence of the stages type model of exporting, and suggests that the US market may be seen as the least daunting outside Europe. None the less, almost one-third of these younger firms are active in more culturally and geographically distant markets, such as Asia Pacific (32 per cent) and Middle East and Africa (29 per cent).⁹³ The profile of UKTI clients in different overseas regions provides a similar picture.⁹⁴

⁹² OMB Research (2010a)

⁹³ Ibid

⁹⁴ OMB Research (2010b) PIMS Quarterly Reports

Table 5: World Regions Currently Doing Business In - By Age & Size

	Total	Age (Years Trading)			Size (Number of Employees)				
		Up to 5	6-10	Over 10	0-9	10-49	50-99	100-249	250+
Base	902	255	219	428	545	222	53	28	35
Regions									
Europe	87%	81%	85%	89%	83%	92%	96%	93%	92%
North America	44%	38%	42%	47%	40%	44%	58%	57%	54%
South & Latin America	21%	15%	13%	26%	15%	23%	31%	35%	47%
Middle East & Africa	45%	29%	38%	52%	38%	48%	59%	63%	87%
Asia Pacific	46%	32%	42%	52%	40%	49%	71%	47%	70%
Not yet exporting	4%	11%	4%	2%	6%	2%	4%	0%	0%
Don't know	1%	1%	1%	0%	1%	1%	0%	0%	0%

Source: OMB (2010a)

Table 6 provides a comparison of the geographical distribution of UK manufacturing firms with those from six other EU Member States. UK manufacturing firms seem to be less active in the Member States which joined the EU in the most recent enlargements, and in “other Europe”, than most of these comparator countries. However, UK manufacturing firms appear to be more active in “Other Asia and US and Canada” and “Others” than the comparator Member States. The UK has the second highest proportion of firms active in China and India.

High income countries are the main destination of UK services exports. Not only do 96 per cent of UK services traders export to these markets, but these markets also account for the majority of the total value of services exports (80 per cent). Although 30 per cent of these firms export to emerging markets, these exports only account for 9 per cent of services exports.⁹⁵ This demonstrates that export value depends not only on the number of firms exporting to a market but also on quantity sold per firm.

⁹⁵ Kneller et al (2010)

Table 6: The Geographical Distribution of Export Destinations

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

A recent survey of members of the Institute of Directors provides further insights into the world regions entered at different stages of internationalisation. The European Economic Area was the most popular first region to be entered (55 per cent) but was less popular as a second region (15 per cent) or a subsequent region (17 per cent). The US and Canada were most popular as a second region (20 per cent). Other regions of the world were most often cited as the third or further region entered. These patterns illustrate how the majority of firms tend to enter regions which are closer in terms of geographical distance and culture and language (EEA and North America), before entering other world regions.⁹⁶

All of these sources are consistent in identifying emerging markets as much less frequent destinations for UK exporters. This indicates that the pool of UK business people with knowledge and experience of these markets is likely to be relatively small. It also means that the pool of knowledge and know-how which would be required to support the supply side of a market for export services relating to these markets is likely to be thin.

Individual UK businesses will also have fewer UK role models and business colleagues with experience of these markets who could help them understand how to go about exporting there. All of these factors are likely to be a drag on growth in the number of firms exporting to these markets.

Export Intensity and Concentration

As noted above, the average value of exports per exporting firm is one of the drivers of the value of total exports. While firms often seek to increase their exports as part of a growth strategy, in some cases increased export sales may be needed simply to offset declining domestic demand. In either case, increased export sales may be

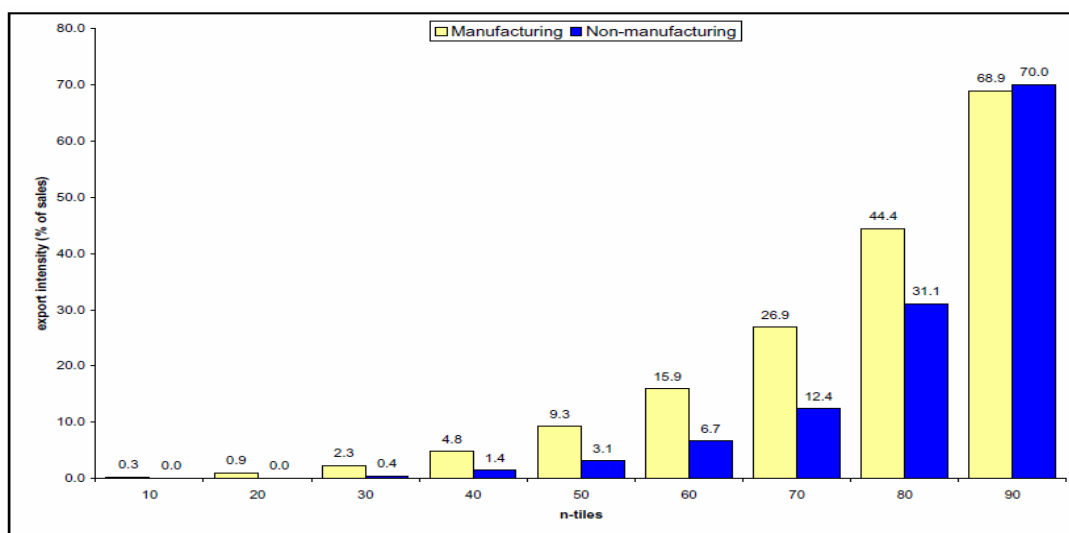
⁹⁶ IoD/UKTI Doing Business Overseas survey, August 2010

associated with increased “export intensity”, measured as the percentage of a firm’s revenues accounted for by export sales.

As set out in a previous BIS Economics Paper⁹⁷, exports account for a low percentage of total sales for many firms: 50 per cent of UK exporters sell less than 5 per cent of their output abroad. Manufacturing firms tend to export more of their output than those in services: While 50 per cent of manufacturing exporters sell 9 per cent or less of their output abroad; the comparable figure for services firms was 3 per cent.⁹⁸ Average export intensity among UK firms has increased over time.⁹⁹

For the top 10 per cent of exporting firms, however, exports account for a high proportion of turnover, 70 per cent in the case of manufacturing and 68.9 per cent for services firms (Figure 25).¹⁰⁰ Firms which export more also tend to export to more markets.¹⁰¹

Figure 25: Export Intensity (Percentage of sales) in UK Exporters by Deciles, 2006



Source: Harris and Li (2010)

Recent research for the UK has found that export intensity tends to be higher among firms which innovate¹⁰², and firms which hold patents¹⁰³. This reflects the fact that exporting can enable firms to increase the return on their investment in patents.

⁹⁷ BIS (2010b)

⁹⁸ Harris and Li, (2010)

⁹⁹ Rogers and Helmers (2008)

¹⁰⁰ Harris and Li, (2010)

¹⁰¹ OMB Research (2010c)

¹⁰² Harris and Li (2010)

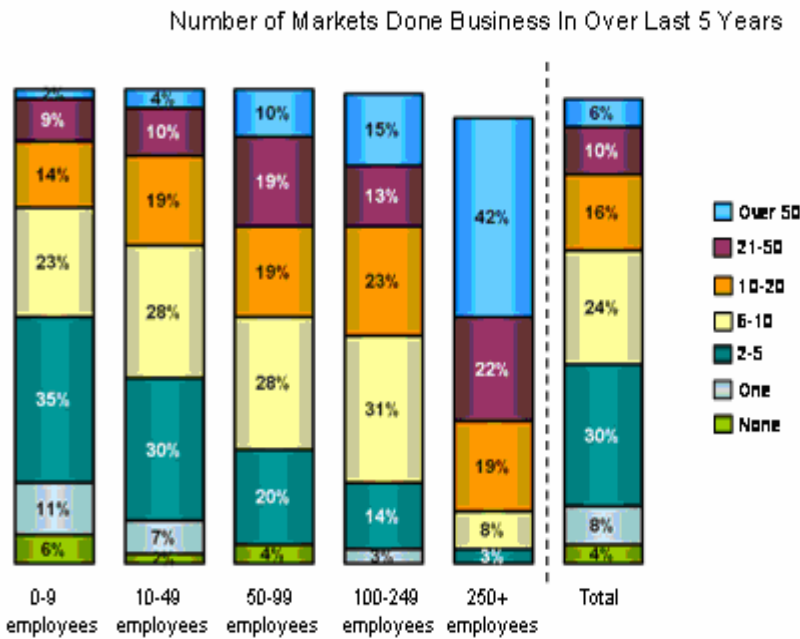
¹⁰³ Rogers and Helmers (2010)

Firms which export to more markets tend to be larger, and to export larger values, thus contributing more to total exports. A US study found that the 7.7 per cent of firms that exported to more than 10 markets accounted for 86 per cent of exports.¹⁰⁴

Figure 26 shows that for UK exporters too there is an association between size of firm and number of export markets, although there are also many smaller firms who export to a great many markets.¹⁰⁵ Growth is the most frequent motivation for seeking to increase the export percentage of turnover (Table 7).

A study of UK services exports found that the top 1 per cent of service exporters accounts for 45 per cent of service exports by value.¹⁰⁶ Studies for other countries have found a similar pattern, with a minority of firms accounting for the majority of total exports. Analysis of French manufacturing exporters found that 1.5 per cent of exporting firms exported to more than 50 markets and accounted for 51.6 per cent of total goods exports from France.¹⁰⁷

Figure 26: Number of Markets – By Size



Base: All respondents (Base, Don't know/refused) – 0-9 (545, 1%), 10-49 (222, 1%), 50-99 (53, 0%), 100-249 (28, 0%), 250+ (35, 6%). Total (902, 1%)

Source: OMB Research (unpublished presentation)

¹⁰⁴ Bernard et al (2005)

¹⁰⁵ OMB Research (2010a) (2008)

¹⁰⁶ Kneller et al (2010)

¹⁰⁷ Eaton et al (2004)

Table 7: Motivations for increasing export sales

Proportion agreeing (4-5 on a 1-5 scale where 1= n/a and 5= completely applicable) that they export for the following reasons:	Motivations for seeking to increase overseas sales as a percentage of turnover
Base	1609
To achieve growth not otherwise possible	84%
To utilise existing capacity more fully	64%
To reduce your dependency on the UK market	58%
To improve your profile or credibility	66%
Because you receive/keep getting orders or enquiries from overseas customers	62%

Source: OMB Research (forthcoming)

Firm Size and Exports

The concentration of exports does not mean that SME exports are unimportant. While large firms do account for the largest value of exports, the contribution of small and medium sized firms to total exports is also substantial, averaging over 40% for goods exports from EU countries.¹⁰⁸ This proportion varies considerably across countries (Figure 27).¹⁰⁹

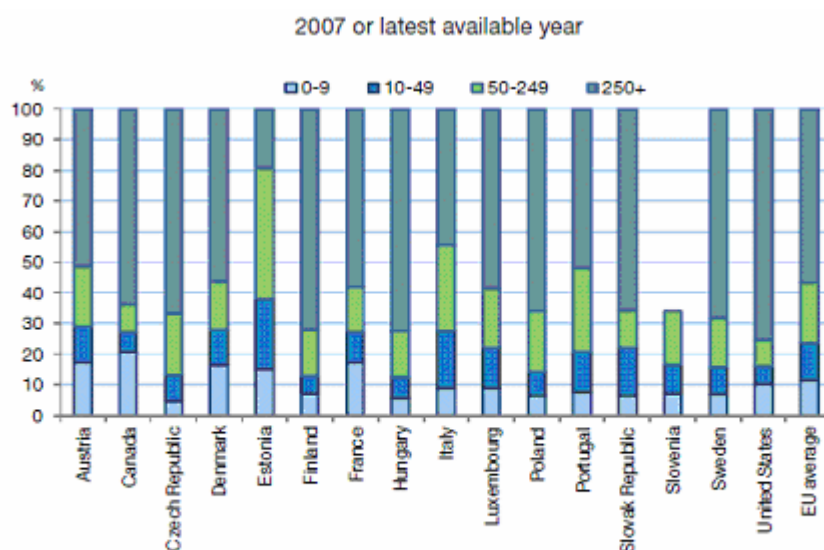
Although there is no equivalent source of data for the UK, an estimate based on the Community Innovation Survey suggests that for the UK, SMEs account for 33 per cent of exports by manufacturing firms. This excludes firms with 0-9 employees, who account for around 10 per cent of goods exports from EU countries. These data are not equivalent to goods exports, as some manufacturers also export services. The share of exports accounted for by services sector SMEs is much larger than for manufacturing firms, and exceeds that of large firms (Table 8).¹¹⁰

As noted above, large firms tend to have been exporting for longer, and to export to more markets. The role of exports and new market entry in business growth is discussed further in Chapter 4.

¹⁰⁸ OECD Statistics Brief, February 2011 – No 16, Figure 3. SMEs are defined here as firms with fewer than 250 employees.

¹⁰⁹ OECD (2011)

¹¹⁰ Harris (2011)

Figure 27: Distribution of Total Exports by Firm Size

Notes: 2005 data for USA and 2006 data for Poland. Total exports (intra- plus extra-EU) for EU countries. The value for Slovenia size class 250+ is not shown as it is confidential (and merged with values in the "unspecified" category). EU average does not include Germany, as extra-EU export value is not available, nor Slovenia.

Source: OECD (2011)

Table 8: Share of Total UK Exports and Turnover in 2000 and 2006 by Firm Size

Size	All sectors		Manufacturing		Services	
	% total exports	% total turnover	% total exports	% total turnover	% total exports	% total turnover
2000						
10-49 ¹¹¹	22.5	22.8	6.4	16.2	46.2	24.7
50-249	18.7	27.6	22.6	25.4	13.0	28.3
250+	58.8	49.6	71.0	58.4	40.8	47.0
Total	100	100	100	100	100	100
2006						
10-49 ^a	54.2	35.3	7.9	16.2	74.0	39.7
50-249	17.9	18.9	25.0	25.4	14.9	17.4
250+	27.9	45.8	67.1	58.4	11.1	42.9
Total	100	100	100	100	100	100

Source: weighted CIS 3 & 5 establishment-level data. Harris (2011)

¹¹¹ Includes a small number of establishments which were included in the survey on the basis of having 10+ employees but which reported 0-9 employees in their survey return.

Conclusions

This part of the chapter has reviewed evidence on some of the factors which influence export growth at the intensive and extensive margins. It shows that:

- Around 20 per cent of UK SMEs, and 30 per cent of firms with ten or more employees export. This proportion has risen in most sectors;
- Firms which are innovative, R&D active, and have higher productivity are more likely to export. However, there are many UK firms who do not export whose productivity and innovation profile matches that of successful exporters;
- Many of those UK firms who do export, export only a very small share of their output, and export only to a few overseas markets;
- Seeking to achieve a level of growth not otherwise possible is the primary motive for businesses seeking to increase the share of their turnover derived from overseas sales;
- The proportion of UK exporters selling into high growth markets is small. This means that the pool of UK business people with experience of doing business these markets is relatively small;
- The largest value of exports comes from a minority of exporters, who have been exporting for many years, export to many markets, and derive a large share of their turnover from overseas sales;
- Entry into new export markets is a route to growth. Large firms export to more markets, and have been exporting for longer;
- The share of goods exports accounted for by SMEs varies considerably across countries, averaging just over 40 per cent across the EU, around a third for the UK, but under 25 per cent for the USA. In UK services sectors the SME share of exports is much larger.
- These findings suggest that there is still significant unrealised export potential among UK businesses. Realising more of this potential, through entering new export markets, will be key to realising stronger growth for many UK businesses

Foreign Direct Investors in the UK

Analogous to the extensive and intensive margins of trade, the stock of foreign direct investment in the UK depends both on the number of inward investors, and on the size of their investments. This section will examine the factors which influence the choice of inward investment as a mode of market entry, and at the factors which influence investors' choice of market in which to invest. Finally, it will look at the characteristics of inward investors in the UK.

Why do Firms Engage in FDI?

Several theories have been put forward to explain why firms choose to enter markets through FDI rather than by exporting, selling via agents or distributors or licensing, franchising or using other contractual arrangements. One of the best known of these is Dunning's (1988) "eclectic paradigm". This suggests that a firm will enter a market using FDI if it has ownership, locational and internalisation advantages (OLI):

- **Ownership advantages** occur when a firm has competitive advantages over its competitors through knowledge capital such as technology, patents, and human capital and if these advantages can be transferred to, and replicated in, other countries.
- **Internalisation advantages** occur when the firm considers licensing or franchising these ownership advantages too risky, in terms of the risk of losing or damaging (in the case of brands) this knowledge capital, and thus prefers to keep these intangible assets within the firm.
- **Location specific advantages** occur when the host country has specific strengths which will enable the firm to exploit its ownership and internalisation advantages.

The OLI model thus relates to "**technology exploiting**" motivations for FDI. FDI is associated with higher costs of market entry than exporting, licensing, or franchising, and therefore needs to offer the firm significant advantages over these other modes of reaching customers in overseas markets. The higher transport costs of exporting to more distant markets may motivate some firms to access these via FDI, while exporting to less distant markets.¹¹²

FDI can be the preferred option to market entry where trade barriers are high in target destination markets. For example, if exporting to the EU from countries outside the EU, a firm would face the EU's external trade barriers. Locating in the UK enables inward investors to export from there to other countries within the EU without

¹¹² Oberhofer and Pfaffermayr (2008)

facing these barriers. In these circumstances firms may be able to exploit their ownership advantages more efficiently by FDI than would be feasible by exporting.¹¹³

For some sectors, where exporting may not be feasible or practical reasons, FDI can enable firms to sell to customers overseas who would not otherwise be accessible as a potential customer base. These sectors are said to have a “low degree of tradability”. Services are a notable example of this, as in many cases, such as retailing, services suppliers and customers need to be co-located.¹¹⁴ For other services, while it may be feasible to serve overseas clients by sending personnel to the market, having local offices may enable better client care, or may be a more effective means of building up a customer base in the market.

The higher costs of market entry for FDI also have implications for the characteristics of firms engaging in FDI. Quantitative studies have been consistent in showing that it is the most productive firms which engage in FDI.¹¹⁵ Econometric studies also suggest that many firms use a combination of exports and FDI.¹¹⁶

Surveys of inward investors to the UK indicate that while serving the UK market is the primary motive, accessing other EU markets is also an important consideration for many firms (Table 9).¹¹⁷ Keeping up with competitors who were locating in the UK was another frequent motive. However, significant numbers were also motivated by being close to important centres of expertise, or centres of knowledge or research.

Table 9: Reasons for Deciding to Invest in the UK¹¹⁸

Reason for decision ('primary aim')	% respondents
Serve the UK market	90%
Be close to customers investing in the UK	69%
Serve Europe	49%
Keep up with competitors locating in the UK	48%
Establish European base in English speaking country	42%
Be close to important centres of expertise	37%
Be close to important centres of knowledge or research	27%

Source: OMB Research (2010e)

¹¹³ Harris (2009)

¹¹⁴ Harris (2009)

¹¹⁵ Girma et al (2005)

¹¹⁶ Oberhofer and Pfaffermayr (2008)

¹¹⁷ OMB research (2010e)

¹¹⁸ OMB Research(2010e)

Evidence as to businesses' perspectives on the motivations for setting up sites overseas is available from surveys of internationally active firms in the UK. Some 60 per cent of the sample were in services sectors, which is likely to be a factor in the findings. Only around 10 per cent had overseas sites; among those who did, "sales or service" sites predominated.¹¹⁹ Those which had set up sales or service sites overseas said that the main reasons for doing so were: "to develop strong working relationships with their overseas customers" (97 per cent), that it was "the best way to approach the market given the level of demand" (90 per cent), and that "it was the best way to ensure quality or customer service" (88 per cent) (Table 10).¹²⁰

Table 10: Drivers Of Mode – Sales/Service Sites

% scoring 4 or 5	
Base: All answering about... (Base) – Sales sites (29)	
'Customers' – our customers in >market> require a local presence	73%
'Meeting needs' – it was the best way to build up strong working relationships with our overseas customers	97%
'ROI/Risk' – we didn't want to reduce our profit margins by paying a 'middle man'	56%
'Level of demand' – it was the best approach given the level of demand	90%
'Product development (ROI, Cost & Risk)' – it enabled us to overcome import restrictions, avoid import duties or gain other tax advantages	17%
'IP' – it was the best way to protect our intellectual property	49%
'Quality' – it was the best way to ensure quality or customer service	88%
'Human resources (Locations)' – it was the best way to access people with the specialist knowledge and skills we required	66%
'Habit' – we always approach overseas markets in this way	32%
'Advice' – we were advised to approach <market> in this way	49%

Source OMB Research (2008)

What Influences the Choice of Market by Inward Investors?

Surveys of international investors from the USA, China, and India provide clear evidence as to the importance of the business environment. The most important elements of the business environment for these firms appear to be:

¹¹⁹ OMB Research (2010a). The number of respondents with manufacturing sites is too small to report separately here.

¹²⁰ OMB Research (2008)

- the approach to business in terms of whether it is ethical and trustworthy;
- a stable economic environment;
- favourability of the environment for legal protection of intellectual property;
- the communications infrastructure; and
- favourability of the bureaucratic, political and regulatory environment.¹²¹

Businesses appear to be seeking to limit the risk to which their investment will be exposed, by selecting markets in which intellectual property is at less risk, the economy is less volatile, and institutions are sufficiently developed to reduce the risk of not getting paid, or goods or services not being delivered. Successive annual waves of the survey have shown a consistent picture.

These findings concur with a quantitative study which found that FDI is positively associated with the quality of formal institutions in a market. Formal institutions which were found to have the strongest effect were: private ownership of business, banking sector reform, foreign exchange, trade liberalisation, and development of legal institutions.¹²² Other studies have found that the size of the market, labour market conditions, and the quality of infrastructure, influence the location choices of multinationals. For R&D sites, the knowledge base of a region, the availability of skilled labour and ICT infrastructure also influence location choice.¹²³

A survey of internationally active UK firms provides evidence as to the factors which influenced their choice of market. Among those who had set up sites overseas, the most frequently cited factors were a need to guarantee the quality of the goods or services provided, and the ease of making product or service modifications for that market. Other important factors included the ease of protecting intellectual property, and the level of risk of getting paid and enforcing contracts, as well as the financial risk of ensuring a return on investment.¹²⁴

A survey of businesses who had recently decided to come to the UK, or to expand operations in the UK, provides evidence as to their perspectives on the relative importance of a number of issues (Table 10). “An important centre for businesses in your sector” is seen as very important for much the largest proportion, followed by “availability of knowledgeable and skilled workforce”. Similar proportions of companies see “potential as gateway to other markets in the region” and “established network of business services” as very important.¹²⁵

¹²¹ RSM (2010)

¹²² Bevan et al (2004)

¹²³ Siedschlag et al (2009)

¹²⁴ OMB Research (2008)

¹²⁵ OMB Research (2010)

Table 10: Importance when Considering Investment in the UK¹²⁶

Issue	% saying 'very important'	% saying 'fairly important'
Important centre for businesses in your sector	71%	17%
Availability of knowledgeable and skilled workforce	60%	24%
Potential as gateway to other markets in the region	54%	22%
Established network of business services	53%	33%
Good reputation for research and innovation	26%	39%
Conducive to fostering creative thinking	26%	32%

Characteristics of Foreign-owned Firms in the UK

Differences between the characteristics of firms in the foreign owned and UK owned sector can be seen as having two main sources:

- Foreign-owned firms in the UK are multinationals:** Studies have found that firms which export and invest overseas tend to have higher productivity than other firms, and that the average productivity of multinationals exceeds that of firms which export only. Theory explains this productivity hierarchy by positing that the fixed costs of entry into exporting, and the higher fixed costs of setting up overseas investment, make it profitable only for firms with relatively high productivity to do so.¹²⁷
- Foreign-owned firms originate in different cultures:** This gives the possibility that inward FDI can bring with it productivity enhancing ideas, or business practices, or entrepreneurial attitudes, which have originated in a different culture, and which may be new to the UK. An example is the transfer of Japanese techniques in automotive manufacture to the UK, which were subsequently also disseminated to other UK manufacturing sectors.¹²⁸

¹²⁶ OMB Research (2010)

¹²⁷ Helpman et al (2003)

¹²⁸ The contribution made by Japanese motor manufacturers Nissan, Toyota, and Honda to transfer of these techniques to the UK, working in collaboration with the UK's automotive trade association, is described in *SMMT Industry Forum: The Story so Far* (2002) at www.industryforum.co.uk/pdf/SMMTEnglishversion.pdf. Details about the current Industry Forum, and services provided to other sectors, can be found on its website at: <https://www.industryforum.co.uk/>

Productivity Differences

Studies of the UK have found that while average total factor productivity of foreign-owned firms exceeds that of UK-owned firms, when the comparison was made with UK-owned multinationals, only US-owned firms had higher productivity.¹²⁹ For the UK retail sector, UK multinationals have been found to have higher total factor productivity than foreign-owned firms.¹³⁰ This suggests that it is multinationals rather than foreign firms per se which are on average more productive.¹³¹

Studies of total factor productivity (TFP) focus on the efficiency with which a firm uses all of its resources, including capital, labour, and purchased inputs. Studies of labour productivity have a different interpretation, and often present a different picture. This is because labour productivity is influenced by the amount of capital and purchased inputs per employee, as well as the efficiency with which inputs are used.

Table 11: Comparison of Foreign-owned and UK Establishments in the UK

	British domestic	British-owned multinationals	Foreign-owned multinationals
Production			
Employment	74	419	293
Value-added/employee	92	102	116
Investment/employee	94	98	115
Intermediate inputs/employee	88	103	126
Service Sectors			
Employment	83	1,966	884
Value-added/employee	94	113	120
Investment/employee	96	105	119
Intermediate inputs/employee	93	108	133

Notes: All results are sample and employment weighted. All index measures are first calculated relative to the four digit industry year average, which is set equal to 100. All figures are means of the index measures within the production and service sectors across the years 1998 to 2001. The average number of establishments across the years in the sample within each ownership category are as follows: production sector 11,222 British owned, 1, 199 British owned MNE, 1,335 foreign-owned MNE; service sectors 26,904 British owned, 668 British owned MNE and 1,124 foreign-owned MNE.

Source: Griffith et al (2004)

¹²⁹ Criscuolo and Martin (2005). This study focused on UK manufacturing only.

¹³⁰ Higon and Vasilakos (2010)

¹³¹ Griffith et al (2004)

Table 11 compares labour productivity of British non-multinational firms (labelled “British domestic” in the table), British MNEs and foreign-owned MNEs in Britain. The analysis normalised the results so that values above 100 indicate that the group of establishments is above average, and values under 100, that they are below average. The table shows that average labour productivity in British domestic manufacturing firms is below the industry average, at 92, while British-owned multinationals are just above the average, at 102, and foreign-owned multinationals in the UK are the highest, at 116 per cent of the industry mean. The table shows a similar pattern for services sectors.

Table 11 also confirms that foreign-owned firms have higher levels of capital investment and intermediate inputs per employee than either British multinationals or domestic UK firms, in both manufacturing and services.¹³² These findings indicate that the more intensive use of capital and other inputs per employee in foreign-owned firms is the main reason these firms are observed to have higher labour productivity.

Research & Development

Foreign-owned firms contribute to business R&D in the UK both by conducting R&D within their UK based operations, and by commissioning, or part funding, R&D which is conducted in the UK at other establishments, including universities and research institutes. If a foreign firm has no UK site, it is not an inward investor, but is a purchaser of UK exports of R&D services.

Data published by ONS on business R&D in the UK show that 44% is accounted for by inward investors.¹³³ This is broadly in line with their UK output share.

As outlined above, theory relating to the reasons for firms becoming multinationals suggests that these firms are likely to have some knowledge related asset, on which returns can best be maximised through FDI. Studies have found that multinationals tend to conduct more R&D than other firms, but that their R&D intensity, measured in terms of R&D relative to output, is greatest in their home country.¹³⁴

Evidence from a recent study of business R&D in the UK confirms this pattern. As shown in Table 3 above, the highest R&D intensity was found among UK-owned exporters, a proportion of which are also multinationals.¹³⁵ Inward investors contributed to UK R&D broadly in line with their contribution to UK output. However, among inward investors who also export from the UK, R&D was substantially higher than among those who do not export.

¹³² Griffith et al (2004)

¹³³ ONS Research and Development in UK Businesses, 2009 datasets. Available at URL: http://www.statistics.gov.uk/downloads/theme_commerce/berd-2009/country-of-ownership.pdf

¹³⁴ DTI (2005)

¹³⁵ The study did not distinguish between exporters who are UK owned multinationals and other UK owned exporters. However, recent survey evidence suggests that around 10% of UK exporters also have sites overseas, and hence strictly speaking are also multinationals.

Conclusions

This section of the chapter reviewed evidence on the factors which motivate FDI, at the factors which influence FDI location decisions, and at the characteristics of inward investors in the UK. This shows that:

- A primary motivation for FDI is that firms have some intellectual property, or other knowledge related asset, on which returns can best be maximised via this mode of market entry. This type of FDI can be described as “technology exploiting”;
- As FDI is costly, the advantages to the investor of this mode need to be significant. Better market access is often a primary motivation;
- Another motivation for FDI is to be near to centres of expertise, knowledge, or research. For some firms this motivation may be secondary to technology exploiting motivations. However, for other firms, gaining access to technology may be a primary motivation. This latter type of FDI can be described as “technology seeking”;
- FDI can be driven by sector characteristics which require a local presence to serve overseas customers effectively. This is common in services sectors, for which exporting may be less feasible;
- Serving the UK market is the most common primary motivation for investment in the UK, followed by keeping close to customers who are investing in the UK, and serving the EU market;
- Total factor productivity among foreign-owned firms in the UK is similar to that of UK multinationals, but higher than the UK industry average. Labour productivity is higher than for UK-owned firms, underpinning higher average wages. This is due to lower labour intensity, and greater use of purchased inputs and other resources.
- Inward investors contribute to UK business R&D broadly in line with their contribution to output. R&D intensity is higher among inward investors who also export from the UK.

The respective characteristics of exporters and inward investors influence the contribution to aggregate productivity growth, as discussed in the next chapter.

Chapter 4: Dynamic Competition

Benefits of Trade and Inward Investment

Introduction

Benefits from international trade and investment to productivity, employment, and income growth, derive from two main processes:

- **Dynamic competition effects:** By enabling the best firms to expand and gain market share, trade and investment drive reallocation of resources to those who can employ them most productively;
- **Innovation and productivity growth within firms:** Innovation stimulated by exporting and inward investment feeds through to productivity and sustainable employment growth by enabling the innovating firms to become more competitive and gain market share.

The chapter looks at evidence on dynamic competition effects, and on the contributions of exporting and inward investment to productivity and innovation through these effects. The evidence shows that both processes are important, but that dynamic competition effects have made the largest contribution to aggregate productivity growth in the UK. The chapter then looks at evidence on how the dynamics of business growth and survival are influenced by exporting and FDI.

Dynamic Competition and International Trade

Trade is a powerful contributor to the market dynamics which drive economic change. By enabling the most competitive firms and sectors to expand, and causing weaker sectors and firms to shrink, it re-shapes economies to focus on areas of comparative advantage, and helps to ensure that scarce skills and resources are used where they can be most productive.

Reallocation of resources across firms results from the dynamics of market share changes, as the best performing firms expand, and new firms enter an industry, while poorer performers reduce in size or exit. These “dynamic competition” effects can account for a large proportion of a country’s total aggregate productivity growth.¹³⁶ Within firms, a similar process can occur, with market competition driving changes at the level of their product lines in shares of the firm’s output.¹³⁷ Trade augments this

¹³⁶ Bernard et al (2006)

¹³⁷ Ibid

dynamic resource re-allocation process by exposing firms and products to international competition and new ideas.

The firm population is also not static. Rather, there is an on-going process of new firms starting-up while others close-down; others expand their market share while others reduce it. This “churn” is one of the drivers of aggregate productivity growth, as resources are reallocated to surviving and growing firms. This is because as firms compete for market share to survive and grow,¹³⁸ the least productive plants tend to close. This raises average productivity across firms and plants.¹³⁹ The speed at which this re-allocation occurs varies over time, by sector and firm characteristics.¹⁴⁰

Exporting makes a strong positive contribution to productivity growth through this dynamic process, because of the above average productivity of exporting firms, noted in the previous chapter.¹⁴¹ Exporters also tend to have faster “within firm” productivity growth. Thus, as these firms increase their exports and grow larger, their growth has a positive “batting average” effect on aggregate productivity growth.

For the UK, Harris and Li (2007) found that exporters contributed 60 per cent of UK productivity growth over the period studied, with non-exporters contributing mainly through exit of low productivity establishments.¹⁴² This exit effect accounted for 91 per cent of aggregate productivity growth among non-exporters.

Dynamic competition effects of trade also impact positively on the aggregate level of innovation and R&D in the economy. This is because exporters tend to be more innovative and conduct more R&D.¹⁴³ Thus, as exporters increase their market share, this impacts positively on average R&D intensity.

As exporting is more prevalent in sectors in which there is comparative advantage, the effects of dynamic competition are likely to vary across sectors, with those sectors in which there is comparative advantage having higher average firm productivity than those in other sectors.¹⁴⁴

Nevertheless, much of the resource reallocation stimulated by international trade occurs within sectors. Analysis of manufacturing firms in the US found that about 86 per cent of reallocation of labour occurred within four-digit industries.¹⁴⁵

¹³⁸ Baldwin and Gu (2006)

¹³⁹ Bartlesman et al (2004)

¹⁴⁰ Foster et al (2001)

¹⁴¹ Bernard et al (2003) and (2007);

¹⁴² Harris and Li (2007)

¹⁴³ Harris and Li (2010)

¹⁴⁴ Bernard et al (2006)

¹⁴⁵ Bernard et al (2004)

Dynamic competition and inward investment

Greenfield inward investment, similarly, will impact positively on aggregate productivity growth through this ‘batting average’ effect when these new plants have higher productivity than the UK average. Mergers or acquisitions will not have a direct impact on the size of the foreign owned sector, and hence will not have this effect unless the new ownership leads to faster growth of acquired plants which have relatively high productivity, or faster closure of low productivity plants.

The dynamic competition effects of inward investment on UK R&D depend crucially on the R&D intensity of the inward investment project. It also depends on the R&D intensity of the firms who may lose market share as a result of competition with the inward investor. Where R&D intensity is lower in the inward investor, as is likely where the comparison is with UK owned exporters (Table 3, previous chapter), an increase in the foreign owned market share would reduce average R&D intensity.

However, Table 3 shows that the R&D intensity of non-exporting UK owned firms has tended to be lower than the average R&D intensity of foreign-owned exporters. Hence if it is non-exporting UK firms who are losing market share to exporting inward investors, the effect on average UK R&D intensity would be positive.

Measures of dynamic competition effects on productivity

Three recent studies have attempted to measure the respective contributions of within firm productivity growth and dynamic competition processes to UK total factor productivity growth. Similar studies have also been carried out for other countries, notably the USA and Canada. Results vary by the method of decomposition used, and by the country and time period under study. Typically, the studies seek to measure the distinct contribution to productivity growth of three main processes:

- Within firm productivity growth;
- Changes in market shares among firms who continue throughout the period under study. This impacts positively on aggregate productivity growth when on average it is higher productivity firms which are gaining market share;
- Entry and exit: This will impact positively on aggregate productivity when the average productivity of firms which exit is lower than that of new firms.

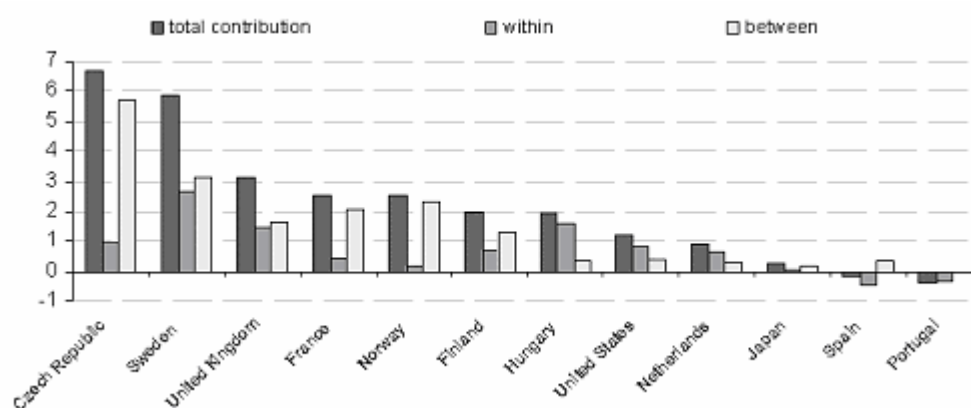
A study by Harris and Li (2007) using data from 1996 to 2004 found that 42 per cent of UK total factor productivity growth comes from reallocation between firms; 37 per cent from exit and entry of firms and 22 per cent from intra-firm productivity growth. An earlier study by Harris and Robinson (2001), covering UK manufacturing from 1990-98, found an even larger positive entry and exit effect; while “within firm” total factor productivity growth was negative.

Analysis by Disney et al (2003) for UK manufacturing over the period 1980 to 1992 found a similar contribution of reallocation between firms to total factor productivity

growth (41 per cent), but a higher contribution from firm entry and exit (54 per cent), and only a small contribution from “within firm” productivity growth (6 per cent).

A fourth study of the UK looked at the contribution of foreign-owned firms to labour productivity growth in manufacturing. This study found that foreign-owned firms contributed more to aggregate labour productivity growth than UK-owned firms. The contribution from reallocation of resources towards foreign-owned firms was slightly larger than the effect of labour productivity growth within these foreign-owned firms (Figure 28). The study found no labour productivity growth within UK-owned firms, but did not distinguish between exporters and non-exporters.¹⁴⁶

Figure 28: Contribution of Foreign Affiliates to Average Annual Productivity Growth and Breakdown by “Within” and “Between Effects” in the Manufacturing Sector, 1995-2001 (percentage points)



Source: Criscuolo (2005)

Effects of Trade on Business Survival

Diversity across sectors and firms is a key element of the dynamic process of churn and reallocation of market shares and resources. Entry rates tend to be higher for new industries but tend to decline as an industry matures.¹⁴⁷ Within any given sector, firms vary by size, age, location, capabilities, and other characteristics, which mean that they will respond differently to the environment in which they operate.

Studies have found that the probability of firm survival tends to increase with both age and size.¹⁴⁸ Controlling for age and size, and other factors, exporting firms have been found to have a higher probability of survival.¹⁴⁹ Econometric evidence for the

¹⁴⁶ Criscuolo (2005) It should be noted that the measure of labour productivity used in this study did not control for the use of inputs other than labour, the higher capital intensity associated with foreign owned firms is therefore likely to influence these results.

¹⁴⁷ Bartlesman et al (2004)

¹⁴⁸ Harris and Hassaszadeh (2002)

¹⁴⁹ Harris and Li (2007) Kneller et al (2010)

UK indicates that firms increase their productivity after entering export markets,¹⁵⁰ and that exporting is also associated with improved financial performance.¹⁵¹ These factors may well influence the higher survival rates observed among exporting firms.

Trade also exposes firms to external factors which can impact negatively on their survival. Currency appreciations are associated with a higher risk of plant death as are trade liberalisations, since the latter increase the number of firms competing on the domestic market.¹⁵² This will shake out the poorer performers within an industry and raise the bar that firms need to reach in order to survive.

Analysis of the Community Innovation Survey by industry gives an indication of the process of dynamic competition taking place in the UK over the period 2004 to 2006. This found that sectors which had a larger percentage increase in the percentage of firms exporting, also tended to show larger percentage falls in the number of businesses in operation.¹⁵³ This reflects the higher survival rate of exporters.

Since exporters tend to have higher than average productivity, their higher survival rate impacts positively on aggregate productivity growth, through a positive “batting average” effect, as those with lower productivity close down.

Exporting and Business Growth

In addition to the effects of churn through business entry and exit, the productivity enhancing effects of dynamic competition reflect differential rates of growth across businesses with different levels of productivity. Faster growth among businesses with higher levels of productivity increases their share in output and employment, and thus raises average productivity through a “batting average” effect.

Evidence on the role of exporting in business growth has been reviewed in depth in a recent BIS Economics Paper.¹⁵⁴ This showed that exporting is key to optimising the potential of innovative and high growth firms in the UK. For these firms, expansion into new international markets is a vital route to growth.

Survey evidence shows that enabling firms to achieve a level of growth not otherwise possible is the most frequently cited benefit of exporting.¹⁵⁵ Growth is also the most frequent motivation for exporting, and for seeking to increase exports.¹⁵⁶

A recent review of literature on patterns of business growth identified entry into new markets as one of the key transition points in achieving successful growth.¹⁵⁷ The

¹⁵⁰ Harris and Li(2007) Greenaway and Kneller (2007)

¹⁵¹ Greenaway et al(2007)

¹⁵² Baldwin and Yan (2010)

¹⁵³ Harris and Li (2010)

¹⁵⁴ BIS (2010b)

¹⁵⁵ OMB Research (2010a)

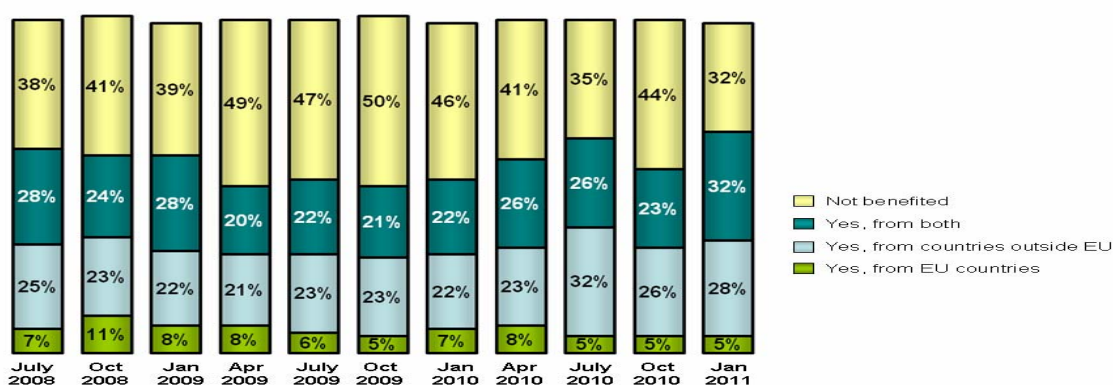
¹⁵⁶ OMB Research Forthcomong

study found that there is no set pattern of stages of growth. However, companies go through a number of typical transitions, or “tipping points”, at different times, when they are facing significant challenges and potential for change, and are receptive to new knowledge, ideas, and behavioural change. Seeking to enter a new market was identified as one of these tipping points.

The study also highlighted the importance of “absorptive capacity”, and the need to build increased absorptive capacity in order to successfully navigate difficulties associated with growth. The key to growth was seen as “the absorption of knowledge and solutions to successfully traverse the tipping points,”¹⁵⁸ increasing the firm’s absorptive capacity during this process. Firms have greater need for external sources of knowledge and expertise during these periods.¹⁵⁹ Thus the greater “absorptive capacity” typical of exporters may help to explain their superior growth.

The positive role which exporting can play in business growth and survival is highlighted by evidence that exporters proved more resilient during the recent economic crisis and downturn. Recent analysis of firms in countries around the world (but excluding those located in the USA) found that exporters performed better than non-exporting firms during the global financial crisis.¹⁶⁰ For the UK, survey evidence consistently showed that exporters fared better during this period.¹⁶¹

Figure 29: Whether Benefited From Economic Growth or Increasing Demand Overseas in the Last Year – Over Time



Base: All except not currently exporting (Base, Don't know/Refused)

July 2008 (865, 2%), October 2008 (834, 2%), January 2009 (979, 2%), April 2009 (826, 2%), July 2009 (833, 1%), October 2009, (927, 2%), January 2009 (910, 2%), April 2010 (966, 2%), July 2010 (921, 3%), October 2010 (967, 2%), January 2011 (933, 2%)

¹⁵⁷ Bessant et al (2005)

¹⁵⁸ Ibid

¹⁵⁹ See discussion of the implications for targeting firms in Chapter 7.

¹⁶⁰ Alfaro and Chen (2010)

¹⁶¹ IFF Research (2010)

Evidence from surveys of UK exporters who had recently received help from UKTI to enter a new market indicates that one of the reasons for the superior growth performance of exporters during the downturn was that export markets helped sustain demand for their products.¹⁶² Figure 29 shows successive quarterly results from July 2008 through to January 2011, for the proportion of firms reporting benefit from sustained economic growth or increasing demand in overseas markets. The lowest point was between April and October 2009, when the proportion benefiting fell to around 50 per cent, before rising again, to nearly 70 per cent in January 2011.

Experienced exporters, who tend to export to more markets, were more likely to report these benefits¹⁶³ This evidence thus highlights the benefits of export market diversification in enabling firms to increase their resilience.

There is also evidence that benefiting from economic growth or increasing demand overseas has supported stronger growth expectations. Some 59 per cent of those expecting substantial growth indicated that they have benefited in this way compared to just 34 per cent of those that are not expecting to grow.¹⁶⁴

Some theories have highlighted the role of innovation in business growth. Firms with successful innovations will tend to grow or replace firms which have not innovated, or have not taken on new technologies. Those that survive will tend to be those that are most productive.¹⁶⁵ These firms in turn are more likely to export.

Summary Conclusions on Exporting and Business Growth:

The evidence on the relationship between exporting and business growth reviewed in this section showed that:

- Expansion into new markets is a key route to business growth, especially important among innovative firms;
- Diversification across export markets helps to increase business resilience, and enable stronger growth to be achieved despite periods of relatively difficult economic conditions in the domestic market;
- Innovation, supported by the greater absorptive capacity typical of exporters, is likely to play a significant role in their stronger growth performance.

¹⁶² OMB PIMS quarterly surveys 2008 to 2011

¹⁶³ As noted in the previous chapter, firms who have been exporting for longer are likely to be exporting to more markets, although there is considerable variation across firms.

¹⁶⁴ OMB (2010b)

¹⁶⁵ Ahn (2001).

Effects of FDI on Survival of Plants and Firms

Research suggests that the presence of foreign firms in an industry can have a positive effect on the survival of new ventures. However this only holds in static industries (combined entry and exit rates of firms in the sector are less than 20 per cent of the stock of firms). For dynamic sectors, with higher churn rates, FDI has a negative impact on the survival rates of new ventures.¹⁶⁶

Foreign mergers and acquisitions are associated with a higher probability of plant or firm closure post-acquisition.¹⁶⁷ Acquisition entry has been found to have a 60 per cent shorter survival time than Greenfield entry.¹⁶⁸ Observation of plant level data suggests that after acquiring a firm, foreign firms tend to shut some plants.¹⁶⁹ Evidence from Germany also indicates that a higher probability of plant closure is associated with merger or acquisition of non-exporting plants.¹⁷⁰

FDI Response to the Financial Crisis

A number of recent studies have looked at the extent to which foreign affiliates may respond differently from domestic-owned firms in times of financial crisis.

Research on the performance of foreign-owned firms in Ireland during the recent financial crisis found that firms in the services sector contracted more than domestic firms. In the manufacturing sector, employment declined proportionally more in domestic firms.¹⁷¹ By contrast, analysis of multinationals around the world during the financial crisis of 2008-2009 found that plants which are owned by multinationals on average had performed better than their competitors during the crisis.¹⁷²

In countries which were harder hit by the financial crisis, establishments owned by foreign multinationals performed better than local firms. However if a multinational was *headquartered* in a country which was more affected by the crisis, then its overseas subsidiaries tended to perform less well.¹⁷³ This is likely to reflect the financial linkages between parents and subsidiaries.

Analysis of sales distributions of domestic firms and foreign multinationals in the UK before and during the financial crisis suggest that both groups of firms were similarly affected by the crisis (Figure 30). In the Netherlands, however, domestic firms lost sales, and foreign-owned firms increased sales (Figure 31).¹⁷⁴

¹⁶⁶ Burke et al (2007)

¹⁶⁷ Girma and Gorg (2003), Harris (2009)

¹⁶⁸ McCloughan and Stone (1998) in Harris (2009)

¹⁶⁹ Harris (2009)

¹⁷⁰ Andrews et al (2007)

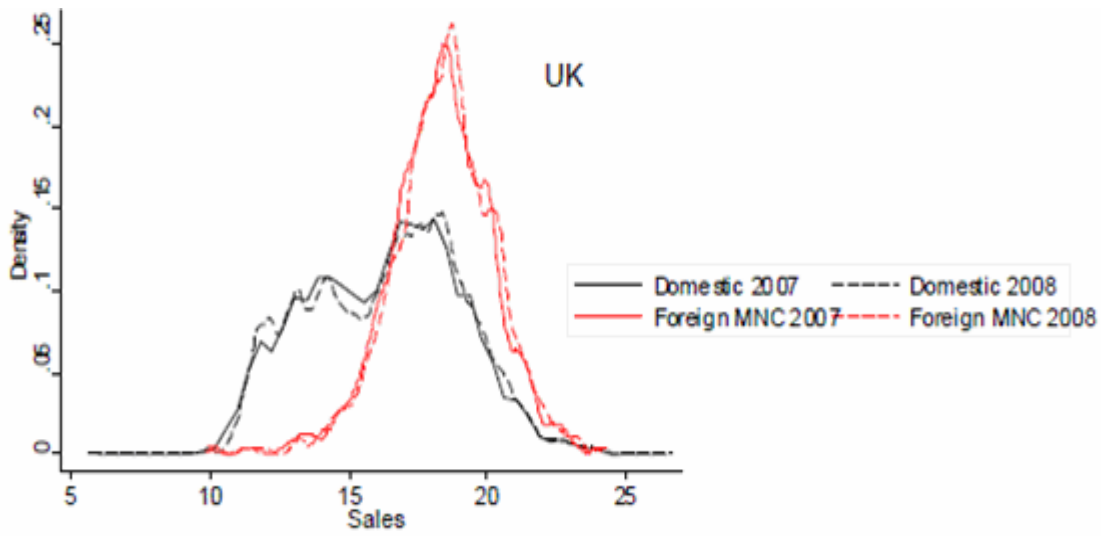
¹⁷¹ Barry and Bergin, A. (2010)

¹⁷² Alfaro and Chen (2010)

¹⁷³ Ibid

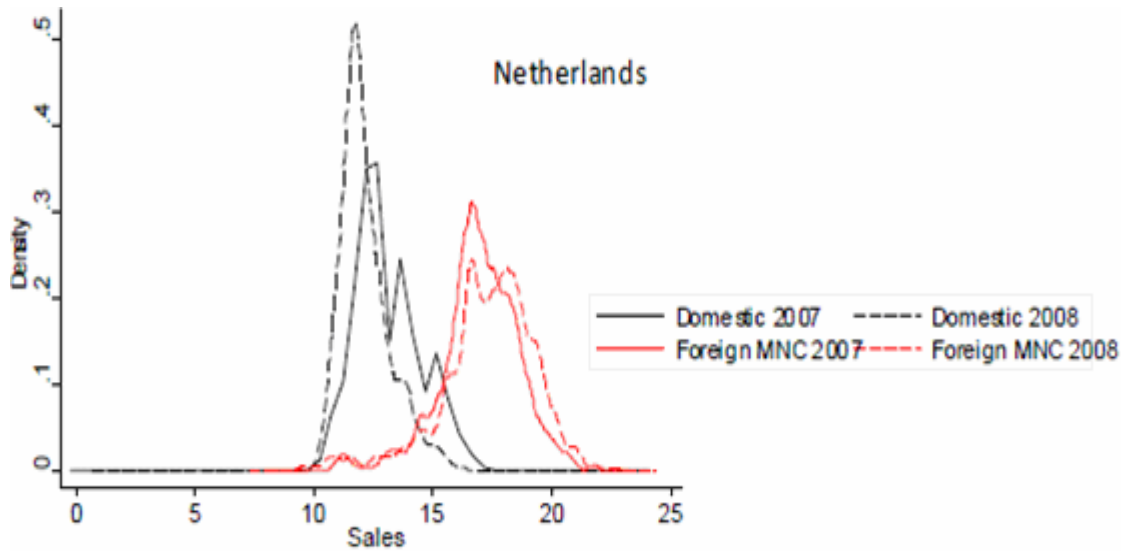
¹⁷⁴ Ibid

Figure 30: The Distribution of Domestic and Multinational Establishments in the UK in 2007 and 2008



Source Alfaro and Chen (2010)

Figure 31: The Distribution of Domestic and Multinational Establishments in the Netherlands in 2007 and 2008



Source Alfaro and Chen (2010)

Dynamic Competition Effects: Conclusions

This chapter has reviewed theory and evidence on the dynamic competition effects of exporting and inward investment on aggregate productivity growth, and has looked at some of the factors which drive these processes. It found:

- The contribution of dynamic competition to average productivity growth is very large, and has been much larger in the UK than within firm productivity growth;
- Gains in market share achieved by UK exporters contributed the largest share of aggregate UK productivity growth. Combined with faster within firm productivity growth, exporters accounted for 60 per cent of UK productivity growth. Non-exporters contributed to productivity growth mainly through net exit of low productivity firms;
- Higher survival rates among exporters have contributed to the observed increase in the percentage of UK firms exporting in many sector;
- Innovation plays a central role in dynamic competition, as it can enable firms to gain market share either through introducing new or improved products, or through innovations which reduce the firm's costs;
- The increased market share of inward investment in the UK has contributed substantially to increased UK labour productivity growth, due to lower labour intensity and higher use of purchased inputs and other resources per employee among these foreign-owned firms;
- In industries with relatively low entry and exit rates, the presence of foreign-owned firms seems to have a positive effect on the survival of other new ventures in the sector. In more dynamic industries, however, survival of new ventures seems to be negatively affected;
- Expansion of UK owned exporters raises average UK R&D intensity, since these firms have much higher than average R&D intensity;
- The effect of increased inward investment market share on average UK R&D intensity depends crucially on the characteristics of the inward investor, and of any UK firms which may lose market share or exit as a result;
- UK exporters proved consistently more resilient during the recent downturn, and were more likely to continue to experience growth throughout. The performance of foreign-owned firms in the UK during the period was similar to that of UK-owned firms.

Chapter 5: The Impact of Trade and Inward FDI on Within Firm Productivity Growth, Innovation, and R&D

In this chapter we first review the evidence about the effects of exporting and inward investment, respectively, on the growth of productivity within UK firms. The chapter then looks at recent evidence on the links between exporting and innovation, including investment in R&D.

The Impact of Exporting on Within Firm Productivity and Innovation

In this section we briefly review the evidence on the effects of exporting on within firm productivity. We then look at recent evidence on some of the processes which lie behind these productivity effects. The evidence reviewed below indicates that positive productivity effects of exporting occur through several mechanisms:

- Firms which export benefit from increased economies of scale, and from increasing the commercial life of individual products or services;
- Firms reallocate internal resources to focus more on their better performing products;¹⁷⁵
- Firms gain exposure to productivity enhancing ideas and technologies, or ideas for new or improved products or services, stimulating innovation and leading to productivity gains.

Measuring the Productivity Effects of Exporting

The economic literature has typically distinguished between two explanations of the higher than average productivity among exporters described in Chapter 3:

- A “**selection**” effect, which explains the higher productivity of exporting firms in terms of a higher propensity to export among firms who already had higher productivity, and
- A “**learning from exporting**” effect. This term is used to refer to productivity increases which result from exporting, having taken into account any higher productivity prior to exporting. However, most of the studies of this effect do

¹⁷⁵ Mayer et al (2010)

not provide any direct evidence about *learning*, but instead infer a learning effect from evidence of productivity increases post-exporting, without being able to shed any direct light on the mechanisms generating these increases.

In addition, some studies have distinguished a “learning to export” effect, which refers to firms taking actions which increase their productivity as part of preparation for beginning to export. This would appear in firm performance data as a productivity increase during the period preceding the firm’s initial export sales.

Many studies have tested for evidence of the “self selection” effect, and findings have generally been consistent, both across countries and across methodologies, in finding that firms with higher than average productivity are more likely to begin exporting.¹⁷⁶ For the UK, this effect varies across sectors, and is found to be stronger in manufacturing than in services.¹⁷⁷

As noted in the previous chapter, there is also evidence that UK firms with intellectual property and other intangible assets, and those engaging in R&D, are more likely to export.¹⁷⁸ Again the strength of these effects varies across sectors.

These “self selection” effects, in which firms with highest productivity and strong intangible assets are most likely to export, are a key factor in the dynamic competition benefits of exporting, discussed Chapter 4.

A number of studies which test for evidence of learning-by-exporting have been carried out, across a range of countries, with mixed results. Evidence of learning by exporting has not been found for the USA,¹⁷⁹ but has been found for Italy,¹⁸⁰ China,¹⁸¹ and Canada.¹⁸² For the UK, however, there is evidence of learning by exporting with four studies having been carried out, all of which find evidence of learning by exporting despite using different methods and data.¹⁸³

The most comprehensive of the UK studies found a 34 per cent long-run increase in total factor productivity (TFP) in the year of beginning to export, and a further small effect of around 5 per cent in the year following. The study also found that firms which ceased to export experienced negative productivity effects in the year they ceased to export and subsequently, averaging around 7-8 per cent.¹⁸⁴

Differences in results from studies in different countries are likely to reflect differences in characteristics of the domestic markets. The very large size of the US

¹⁷⁶ See reviews in Wagner (2007), Greenaway and Kneller (2007), Harris and Li (2007)

¹⁷⁷ Harris and Li (2007)

¹⁷⁸ Harris and Li (2007); Rogers and Helmers (2010); Harris and Li (2010 and 2009)

¹⁷⁹ Bernard and Jensen (1999)

¹⁸⁰ Castellani (2002)

¹⁸¹ Kraay, (1999)

¹⁸² Baldwin and Gu (2004).

¹⁸³ BIS (2010b) Table 4.1

¹⁸⁴ Harris and Li (2007)

domestic market, for instance, is likely to enable more firms to achieve economies of scale, and to meet their owners' growth objectives, without need to export. In addition, differences across countries in the range of technologies in use among competitors in the domestic market are likely to influence the scope for learning from exposure to new ideas and technologies through exporting.

Productivity gains through economies of scale

A Canadian study documents productivity benefits resulting from economies of scale associated with the longer production runs made viable by exporting. The small market size in Canada limits the extent to which non-exporters can achieve economies of scale. The study found that non-exporters tended to have shorter product runs and a wider range of product lines. Canadian firms who began exporting increased their product runs and also increased specialization in product lines.¹⁸⁵

Evidence from surveys of internationalising firms in the UK also indicates that some of the observed productivity benefits of exporting are likely to be due to increased economies of scale (Table 12). Exporters cite benefits from making fuller use of their existing production capacity, increasing the commercial lifespan of their existing products and services, and above all enabling them to achieve a level of growth that otherwise would not be possible.¹⁸⁶ All of these effects would be expected to increase efficiency, since they suggest higher returns to fixed costs such as investment in productive capacity, and in developing new products and services.

Productivity Gains through Internal Resource Reallocation

A second mechanism by which exporting can impact positively on a firm's productivity is through resource reallocation and product churn within the firm, to increase focus on the firm's best performing products. Churn occurs within firms, at product level, as some product lines are expanded, while others are curtailed or dropped, and new products are added. Products for which the firm is least productive will be dropped or curtailed, while those at which it is more productive will be continued or expanded. Thus the firm will focus more of its resources on products for which it has the most expertise and capability.¹⁸⁷ This reallocation of resources towards the firm's areas of relative strength is analogous to a country focusing on its areas of comparative advantage.

The impact of product churn on within firm productivity occurs through two channels. As firms reduce the number of product lines that they have but increase the production run of these products,¹⁸⁸ they gain economies of scale. Also, since it is

¹⁸⁵ Baldwin and Gu (2005)

¹⁸⁶ OMB Research (2010a)

¹⁸⁷ Bernard et al (2006)

¹⁸⁸ Baldwin and Gu (2005)

the least productive products being dropped, this raises average productivity across the firm's remaining products through a "batting average" effect.¹⁸⁹

Product churn is also linked to innovation, discussed below. As a firm innovates and produces new products, this can lead to a process by which the firm changes its product focus over time. The firm's comparative advantage may then shift over time in response to these innovations.

Exporting and the Productivity Benefits of Innovation

Evidence from studies of a number of countries has shown that exporting increases the productivity benefits of investment in R&D and innovation.¹⁹⁰ Evidence for the UK that exporting enhances the productivity effects of investment in innovation was also reported in a literature review carried out as part of a recent evaluation of the impact of UKTI trade services on firm investment in R&D.¹⁹¹

Exposure to New Ideas

Productivity and innovation benefits of exporting are linked to exposure to new ideas, to the effects of exporting on innovation, and to the firm's ability to increase investment in R&D. A qualitative study of UK exporters identified three main reasons why exporting stimulates additional R&D:

- Firms gain exposure to ideas for new products or services, or for product improvements, which require some R&D;
- Exporting gives the firm additional revenues and profit, thus increasing the financial resources available internally for investment in R&D; and
- Exporting increases the returns to investment in R&D, as a result of being able to sell the resulting products or services to a larger customer base.¹⁹²

Evidence from qualitative studies also indicates that firms gain useful ideas both from exposure to new competitors overseas, for example at trade shows, and from engaging with new overseas customers, who were sometimes more demanding.¹⁹³ Quantitative surveys confirm that exposure to new ideas is one of the most frequently cited benefits of exporting, especially for innovative firms (Table 12).¹⁹⁴

A quantitative study of data from the Community Innovation Survey for the UK also finds evidence of exporters learning from buyers.¹⁹⁵ The study finds that firms which

¹⁸⁹ Mayer et al (2010)

¹⁹⁰ Aw et al (2009), Cassiman and Golovko (2007)

¹⁹¹ Aston Business School (2010)

¹⁹² OMB Research (2008)

¹⁹³ OMB Research (2007)

¹⁹⁴ OMB Research (2010a, 2010b)

¹⁹⁵ Crespi et al (2006)

reported learning from this source were more likely to enjoy subsequent productivity growth.¹⁹⁶ Another quantitative study of globally engaged firms found that these firms had access to a larger stock of ideas than firms which serve only their domestic market. Learning from more sources was associated with these firms generating more innovations, which were, in turn, associated with higher productivity.¹⁹⁷

Table 12: Summary of Benefits of Exporting by Innovation¹⁹⁸

Proportion benefiting significantly (4-5 out of 5, where 1 = not at all and 5 = benefited to a critical extent) from...	Total	Innovative	
		Yes	No
Base: All (UKTI users)	3,565	3,087	478
Level of growth otherwise not possible	58%	60%	48%
Improved utilisation of existing capacity	50%	51%	45%
Reduced dependence on single/small number of markets	47%	48%	39%
Exposure to new ideas	52%	53%	44%
Increased commercial lifespan of products/services	44%	45%	37%
Scoring 4 or 5 for any	80%	81%	74%

Source: OMB Research (2010f)

Exporting, Innovation, and R&D

At the macroeconomic level, there is evidence that a country's trade performance is positively associated with knowledge accumulation and innovation activities.¹⁹⁹ Evidence from firm level studies suggests that this association is both cause and effect, and that the links between innovation and exporting are complex.

Causality running from innovation or R&D to exporting can arise for a number of different reasons. For example, the products or services which the firm produces may be sufficiently niche (due to their innovative nature), that internationalisation is the only way to reach a sufficient number of customers for the business to survive. Equally, exporting may enable optimal exploitation of the competitive advantage generated by an innovation, thus maximising returns to product development.

¹⁹⁶ Ibid

¹⁹⁷ Criscuolo et al (2005)

¹⁹⁸ Interviews with UKTI users conducted during 2009.

¹⁹⁹ Harris and Li (2006b)

Firms may also innovate or invest in R&D in order to prepare themselves for international markets, or because modifications to a product or service are required in order to be able to enter a particular market. Once they are exporting, firms may continue to innovate or invest in R&D in order to remain competitive in overseas markets, or as a result of ideas gained through exposure to new markets.

Recent analysis of a panel of UK firms which were in two consecutive waves of the Community Innovation Survey (CIS)²⁰⁰ found that for manufacturing firms exporting was associated with a higher probability of investing in R&D in the subsequent time period.²⁰¹ The study also found evidence that R&D had a positive influence on the probability of exporting among manufacturing firms.

Another study of UK firms,²⁰² found a more complex relationship between R&D and exporting. For manufacturing, the study found stronger evidence that investing in R&D has a positive impact on the propensity to export. Exporting was again found to have a positive effect on the probability of investing in R&D, but (contrary to the earlier study) this effect was smaller than the effect of R&D on exporting.²⁰³

A complex two-way relationship was found between innovation and exporting. In manufacturing, innovation and exporting were found to influence each other only indirectly, through their impact on R&D (black lines in Figure 32). For services, innovation had a positive effect on exporting, and exporting had a positive impact on both innovation and investment in R&D (red lines in Figure 32).²⁰⁴

Another study, of UK based high technology firms, found that firms which started to export had a significantly higher probability of innovating in the three years following export market entry than firms which did not export.²⁰⁵ Evidence for the UK from a survey of SMEs found evidence that product innovation was associated with exporting but not process innovation.²⁰⁶

Evidence from recent surveys of UK exporters provides insights into these complex relationships between innovation, R&D, and exporting. A survey of 900 firms found that selling overseas had prompted 38 per cent to invest more time and money in product or service development, while 53 per cent had developed new products or services and/or modified or changed existing products in some way as a result of entering overseas markets. Nearly half reported that selling overseas had increased the return on their investment in product or service development (Figure 33).²⁰⁷

²⁰⁰ CIS 4 and CIS 5

²⁰¹ Harris and Li (2010)

²⁰² CIS 4, CIS 5, and CIS 6

²⁰³ Differences in the estimates of the magnitude of these effects could be due to differences in research technique, or to the difference in the time period covered by the two studies.

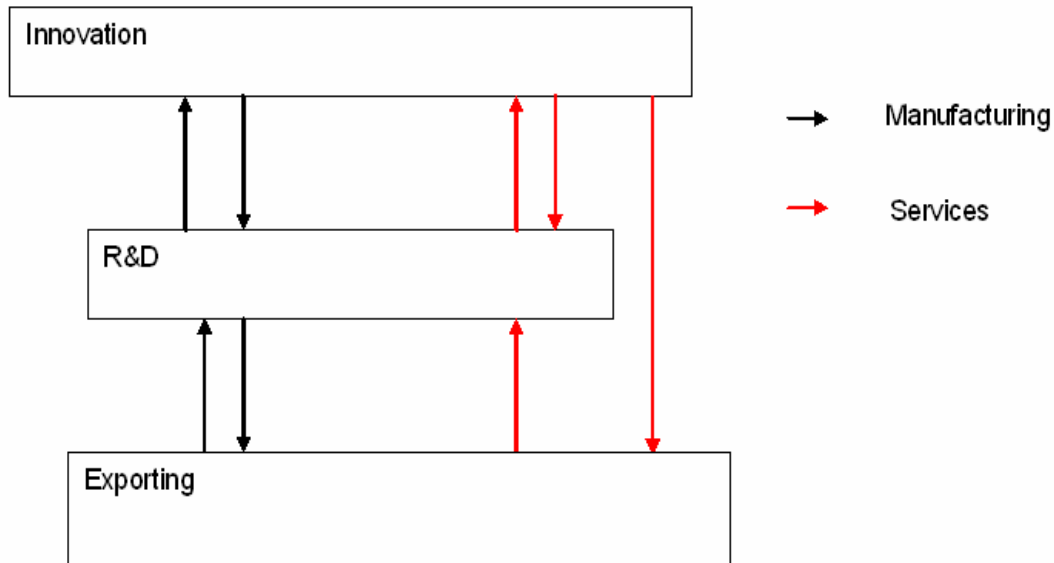
²⁰⁴ Harris and Moffat (2011)

²⁰⁵ Love and Ganotakis (2010)

²⁰⁶ Higon and Driffield (2010)

²⁰⁷ OMB (2010a)

Figure 32: Contemporaneous Relationships between Exporting, Innovation and R&D



Source: Harris and Moffat (2011)

The survey found that the influence of exporting on innovation was even higher among “Born Global” firms,²⁰⁸ 52 per cent of whom indicated that they had developed new products or services in response to selling overseas, with 61 per cent indicating that they had changed or modified existing products. This is indicative of the innovative nature of this sub-group of firms.

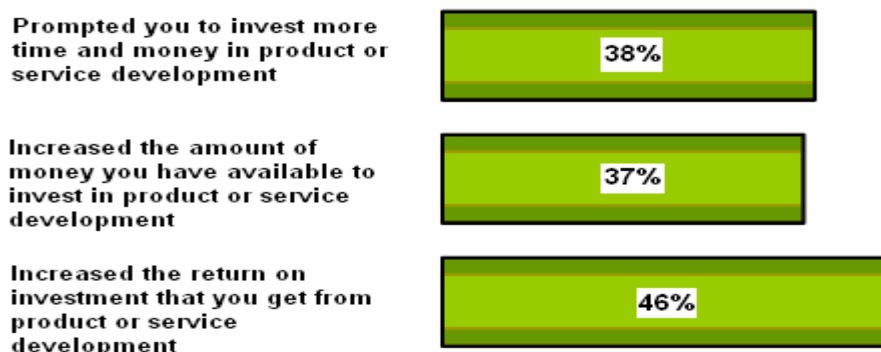
Firms which had expectations to grow substantially were also more likely to report that they had developed new products or services in response to selling overseas.²⁰⁹

The same survey provides evidence as to the reasons why exporting had prompted innovation or new product development. Some firms reported that they had developed new products or services in order to comply with regulations or legal requirements in overseas markets. Others had needed to do so in order to overcome a technical or practical issue in an overseas market, in response to different cultural or consumer preferences in overseas markets, or specific customer requests.²¹⁰

²⁰⁸ Identified in the survey as firms which had been established for up to 5 years and had been active in overseas markets since establishment, with exports accounting for at least 25% of their turnover.

²⁰⁹ OMB (2010a)

²¹⁰ OMB (2010a)

Figure 33: Impacts on Investment in Product/Service Development

Source: OMB (2010a)

Conclusions:

The evidence reviewed above indicates that exporting has significant positive effects on productivity and innovation within firms:

- **Exporting stimulates firm level productivity growth:** This occurs through a combination of scale economies, learning from exporting and exposure to new ideas, and reallocation of resources across product lines to focus on the firm's comparative advantage;
- **Exporting stimulates innovation and increased R&D:** Exporting stimulates innovation and R&D both through exposure to new ideas and competitors, and through increasing the returns to investment in R&D, and revenues available for such investment. ;
- **Productivity effects of innovation are enhanced by exporting:** In order for productivity benefits of innovation and R&D to be fully realised, firms in engaged in these activities need to be active in overseas markets;
- **Innovative firms benefit more from exporting:** Survey evidence supports evidence from econometric studies, showing that innovative and R&D active firms, and "Born Globals" benefit more from exporting. Firms which expect substantial growth also report more benefits and stronger innovation effects from exporting.

However, exporting is not suitable for all firms, and can have significant negative effects on the productivity of firms which begin to export and then cease to do so. Hence it is most likely to benefit those which have the characteristics needed for sustained export success.

Effects of Inward FDI on Productivity Growth within Firms

There are two main channels through which FDI can impact on productivity within the existing population of UK firms and plants:

- Knowledge spillovers, enabling the recipient plants and firms to improve their products, processes, and productivity;
- Improved management as a result of merger or acquisition by a foreign firm.

Knowledge Spillovers from Inward FDI:

We first review the academic evidence on types of spillover, and then look at the evidence on the magnitude of productivity enhancing spillovers, and how this varies according to the characteristics of the inward investment.

The term “spillover” refers to a benefit to one firm, or group of firms, which results as a by-product of the activities of another firm, as opposed to benefits which result from market transactions between firms. A key feature of spillover benefits is that they are not directly paid for by the firm receiving the benefits. Hence firms which confer knowledge spillovers are thought to benefit the economy in ways which may not be fully rewarded by market mechanisms.

The idea that inward investors are likely to confer productivity enhancing spillover benefits is predicated on their performing better than domestic firms. As discussed in Chapter 3, inward investors do tend to have higher productivity than the average UK owned firm, although not higher than that of UK multinationals. This does suggest scope for productivity enhancing spillovers with respect to UK firms who are not multinationals. By the same token, UK-owned multinationals may also be expected to confer positive spillovers on other UK firms.

Spillover benefits of inward investment are thought to include the transfer of technology or knowledge to domestic firms, via mechanisms such as demonstration effects, or networking among employees from different firms, or movement of employees between firms. Academic literature distinguishes two types of spillover:

- **Horizontal spillovers** occur between firms within an industry. Firms within the same industry are likely to be competitors so will have an incentive to try to prevent spillovers of this variety occurring;
- **Vertical spillovers** tend to occur between firms in a supply chain, so may involve firms in different sectors. These can confer broader knowledge, such as relating to new processes, or technologies which may be applicable across sectors, rather than sector specific knowledge.²¹¹

²¹¹ Kneller and Pisu (2007a)

The main channels through which horizontal spillovers occur are through acquisition of human capital and reverse engineering. These can occur when workers which have been trained by, or have specific knowledge of production techniques used in the foreign-owned firm, then leave and move to a domestic firm.²¹²

Findings from analysis of the Community Innovation Survey suggest that vertical spillovers can be significant. Learning from clients was found to be linked to the presence of multinational firms in downstream industries, while learning from suppliers was linked to multinational presence in upstream industries.²¹³ This study concluded that spillovers from FDI also occur via their impact on competition, because more competition was found to be associated with more learning.

Foreign firms may have incentives to share knowledge and technology with suppliers in order to influence the quality and quantity of the inputs which they require. The role which Japanese motor manufacturers played in transferring process improvement techniques to the UK supply industry, via involvement of some of their specialist engineers in the SMMT Industry Forum provides an example. However, in this case Government support to establish the Industry Forum was also involved.²¹⁴

Foreign firms may also learn from domestic or other foreign-owned firms in the host country. This can potentially lead to beneficial agglomeration effects, as once foreign firms have located in a host country, their presence may become an attraction to other foreign firms which see potential benefits of locating with other foreign firms.²¹⁵ For the UK there is evidence of foreign firms benefitting from spillovers from UK firms in industries in which the UK is knowledge intensive.²¹⁶

Several studies have sought to investigate the presence and magnitude of productivity enhancing spillovers, using econometric methods and firm level data. Findings show that such spillovers do occur, but vary both between sectors and within sectors in terms of the magnitude and type of spillover experienced. Agglomeration spillovers were found to be negligible, while the relative magnitudes of inter-industry (vertical) and intra-industry (horizontal) spillovers vary across industries. In manufacturing sectors, inter-industry spillovers were as likely to be negative as positive, with no clear evidence of an overall beneficial effect on UK manufacturing from FDI through supply side linkages.²¹⁷

Empirical studies of spillovers suggest that they not only depend on the characteristics of inward investors, but also on the “absorptive capacity”²¹⁸ of

²¹² Ibid

²¹³ Crespi et al (2007)

²¹⁴ See description at: <http://www.industryforum.co.uk/pdf/SMMTEnglishversion.pdf>

²¹⁵ Driffield and Love (2005)

²¹⁶ Ibid

²¹⁷ Harris and Robinson (2004)

²¹⁸ As explained in the previous chapter, “absorptive capacity” refers to the firm’s ability to identify and absorb useful knowledge and ideas from external sources.

domestic firms.²¹⁹ This is because the ability of a firm to identify potentially useful technology, skills etc from an inward investor, and the ability to interpret the information and utilise it, will depend on a firm's absorptive capacity. Exporting firms tend to have higher absorptive capacity²²⁰, which helps to explain the evidence that spillover effects tend to be greater for exporters than for non-exporters.

Characteristics of Inward Investment Associated with Spillovers

Not all inward investors will generate beneficial spillovers, as their ability to do so depends crucially on the extent to which they have useful knowledge or technologies which are new to the host economy. Thus inward investment which is "technology exploiting", that is, those firms which locate overseas in order to exploit a technology produced by the firm, has been found to be associated with spillover benefits.²²¹ Such inward investment projects may be referred to as "high quality", in the sense that they are likely to generate more knowledge spillovers, and hence confer greater benefits on the host economy.

These "technology exploiting" inward investors have been identified in research as firms for which the research and development intensity of their sector in their home country is above that of the host country.²²² Firms in these sectors, on average, tend to have invested proportionally more in research and development than firms in the same sector in the host economy.

Firm level analysis of the UK for the years 1986, 1998 and 1992, suggests that inward investments from the USA, Canada, Switzerland are more likely to be technologically intensive than the average firm, and hence more likely to be "technology exploiting". The analysis also found that investments from "other countries" (i.e. countries other than the USA, Canada, Japan, EU, Sweden and Switzerland) were significantly less likely to engage in R&D than the average firm.²²³

These findings suggest that countries with a higher incidence of patents are also likely to be more frequent sources of "technology exploiting" FDI. Figure 34 shows that the USA, Japan and Germany continue to file the greatest share of patents, together accounting for almost 60 per cent of PCT patents filed globally. However, the share filed by the USA, Germany, France and the UK has been declining over time. China and Korea have been increasing rapidly, and exceeded the share filed by the UK in 2007 and France in 2008. The share filed by India increased over the period but remained below 1 per cent in 2008.

At the other end of the spectrum, some inward investors have been classified as "technology sourcing", since they locate overseas with the purpose of acquiring

²¹⁹ Girma (2005); Higon and Vasilakos (2010)

²²⁰ Harris and Li (2009)

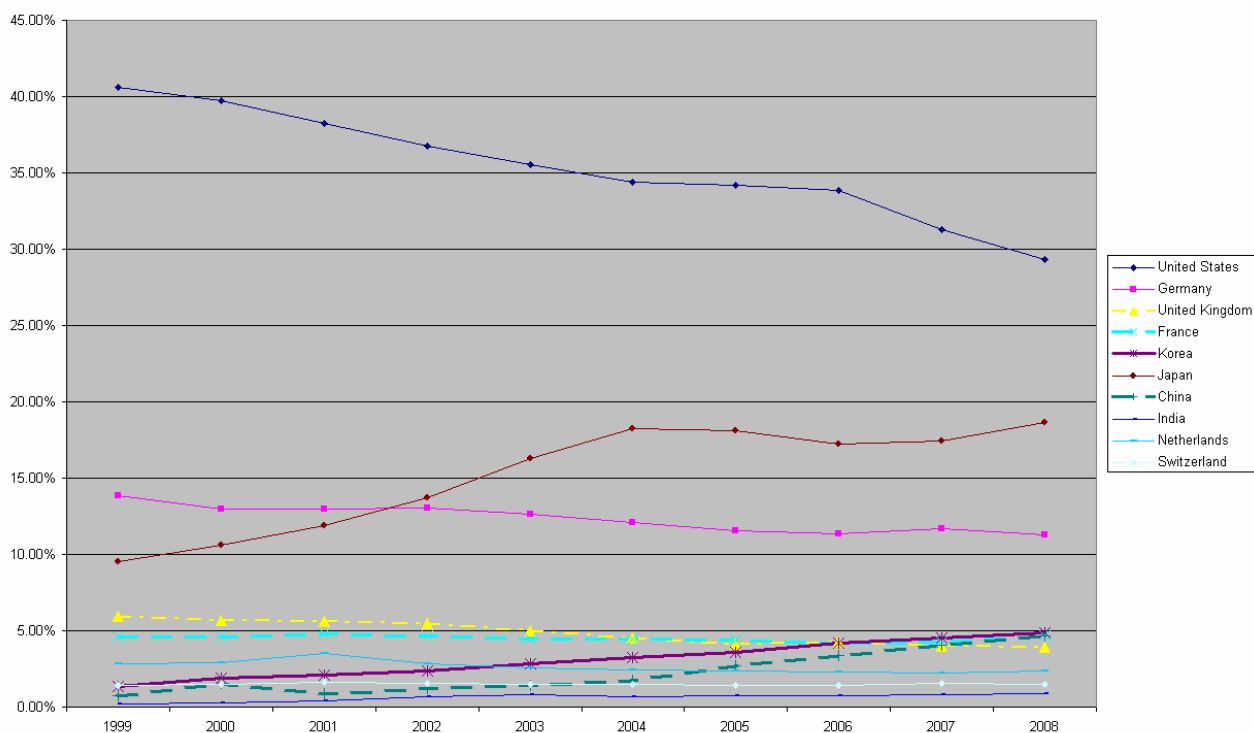
²²¹ Driffield and Love (2007)

²²² Ibid

²²³ Driffield and Taylor (2005)

technology from other firms, rather than to exploit technology of their own. Technology sourcing inward investment is often through merger or acquisition, but can also be through Green field investment. This occurs when the investment is intended as a means to learn through proximity to other firms in the host economy. Theory suggests that technology laggards can find it worthwhile to invest in overseas markets even if these overseas affiliates run at a loss, as long as the investing firm can incorporate the benefits of advanced technology in the host markets.²²⁴

Figure 34: Share of PCT patents held by country 1999 - 2008



Source: OECD Patent Statistics (OECD.stat)

Technology sourcing inward investors have been identified in the literature as those in which the research and development intensity of their sector in their home country is below that of the host country.²²⁵ FDI of this nature is not associated with productivity enhancing spillovers. Moreover, when the investor is also gaining access to cheaper labour, this is associated with a negative effect on the productivity of domestic firms. This occurs due to the foreign investor gaining market share at the expense of domestic firms.²²⁶

²²⁴ Fosfuri and Motta in Driffield and Love (2005)

²²⁵ Driffield and Love (2007)

²²⁶ Driffield and Love (2007)

Figure 35 illustrates a taxonomy of motivations for FDI, distinguishing between “technology sourcing” and “technology exploiting” FDI. The main effects found on productivity and jobs in the UK were:

- UK gains from productivity spillovers where the incoming investor has some form of technological advantage (“technology exploiting”);
- This positive spillover is significant only where the technological advantage of the foreign investor is sufficiently great to offset the disadvantage of higher unit labour costs in the UK;
- Technology sourcing FDI has negative effects on UK productivity when it also has lower unit labour costs in the UK;
- Technology exploiting FDI has a positive effect on demand for skilled labour in the UK, especially where there is no labour cost advantage in the UK;
- Technology-sourcing FDI reduces the demand for skilled labour in the UK, especially where the UK has lower labour costs;
- Technology sourcing FDI increases demand for unskilled labour where unit labour costs in the UK are lower than in the home country.

Figure 35: Taxonomy of Motivations for FDI

	Unit Labour Cost of host country less than home country	Unit Labour Cost of host country more than home country
R&D intensity of host country greater than home country	(1) Technology sourcing/ location advantage	(2) Technology sourcing
R&D intensity of host country less than home country	(3) Technology exploiting: Ownership advantage/efficiency seeking	(4) Technology exploiting/Ownership advantage

Source: Driffield and Love (2007)

Another characteristic of inward FDI which has been found to influence the incidence of productivity enhancing spillovers is whether the inward investor is export oriented. For the UK, export oriented foreign-owned firms have been found to have a positive “horizontal” spillover effect on the productivity of domestic exporters, although not on non-exporters.²²⁷

In contrast, export-orientated foreign affiliates in the UK have been found to have a negative “vertical spillover” effect on the productivity of UK suppliers. One explanation could be that foreign-owned firms may have weaker links with UK suppliers than do UK owned firms. They may also have greater bargaining power, and able to lower the price of the inputs they purchase from UK suppliers.²²⁸

However, domestic market orientated FDI has been found to have a positive “vertical spillover” effect on UK firms in upstream industries (i.e. suppliers),²²⁹ with the effect being greater on domestic exporters than non-exporters.

Conclusions

The evidence reviewed above shows that:

- productivity enhancing spillover benefits of inward investment do occur, and can be significant, but only for high quality projects, likely to be ‘technology exploiting’;
- the incidence and magnitude of these effects depends on links and proximity to UK firms which have the “absorptive capacity” needed to benefit from them; and
- technology sourcing inward investment does not confer productivity enhancing spillover benefits. and can impact adversely on skilled jobs.

Other Spillover Benefits

Export Spillovers

The presence of foreign-owned firms can have a positive effect on the incidence of exporting among host country firms. Research on UK firms has found evidence of positive horizontal spillover effects on the decision of domestic firms to export.²³⁰

²²⁷ Girma et al (2008) In both cases, the implication seems to be that inward investment is associated with weaker demand for output from UK suppliers.

²²⁸ Ibid

²²⁹ Smarzynska (2002)

²³⁰ Kneller and Pisu (2007a)

Studies have suggested two main mechanisms through which the presence of foreign-owned firms may impact on the export activity of host country firms. One mechanism is through intensified competition. Sectors with higher levels of international competition in the domestic market have been found to have domestic firms which operate closer to the technology frontier than sectors which do not.

The presence of foreign-owned firms can increase competitive pressure on domestic firms, over and above what would have occurred through exposure to competition from imports. This leads domestic firms either to become more productive or to exit. Consequently, the remaining domestic firms in the sector are more internationally competitive, and hence more likely to export. For the UK, the chemicals sector provides an example.²³¹

A second mechanism through which inward FDI can exert a positive influence on the participation of domestic firms in export markets is through information flows which they generate about foreign markets and tastes. This information reduces the costs to domestic firms of investigating potential overseas opportunities, and so can enable more of them to export.²³²

Qualitative research of inward investors into the UK indicates that these information flows can also open up international networks to domestic firms in the host market. One case study found that a domestic supplier to a Japanese subsidiary in the UK had begun to export to the parent firm in Japan, and also to the Japanese firm's other subsidiaries in China and the USA. Thus, the FDI enabled the domestic supplier to enter the network of the inward investor.²³³

Foreign-owned firms which are export oriented may also provide other types of information about entering other foreign markets, as a knowledge spillover effect of their own export experience and expertise.²³⁴

Productivity Effects of Foreign Mergers and Acquisitions

Acquisition by, or merger with, a foreign firm might be expected to raise productivity of the acquired firm if the change in ownership leads to productivity enhancing changes, such as improved management practices, or new technologies.

Studies which have sought to test whether this occurs have also needed to investigate the characteristics of merged or acquired firms prior to the ownership change, in order to distinguish effects of the change from these pre-existing characteristics. This is because if the most productive plants were more likely to be acquired, an observation that merged or acquired firms had higher productivity than those which were not could simply be due to this selection effect.

²³¹ Greenaway and Yu (2004)

²³² Ibid

²³³ SQW (2009)

²³⁴ Kneller and Pisu (2007a)

Theory suggests that firms or plants which are acquired will either tend to be either the best performers (“cherry picking”), or the poorer performers (“buying lemons”). “Cherry-picking” is consistent with a “synergy” hypothesis, which suggests that cherry picking will occur when the value of the new entity created by merger or acquisition is expected to be greater than the sum of the values of the individual firms. This implies that performance of the acquired plant or firm is expected to improve post-acquisition. A number of studies have found evidence of cherry-picking.²³⁵

Lemon buying is thought to occur in two possible contexts. The first is led by management in the acquiring firm, which seeks to acquire underperforming or poorly performing firms or plants, and then improving their performance by replacing the management post-acquisition. The second context is led by management in the acquired firm or plant. This view suggests that when lapses in efficiency occur, these plants or firms then seek a “match” with a better performing enterprise in order to improve their own performance.²³⁶

Recent analysis of foreign mergers and acquisitions of UK plants found limited evidence of cherry-picking and lemon buying.²³⁷ For manufacturing plants, there was evidence that it was not the very best performing plants which were being taken over, but instead those at the upper end of the middle to lower end of the productivity distribution. Among services plants, results were mixed, but overall less productive plants tended to be acquired, suggesting some lemon-buying.

A number of studies have investigated the impact of foreign mergers and acquisitions on labour productivity. Some have found a positive effect of foreign acquisition on labour productivity, while others found no effect, or a negative effect.²³⁸

As labour productivity is driven by the balance between labour and other factors of production, including purchased inputs, studies of total factor productivity are needed in order to understand the extent to which ownership changes may affect efficiency.

Two recent studies of the UK have examined the impact of mergers and acquisitions on total factor productivity, looking at effects over a five year post-acquisition period. One of these studies used plant level, and the other, firm level data. Both found limited evidence of any sustained positive effect on total factor productivity, although results varied by sector and by the country of origin of the acquiring firm.

The plant level study found that among manufacturing plants there was little change in total factor productivity (TFP) when they were acquired by firms from the USA (or by other UK firms). However, when acquired by EU owned firms, or by firms from countries other than the USA or the EU, TFP declined and this declining trend

²³⁵ Harris (2009)

²³⁶ Harris (2009)

²³⁷ Harris (2009)

²³⁸ Girma (2005) Bellak et al (2006) Salis (2008) Bellak et al (2006) in Harris 2009; Harris and Robinson (2002), Girma and Gorg (2006) Gioia and Thomsen (2002) in Harris (2009)

generally continued over time.²³⁹ For services plants, although there were initial gains in TFP when they were acquired by firms from the US or EU, these dissipated over time. When acquired by firms from countries other than the US or EU, however, there were large initial gains to TFP which fell back to around a 10 per cent.²⁴⁰

The second, firm level study found that at aggregate level foreign acquisition had no significant impact on TFP. However, the study did find heterogeneity across sectors with regard to the effect of foreign acquisition on firm level TFP. The study also found that foreign mergers and acquisitions had a positive effect on labour productivity. This effect of raising labour productivity was found to be driven by an increase in capital intensity and a fall in employment at firm level post-acquisition.²⁴¹

Conclusions:

In summary, evidence on the effects of foreign mergers and acquisitions shows that:

- Foreign mergers and acquisitions do not generally lead to improvements in efficiency, as measured by total factor productivity. In some cases the effect has been negative. However, there are differences across sectors and source countries. Acquisitions in the services sector, from firms outside the EU and the USA, did show some positive effects;
- Foreign mergers and acquisitions do tend to increase labour productivity, as a consequence of changes in the balance of resources to decrease labour intensity, while increasing the use of capital and purchased inputs.

Conclusions:

This chapter has reviewed evidence on the effects of exporting and inward investment on productivity, innovation, and investment in R&D within firms.

The evidence on exporting shows that:

- **Exporting stimulates firm level productivity growth:** This occurs through a combination of scale economies, learning from exporting and exposure to new ideas, and reallocation of resources across product lines to focus on the firm's comparative advantage.

²³⁹ Harris (2009)

²⁴⁰ Harris (2009)

²⁴¹ Schiffbauer et al (2009)

- **Exporting stimulates innovation and increased R&D:** Exporting stimulates innovation and R&D both through exposure to new ideas and competitors, and through increasing the returns to investment in R&D, and revenues available for such investment.
- **Productivity effects of innovation are enhanced by exporting:** In order for productivity benefits of innovation and R&D to be fully realised, firms engaged in these activities need to be active in overseas markets.
- **Innovative firms benefit more from exporting:** Survey findings support evidence from econometric studies, showing that innovative and R&D active firms, and “Born Globals” benefit more from exporting. Firms which expect substantial growth also report more benefits and stronger innovation effects from exporting.
- **Exporting is not beneficial for all firms:** Firms which begin to export and then cease to do so can suffer significant negative productivity effects.

The evidence on inward investment shows that:

- **High quality FDI confers productivity enhancing spillover benefits:** Productivity enhancing spillover benefits of inward investment do occur, and can be significant, but only for high quality projects, likely to be “technology exploiting”.
- **Productivity benefits depend on links to UK firms capable of absorbing them:** The incidence and magnitude of these effects depends on links and proximity to UK firms which have the “absorptive capacity” needed to benefit from them.
- **High quality FDI can benefit UK exporters:** Exporters are more likely to benefit from productivity enhancing spillovers because they have the “absorptive capacity” to do so. They can also benefit from export enhancing spillovers, including knowledge and networks;
- **Technology sourcing FDI does not bring benefits:** Technology sourcing inward investment does not confer productivity enhancing spillover benefits, and can impact adversely on skilled jobs.

Chapter 6: Barriers to International Trade and Investment and Market Failure

Introduction

The evidence reviewed in previous chapters showed that exporting and high quality inward investment have substantial potential to contribute to productivity growth and economic prosperity. The evidence also shows that firms can derive substantial benefit from pursuing these activities, suggesting that market mechanisms driving exporting and inward investment are very strong. In this chapter we consider whether market forces unaided would be likely to maximise these benefits, or whether there are barriers or market failures which give rise to a need for government action.

The chapter begins by looking briefly at the concept of market failure, and at some theoretical reasons why markets unaided might fail to deliver optimal outcomes in these areas. We then review evidence on business experience of barriers which hinder exporting and FDI, and consider the extent to which markets might be able to overcome these without government involvement. The discussion concludes that:

- **Market failures create significant non-policy barriers to trade and inward investment** which would prevent the business community unaided from fully realising the potential benefits.
- **The incidence and intensity of barriers to entering new markets are greatest for innovative and growing firms**, indicating that the economic cost of these is likely to be large, due to the economic importance of this segment of the business population.
- **Market failures differ in their policy implications:** Market failures affect the demand and the supply side of the market for export and investment related services in different ways.

Market Failure

The term “market failure” has both a narrow interpretation – in terms of deviations from theoretical conditions for perfect markets – and a more general policy-oriented usage, which refers simply to circumstances in which there are significant potential economic benefits which the private sector would be unable, or unlikely, to achieve.

There is neither a clear benchmark for determining whether market failure is occurring, nor for measuring its economic cost. Different perspectives on what constitutes a well-functioning market result in different views about what constitutes market failure, and different degrees of optimism as to the likelihood that market

forces unaided can optimise economic benefits. These different perspectives can lead to different interpretations of any given evidence.²⁴² In this chapter we take a pragmatic approach, first looking at theory, and then at business experience.

Theory shows that market failures can hinder trade and FDI in two main ways, the first relating to the supply side of the market for export and investment related services, and the second affecting the demand side.²⁴³

- **Effects on the costs of entering new overseas markets:** Costs to firms of acquiring the necessary information and of making the right contacts will be influenced by the extent to which they have access to relevant established networks, and to good sources of information and advice at a cost which does not exceed its true resource cost. Market entry costs can include acquisition of knowledge and skills relating to navigating a new business environment, or of overcoming adverse buyer prejudices, as well as the costs of information.
- **Effects on the expected benefits from entering new overseas markets:** Firms need to make judgments about whether the benefits are likely to exceed the costs, taking account of risks. Under-estimation of potential benefits, or over-estimation of risks, can lead to firms deciding not to make the effort, when in reality it would have been profitable to do so. While mis-judgments by individual firms is a normal part of market activity, it is a more general tendency for many firms to under-estimate benefits or over-estimate risks of exporting which is the issue here. In addition, where investment in new market entry generates “spillover” benefits, accruing to other firms, the social and economic benefits of the firm’s investment will exceed the private benefits, resulting in sub-optimal outcomes.

While the ultimate consequences of market failure in either of these areas can be the same, in terms of deterring firms from exporting or entering new markets, or failing to attract optimal levels of high quality inward investment, the potential policy implications can be very different. Designing a cost effective policy response will therefore depend crucially on robust diagnosis of what the problem is, and the extent to which a private sector market for export and investment related services might be able to respond. For example:

- Is there potential or actual private sector capability to deliver services which can meet business needs for information, know how, and access to contacts at an efficient economic cost?
- Are there some services which private sector providers are less able to provide than Government?

²⁴² For a discussion of ways in which different theoretical paradigms lead to different perspectives on evaluation research and evidence see Lipsey (1998). The paper discusses evaluations from two perspectives: neoclassical economic theory and structuralist-evolutionary theory respectively.

²⁴³ These points are discussed in the context of a theoretical model of trade in DTI (2006).

- Are coordination problems inflating costs of new market entry to individual businesses, by hindering cooperation on issues of potential collective benefit, such as sector based research, or showcasing sector capability?
- Does business willingness to pay for services relating to exporting and inward investment reflect their true economic value? Or are there demand side market failures which affect willingness to pay and thus weaken the potential commercial viability of such services?
- If there are demand side market failures, how much do they matter to the economy? Do they affect all firms, or just an identifiable subgroup?

We first review theoretical sources of market failure which can affect costs of new market entry and the supply side of the market, and then look at market failures which are likely to influence business willingness to invest in the costs of beginning to export, or entering a new market.²⁴⁴ Through their effects on willingness to pay for export and investment related services, these latter market failures would affect the demand side of the market.

Market Failure Affecting Costs of Overseas Market Entry

The existence of costs to new market entry may be experienced as a barrier by firms, but does not necessarily imply market failure. However, a number of market failures have been identified which can adversely affect these costs:

- **Under provision of public goods:** Private-sector market incentives are generally insufficient to provide optimal quantities of public goods. Much of the general market information, and awareness raising material, provided by government trade and investment promotion bodies comes under this heading.²⁴⁵ If public-sector action is not taken to ensure these gaps are filled, individual businesses requiring the information would be obliged to produce it for themselves.²⁴⁶ This would both inflate the costs of acquiring the information, and waste resources from the perspective of society as a whole, by duplicating activity which could more efficiently have been done once for use by all;

²⁴⁴ Literature reviews which have looked at market failures relating to exporting include Harris and Li (2005); Reading Business Group (2005).

²⁴⁵ In many cases, information, once provided, can be used by more than one consumer (non-rival) and others cannot be prevented from using it (non-excludable). A pure public good has both characteristics, while a pure private good has neither; many types of information fall somewhere between the two, with the boundary between what the market will or will not provide not necessarily fixed or easy to assess.

²⁴⁶ In some circumstances a feasible alternative option is to encourage business groups to co-operate in commissioning research relevant to an entire sector, or group of sectors.

- **Coordination failures:** Costs can be saved for individual businesses by cooperating with other businesses on investment in information or promotional activity for collective benefit, for example through a sector body. However, difficulties arising from lack of mutual trust, or relating to allocation of the costs and benefits of the collective effort, or a tendency for some members to free ride on the efforts of others, can hinder or prevent such cooperation, even when it would bring significant collective benefit. Government can sometimes overcome these problems, serving as an effective catalyst for beneficial private sector cooperation;²⁴⁷
- **Network and intermediation failures:** The literature has highlighted the importance of the social networks and intermediaries which underpin international linkages and knowledge flows, and enable businesses to identify and gain access to overseas contacts and opportunities.²⁴⁸ However, networks are subject to externalities, and the private sector alone may not be willing or able to develop or maintain these adequately. Theory also identifies a number of reasons why government is uniquely well placed to fulfil the role of trusted intermediary, bridging gaps in private-sector networks in ways that could not be done as effectively, if at all, by a commercial service provider.
- **Business environment barriers to market access:** Government has a key role in setting and enforcing the rules of the business environment. The costs of trying to find effective ways of navigating a new business environment can be high if firms do not have access to the right advice and help. Because of its links with official counterparts overseas, government can be uniquely able to provide this help, including political and diplomatic support, if needed, to address issues surrounding the implementation of these rules.
- **Externalities affecting investment in skills:** While there are collective benefits to the economy of increasing the pool of business people with the knowledge, expertise, and networks needed for success in overseas markets, the incentives for individual businesses to invest in developing these skills among their staff may not fully reflect this collective benefit. This is because the individual firms making this investment are unlikely to be able to appropriate all of the benefit.²⁴⁹ Knowledge and contacts built up on one firm can spill over to other firms, either through staff movements, or simply through social networks, or demonstration effects.

By increasing the costs and difficulties of entering new markets, all of these factors would tend to have an adverse effect on the number of exporters entering new markets, and thus on the extensive margin of trade. These factors also seem likely to have stronger adverse effects on entry into markets which are culturally more

²⁴⁷ Reading Business Group (2008); SQW (2010)

²⁴⁸ For a summary historical review of literature on this issue see Casson et al (2006)

²⁴⁹ OMB Research (2009b) and (2010c) find evidence of these effects.

remote, and where established networks and the pool of existing UK business expertise, knowledge, and contacts is less strong.

These factors can accordingly hinder the economy's ability to respond quickly to changes in the pattern of global opportunities, especially where changes are relatively rapid. Exporters from countries which lack established social, cultural, and language ties with the fastest growing economies face a disadvantage in this respect, as compared with competitors from countries which do have such ties.

Equally, lack of relevant information, or difficulties in gaining access to the right contacts, including suitable R&D partners or suppliers, can present a barrier to inward investors, or reduce the incentives for them to locate R&D in the UK.

Social Networks and the role of Trusted Intermediary:

Social networks are a key vehicle through which firms gain information about opportunities in overseas markets, and also find buyers, agents and business partners in overseas markets. When firms seek to enter new markets to which their existing social networks do not extend, they require a **trusted intermediary** through which they can enter new social networks in the overseas market. Government can be in a unique position to address this need through its ability to bridge access to a wide range of networks in both the public and private sectors.

Government is often thought to engender more trust than could be achieved by commercial private sector firms when brokering networks, as officials are better placed to be impartial, and to take account of the wider public interest, including implications for UK reputation, as well as to focus on the best interests of individual firms. By contrast, commercial incentives can tend to favour the interests of wealthier clients, as those are most likely to be a source of profitable revenue. Commercial incentives can also be more skewed to short term financial aims, resulting in weaker incentives to act in the best interests of clients who are not seen as likely to be sources of repeat business. Hence commercial incentives are likely to provide a less reliable basis for a trusted intermediary role, especially for smaller businesses.

Diplomatic activities can also facilitate access to public sector networks in overseas markets, which private sector providers may struggle to provide. This is likely to be particularly true in sensitive sectors. Introduction to networks by government officials can also boost a firm's reputation or kudos, improving the firm's access to key contacts and potential business.

Networks are likely to be stronger near a firm's home base, or where there are strong family or cultural linkages for historical reasons, for example due to former colonial ties. In geographically and culturally distant markets, firms may lack the means of access to business or social networks, or understanding of how they work. The

private sector alone may be unable to develop or support networks to redress this lack, particularly where there is little or no history of bilateral trade and investment.²⁵⁰

Networks have some of the characteristics of public goods, and so can suffer from free-rider effects. Private sector-run networks can also be dominated by the interests of incumbents and be used as a barrier to those outside.

Evidence from surveys of UK exporters supports the idea that Government is uniquely well placed to provide this trusted intermediary role. “Access to contacts not otherwise available”, and “improved profile or credibility” are among the benefits most frequently cited by users of the services provided by UKTI’s overseas network. By contrast, Figures 36 and 37 show that non-users of these services have rarely been able to obtain similar benefits from using other forms of support.

Cost Consequences of Skill Deficiencies:

A limited pool of skills and knowledge relating to overseas markets, and how to go about exploiting them, will raise the costs to individual firms of acquiring these skills. At the same time, it will limit the capability of consultants and other external service providers to offer good quality help to businesses who need it. Hence it is generally necessary for firms to build up these skills internally, to an extent, rather than buying them in from the market through the purchase of commercial training or consultancy services, or through hiring new staff.²⁵¹ A limited pool of UK business people with the necessary foreign language skills is likely to present similar issues for some markets.

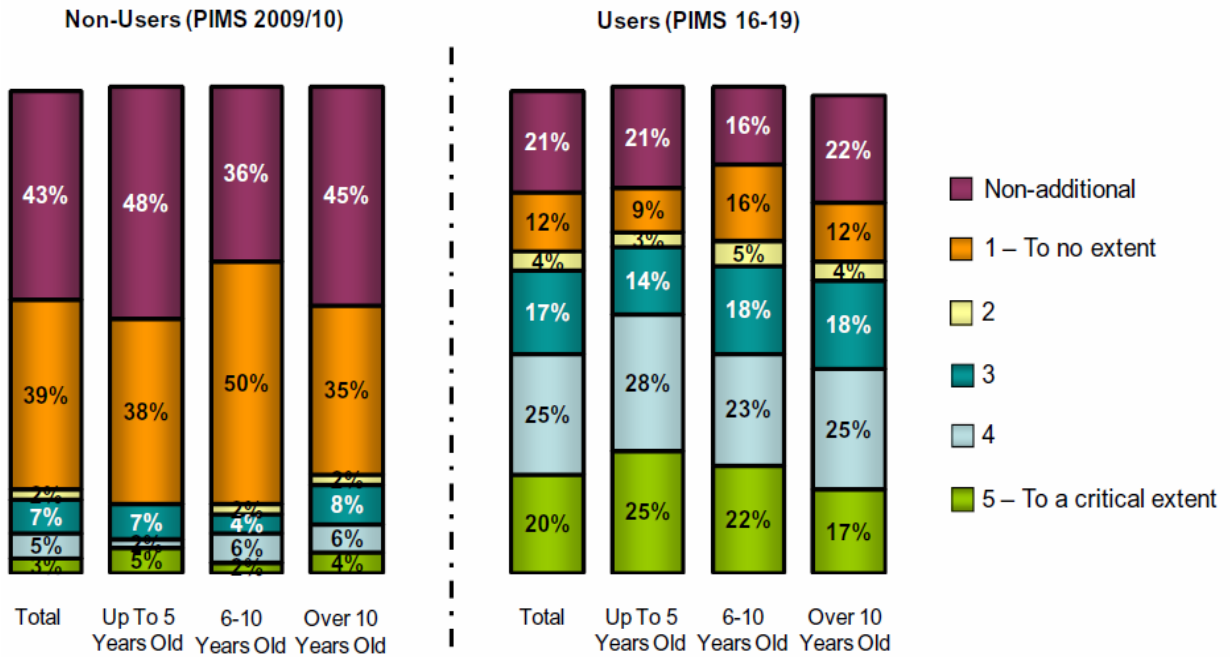
Weaknesses in internationalisation skills, if not addressed, are likely to increase the costs of entering overseas markets, for example as a result of pursuing poor quality marketing research or market entry strategies which waste resources, or increase risks of failure.

While there is likely to be a substantial pool of UK business people with knowledge, expertise and contacts in long established UK export markets, available both to exporters seeking a new recruit, or to consultancies seeking to provide export related services, the pool of such expertise is likely to be much thinner for some of the fast growing emerging markets.

²⁵⁰ There may also be little commercial incentive for such capability to develop until a sufficient volume of bilateral trade and investment activity develops to justify the fixed costs of building it up.

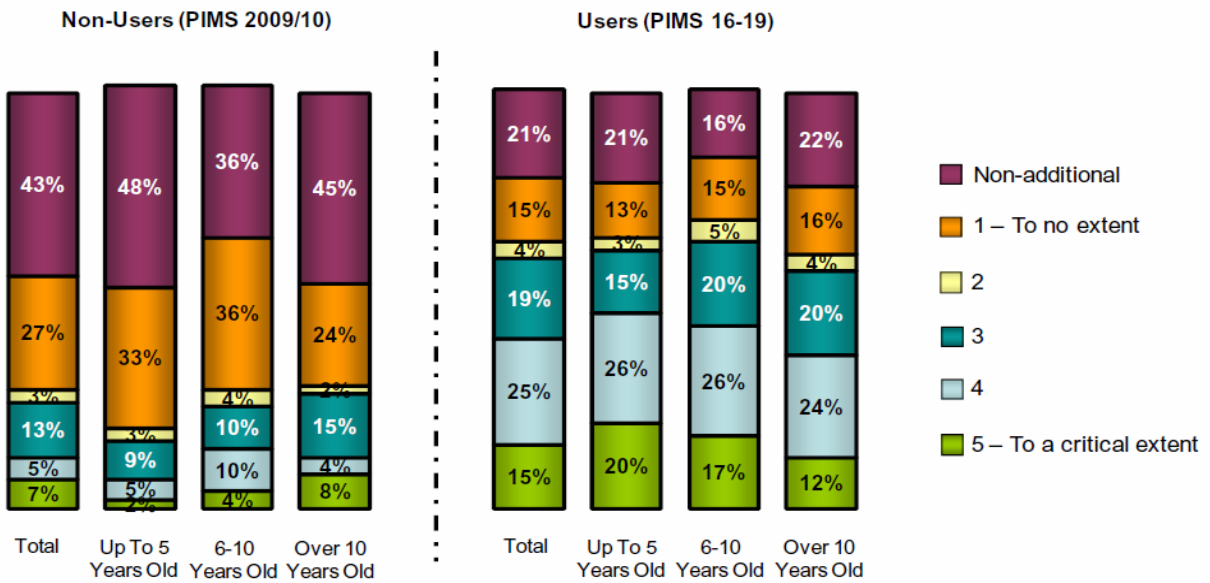
²⁵¹ Harris and Li (2005) highlight the distinction between capabilities which can be purchased and those which must be built up internally, partly through experience. Cost-effective acquisition of external expertise in any case requires sufficient complementary capabilities to be an intelligent customer, while taking on a new staff member can represent a significant fixed cost, assuming that there is sufficient supply of labour on the market with the right expertise for this to be a feasible option.

Figure 36: Gained Access to Prospective Customers, Business Partners or Other People You Would Otherwise Have Been Unable To Meet



Source: OMB Research (2010c) Base: All supported firms exc. just Certificates of Origin or <1 hour of 'other' support (Base, Don't know, Signposted only) Non-Users – Total (174, 0%), Up to 5 years old (40, 0%), 6-10 years old (50, 0%), Over 10 years old (84, 0%), Users – Total (3984, 1%, 0%), Up to 5 years old (1007, 1%, 0%), 6-10 years old (727, 0%, 0%), Over 10 years old (2242, 1%, 0%)

Figure 37: Improved Profile or Credibility Overseas



Source: OMB Research (2010c)

Roles for Government

Government can play a number of important roles in addressing these problems:

- 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.

Market Failure Affecting Expected Benefits of New Market Entry

Market failures which affect businesses' judgments relating to the potential benefits and risks of beginning to export, or of entering a new market, will influence business willingness to invest in the associated costs of acquiring the necessary knowledge. By influencing willingness to pay, these judgments will in turn have an influence on the demand side of the market for export and inward investment related services.

Evidence reviewed below shows that lack of information about export markets can be perceived by businesses as a barrier to exporting, or to entering a new export market. However, given that this type of information can be obtained, albeit at a cost at least in terms of time and effort, this lack of information may actually reflect a tacit judgment on the part of the businesses concerned that the potential benefits of acquiring it are not worth the cost. By contrast, someone who appreciates the potential business benefits of exporting is likely to make different judgments about how much is worth investing in acquiring export related information.

Economic theory suggests that when acquisition of information has real costs, as is usual in a process of "search" – whether for suitable overseas market opportunities, or for suitable employees - acquisition of the *optimal* amount of information will still

leave decision makers with less than perfect information.²⁵² Thus the existence of limited information *per se* is not a sign of market failure. See Box 2.

Hence the fact that some businesses lack of information about overseas markets may not indicate market failure. Not all firms have the export potential which would warrant investment in the acquisition of such information. For those who do have such potential, the real issue may be that the firm lacks awareness of its export potential, or under-estimates the potential benefits of exporting, or lacks confidence, or exaggerates the potential risks. Demonstration effects, from observing or hearing about other firms similar to themselves are achieving success in overseas markets, can sometimes change these perceptions.²⁵³ Advice or mentoring from a trusted advisor can also have this effect.²⁵⁴

Surveys of UK exporters provide evidence suggesting a positive association between businesses' perceptions of the benefits of exporting, and their use of external sources of advice and knowledge relating to exporting. Those who had used UKTI services reported greater business benefits from exporting,²⁵⁵ and were also six times more likely to have commissioned research on an overseas market from a commercial service provider.²⁵⁶

Two theoretical sources of market failure which can influence business perceptions of the potential benefits of entering new markets are discussed below.

Asymmetric Information

Prior to entering a new market, a firm faces greater uncertainty, relative to a market in which it is already established, as to how profitable its sales will be in the new market, or the extent to which the firm will derive other benefits from entering the market. This may lead to firms underestimating the benefits of exporting, and/or over estimating the costs and risks, resulting in fewer firms investing in building the capabilities or acquiring the knowledge needed for active exporting,²⁵⁷ or for entering new markets. Hence lack of understanding of the potential benefits of exporting can result in fewer firms exporting, and fewer of those who do export being willing to tackle new markets. Thus it would also be a drag on the extensive margin of trade.

²⁵² The economic theory of search is widely used in the context of employment economics, to analyse issues of firms finding the right employees, and vice versa. The concepts are equally applicable to trade and inward investment, where the 'search' relates to suitable business opportunities.

²⁵³ OMB Research (2010g) provides examples of firms being aware of these effects on competitors.

²⁵⁴ Gaining the confidence to export, or to expand into a new market is one of the business benefits most frequently reported by clients of UKTI's International Trade Advisers. See OMB Research (2010b) report on the Performance and Impact Monitoring Survey.

²⁵⁵ OMB Research (2010c)

²⁵⁶ OMB Research (2011) unpublished presentation

²⁵⁷ "Active exporting" is distinct from "passive exporting", in which a firm may respond reactively to export orders, but does not invest active effort in seeking to develop export sales.

Qualitative research suggests that prior to investigating overseas markets some firms underestimate the potential demand for their product or services in overseas markets. Surveys of UKTI clients also suggest that firms tend to underestimate how exporting can benefit their innovation activity.²⁵⁸

Cultural and language issues may also influence perception of the potential rewards and difficulties of tackling particular markets, especially where established links with UK business are relatively weak. It can also hinder firms' response to potential opportunities in these markets even when approached by potential customers.²⁵⁹

Survey evidence shows a positive association between business perceptions of the benefits of exporting, and the percentage of their turnover derived from exports. Firms with a written business plan including overseas sales targets also reported greater benefits.²⁶⁰ Experienced exporters are also more likely to report stronger motivations for exporting.²⁶¹

Quantitative studies of the factors which influence firms' decision to export show that hard factors, such as productivity, R&D, and innovation, explain the observed incidence of exporting only to a limited extent. As noted Chapter 3, while studies are generally consistent in finding that these factors increase the probability that a firm will export, there remain a great many non-exporting firms whose profile matches that of exporters in these respects. Analysis of data from a recent large scale survey of European firms' international activities similarly was able to explain the determinants of exporting only to a very limited degree.²⁶²

Other factors, such as management attitude and business goals, clearly also play an important role in influencing the firm's decision to export. A study of firms in Ireland and Northern Ireland found that these other factors played a larger role in determining export decisions of SMEs than among larger firms.²⁶³

Management attitudes to export activity also help to explain the evidence that firms with a written business plan which has targets for overseas sales tend to report greater benefits from exporting. These attitudes are likely to influence judgments as to whether it is worth investing in export related services, and hence affect willingness to pay for such services.

²⁵⁸ OMB Research (2009) (2010d)

²⁵⁹ In one exporter case study, a firm had been ignoring faxes from Brazil containing serious business enquiries, because the faxes were in Portuguese. Eventually, a contractor from Portugal who was working for the firm on an unrelated project noticed these enquiries, and told the firms' managers what they were. This led the firm to contact UKTI for help in working out how to follow up the enquiries, ultimately resulting in successful development of export sales to Brazil. OMB Research (2007)

²⁶⁰ Breinlich et al (2011)

²⁶¹ OMB Research (2006) PIMS 2-3 Full Report

²⁶² Navaretti et al (2010)

²⁶³ Roper et al (2005)

Willingness to pay for information and advice can also be limited by lack of awareness of need for such information (not knowing what one does not know), or by uncertainty as to its quality. These factors would affect the willingness of businesses to pay for information and advice, especially for smaller firms. These effects are likely to diminish with experience gained of benefiting from using particular services.

A review of literature on business use of external sources of knowledge and expertise highlighted awareness of the need for such knowledge as a key pre-requisite to addressing such needs.²⁶⁴ A recent survey of UK exporters found that those who had previous experience of commissioning a charged service from UKTI's overseas network were, on average, willing to pay significantly more for this type of service than those who had not done so.²⁶⁵ Willingness to pay was also linked to size of firm, and to the business benefits which the firm had experienced from the service most recently commissioned.²⁶⁶

Conclusions

There are different theoretical perspectives on the extent to which information failure is seen as a source of “genuine” market failure, stemming from different perspectives on how markets function. However, from a pragmatic perspective, the theory and evidence reviewed above indicates that:

- information failures are likely to be a significant drag on the propensity to export, or to tackle unfamiliar markets, for many firms;
- these information failures are likely to help explain the fact that many innovative and high productivity firms, which have the potential to export successfully, do not export, or do so only to a limited extent.

This suggests that these information failures are likely to be of material significance to the economy's ability to optimise the potential opportunities offered by international markets.

Externalities/ ‘Spillovers’

Externalities, or “spillovers”, are another source of market failure which can influence firms' perceptions of the benefits to the firm of investing in, or exporting to, an overseas market. Decisions relating to investment and exporting which are taken on a purely commercial basis would take account of benefits which can be internalised by the firm itself, but would not take account of benefits which may ‘spillover’ to other

²⁶⁴ Bessant et al (2005)

²⁶⁵ OMB Research (Forthcoming)

²⁶⁶ OMB Research (2010b)

firms through “externalities”. Thus theory suggests that where such decisions generate beneficial spillovers, social benefits will exceed the private benefits, and there is a case for some public subsidy, to reflect the value of the difference.

Inward investors and exporting firms may both generate beneficial spillover effects on other domestic firms. Spillovers from inward investment were discussed in Chapter 5, and were found to depend on the type of inward investment. For high quality inward investment, there can be significant productivity enhancing spillovers and also beneficial export related spillovers.

Beneficial spillovers from exporting can result from businesses acquiring export related knowledge and skills, or gaining access to export related networks, or through demonstration effects, as mentioned above. Thus investment by individual firms in these areas will add to the pool of such knowledge and contacts in the UK, conveying a collective benefit on the UK business community in addition to benefiting the firm itself. As well as reducing the costs to other firms of entering new export markets, these spillovers can influence other firms’ perceptions of the benefits of doing so.

Surveys of UK exporters show that movement of staff with export related expertise and contacts is common. Around half of those who had used UKTI trade services, and 27 per cent of those who had not done so, reported having employees who had brought with them export experience built up while working for a previous employer (Table 13). In most cases, the employee had also brought export related business contacts with them.²⁶⁷

Table 13: Employees with Previous Export Experience

	Non-users of UKTI	Users of UKTI
Base	300	3963
Yes	27%	51%
- Business contacts	2%	2%
- Doing business overseas	7%	9%
- Both	18%	39%
- None of these	0%	0%
No	72%	47%
Don't know	1%	2%

²⁶⁷ Source: OMB Research 2010

Rationale for Service Provision versus Rationale for Subsidy

It should be noted that the issues which underpin the economic rationale for government action **to provide services** to support exporting and inward investment are distinct from those which underpin the case for government **subsidy** in the provision of such services. In general, the issue turns on whether market failure is affecting the supply side of the market for services, or the demand side.

Service provision: An economic rationale for government to provide a service directly rests on evidence that it is better placed to do so than potential alternative providers. This could be either because government is able to do so more efficiently, for example due to complementarity of investment in building and maintaining networks which would be required in any case for the diplomatic functions of government, or because it has some unique ability to provide a quality of service which the private sector could not replicate. As discussed above, the commercial services provided by teams at Consulates and Embassies overseas are likely to meet these criteria, as a result of their unique access to information and networks, and their ability to serve as a “trusted intermediary” in helping firms to gain access to the right networks. Figures 34 and 35 showed that non-users of these services have rarely been able to obtain similar benefits from using other forms of support.

Subsidy: The economic rationale for a subsidy, on the other hand, generally rests either on one or more of the following arguments:

- **Benefits not fully internalised by the firms using the services:** Beneficial “spillovers”, or “externalities” generated by inward investment and exporting have been discussed above. Activities which have a positive effect on the reputation of other firms in a sector, or of the UK, would also generate beneficial externalities.
- **Information failure:** Businesses may underestimate the potential benefits of external advice, or may feel unable to assess the potential costs and benefits adequately, or to manage the risks that consultants may not provide good value for money.²⁶⁸ These factors may lead to sub-optimal use of such advice
- **Public goods:** While in some cases it may be possible to overcome under provision of public goods by facilitating co-operation among private-sector groups who would benefit from such goods, in other circumstances the potential beneficiaries may be too disperse or difficult to co-ordinate for this to be feasible. Subsidised provision can be justified where the benefits from doing so sufficiently exceed the costs.

²⁶⁸ As noted above, there are different views on the extent to which this is seen as a cause of market failure, and this argument for subsidy is also made on the basis that the benefits of increasing firms’ capabilities through such advice are expected to be greater than the costs of subsidy. See discussion in Harris and Li (2005). The argument may also imply the idea that there is a wider economic benefit from increasing the capabilities of certain groups of SMEs, particularly innovative young firms.

In general, awareness raising and capability building services for exporters, and help provided to inward investors, tend to respond to demand side market failures, and are thus delivered either free or at a highly subsidised rate. In the UK, these services are generally delivered by private sector providers, under contract to Government.²⁶⁹ By contrast, tailored information and advice provided by the overseas network in general responds to supply side market failures, and is normally charged.²⁷⁰

Irrespective of whether the policy involves subsidy or direct provision, the economic rationale for government intervention depends crucially on the ability of government to do so cost effectively. Evidence on this is addressed in the next chapter.

In the next section of this chapter we turn to evidence on business perspectives of barriers to exporting and inward investment.

BOX 2 Search Theory and Trade and Investment²⁷¹

Search theory can provide a useful framework for analysis of decision making in circumstances where there is uncertainty about the potential costs and benefits of alternative actions, and in which acquisition of further information through “search” behaviour can reduce uncertainty and improve decision making. Business decisions about overseas market prioritisation and market-entry strategy can usefully be analysed in terms of search models, as can the process of matching individual buyers and sellers.

A useful insight from search theory is that when information, and its acquisition, are costly, acquisition of the optimal amount will generally still leave elements of uncertainty in decision processes. The optimal amount of information to acquire in this context can be defined in terms of equating the marginal costs and benefits of acquiring further information. Accordingly, decision makers can be expected to continue to lack perfect information, and to make some poorly informed decisions, while nevertheless having acquired the economically efficient level of information. The costs of failure resulting from poorly informed decisions may still be lower than the real resource costs of acquiring additional information.

By the same token, search theory predicts that an increase in search costs, other things equal, leads to a reduction in the optimum level of information acquisition for any given investment decision, and hence results in an increase in the optimum proportion of failures. A decline in search costs has the reverse effect.

²⁶⁹ This includes the advisory services provided by International Trade Advisers in the English regions, and advisory services delivered on behalf of UKTI by the British Chambers of Commerce.

²⁷⁰ In the case of UKTI, staff delivering services in the overseas network are employed by the UK Government, unlike those delivering services in the English regions. Most are recruited locally, and bring with them private sector experience as well as understanding of the local culture and business.

²⁷¹ Material in this Box is largely drawn from DTI (2006).

The process of search can be simultaneous or sequential. For instance, market prioritisation can be seen as a simultaneous search process: the business considers a range of markets simultaneously, and must decide how to prioritise among them. The larger the range of markets considered, and the better the information relating to each, the greater the likelihood of selecting the most profitable potential opportunity as the top priority.

In practice, evidence suggests that businesses often consider only a very limited range of markets, both in terms of export destinations and overseas investment locations. Survey evidence has found that firms often have serendipitous reasons for selecting the market they were seeking to enter, and that no market prioritisation assessment had been conducted before they began to invest resources in attempting to enter the market.²⁷² After a time, if the market-entry venture does not seem to be going well, they may decide to cut their losses and move on to somewhere else.²⁷³ Thus market-entry decisions may often be sequential.

Theory and evidence²⁷⁴ suggest that reputation effects can have a significant influence on the initial decisions of which options to investigate. Social networks are seen as having a key role in conditioning the search process, partly by the reputation effects they confer on network members. The analysis relates both to the ability of an individual business to attract interest in what it has to offer, and to the probability that a business will select any given overseas market as the location in which to develop new business, either through selling or direct investment. Thus UK reputation effects are likely to matter both for attracting inward investment and for UK firms seeking to do business overseas.

Analysis in Rauch (1999) similarly stresses the role of social networks in conditioning search, linking search theory to the determinants of trade patterns. The analysis distinguishes between homogenous and differentiated products on the grounds that the search costs of trade are likely to be higher for the latter, and leads to a hypothesis that historical cultural ties and common language are likely to have a stronger influence on trading patterns in differentiated goods.

A key issue for policy analysis is whether the search costs associated with international trade and investment are sub-optimally high due to market failure, or whether they simply reflect the real resource costs of acquiring knowledge.

²⁷² OMB Research (2008)

²⁷³ OMB Research (2006)

²⁷⁴ Reading Business Group (2005); Casson et al (2006);

Evidence on Barriers to Exporting and Inward Investment

Barriers to Exporting

When seeking to begin exporting, or to enter new overseas markets, firms can face a variety of barriers. These barriers to entering overseas markets represent an initial “fixed cost” of beginning to export, or of entering a new market subsequently. Econometric studies of export behaviour have generally been consistent in finding evidence consistent with the idea that such fixed costs exist and are significant, although these studies generally do not include any actual data on what they are.²⁷⁵ Firm level survey data provides evidence as to the types of barriers firms face.

Evidence is available from a number of surveys, showing a broadly consistent picture as to the nature of the barriers firms face. Barriers may be classified as being:

- a) External to the firm: These include gaining access to contacts, or barriers arising from legal or regulatory issues;
- b) Internal to the firm: These relate to the resources and capabilities of the firm.

Table 14 summarises evidence from a recent survey of UK exporters and firms who are expected to begin exporting within the next year. This shows that legal and regulatory issues are the most frequently cited barriers, presenting significant difficulties to two-fifths of exporters, followed by customs issues and access to contacts. Language and cultural barriers are cited as presenting significant difficulties by around a fifth, as are difficulties with finding sufficient management time.

As has been consistently found in successive surveys, firms who have used UKTI services report a higher incidence of all barriers. Analysis suggests that this reflects a number of factors:

- Firms who encounter barriers are more likely to seek out help to overcome these, while others do not feel a need for help²⁷⁶;
- UKTI users tend to be more active in their export activity, exporting to a larger number of markets. Thus they are more likely to have attempted to enter more difficult markets;
- UKTI users are more likely to be innovative, and innovative firms tend to experience greater barriers, both in their incidence and intensity (Table 14).²⁷⁷

²⁷⁵ Fixed costs of beginning to export are typically inferred from the observation that firms with higher productivity are more likely to export, and that firms who have begun to export in one period are much more likely to do so in subsequent periods.

²⁷⁶ OMB Research (2010c)

²⁷⁷ This finding was confirmed in multivariate analysis, carried out by NIESR (2010).

Surveys also provide insights as to the reasons why firms do not necessarily experience some of these barriers.²⁷⁸ These show:

- For firms not experiencing difficulty with gaining access to contacts to establish an initial dialogue, the main reason was that the customer had initiated contact with them (nearly 60 per cent), while the remainder said they had already had contacts in the market;
- For firms not experiencing language barriers, the overwhelming reason cited was simply that they had always been able to use English;
- For firms not experiencing cultural barriers, around 30% said they had staff familiar with the culture, while just over half had not come across cultural differences.

This evidence highlights the role of established cultural links and networks, and firms' reliance on English as a widely used international language. It also suggests that firms' experience of barriers to accessing contacts is linked to an active approach to exporting.

The incidence and relative importance of different barriers varies by market, with firms generally experiencing more barriers in fast-growing markets. Legal and regulatory barriers and language and cultural barriers are the most commonly encountered barriers in these markets²⁷⁹.

Analysis of the evidence on barriers by firm size and export experience shows that the incidence of barriers is not linked to firm size, and that firms continue to encounter barriers irrespective of the number of years exporting. The link between the incidence of barriers and number of years export experience also varies by type of barrier. Some barriers rise after a firm has exported for more than two years, but fall after the firm has exported for at least ten years.²⁸⁰

One of the reasons for this appears to be that many firms begin exporting by entering the closest or easiest markets, or in response to enquiries received from overseas purchasers. They then progressively move to more difficult markets, including those which are culturally and linguistically more distant.

Differences in the nature of barriers which firms experience as they have been exporting for longer are also likely to reflect an internal learning process, and changes in management attitude based on greater experience overseas. Thus firms which are just beginning to export may face more "internal" barriers, while "external" barriers are more likely to persist.

²⁷⁸ OMB Research (2010c)

²⁷⁹ (OMB, 2010a)

²⁸⁰ (Kneller and Pisu, 2007b)

Box 3 briefly reviews findings from academic studies of barriers to exporting.

Barriers Faced by Innovative and High Growth Firms:

Firms which are innovative²⁸¹ tend to be more likely to report barriers to entering overseas markets (Appendix 1 Table A1). This is because, unlike commodities, information about innovative goods or services, and what they have to offer, can be more complex to communicate to potential buyers. Social networks can be particularly important in this context as a way of facilitating access to opportunities for such communication.

Firms selling innovative goods and services also tend to encounter greater difficulties with legal and regulatory issues, including intellectual property. (Appendix 1 Table A1) The table shows that innovative firms and those with registered intellectual property – “IP active” firms - are the most likely to face barriers relating to legal and regulatory issues, customs and contacts.

“Born Global” firms are also among those most likely to report barriers. However, “Born Global” firms are less likely than other firms of similar age to report resource or information barriers. This may be indicative of these firms being more aware of the benefits of internationalisation, and therefore tending to commit more resource to these activities. It may also reflect the greater “absorptive capacity” of these firms, which makes them better able to identify and absorb useful sources of knowledge.

Firms which expect substantial growth are also more likely to report barriers to internationalisation. Within this group, firms which are also innovative report more barriers than firms which expect substantial growth but are not innovative (Appendix 1 Table A2). The association of high growth with greater incidence of barriers may in part be explained by their more active approach to overseas markets, reflecting their need to enter new markets in order to realise growth objectives.

A fuller discussion of the internationalisation activities of innovative and high growth SMEs, and the barriers they encounter, is provided in a previous BIS Economics Paper.²⁸² The paper concludes that Government support for the internationalisation of this subgroup of businesses is important to the economy for a number of reasons:

- This sub-group of SMEs plays a disproportionately important role in the UK economy, in terms of productivity, innovation, growth, and job creation;

²⁸¹ Source: OMB (2010a) For analysis purposes, innovative firms were defined as those which have more than one employee engaged in R&D activity and more than one employee engaged in new product/service development; or, have commissioned external new product or service development activity in the last year; or, have introduced new products or services in the last 3 years except firms established in the last 2 years

²⁸² BIS (2010b).

- They are likely to need successful access to overseas markets in order to achieve their growth aims, and fulfil their potential contribution to UK growth;
- They are likely to have higher absorptive capacity, making them more likely to be able to internationalise successfully and thus to benefit more from internationalisation; and
- They are more likely to encounter significant barriers to new market entry.

Table 14: Barriers to Entering New Markets by UKTI Usage

Proportion of firms experiencing significant difficulty (ratings of 4-5 out of 5, where 5 = extremely difficult) with...	Total	UKTI Users	Non-users of UKTI services
Base: All exporters	858	227	631
Types of Barriers			
Legal & regulatory barriers	41%	53%	36%
Customs barriers	27%	34%	24%
Contacts barriers	27%	37%	24%
Information barriers	16%	21%	14%
Resource barriers (management time)	20%	25%	18%
Language & cultural barriers	19%	23%	18%
Bias barriers (purchaser preference for using domestic suppliers)	17%	20%	17%
Number of Barriers			
At least one significant individual barrier (% rating 4-5)	66%	77%	62%
- One	17%	13%	19%
- Two	15%	17%	15%
- Three	12%	16%	10%
- Four or more	22%	32%	18%
No significant barriers	34%	23%	38%

Source: OMB (2010a)

Barriers to Beginning to Export

A recent survey of European SMEs, including firms from the UK, provides evidence of the differences in barriers perceived by firms who are not yet exporting, but planning to do so, and those who are already doing so.²⁸³ Figure 37 shows that all

²⁸³ EIM (2010)

barriers are perceived as much more difficult by those firms not yet exporting. Interestingly, the difference appears greatest for language and “other” barriers. This suggests a learning process, whereby firms revise their perceptions as they gain experience of exporting, and also acquire more of the necessary skills.

Table 15 provides evidence from UK businesses who had recently begun to export as to the factors which motivated their decisions to begin exporting. Whereas most of the motivations reflect awareness of the potential business benefits, for around 30 per cent, personal reasons were a major driver. Where this is the case, appreciation of the business benefits of exporting can develop as a consequence of export experience. This is illustrated by a successful UK SME exporter, who began to export initially because the owner/managing director wished to be able to follow the cricket to Australia. Having gained experience of the business benefits of exporting to Australia, the firm expanded into other markets.²⁸⁴

Table 15: Motivations for Starting to Sell Overseas

Proportion agreeing that they export for the following reasons... (1-5 rating scale, where 1= not applicable and 5=completely applicable to your experience)	Motivations for starting to sell overseas	
Base: PIMS 20-22 respondents (Those exporting <2 years only)	829	
	% rating 4-5	% rating 3-5
To enable you to achieve a level of growth otherwise not possible	73%	88%
To allow you to more fully utilise existing capacity	55%	75%
To reduce your dependence on the UK market	46%	67%
To improve your firm's profile or credibility	60%	81%
Because you received/keep getting orders or enquiries from overseas customers	48%	66%
Because you had personal connections overseas or a desire to travel abroad	31%	48%

Source: OMB (2011)

Figure 39 illustrates differences between the perception of barriers by exporters and non-exporting firms as reported in a survey of European SMEs. Non-exporters which had plans to export found all the listed barriers more important than exporters.

²⁸⁴ Interview with UKTI official.

There is also evidence that non-exporters tend to be more concerned with problems associated with information and access to contacts, while established exporters tend to be more focused on problems surrounding operational issues. In a survey of Portuguese SMEs, exporters were most concerned with warehousing and physical product flow whereas non-exporters were more likely to report knowledge and resource barriers.²⁸⁵ This is similar to the picture obtained about non-exporters in the UK for which five of the top six barriers related to information and resource barriers (Figure 38), with lack of contacts the most frequently cited problem.²⁸⁶

Of the barriers identified in Table 14, there is some evidence that those relating to culture may create the greatest impediment to entering a first export market. Analysis of data from an earlier survey found that firms which reported greater difficulty with this barrier were significantly less likely to have succeeded in entering the market.²⁸⁷

Barriers to beginning to export can be lower when a firm is able to begin by responding to an enquiry, thus being saved the difficulty of gaining access to initial export customers. However, even where a firm has received such enquiries, other factors, including language and culture, can sometimes seem too difficult. An example is a firm who had been receiving faxes from interested purchasers in Brazil, but had been ignoring them because they were in Portuguese.²⁸⁸

Conclusions

While many firms do have sufficient awareness of the potential benefits, and confidence in their own export potential, to begin exporting, the evidence reviewed suggests that this is by no means always the case.

Some firms nevertheless begin exporting for non-business reasons, and thus learn from experience about the business benefits.

Lack of confidence, lack of awareness of the potential benefits, and other information barriers to beginning to export, are likely to help explain the fact that many innovative and high productivity firms, which have the potential to export successfully, do not export, or do so only to a limited extent.

²⁸⁵ Hook and Czinkota (1988) in Pinho, J.C., Martins, L. (2010)

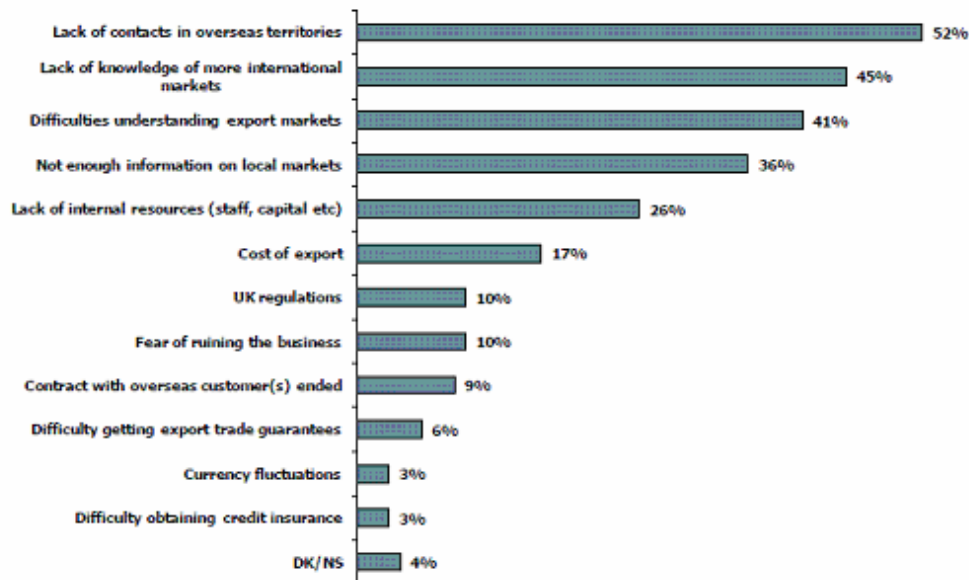
²⁸⁶ IOD/UKTI (2010)

²⁸⁷ Kneller and Pisu (2007b)

²⁸⁸ In this case the story had a happy ending. See footnote to discussion of language and cultural barriers, above.

Figure 38: Factors Influencing the Decision to have Never Exported or to have Stopped Exporting

Q2. If you have never exported, or recently stopped exporting, tick the factors that influenced that decision

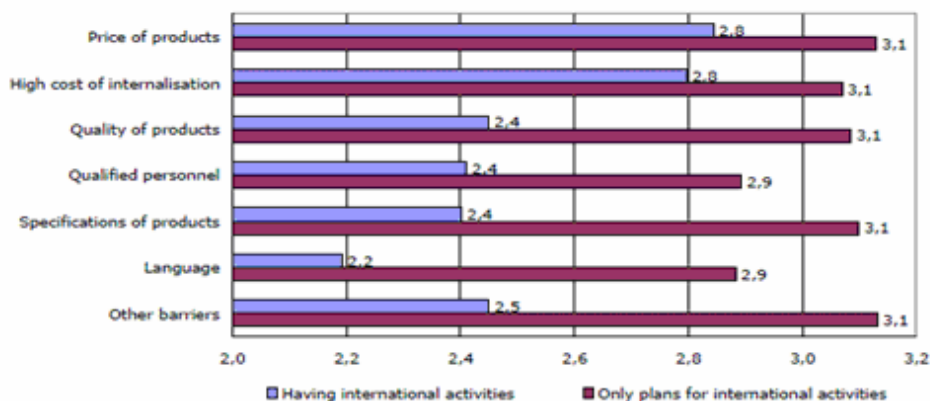


Base: All respondents who have never exported or stopped exporting: 69

Source: IoD/UKTI (2010)

Figure 39: Importance of Internal Barriers for Internationalisation: comparison between firms with current international activities and firms planning to begin such activities

(The figure shows average ratings on a 1-5 scale where 1 = not at all important, and 5 = very important.)



Source: EIM (2010)

Box 3: Findings from Academic Studies

Academic studies have defined a barrier to exporting as “any element or factor, whether internal or external, that blocks or discourages companies from initiating, increasing or maintaining export activities.”²⁸⁹ This literature has commonly distinguished between internal and external barriers.²⁹⁰ Internal barriers are those related to firm itself.²⁹¹ External barriers are those which relate to the home and host country environment in which a firm operates.²⁹² A recent study classified barriers in four categories: Knowledge, Resource, Procedure and Exogenous barriers.²⁹³

Knowledge barriers

Beyond knowledge of potential export markets and lack of information about opportunities in overseas markets, knowledge barriers include a lack of awareness of the financial and non financial benefits arising from exporting. This can result in firms not committing sufficient resources to exporting.²⁹⁴ Thus firms which indicate that a lack of resources has been a barrier may be indirectly reporting information barriers.

Resource barriers

Resource barriers relate to the availability of management time or staff for planning and developing international activity. Studies have also found evidence that firms can face difficulties in hiring staff from outside the firm to perform export related tasks.²⁹⁵

Resource barriers also include financial constraints. The evidence on financial constraints is mixed. Theoretical models predict that firms with better financial performance, and hence fewer liquidity constraints, will be more likely to export.²⁹⁶ This is consistent with evidence from France,²⁹⁷ but not for the UK.²⁹⁸ Evidence from German firms also suggests that financial factors do not influence the decision to export,²⁹⁹ but can affect the amount exported.³⁰⁰ In surveys, firms often report financial constraints as a barrier to exporting,³⁰¹ but there is some evidence that this

²⁸⁹ Arteaga-Ortiz and Fernandez-Ortiz (2010)

²⁹⁰ EIM (2010)

²⁹¹ Pinho and Martins (2010)

²⁹² Leonidou (2004)

²⁹³ Arteaga-Ortiz and Fernandez-Ortiz, (2010)

²⁹⁴ Ibid

²⁹⁵ Ibid

²⁹⁶ Chaney (2005)

²⁹⁷ Bellone et al (2008)

²⁹⁸ Greenaway et al (2007)

²⁹⁹ Arndt et al (2009). Greenaway et al (2007)

³⁰⁰ Arndt et al (2009)

³⁰¹ EIM (2010)

can reflect an issue of firm capability.³⁰² There may also be a tacit judgment that the benefits may not exceed the costs.

Procedural barriers

Procedural Barriers include documentation and bureaucracy associated with exporting and non-tariff barriers such as sanitary and phytosanitary requirements, and legal regulations or standards. Some studies also include cultural and linguistic barriers in this classification.³⁰³

Exogenous barriers

Exogenous Barriers are those arising from risk and uncertainty in overseas markets such as exchange rate fluctuations and the political stability in overseas markets.³⁰⁴

Reputation Effects

Evidence from surveys of UK exporters shows that attitudes of overseas buyers towards purchasing from a non-domestic supplier are often experienced as a barrier (Table 14, “bias barriers”). This effect is stronger in some markets than others, and seems likely to be influenced by the UK’s reputation as a supplier of the types of goods or services which the exporter would like to sell.

Evidence from successive annual waves of a survey of firms in the USA, China, and India has been consistent in finding that the weaker attributes of UK products and services are perceived to be in innovation, and in qualities associated with value for money, quality, reliability and delivery to specification.³⁰⁵ By contrast, the USA is perceived as particularly strong in innovation and creativity, while Germany and Japan are both perceived as relatively strong in quality, value, and delivery aspects (Figure 40 below). Interestingly, respondents from these countries perceived France to be weaker than the UK for all groups of attributes.³⁰⁶

Perceptions of the UK are most positive among respondents from the USA, and least positive among those from China. Indian respondents are only slightly more positive than those from China. However, perceptions of the UK with respect to quality, value, and reliability of delivery are similar across all three countries.

³⁰² Zucchella (2009)

³⁰³ Arteaga-Ortiz and Fernandez-Ortiz (2010)

³⁰⁴ Ibid

³⁰⁵ RSM (2010)

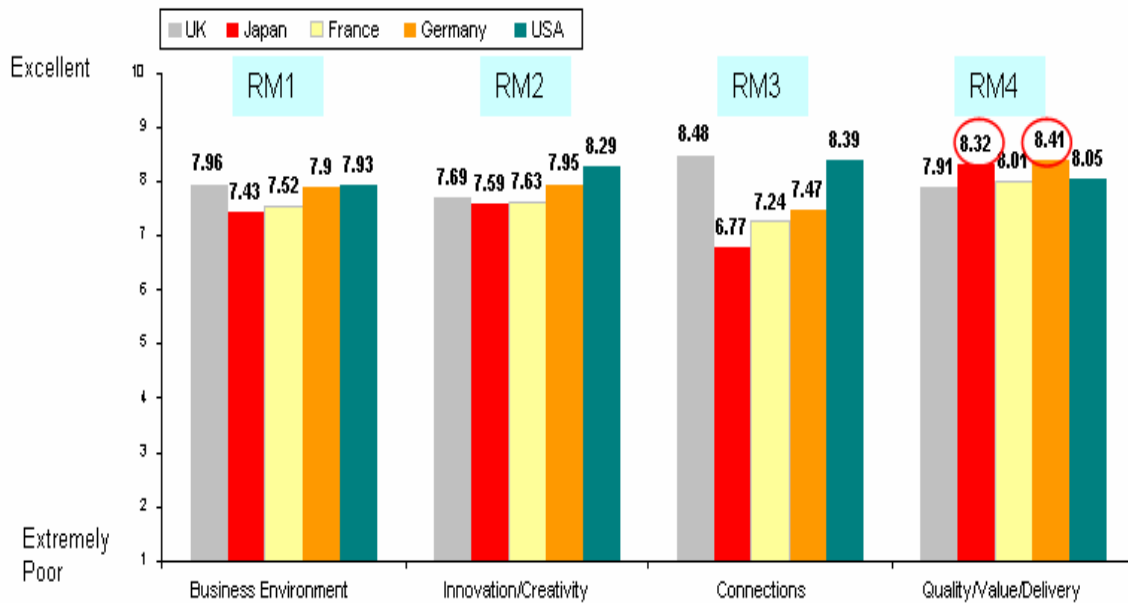
³⁰⁶ The survey does not provide details of what respondents mean by rating the UK highly for language. While this seems most likely to refer to the wide international use of English, it is also true that London offers good access to native speakers in a great many languages. Interviews with Chinese respondents for this survey were carried out by native Chinese speakers based in London.

These perceptions may result in barriers to exporting to these markets for UK firms, who may find it difficult to persuade buyers that their products are strong in these aspects. They may also deter interest from some inward investors, especially among foreign firms who are less well informed about the UK.

Figure 40: Perceptions of the UK vs. Best Competitor – by Country

Country Scores - 2010

C4a: I am going to read out again the factors that may be taken into consideration when selecting a country to [invest/partner/purchase/source from] in the [insert sector], and for each one I would like you to tell me how you think the UK rates, using a scale of 1 to 10, where 1 means extremely poor and where 10 means it is excellent.



Sample base varies: 11 out of 23 attributes rated by all respondents.
 Minimum 2010 base per attribute 559 (unweighted), 542 (weighted)
 One competitor country (i.e. country receiving highest favourability rating at QC1) rated per respondent

Source: RSM (2010)

Evidence on the Role of Social Networks in Patterns of Trade

The evidence reviewed above indicates that market failures and other barriers to entering new markets can have a material impact on firms' export growth. Barriers associated with the role of social networks as channels of information, knowledge, and access to contacts were found to be particularly difficult in markets where established ties with the UK are weaker.

In this section, we review evidence from studies which have sought to quantify the effect of social networks and historical ties on bilateral patterns of trade. The studies suggest that these factors do have significant influence on bilateral trade.

In an influential study, Rauch (1999) applies search theory to his analysis of the determinants of bilateral trade patterns. His analysis highlights the importance of social networks as a means of reducing search barriers to trade, enabling buyers and sellers to achieve a better match with lower search costs. He argues that the search process is strongly conditioned by social networks associated with proximity, common language and colonial ties, and stresses the importance of personal contacts and relationship building in determining bilateral trade patterns. The analysis also suggests that search barriers to trade will be higher for differentiated goods and services than for homogenous products.

Rauch then tests for evidence of the role of cultural ties and common language in determining patterns of bilateral trade at a detailed sectoral level. He reports evidence of the importance of common language and colonial ties, and evidence supporting the view that these ties are more important for differentiated products than for those traded on organised exchanges. The findings support the idea that search barriers to trade are higher for differentiated than for homogeneous products.³⁰⁷

Using similar techniques, Rose (2005) provides looks at the influence of national networks of overseas consulates and embassies on bilateral trade flows. Consistent with Rauch (1999), he finds strong evidence that historical colonial ties and common language influence trade patterns, and also finds that embassies and consulates play a significant role. The strength of the effects varies by country.³⁰⁸

The evidence that historical ties and social networks matter for patterns of international business has implications for the ability of economies to respond to rapidly changing international conditions. Where the fastest-growing emerging markets are those with which historical ties and established social networks are relatively weak, the economy's response to changing international opportunities is likely to be sluggish, with adverse implications for prosperity growth.

³⁰⁷ Rauch (1999)

³⁰⁸ Rose (2005). As these studies both use cross-section data, causality remains uncertain.

Since innovative firms are generally seeking to sell differentiated products and services, the Rauch analysis helps to explain the greater barriers encountered by these firms. Yet their ability to respond successfully to rapidly changing international opportunities is likely to be of particular importance to national prosperity.

Barriers to Inward Investment

Most studies of barriers to internationalisation have focused on barriers to exporting. There is therefore limited evidence which is specific to FDI. However, some indications of the barriers encountered by inward investors into the UK, or those thinking about coming to the UK, can be inferred from two surveys:

- The UKTI survey of internationally active UK businesses: Around 10 per cent of respondents have overseas operations, who provide evidence as to the nature and intensity of different barriers they have experienced. While the nature of the market they were seeking to enter is likely to affect the barriers encountered, some aspects of their experience are likely to be equally relevant to foreign firms seeking to establish operations in the UK;
- The UKTI survey of inward investors who have been helped by UKTI to come to the UK. This survey provides evidence on the extent to which the help enabled them to overcome barriers of different types, and thus gives some indication of what issues the inward investors may have found difficult.

Table 16 shows how barriers reported by UK firms vary by mode of market entry. The results indicate that firms with overseas sites face more barriers than are faced by exporters. This is consistent with theoretical studies which find that FDI is associated with a higher “sunk cost” than exporting.³⁰⁹ The most frequently reported barriers are legal and regulatory barriers and contacts barriers.

Evidence on the types of barriers with which inward investors to the UK felt they had received beneficial help through UKTI is summarised in Table 17, broken down by the project quality classification.³¹⁰ The table shows that access to contacts and information not otherwise available are the most frequently cited barriers overcome, followed by issues relating to legal requirements. Analysis of the survey data also shows that inward investors who have reported help in overcoming barriers are more likely to report that this help had significant influence on their decision to come to the UK, or on the scope or scale of their UK operations.

³⁰⁹ Helpman et al (2003)

³¹⁰ The basis for project quality classification is set out in the information relating to performance management in UKTI Annual Reports. Criteria for the classification relate to innovation, R&D, and other characteristics identified by the economic literature as likely to be associated with productivity enhancing spillover benefits to UK firms.

Table 16: Summary Barriers – By Modes Used

	Modes Used In Market			
	Selling direct	Agents/ distributors	Contractual arrangements	Overseas site
Base: All exporters	666	256	48	53
Types of Barriers				
Legal & regulatory	40%	45%	53%	53%
Customs	24%	30%	23%	35%
Contacts	26%	33%	39%	40%
Information	16%	19%	15%	23%
Resource	18%	25%	30%	29%
Language & cultural	17%	24%	31%	29%
Bias	16%	20%	19%	35%
Number of Barriers				
At least one barrier	64%	75%	73%	76%
- One	18%	16%	9%	13%
- Two	15%	18%	12%	14%
- Three	11%	15%	15%	12%
- Four or more	21%	26%	38%	37%
No significant barriers	36%	25%	27%	24%

Source: OMB Research (2010a)

Table 17: Barriers Overcome (A92) – By Quality of Project

Proportion scoring 4-5 out of 5, where 1= no benefit and 5= benefited to a critical extent	High Quality	Good Quality	Other
Base	69	31	38
Barriers Overcome:	55%	68%	55%
- Gaining access to prospective customers/suppliers/partners	29%	26%	26%
- Gaining access to contacts at universities/UK centres of knowledge	13%	10%	0%
- Gaining access to information otherwise unobtainable	30%	39%	32%
- Overcoming difficulties in recruiting suitable staff	4%	6%	5%
- Gaining assistance with planning applications or permits	10%	16%	16%
- Gaining assistance with legal requirements	23%	45%	26%

Source: OMB Research (2010e)

Reputation Effects on Inward Investment

Annual waves of a survey of Chinese, Indian, and US businesses' perceptions of the UK consistently show the UK as being especially well regarded for "connections" attributes, which include being a global hub, having good established network of business services, and good international linkages, and a language advantage.³¹¹

Analysis of data from the survey of shows that firms who feel well informed about the UK tend to have more positive perceptions of the UK, as was also noted above in relation to sourcing from the UK. In turn, there is some evidence that respondents who have had some form of direct contact with someone from the UK Government tend to have more positive perceptions. The survey also found evidence that respondents welcome such contact.³¹²

Firms from these countries who were already investing in the UK also tended to have more positive perceptions, particularly relating to the business environment. There was a similar, although weaker, association for firms planning to invest in the UK.³¹³

Although causality of these associations cannot be determined, the economic theory of search suggests that a firm's perceptions of an overseas market are likely to influence the probability that it will take action to investigate that market further. This provides a theoretical basis for expecting that the reputation of the UK as a place in which to invest is likely to influence the UK's ability to attract inward investment.

Conclusions

In summary, the discussion above has reviewed a number of different types of evidence on barriers to overseas market entry, affecting both trade and investment. The evidence suggests that:

- Non-policy barriers to doing business overseas are significant, and help to explain the fact that many firms with export potential do not export, or do so only to a limited range of markets;
- The incidence of these barriers across firms is not explained by firm size, and is not limited to new exporters. Innovative and high growth firms experience greater incidence and intensity of barriers;
- Social networks, associated with historical cultural ties and common language, play a significant role in determining bilateral trade patterns, and present significant barriers to entering new markets for firms of all sizes. Networks are

³¹¹ RSM (2010)

³¹² RSM (2010)

³¹³ UKTI analysis of data from RSM (2008)

especially important for firms selling innovative products and services, as communication about these is more complex than for homogenous goods;

- Management resources and other costs of entering new markets are seen as important from the perspective of businesses, but quantitative evidence suggests that financial performance does not significantly influence firms' decision to export;
- Limited export know how, and management attitudes to the potential risks and benefits, are important barriers to SME internationalisation. These can be a stronger influence on the decision to export than structural factors such as productivity and R&D;
- A limited pool of UK business people with skills, knowledge, and expertise relating to overseas markets which are culturally more remote from the UK is likely to hinder the ability of UK exporters to respond quickly to emerging opportunities in these markets;
- Barriers to inward investment in the UK are likely to include limited knowledge about the UK's attributes as a place to invest, and in some cases adverse perceptions of the UK;
- Issues with which inward investors are likely to need help include access to information, contacts, and guidance in navigating the legal and regulatory framework in the UK.

If not addressed by appropriate policy action, the barriers and market failures identified are likely to have a material adverse impact on the UK's ability to exploit overseas business opportunities, and attract high quality inward investment:

- Young innovative and high-growth potential companies will not be able to fulfil their potential without the capabilities and access to networks which are necessary for successful internationalisation;
- High-productivity and knowledge-intensive overseas firms will not fulfil their potential contribution to innovation and R&D in the UK, both directly and through knowledge spillovers, if they are deterred from approaching the UK by lack of information or reputation factors, or if they find it too difficult to access the right networks within the UK;
- The UK business community's response to opportunities in the fastest-growing emerging markets, and sectors of growing export demand, will depend crucially on the strength of social networks underpinning bilateral trade and investment relationships with those markets, and on the ability of innovative UK businesses to gain access to these networks. If these networks are weak, or relatively closed to new companies, the UK economy's ability to respond to these opportunities may be sluggish, with adverse effects on prosperity.

In summary, theory and evidence on barriers to trade and investment arising from market failure suggest the need for government action in the following areas:

- Strengthening the social networks which underpin international trade and investment flows, and helping individual businesses to gain access to key contact networks, by serving as a trusted intermediary;
- Strengthening the internationalisation capabilities of innovative and high-growth businesses;
- Providing access to information and advice which the private sector alone would not or could not provide, both to inward investors and to UK businesses seeking to exploit opportunities overseas;
- Facilitating beneficial co-operation among UK businesses, enabling them to work together to overcome barriers and develop potential overseas business opportunities, and to promote the reputation of the UK through showcasing UK capabilities in key overseas markets;
- Overcoming legal or regulatory barriers to market access which affect particular firms or sectors, including through political and diplomatic support.

Chapter 7: Cost Effectiveness

This chapter reviews the evidence on the ability of government to intervene cost effectively to address the barriers and market failures identified. The chapter begins by reviewing the some key evaluation issues, and then looks at the evidence from recent monitoring and evaluation research, focusing on the roles for government identified in the previous chapter.

Issues for Evaluation and Cost-benefit Analysis

Principles for evaluation of costs and benefits of public expenditure are set out in HM Treasury (2003) and (2001)³¹⁴. The National Audit Office (NAO) guidance sets out three key aspects of assessing value for money:

- Economy, which focuses on minimising the cost of resources per unit of input;
- Efficiency, which focuses on the relationship between inputs and outputs;
- Effectiveness, which focuses on the relationship between outputs and outcomes, in terms of the benefits which the policy is expected to achieve.

A prerequisite for assessing value for money is thus to determine the specific types of inputs, activities, outputs, and outcomes on which the evaluation will need evidence. In policy evaluation this is commonly done within the framework of a policy logic model, illustrated in Figure 41.

In evaluation of business support policies, the policy influence on final outcomes, such as increased UK productivity and prosperity, cannot be assessed directly, because the causal mechanisms at this high level cannot be observed. Hence the focus of most evaluation research is instead on **intermediate outcomes**, where direct causal influence of the policy can be most clearly discerned. The appropriate intermediate outcomes will depend on the logic of the policy. For example, for export support policies, the logic is:

- **Outcome** (high level policy aim): To support national productivity, prosperity and growth;
- **Intermediate outcomes** (the means to achieving the high level aim): To enable UK businesses to grow and improve their performance through exploiting overseas markets;

³¹⁴ HM Treasury et al (2001)

- **Outputs** (the means to achieving the intermediate outcomes): Enabling UK businesses to up-grade their approach to international business, and to overcome barriers to entering new overseas markets;
- **Activities** (the means to achieving the outputs): Provision of information, advice, and support to individual businesses or groups of businesses;
- **Inputs**: The wherewithal to deliver the activities.

Evaluations of export support policies thus generally focus on the effects on the performance of supported businesses, including productivity, innovation, R&D, and growth. Indicators of growth can include revenues (exports and total revenues), annual profit, assets, employment, and Gross Value Added.

Although exports might seem the most obvious evaluation measure, it is less relevant to the high level policy aim than other indicators of business growth, because it does not capture the effects on business performance adequately. Measuring increased exports by itself gives a misleading picture of effects on business performance, and on growth, for at least two reasons:

- **Export sales do not necessarily benefit business performance.** If export sales turn out to cause unexpected losses, or to draw resources away from more beneficial endeavours, they can even be quite damaging. Focusing on indicators of overall business performance ensures that additional exports are not counted as a “benefit” of the support in these circumstances;
- **Estimates of additional exports tend to understate the impact on business performance.** Evaluation evidence shows that the impact of export support on business revenue growth and performance is often much broader. This is because it often results in changes to business behaviour, profile, and access to new contacts, which also impact on profit, productivity, and revenue growth in the domestic market, and in export markets to which the support did not directly relate.

The discussion in previous chapters has shown that exporting often prompts firms to make changes to their products or services, or to undertake new product development and R&D, or to upgrade their approach to business in various ways. The monitoring and evaluation evidence outlined below shows that similar changes often result directly from export support, as the firm increases its understanding of the competitive environment, acquires new knowledge about the needs of overseas customers, or gains exposure to new ideas. Changes of this nature will tend to impact on the firm’s competitiveness and performance in all its markets.

Theoretical analysis carried out for UKTI has identified additional profit as the most appropriate summary measure of economic benefit from export support services.³¹⁵ This is mainly due to the role of the services in enabling individual firms and sectors to access new markets and a higher level of demand for their output than could have been achieved without the support, and associated productivity gains.

For **inward investment** support policies, while the high level policy aims of the policy logic model are the same, and many of the activities are quite similar, there are important differences in the intermediate outcomes, and hence also in the outputs, which need to be achieved in order to deliver these policy aims:

- Intermediate outcomes: To generate productivity enhancing spillover benefits in the UK, by bringing new knowledge, ideas, techniques, and technologies, as well as undertaking more R&D in the UK;
- Outputs: To attract more high quality inward investment by influencing the decisions of inward investors to locate in the UK, or to increase the scale or scope of beneficial investment in the UK, and by enabling them to overcome barriers to such investment.

Evaluations of inward investment support policies thus generally do **not** focus on the effects on the performance of the supported inward investors. Instead the focus is generally on the extent to which support has influenced the quantity, scale, or scope of beneficial types of inward investment in the UK, and how these UK operations develop over time. In addition, some evaluation studies have sought to investigate spillover effects of inward investment on UK businesses.

Defining the expected relationships between inputs, outputs and outcomes in a policy logic model is not straightforward. The mechanisms which generate productivity growth and prosperity are complex and imperfectly understood, with new sources of evidence providing new insights and new theories. Hence evaluation needs to be rooted in a review of recent theory and evidence from wider economic research.

Sources of Evidence

Evaluation evidence relating to UKTI support for trade and inward investment derives from a varied range of studies carried out by independent external researchers:

- **The Performance and Impact Monitoring Survey (PIMS) for trade services:** This provides detailed evidence on the **outputs** and **business performance impacts** experienced by supported businesses, as well as evidence on quality of service, on the profile of service users, and on contextual factors such as motivations for seeking to export or to increase overseas sales. Five years of data are available, covering all significant

³¹⁵ Foreman-Peck (2009): Cost Benefit Analysis of Trade Promotion; unpublished mimeo

services on a comparable basis. The evidence shows how business impact is achieved, as well as quantifying the benefit.

- **The Performance and Impact Monitoring Survey (PIMS) for inward investment:** This provides detailed evidence on the nature and quality of supported inward investment projects, on the extent to which projects were influenced by the support, on the quality of service, and on contextual factors such as motivations for the investment. Four years of data are available.
- **Economic evaluations of specific services:** These use a range of quantitative and qualitative research techniques, typically including a review of literature relating to the economic rationale for the activity; interviews with a sample of users and others to provide triangulated perspectives on the activity; and econometric analysis of data on the performance of UKTI supported firms and a comparison group of non-supported firms, to test for impact on business performance. The studies provide insights as to the strengths and weaknesses of services, as well as estimates of impact;
- **Econometric impact studies:** These involve econometric analysis of data on supported companies, linked to data on the wider population of businesses in the UK. As desk research, they do not involve any interviews, and hence shed no light on *how* the services under study might be working, or *how* any observed impact is being achieved. They provide quantitative estimates of business performance impact by comparing supported companies with an appropriate comparison group in the wider population.³¹⁶

Evaluations and econometric impact studies carried out for UKTI are normally supported by an advisory group involving senior academics as well as officials and the evaluation research team. This process fosters cross-fertilisation across the monitoring, evaluation, and academic research, and ensures development of a richer and more robust evidence base. It also ensures that policy relevant insights and lessons from all three sources of evidence can be identified and debated in the round, thus providing a more rounded and reliable basis for policy.

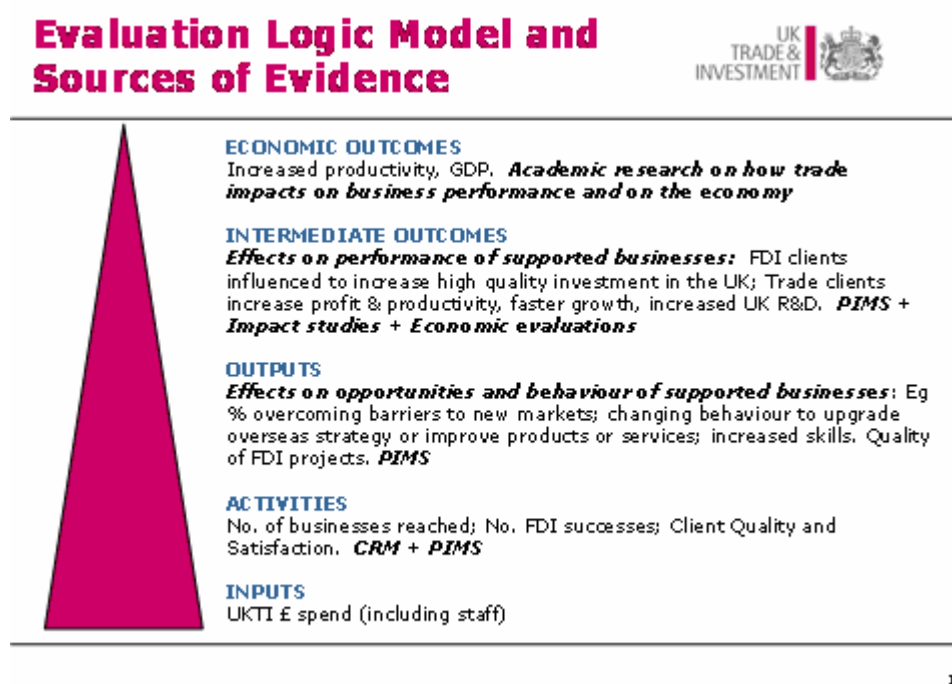
Figure 41 outlines how these sources of evidence cover the respective elements of the logic model. Key points to note are that:

- Evidence on **intermediate outcomes** is derived from three sources: PIMS, economic evaluations, and econometric impact studies. As these use different methodologies, they provide a triangulated perspective on the nature and magnitude of business impact;

³¹⁶ Specific econometric techniques differ, and studies often use more than one technique.

- Evidence on **high level economic outcomes** comes from wider academic research. This is a necessary complement to evaluation, in order to set findings on intermediate outcomes in a wider economic context.

Figure 41: Evaluation logic model for UK Trade & Investment



Evaluating Causality³¹⁷:

A key issue for evaluation is to understand what would have happened in the absence of the intervention, i.e. what is the most likely “counterfactual”, and how much of any observed result is genuinely “additional”, in the sense of being attributable to the policy. Given that business development processes and economic outcomes are complex and imperfectly understood, conclusions on this issue will always be open to different perspectives. Nevertheless, researchers have developed a range of techniques for gathering evidence on this, and where these present a consistent picture, the combined evidence is likely to provide a sound basis for policy.

Estimates of business performance impact use one of two main techniques for taking account of what would have happened in the absence of the intervention:

- **Asking the businesses concerned.** The advantage of this approach is that the business respondent can be uniquely able to take into account all the

³¹⁷ A fuller discussion of evaluation issues relating to causality is provided in DTI (2006)

circumstances and alternative options which the business was facing at the time of the intervention, and thus to understand the implications of the support for its development trajectory. In addition, any apparent anomalies in survey responses can be probed through further interview. However, a disadvantage is that there is a subjective element in the respondent's judgement about what the business is likely to have achieved without support. The impact of support will be *understated* if the respondent exaggerates what the firm could have achieved without help, or *overstated* if it is the role of the support which is exaggerated;³¹⁸

- **Statistical estimation.** Various econometric techniques have been developed for analysing data on the performance of the assisted businesses, and comparing that with a non-assisted control group, to obtain a statistical estimate of the impact attributable to the intervention over a period of time. The advantage of these techniques is that they avoid the risks associated with respondents' subjective judgements. However, the estimates are vulnerable to error deriving from data deficiencies, or from modelling flaws due to incorrect understanding of the processes involved. Statistical modelling also cannot identify the mechanisms which are generating the results.

In addition, survey methods enable data to be collected a short period after intervention, thus providing early information about impacts. By contrast, for statistical estimation techniques there is usually a considerable time lag after service provision before impact can be estimated.

In the next section, we review the main findings on the outputs and business performance impact of export support services, and the profile of supported businesses compared with that of non-users of the services. This is followed by a summary of findings relating to outputs and intermediate outcomes of support for inward investment. Finally, we review evidence relating to each of the roles for Government which were highlighted in the previous chapter.

Export Support Services: Outputs and Business Impact

Evidence from PIMS

A summary of PIMS evidence over time on the main outputs and business performance impacts generated by export support services is provided in Table 18.

The table shows a consistent picture across the five years of data for all measures except mean financial benefit, which has been higher in the most recent three

³¹⁸ Benefits which derive mainly from learning require a significant degree of humility to acknowledge, and hence may tend to be understated. By contrast, benefits which are believed by the respondent to derive from receipt of financial support may tend to be overstated, in order to send a policy message about their usefulness.

years.³¹⁹ There was also a temporary dip in the proportion of clients reporting additional R&D during 2009, associated with the global financial crisis.

Table 18: Outputs and Impacts of Trade Services over Time

Measure	PIMS 3-6 ³²⁰ Mar 2007	PIMS 7-10 Mar 2008	PIMS 11-14 Mar 2009	PIMS 15-18 Mar 2010	PIMS 19-22 Mar 2011
Businesses helped	15,000	15,900	20,700	23,600	23,400
A81 – Increased Skills	49%	53%	50%	46%	51%
A83 – Changed Behaviour	51%	57%	53%	50%	55%
AR&D – Increased R&D	9%	13%	9%	9%	13%
A92 – Barriers Overcome	61%	64%	63%	59%	61%
A06 Productivity and Competitiveness (significant qualitative benefit to business)	68%	71%	69%	67%	69%
Improved Business Performance (medium term productivity and profit)	51%	57%	51%	53%	51%
A49 – Mean £ Estimated Benefit (Additional profit attributed by client to UKTI support)	£115,000	£139,000	£175, 000	£222, 000	£264, 000
Total additional profit	£2.5bn	£3bn	£3.6bn	£5bn	£6bn

Source: OMB Research PIMS Quarterly Results

The financial benefit measure is a discounted present value (over a period of up to 5 years) of additional profit which the client has specifically attributed to the support. As a consistency check, this measure of financial benefit also *excludes* any benefit reported by clients who have not also reported significant qualitative business benefit.³²¹

³¹⁹ This is likely to be due to improvements in quality of service, as Quality ratings have also risen.

³²⁰ Results are reported as an average over four quarterly waves of PIMS.

³²¹ Details of how this measure is calculated are in the full text PIMS annual reports, and in the UKTI Annual reports.

Mean financial benefits are multiplied by the de-duplicated number of businesses helped in the year (reported through PIMS), to estimate total benefit. For 2009/10, this was £5.2bn, giving a ratio of benefit to total UKTI cost (including all corporate overheads) of £19:£1, up from £16:£1 the previous year, and £15:£1 in 2007/08.

These estimates are very similar to the £17:£1 ratio reported for a cross-cutting study, of a more limited range of UKTI trade services, carried out in 2005.³²²

PIMS evidence about qualitative business benefits sheds light on what lies behind the financial benefits. Analysis of PIMS data consistently shows that the additional profit, and improved medium term business performance, reported by UKTI clients result from one or more of the following qualitative benefits:

- **Increased skills and knowledge:** This includes improved knowledge of the competitive environment in an overseas market; increased awareness of IP protection issues; improved marketing research skills; and gaining new ideas about products, services, techniques, or technologies;
- **Changed behaviour:** This includes improved overseas marketing strategy; gaining the confidence to either explore a new market or expand in an existing one (and taking action as a result); improvements to products, services or management practices; improvements to new product or service development strategy; and improvement in the firm's approach to doing business overseas;
- **Increased innovation:** This is a sub-set of "changed behaviour", covering improvements to products, services, or practices, or to new product or service development strategy, as a direct result of the support;
- **Barriers overcome:** This includes gaining access to prospective customers or business partners not otherwise accessible; access to information the client would otherwise have been unable to come by; improved company profile or credibility overseas; or overcame a legal or regulatory problem.

These qualitative benefits clearly have wider implications for the performance of the business in the medium to longer term, as a result of strengthening capabilities, and increasing the firm's access to international networks. This is reflected in the fact that among those who report additional sales, around 44 per cent report increased UK sales as well as increased exports.³²³

Evidence from the PIMS follow up surveys, conducted a year after the initial PIMS interview, also suggests longer term learning effects. The proportion of clients reporting 'increased innovation' as a result of support has been consistently higher in the PIMS follow up interviews, rising for example from 35 per cent to 48 per cent among clients re-

³²² Reported in DTI (2006), which includes a discussion of the methodology, and a table of results from other earlier studies.

³²³ OMB Research (2010b), based on figures reported in Table 10.9.2.3.

interviewed during 2010.³²⁴ This suggests further learning, leading to changes which could impact on the firm's performance across all of its markets.

Table 18 shows that "barriers overcome" has consistently been the most frequently reported qualitative benefit. This is consistent with the evidence on barriers to exporting, reported in the previous chapter, indicating that barriers relating to external factors, such as gaining access to contacts, and problems with legal and regulatory issues, are more often identified by businesses than barriers arising from internal constraints, such as limited know how and skills.

The table shows that around half report significant business benefit from learning gained through the support, and just over half report significant benefit from changes in behaviour attributed to the support. In each case, these measures refer to the proportion of clients giving ratings of 4-5 for the extent to which the business had benefited in this particular way, on a 1-5 scale where 1 = not at all, and 5= to a critical extent. Clients who say they believe they could have achieved the same effect without the support are excluded from the measures.³²⁵

Table 19 provides a breakdown of recent PIMS data by business profile, showing how the reported qualitative benefits vary across businesses with different characteristics. The table shows clearly that firms with fewer than 100 employees, innovative firms, and those expecting to grow at least moderately, are more likely to report benefits on all of the qualitative measures, including "improved business performance". However, when multivariate techniques are used to analyse the data, some of the differences by firm size disappear.

Multivariate analysis shows that while benefits from learning, as reflected in "increased skills", "changed behaviour", and "increased innovation", are more likely to be reported by firms with fewer than 100 employees, there is no significant difference by firm size for "barriers overcome".³²⁶ This is consistent with findings reported in the previous chapter, that the incidence of barriers to entering new markets is not linked to size of firm.

The multivariate analysis confirms that innovative firms were significantly more likely to report benefits relating to sales, value of IP assets, changed behaviour, and improvements to products, services, or new product development strategy. Firms with a written business plan which includes overseas sales were also much more likely to report all qualitative benefits.³²⁷

Innovative firms, those expecting substantial growth, and those who had been exporting for not more than ten years, were likely to report higher mean financial benefits. Interestingly, the multivariate analysis found there was no clear picture with respect to

³²⁴ OMB Research (2010d)

³²⁵ Full detail of PIMS measures is set out in the PIMS report (OMB Research 2010b).

³²⁶ Breinlich et al (2011)

³²⁷ Ibid

firm size and mean financial benefit.³²⁸ This is consistent with the descriptive results, which have shown a varied picture by firm size over the five years of PIMS data.

The probability of reporting exceptionally high financial benefits is also greater among innovative firms, those expecting substantial growth, and those with a written business plan including overseas sales. This suggests that these firms were at a “tipping point” in their development, associated with new market entry, which the support had helped them to traverse successfully.³²⁹

Table 19: Key PIMS Measures by Business Profile

PIMS 18-21	Business Size (employees)				Innovative		Growth expectations		
	0-9	10-99	100-249	250+	Yes	No	Grow substantially	Grow moderately	No growth
A81 – Increased Skills	56%	51%	43%	37%	51%	45%	54%	50%	40%
A83 – Changed Behaviour	60%	56%	48%	38%	55%	48%	57%	55%	44%
Increased R&D	17%	12%	5%	6%	13%	7%	16%	11%	3%
A92 – Barriers Overcome	67%	62%	58%	52%	63%	56%	64%	63%	52%
A06 – Productivity & Competitiveness	73%	71%	65%	59%	71%	63%	72%	70%	59%
Improved Business Performance	57%	53%	50%	35%	53%	42%	55%	52%	40%

Qualitative studies of UKTI clients who had reported exceptionally high financial benefits confirms this association with a period of rapid growth. Specific circumstances were very varied, but in each case the client believed the support had made a significant difference which opened up a large amount of new business. In 4 of the 20 cases the firm had not previously recognised the scale of growth potential in its (innovative) product/services. Thanks to gaining this better understanding of their

³²⁸ Breinlich et al (2011)

³²⁹ See discussion of exporting and business growth in Chapter 4.

market potential, and gaining exposure to new contacts, high growth was opened up for these firms.³³⁰

The finding that innovative firms tend to benefit more on all measures, including those related to learning is consistent with the discussion of ‘absorptive capacity’ in a previous chapter. This showed that “absorptive capacity”– the ability to identify and absorb useful ideas and knowledge from external sources – plays a key role in business growth, and tends to be higher among innovative firms and “born globals”. Absorptive capacity also appears to influence the ability of firms to derive learning benefits from exporting. The greater benefits from support which are reported by innovative firms are therefore likely in part to reflect their greater absorptive capacity, and in part to reflect the fact that they also report greater benefits from exporting, as shown in a previous chapter.

Evidence from econometric impact analysis, reported below, has also found that innovative and growing firms are more likely to increase investment in R&D as a result of trade support.³³¹

In the next section we look at evidence on the extent to which trade services are attracting businesses with the characteristics most likely to benefit from support.

Client Profile

Given the evidence that innovative and growing businesses tend to benefit more from export support, the cost-effectiveness of Government intervention in this area will clearly depend crucially on the ability of services to attract clients with these characteristics.

Table 20 provides a summary of evidence on these characteristics, based on evidence from PIMS user and non-user surveys.³³² Although non-users are also exporters, and previous chapters have shown that exporters tend to be stronger performers on both innovation and productivity criteria, the table shows that there are clear differences between users and non-users of UKTI export services.

Users are much more likely to have a current business plan, to be innovative, to hold registered Intellectual Property (IP) protection, and to expect substantial growth. Conversely, they are much less likely to expect no growth. Multivariate analysis of data from other surveys of UK exporters has also found a strong association between use of UKTI services and innovation, investment in R&D, holding IP, and having a written business plan.³³³ The analysis also found a positive association with high growth

³³⁰ OMB Research (2010) An Investigation of Firms Reporting High Levels of Financial Growth as a Result of UKTI Support

³³¹ Aston (2010)

³³² Source: OMB Research (2010c). The non-user survey covers exporters, and firms who are actively seeking to export, using a sample structure carefully designed to ensure capture firms in the same age bands as use UKTI services.

³³³ NIESR (2010) Aston (2010)

objectives. Another study found that the association with high growth was statistically insignificant after controlling for innovation, IP, and other characteristics.³³⁴

Table 20: Profile of Users and Non-users of UKTI Export Services³³⁵

	Non-Users (PIMS 2010)				Users (PIMS 16-19)			
	Total	Up to 5 years	6-10 years	>10 years	Total	Up to 5 years	6-10 years	>10 years
Base	302	96	100	106	3984	1007	727	2242
Has current business plan	46%	52%	48%	43%	75%	78%	72%	75%
Innovative	64%	57%	55%	69%	83%	72%	86%	88%
Innovative (alternative, tighter definition)	32%	26%	23%	38%	63%	58%	61%	66%
Holds IP protection	21%	6%	9%	30%	39%	40%	37%	39%
Expects substantial growth	23%	33%	20%	21%	39%	50%	46%	32%
Expects moderate growth	55%	52%	52%	57%	48%	36%	46%	55%
No growth/grow smaller	20%	12%	27%	20%	7%	5%	6%	9%

These findings show that there is a clear tendency for users of the services to be more likely to have the characteristics associated with greater potential to benefit from support. Several factors are likely to drive this association:

- Innovative and growing firms tend to encounter greater barriers to entering new markets. At the same time they derive greater benefit from exporting, so are more likely to see a business need for entering new export markets;
- Firms with greater absorptive capacity are more likely to seek out external sources of expertise and knowledge, and innovative and successfully growing firms tend to have greater absorptive capacity;
- Firms which are seeking to grow by entering new markets are at a “transition point” when they have particular need of external knowledge and expertise;³³⁶

³³⁴ NIESR (2010)

³³⁵ Source: OMB Research (2010c)

³³⁶ Bessant (2005)

- Conversely, firms which export only in response to enquiries are much less likely to perceive any such need.³³⁷

All of these factors suggest a strong element of self-selection on the part of firms most likely to be able to benefit. Nevertheless, the evidence on non-users shows that there are many UK exporters and firms seeking to begin exporting who match the profile of firms most likely to benefit from the services, but remain unaware of them.³³⁸

In the next section, we compare the PIMS findings on business performance impact with estimates derived from econometric impact studies and economic evaluations.

Evidence from Econometric Impact Studies

Econometric impact studies have not focused on additional profit, mainly due to data limitations. However, they do provide an alternative source of evidence as to the magnitude of the impact of trade services on business performance using other measures. In addition, they provide a source of corroborating evidence as to the characteristics of firms most likely to benefit from support.

The broadest econometric study of the impact of UKTI trade services focused on the impact on R&D, and was carried out by Aston University.³³⁹ The study found:

- Export support generates additional R&D of around £65k per firm over a two year period, with the Tradeshow Access Programme, Export Marketing Research Scheme, and Passport to Export among the services which tended to generate the strongest R&D impact;
- Innovative and growing firms were most likely to show positive R&D impact. There was clear evidence of UKTI service complementarity, with the R&D impact stronger for multiple service use.

The study also included a literature review, which reported evidence that exporting enhances the productivity effects of innovation. The review concluded that relationships between innovation, exporting and productivity are complex but suggest that innovation itself is not sufficient to generate productivity improvements; only when innovation was combined with increased export activity were productivity gains evident. A policy conclusion of the study was that innovation support policies should include helping firms to enter export markets or to expand their existing export market presence.

³³⁷ During interviews, when asked about need for external help or support, non-users who export mainly or entirely in response to enquiries often comment that they do not need help for this reason.

³³⁸ OMB Research (2010a and 2010c)

³³⁹ Aston University (2010) available at:

http://www.ukti.gov.uk/fr_fr/uktihome/aboutukti/ourperformance/evaluation/comparativeandcrosscuttingevaluations.html

Comparison of these findings with PIMS evidence presents a consistent picture both with respect to the services which generate the strongest R&D impact, and with respect to the characteristics of firms most likely to benefit. In addition, the Aston findings are consistent with PIMS evidence that the impact of the services is large, relative to the cost of support. Assuming average costs of around £10k per business³⁴⁰, the Aston estimate implies just over £6 of additional R&D per £1 spend, compared with PIMS estimates of £15-£19 additional profit per £1 UKTI spend.

Findings from qualitative research, cited in the Aston report, indicate that there are three main reasons why trade services generate substantial impact on R&D:

- **New ideas for R&D:** Businesses gain exposure to new customers and competitors overseas, which gives them ideas for new or improved products or services, requiring R&D;
- **Additional revenues:** The additional revenues and profit made possible by the support increases the internal resources available for investment in R&D;
- **Increased incentives:** The opportunity to increase overseas sales increases firms' incentives to invest in R&D, by increasing the return to such investment.

These findings are consistent with evidence on the links between exporting, innovation, and R&D reported in previous chapters.

Two recent econometric impact studies looked at support for new exporters under the Passport to Export service, with the second also covering help provided under the Export Marketing Research Scheme, which is also open to other SME exporters.³⁴¹ The studies used a unique data set which includes data on intellectual property as well as on business performance. The analysis found evidence of positive impact on survival, asset growth, and IP activity, controlling for other factors. Quantified estimates of impact on asset growth varied considerably depending on the model and analysis technique, ranging from around 3% to 26% for Passport to Export, and were not significant for EMRS.

UKTI clients were also found to be some 3-4 times more likely than comparator groups to hold intellectual property.

³⁴⁰ This is consistent with average total costs per client, including all corporate overheads, in the £19:£1 ratio of benefit to total cost cited above. Full details of how this is calculated, and of UKTI costs, are set out in the UKTI annual reports.

³⁴¹ Rogers and Helmers (2010) (2008) Oxford

Evidence from Economic Evaluations

Evidence on the business performance impact of UKTI trade services is also available from a number of evaluations of individual services. Quantified estimates of benefit:cost ratios, measuring benefit in terms of additional profit attributed to the service, net of non-additionality, are provided by three evaluations:³⁴²

- **(2009) Tradeshow Access Programme (TAP) (London Economics):** The study found evidence of impact on innovation and productivity, and an estimated overall benefit cost ratio of £5:£1;
- **(2009) High Growth Markets Programme (HGMP) (London Economics):** The study found a benefit cost ratio of between £4.6 and £10.2 per £1;
- **(2006) International Trade Teams in the English Regions (SQW):** The study covered support provided under Passport to Export as well as advice to other clients assisted by the International Trade Advisers, and estimated that the overall benefit cost ratio for these services was £25:£1.

Comparing these estimates with evidence from PIMS shows a varied picture. While at aggregate level, across all services, PIMS estimates of mean estimated financial benefit have shown limited variation over time, when broken down for individual services the degree of variation rises considerably. For TAP, mean estimated benefit has ranged from £20k to £109K over the past 5 years, while estimates for Passport have ranged from £159k - £420k over the same period.³⁴³ This high degree of variation at service level suggests a clear need for caution in placing too much emphasis on a single estimate.

Nevertheless, PIMS results are consistent with the evaluation findings in suggesting that TAP tends to have lower impact on clients' profit than is the case for Passport to Export. Interestingly, this is not the case when comparing the R&D impact of TAP and Passport to Export, which show similarly high impact. This suggests that TAP has tended to have a particularly strong impact on innovation and R&D, relative to its impact on profit, and indeed the innovation impact of TAP was highlighted by the evaluation.

The TAP evaluation findings on innovation, R&D, and productivity effects were also consistent with those from PIMS. The report concluded that:

“Notably, firms also experienced substantial impacts from attending trade fairs in terms of product innovation, making improvements to products and services, making improvements to product and service development and investing more in R&D. Further, the majority of firms believed that their

³⁴² These reports are all available in full on the UKTI website at <http://www.ukti.gov.uk/uktihome/aboutukti/ourperformance/evaluation/evaluationsofspecifictradeservices.html>

³⁴³ The HGMP was in operation only for a short period, so comparison over time is not available.

attendance at a particular trade fair would improve their firm's productivity in five years time. This suggests that firms' attendance at trade fairs can contribute to UK innovation and productivity."

An interesting finding of the evaluation was the role of the grant in influencing behaviour. Despite the fact that TAP grants account for only a small proportion of firms' costs in attending trade fairs, a significant proportion stated that they would not have attended a particular trade fair in the absence of support (with the proportion higher amongst smaller firms and newer exhibitors). The scale of this effect was also supported by the results of willingness-to-pay questions used in the study, and by the findings of econometric analysis of the decision to attend. This finding was seen by the academic advisers as evidence of information market failure: The grant appears to have served as a signal to firms about the benefits of exhibiting, which carried sufficient weight to influence behaviour, despite its small contribution to the costs.

The report concluded that in the absence of government support for trade fair participation, too few firms would choose to exhibit, based on a lack of understanding of the likely benefits from attending. It also concluded that attracting additional firms to trade fairs has wider benefits, particularly when the additional participants are innovative firms. This is through the increased opportunity to discover new products and ideas (network benefits), and also potentially through raising the perception and profile of UK industry.

Conclusions

Evidence from the evaluation and monitoring evidence shows that trade services:

- Have substantial positive impact on the profit and medium term performance of supported firms, giving high benefit cost ratios, and supporting stronger business growth;
- Have substantial positive impact on business R&D and innovation, suggesting lasting positive effects on business competitiveness in both domestic and overseas markets;
- Have substantial positive impact on business skills and export know how;
- Attract businesses which are innovative, actively seeking to grow, and have the management qualities to benefit from support.

Nevertheless the evidence on the profile of non-users indicates that there are still many UK firms who could potentially benefit equally from the services, but have not used them due to limited awareness.

Support for Inward Investment: Outputs and Intermediate Outcomes

Evidence from the Performance and Impact Monitoring Survey (PIMS)

This survey of inward investors who have received help from UKTI provides evidence on the quality of projects, and on the nature and extent of UKTI influence on the scale or scope of inward investment decisions, including the decision to locate in the UK.

The criteria used in PIMS to assess project quality seek to identify characteristics of the project likely to be associated with a positive contribution to knowledge intensive economic activity in the UK, including R&D, and productivity enhancing spillovers. These include:

- **Innovation:** The UK site involves new to the world products, services, business models, or ways of working. These might include new processes, or new internet applications;
- **R&D:** The UK site involves R&D, or commissions R&D from a UK location, or is involved in research projects with universities or Research and Technology Organisation, or other research service providers;
- **UK supplier linkages:** The UK site purchases high-tech or other innovative inputs from UK suppliers;
- **Quality jobs:** The UK site involves new degree-level positions and fills these with UK staff.

Over the last three years, the number of supported projects identified as 'high quality' has been rising (Table 21), as has the total number of successfully supported projects.

Table 21: Results against Inward Investment targets over time³⁴⁴

Target:	2009-2010	2008-2009	2007-2008
- Number of involved successes – target: 525	758	599	550
- Number of high value successes – target:125	368	268	172
- Number good quality successes – target: 285	164	139	178
- Combined high value/good quality – target: 410	532	407	310
- 70 % agreeing that support had significant favourable influence on decision to locate/expand in UK, or on the scale/scope of the project	76%	72%	74%
- At least 30 of the FDI projects should involve additional R&D activity in the UK	74	49	47
At least 70 FDI projects involving additional R&D in the UK (Results against this target <i>include</i> the 30 reported under Target 1.)	88	71	67

The evidence from the survey shows that UKTI help can have significant influence on investor decisions, both with respect to the decision to come to the UK, and with respect to the scope or scale of their UK activity. Just over 70 per cent report some significant influence; with around half saying it had influenced their decision to locate in the UK, and a further 20 per cent citing influence on the scale, scope, or timing of the project. Around a third reported that it had influenced them to increase their use of UK based suppliers or professional service providers, while smaller numbers reported influence on their involvement in joint R&D with UK partners. Many of those who reported influence on the decision to come to the UK also reported influence on other aspects of the project.

Table 22 shows that the areas of influence vary by type of project, with influence on the decision to come to the UK appearing somewhat stronger among the “good quality” and “high quality” projects. Influence on R&D, and on links to universities, and Research and Technology Organisations is more evident among the high quality projects, as these are more likely to be engaged in such activities.

³⁴⁴ Performance and Impact Monitoring Survey for Inward Investment (2009) (2010) (2011)

Table 22: Significant Influence (All3) – By Project Quality

Proportion scoring 3-5 out of 5	High Quality	Good Quality	Other
<i>Base</i>	69	31	38
Significant Influence (All3)	74%	71%	74%
- Increasing the amount of R&D activity in the UK	14%	3%	3%
- Increasing firms involvement in joint R&D with UK partners	22%	0%	5%
- Improving access to UK universities, RTOs, etc.	22%	10%	8%
- Increasing firms use of UK-based suppliers at this site	29%	32%	37%
- Increasing level of investment in equipment/premises/etc.	22%	6%	11%
- Allowed the project to proceed more quickly	49%	68%	58%
- Increasing the amount of training you do at this site	3%	3%	5%
- The size or composition of the workforce at this site	9%	10%	5%
- Original decision to go ahead with this investment in the UK	54%	52%	37%

Source: OMB Research (2010e)

Analysis of PIMS data shows that the influence of support is mainly due to the role of UKTI in overcoming barriers, e.g. facilitating access to the right contacts in the UK, providing access to information not otherwise available, or helping the inward investor to navigate the legal and regulatory environment. Nearly all (93 per cent) of those who reported significant benefit from overcoming one or more such barriers also reported significant influence on one or more aspects of the project, or on the decision to locate in the UK. This compares with only 59 per cent of those not reporting such benefit.

The evidence from PIMS also shows that Inward investors see limited alternative sources of similar help. Few of those surveyed (11 per cent) feel they could have obtained similar help elsewhere, although a further 21 per cent feel they could have done so but not as quickly or easily. Most feel they either could have achieved some but not all of the help (32 per cent) or would not have obtained similar help (35 per cent).

Evidence from Evaluation Research

An evaluation was carried out in 2008/09 which sought to investigate spillover effects from supported FDI projects, using an extended case study methodology. The study also involved a literature review, in order to inform design of the case studies. These case studies included consultations with a range of connected parties, to examine the various potential spillover channels identified through the literature review, as follows:

- **Vertical spillovers** – from supplier and customer linkages
- **Horizontal spillovers** – from migration of skilled workers to, and demonstration effects on, competitors and from membership of trade networks and sector organisations
- **Positive and negative spillovers** (depending on the motivation of the inward investors) – from links with the research base (as well as acquisition of R&D intensive domestic firms)
- **Improvements in absorptive capacity** – through capacity building activities in deprived areas.

In the twelve cases studied, the most common motivation for investing in the UK was to use the firm's technological, organisational or market strength to sell goods and services in UK and European markets. These projects were thus "technology exploiting", rather than "technology sourcing", and hence might be expected to show positive spillovers.

The findings on spillovers are summarised in Table 23, together with effects on innovation, R&D, and direct effects on productivity in the sector. Although two cases are identified as "high" R&D, and three as "medium", it should be noted that only in one project was the level of R&D at the project found to have been directly influenced by the support.

The strongest spillover benefits identified by the study related to effects on suppliers. In one example, a highly innovative Japanese firm had been working closely with its UK suppliers, and involving them in new product development. One of these suppliers said this relationship had assisted their growth, and had resulted in significant productivity improvements. In another case, an investor from Japan had also been working jointly with UK suppliers on product and service development, and also on process and infrastructure design. Suppliers interviewed felt they had benefited from learning effects, which would benefit their business more widely than in dealings with this particular customer.

Innovation effects refer to ways in which customer or supplier productivity had been improved by gaining access to new, improved or better value products, as a result of the presence of the inward investor in the UK. The scale of these effects was found to depend on how innovative the products are, and how effectively they are used. A key factor was found to be the role which the inward investor's sales and support office had played in introducing UK firms to the new technology, or helping them to use it effectively.

Table 23: Summary of effects

	R&D	Spillover effects	Innovation effect	Direct effect on sector productivity
Glass manufacturer	Medium	Medium	Low	High
Software sales	None	None	High	Low
Engineering	Medium	High	Medium	Low
Internet advertising	None	Low	Low	Low
Specialist pet food manufacturer	None	Low	Medium	High
Bearings manufacturer	Medium	Medium	Low	Medium
Biotech research	High	High	-	-
Telecoms equipment	None	Medium	High	Low
Distributor of automotive parts	None	Medium	Medium	Medium
Computerised machine tools	High	High	Medium	High
Investment bank	None	Low	Low	Low
Publishing ad-tracking	None	Low	Medium	Low

In theory, these cases of beneficial innovation effects involve an increase in imports, since the products themselves were produced abroad. In practice, however, in these case studies, they tended to displace other imported goods rather than UK products.

In almost all the cases the main competitors of the inward investors were other international firms. There was little direct product displacement, and in the three cases where displacement was found, the activities were displaced from other foreign-owned firms. In a number of the cases, the investor was not competing directly with UK firms.

The study found that many of the benefits reported had also accrued to other foreign-owned businesses in the UK, rather than to UK-owned firms. This is to be expected, given the large size of the foreign-owned sector, and the fact that their average performance is above that of the average UK firm (although not above that of UK multinationals).

With respect to the influence of UKTI on the projects, inward investors commented on the value they attached to the professionalism of UKTI services, and of the support received. They also indicated that this experience could impact on their future decisions regarding development or expansion of their UK operations.

The case studies found little evidence that the support had been critical in the initial decisions to invest in the UK, because this had usually been made by the parent company

independently. However, there was evidence in most cases that the support had accelerated the investment, reduced the risk, or improved the quality of the project.

Although case study findings cannot provide a basis for generalising about the effects of inward investment projects, they do provide useful insights into the nature of the effects which inward investment can have on other UK based firms. In addition, the case studies illustrate ways in which learning benefits can be associated with highly innovative “technology exploiting” types of inward investment.

Quantifying Benefit from Inward Investment

Measurement of benefits arising from support for inward investment presents much greater difficulties than for trade. This is because:

- “Spillovers” are central to the potential economic benefit from inward investment, but are extremely difficult to observe and to quantify. Econometric studies have attempted to quantify spillovers, with limited success, but these methodologies cannot shed light on the role which support may have played;
- Other potential benefits from inward investment, such as positive “batting average” effects on UK productivity, effects on UK R&D, or additional skilled jobs, are also extremely difficult to measure in a realistic way³⁴⁵ because of the importance of displacement effects. As discussed in Chapter 4, the net effect of inward investment depends crucially on the quality of the project, compared with that of that of other UK-based businesses with which it may be competing, either for labour, or in product markets.³⁴⁶

Hence evaluation tends to focus on outputs and intermediate effects, such as influence on projects and indicators of project quality, without attempting to quantify benefits.

Evaluation Evidence on Five Key Roles for Government

In this section, we look at evidence relating to the ability of Government to intervene cost effectively in the five key roles highlighted in the previous chapter.

The help provided to firms through **trade services** fulfils two complementary roles:

- **Helping firms to build export related skills and capabilities:** These services address internal barriers to exporting, by building skills and

³⁴⁵ For example, while jobs created by a new investment project can be observed readily, it is very difficult to identify the extent to which the project may also result in job losses in other UK based firms with which the new project is competing.

³⁴⁶ Displacement is not a significant issue for export support, as additional sales achieved by supported firms are likely to displace mainly overseas competitors. In addition, any job creation among exporters as a result is expected to have positive aggregate productivity effects, by reallocating resources into more productive use, as discussed in Chapter 4.

capabilities specifically related to exploiting international markets, focusing on firms who have already demonstrated the ability to produce successfully exportable goods or services. In the UK, the services are provided by teams of International Trade Advisers in the English Regions, and by the British Chambers of Commerce (BCC), under contract to UKTI;

- **Helping firms overcome external barriers to accessing new markets:** This includes provision of tailored market information, access to contacts, and help with overcoming problems associated with the legal or regulatory framework, or other barriers to market access. The services are delivered mainly by the overseas network, and through events held both in the UK and overseas.

In terms of the roles for Government identified in the previous chapter, the roles of bridging access to networks and contacts, and of helping firms overcome legal and regulatory barriers, are primarily addressed by the “accessing new markets” services, while capability building is primarily addressed by the first service group. While both services provide information and advice which the private sector alone would not provide, there is a clear difference in the respective roles:

- Information and advice associated with capability building responds to market failure arising from firms’ lack of skills and knowledge, and lack of awareness of learning needs. As discussed in Chapter 6, this gives rise to a need for subsidised support, but not necessarily for public sector delivery;
- Information and advice associated with gaining access to new markets responds to market failure in the supply of such information. As discussed in the previous chapter, this gives rise to need for intervention on the supply side, but not necessarily for subsidy.

Table 24 summarises PIMS evidence relating to these two groups of services. The table shows that impact of “Building Internationalisation Capabilities” tends to be higher on all qualitative measures, but is not significantly different with respect to reported financial benefit or R&D impact. This difference primarily reflects the fact that capability building services tend to involve more intensive support than is usual under “Accessing International Markets”. In addition, the proportion of clients who are new exporters is greater for capability building services.

Focusing on the nature of the impact, the table shows that the difference between the two services in the two measures of learning benefit – “increased skills”, and “changed behaviour” – is much greater than for “barriers overcome”, reflecting the distinct roles played by the two groups of services. Analysis of qualitative benefits shows that, for the “Accessing International Markets” services, the most frequently reported benefits are gaining access to contacts not otherwise available, or improving profile or credibility overseas (which is clearly also linked to gaining better access). By contrast, among the most frequently cited qualitative benefits for the capability building services are “gaining the confidence to explore or expand overseas” and “improved marketing strategy”. Both groups report benefits from “gaining access to information not otherwise available”.

Taken together, capability building, as measured through changes in behaviour, and overcoming barriers to new markets, account for *all* of the financial benefit reported through PIMS.³⁴⁷ However, this measure does not take into account any of the wider benefits, such as knowledge spillovers, which are likely to arise from strengthening networks or building internationalisation capabilities.

Table 24: Summary Impact of Trade services by Government Role

	Building internationalisation capabilities	Accessing International Markets
Firms Supported (PIMS 18-21)	6,130	21,200
Improved Business Performance (medium term productivity and profit)	65%	49%
A81 – Increased Skills	60%	48%
A83 – Changed Behaviour	66%	52%
Increased R&D	14%	12%
A92 – Barriers Overcome	68%	61%
A06 – Improved Productivity & Competitiveness (significant qualitative business benefit)	77%	68%
A49 – £ Estimated Benefit (mean additional profit attributed by client to UKTI support)	£231,000	£205,000

Providing Access to Information and Advice – High Growth Markets

The evaluation of the High Growth Markets Programme (HGMP) provided some lessons as to most cost effective approach to seeking to raise awareness of opportunities in these markets, and helping businesses to overcome barriers to exploiting these. The evaluation concluded that there is a sound economic rationale for these aims, but that the findings did not support the programme approach, which was to be pro-active in encouraging medium large companies to be more active in exporting to these markets.

³⁴⁷ As noted above, firms which report financial benefit through PIMS but do not also report significant benefit through either “changed behaviour” or “barriers overcome” are excluded from the estimates of financial benefit attributed to UKTI, as a consistency check.

With respect to the focus on medium large companies, the evaluation concluded that the potential to benefit from exporting to these markets was not limited to this size band. Neither was there evidence that this size band was in greater need of support than other firms. Table 25 shows that PIMS evidence supports this, in that the size profile of firms seeking UKTI help, in relation to high growth markets, is not radically different from those seeking help in relation to established markets. Even among the smallest firms, 35 per cent were seeking help with high growth markets.

Table 25: Size Of Business – By Markets to Which Support Referred

	High Growth Markets	Established Markets
Base	1527	1679
250+	14%	7%
100-249	7%	6%
50-99	9%	8%
20-49	19%	16%
10-19	13%	13%
0-9	35%	47%
Not yet trading	2%	2%
Don't know/refused	1%	1%

Pro-active Targeting vs Client Self-selection:

Another key finding of the HGMP evaluation was that the pro-active approach used by the programme was relatively costly, and difficult to achieve successfully, as the companies approached were often not receptive. A far more cost effective means of identifying companies responsive to interest in these markets was to focus on companies who had attended events about them. The fact of their attendance was a clear signal of receptiveness to learning more about these markets.

This finding is consistent with evidence from a review of evidence on the stages of business growth and the context in which they are most likely to benefit from external advice and expertise.³⁴⁸ The study found that:

- There is no set pattern of stages of growth. However, companies go through a number of typical transitions, or “tipping points”, at different times, when they are facing significant challenges and potential for change, and are receptive to

³⁴⁸ Bessant et al (2005)

new knowledge, ideas, and behavioural change. Seeking to enter a new market was identified as one such transition;

- The key to growth was seen as “*the absorption of knowledge and solutions to successfully traverse the tipping points. In dealing with these tipping points the firm needs to grow its absorptive capacity. It needs to become aware of key issues it is facing and it needs new knowledge inputs to provide solutions to the crises and challenges generated at tipping points*”;³⁴⁹
- The impact of external advice can be most potent during these transition points, and can lead to a “tipping point”, enabling a small amount of well focused advice or information to have very large business benefits.

Since the “tipping points” at which external knowledge is most likely to make an impact are not generally visible to an outsider, successful pro-active targeting of firms can be difficult. By contrast, outreach events on topics likely to be of interest to firms seeking to enter new markets can assist such targeting. By attracting firms when they are at this type of tipping point, firms can be identified when they are receptive to new ideas, and hence most likely to benefit from support.

Inward Investment

Monitoring and evaluation evidence reviewed above suggests that the service provided to inward investors fulfils similar roles to the “accessing overseas markets” service for exporters. This is as expected, since inward investors are by definition entering (or seeking to expand presence in) the UK market.

Facilitating Beneficial Co-operation among UK Businesses

Two recent evaluations have looked at the role of Government in facilitating beneficial cooperation among UK businesses, in both cases focusing on sector based activity. The findings are consistent in finding a clear economic rationale for Government to provide a catalyst and coordinating role with industry to facilitate beneficial cooperation, and in finding examples of this role being carried out effectively. The studies also provide insights into the circumstances in which Government involvement is most likely to be useful.

Evaluation of Sector Marketing Strategies (SQW 2010)

The study evaluated the role which UKTI had played with industry to develop sector marketing strategies, and to develop evidence based messaging which could help promote the strength of the sector’s reputation in overseas markets. The research included a survey of overseas businesses, as well as a survey of UK businesses in

³⁴⁹ *Ibid*

the sectors concerned, and qualitative consultations with other stakeholders, including the members of the boards who had overseen work on the strategies.

The findings highlighted the importance of the role which UKTI had been able to play as a catalyst and facilitator for beneficial business cooperation, which would not have taken place in its absence. Evidence from the surveys indicated that the messaging which had been developed was credible, and seemed to be having some positive effects on perceptions of UK capability among the overseas audiences reached. These findings suggest some collective benefit to the sectors concerned.

The survey of overseas target audiences found that these communications were welcomed, and, indeed, that respondents also welcomed being contacted through the survey itself. However, there was evidence of scope for improvement in the marketing materials, as a third of respondents who had seen them did not take a clear message from the communications they had received. In addition, the evaluation highlighted the limited reach and adoption of some of the marketing messaging and collateral among UK firms.

The evaluation also highlighted the need for an “exit strategy” for this type of policy intervention, recommending development of “vehicles by which the private sector can sustain the strategies and their associated actions with minimal support”.

Evaluation of the Trade Development Activities of UKTI Sectors Group (Reading Business Group 2007)

This evaluation highlighted the importance of impact which was generated at a *collective* sector level, in addition to any benefits accruing to firms directly involved in the supported activities. In particular, it found evidence of positive effects on:

- the reputation of UK sectors in overseas markets;
- the social networks which underpin international business, including levels of trust and flows of information;
- mechanisms for co-operation for collective sector benefit, for example to commission research on new opportunities, or to showcase UK capability.

Evidence on these sector level effects was gathered through a set of sector case studies, for each of which the evaluation team interviewed a range of players, seeking to capture a robust range of perspectives. In addition, the evaluation used quantitative evidence, which was available from UKTI's Performance and Impact Monitoring Survey (PIMS), on benefits to the firms directly involved in the supported activities. The study did not seek to quantify sector level effects, but concluded that benefits to direct participants, as measured through PIMS, were sufficiently large that the activities generated good value for tax payer money on that basis alone.

The evaluation found that there is a sound economic rationale for UKTI sector activity, both to promote the reputation of UK sectors in overseas markets, and as a catalyst and facilitator for other beneficial sector cooperation, based on:

- Stimulating provision of “public goods”: The pursuit of individual self-interest by businesses cannot be expected to achieve optimal investment in generating collective benefits, such as effects on UK reputation;
- The role of UKTI as a trusted intermediary: This role can be crucial to building the trust which is needed for businesses to cooperate on projects for wider collective sector benefit, rather than pursuing narrower individual self interest.

The analysis particularly highlighted the useful strategic leadership role which UKTI teams had played under certain circumstances, to motivate business to work together on strategic projects with longer term aims. However, the evaluation also made clear that it is neither necessary nor possible for UKTI to undertake a strategic sector leadership function in all sectors.

The analysis also provides clear criteria for identifying circumstances – likely to be time limited – in which such strategic leadership can be worthwhile. These are where:

- Significant change has occurred, such that the existing reputation of the UK sector in particular overseas markets does not do justice to actual UK capability, and/or to the relevance of the UK offer to emerging new demand in those markets. This could arise because the needs of the market itself have changed, opening up important new opportunities, or because of changes in the capabilities of the UK sector itself; and
- Private sector mechanisms for cooperation are insufficiently strong to overcome the problem without support; and
- Potential additional benefits from improved UK reputation are likely to be sufficiently large to warrant public sector involvement.

Finally, the evaluation stressed that these strategic leadership roles needed to be done well, and adequately resourced, or not done at all. This is because stretching resources too thinly, or failing to follow through on commitments over time, can have adverse reputation effects both for the sector, and for Government.

Conclusions

The evaluation evidence shows that Government is able to intervene effectively to address barriers and market failures which would otherwise prevent the UK from optimising the potential benefits of exporting and inward investment.

For export services, the evidence shows:

- Substantial positive impact on the profit and medium term performance of supported firms, giving high benefit cost ratios, and supporting stronger business growth;
- Substantial positive impact on business R&D and innovation, suggesting lasting positive effects on business competitiveness in both domestic and overseas markets;
- Substantial positive impact on business skills and export know how;
- Export services attract businesses which are innovative, actively seeking to grow, and have the management qualities to benefit from support. Nevertheless, many firms with similar profile are not being reached;
- A strategic self-selection approach, such as through out-reach events to attract the target audience, is likely to be far more cost-effective than a more pro-active approach to reaching firms with the profile to benefit from help.

For inward investment services the evidence shows that:

- Advice and help to inward investors is an effective means of influencing investor decisions, both with respect to locating in the UK, and with respect to scale and scope of the project;
- Support has significant influence on use of UK based suppliers, involvement in joint R&D in the UK, and other linkages which are likely to be conduits for productivity enhancing knowledge spillovers;
- The influence of support is mainly due to helping inward investors to overcome barriers, for example by facilitating access to contacts and information not otherwise accessible, or by helping them to navigate the legal or regulatory framework. For high quality projects, help with gaining access to contacts at universities, or other knowledge centres can be an important issue;
- Most inward investment clients believe they could not have obtained similar advice or help from another source;
- There is qualitative evidence of significant productivity enhancing spillovers having occurred for some types of project, and becoming stronger over time.
- Such benefits are highly dependent on the quality of project, and on strong linkages with UK firms which have the ability to absorb new knowledge and ideas (absorptive capacity).

Benefit-cost ratios could not be estimated for inward investment support due to the difficulties in identifying and measuring spillover effects.

Chapter 8: Conclusions

Introduction

This paper has reviewed evidence relating to three necessary criteria underpinning the economic rationale for Government support for international trade and investment, focusing specifically on support for exporting and inward investment. These criteria are:

- Economic benefits from exporting and inward investment. The paper looked at the role which exporting and inward investment play in reallocating resources through a dynamic process of market competition, as well as at effects on business productivity, innovation, and growth;
- Market failure and other barriers preventing the private sector from fully realising these potential economic benefits; and
- Evidence that Government is able to intervene effectively to overcome these barriers, generating benefit sufficient to justify the cost of doing so.

In order to set the evidence on these issues in context, the paper began by providing a review of recent trends in trade and investment. Bearing in mind that in a market economy trade and investment are driven by businesses, the paper then devoted a chapter to looking at evidence on the firm level decisions and behaviours which underpin these trends.

In this chapter we review the main findings, and consider the implications for policy.

Export trends

In recent years the total value of UK exports has risen broadly in line with GDP, with services exports growing more quickly than GDP. UK experience contrasts with that of Germany, where the export share of GDP has risen. The USA and France, like the UK, have seen exports grow in line with GDP.

Rebalancing the UK economy over the coming years will require a change in this pattern, to achieve faster growth of net exports relative to that of GDP. While this is a macroeconomic change, likely to be driven primarily by macroeconomic factors, the required changes in behaviour will ultimately be executed by businesses and consumers, making decisions at a microeconomic level. For UK businesses, the required change in net exports as a share of GDP can be broken down into a number of potentially contributing factors at firm level:

- **Export intensity:** As more UK businesses increase the export share of their turnover, this would tend to increase the exported share of UK output;
- **Export incidence:** As the proportion of UK businesses that export rises, this would also tend to increase the export share of UK output. However, the magnitude of this effect can be small if firms are exporting only a tiny proportion of their output. In practice, the incidence of exporting in the UK has been rising, but many firms do still export only a tiny proportion of their output;
- **Import content of exports:** Imported inputs make a vital contribution to the productivity and competitiveness of output and exports for many businesses.³⁵⁰ Where this contribution to output is relatively large, growth in gross exports will have less impact on growth in net exports than in firms and sectors which make less use of imported inputs.

The evidence reviewed at firm level showed that greater **export intensity** is associated with exporting for more years, and exporting to more markets. There was also evidence that firms see entry into new markets as an essential means of increasing their exports, and as an important route to business growth. Nevertheless, a great many UK firms who have been exporting for many years still export only a small proportion of their output, and export only to a small number of markets.

The **incidence of exporting** has been rising in the UK, and is greatest among firms who are innovative, R&D active, and have relatively high productivity, across all size bands. Larger firms are also more likely to export, partly reflecting the role of exports in business growth. Nevertheless, the evidence in Chapter 3 showed that these characteristics explain business engagement in exporting only to a limited degree. There are still many UK firms with the characteristics associated with export success, who do not export.

In terms of growth in the **value of exports**, we saw in Chapter 2 that the UK has lagged behind key competitors in high growth markets, and in its share of world goods exports. The UK exports as many products as its competitors, and to as many destinations, but generally exports smaller amounts. Growth in the value of goods exports to individual markets has been driven in varying degrees by increasing numbers of UK firms exporting to the market, and increasing average values per exporter. There is also considerable variation across sectors and across markets in this respect.

³⁵⁰ Although touched on only briefly in Chapter 5 of this paper, there is good evidence that firms which engage in importing as well as exporting tend to have higher productivity than those who export only. This is to be expected, as the opportunity to choose from a wider range of suppliers is one of the major sources of economic benefit from an open international trading regime. See discussion in the Trade and Investment White Paper (2011).

At firm level, larger export values are associated with longer duration of exporting, greater export intensity, and exporting to more markets. Within manufacturing, SMEs³⁵¹ with 10 or more employees contribute around a third of the value of UK exports, while in services sectors the contribution of SMEs is much larger, and appears to have risen significantly in recent years.

The review of evidence on recent trends suggests some scope for cautious optimism from a microeconomic perspective in terms of the potential to increase the share of net exports in UK GDP:

- UK exports are at least on a par with key competitors in terms of product quality and diversity, albeit exported in smaller amounts. This suggests scope for increasing exports without adverse effects on terms of trade;
- There is still significant unrealised export potential among many UK businesses which have the innovation and productivity profile necessary to compete successfully in export markets.

The evidence on the economic benefits of exporting reviewed in Chapters 4 and 5 suggests that realising this greater export potential would bring substantial benefits, both to the firms concerned and to the UK economy. It shows that:

- Trade is a powerful driver of productivity growth through a dynamic process of market competition, as it enables exporters to grow and gain market share, while causing weaker firms to shrink. This reallocation effect is beneficial, because exporters tend to have higher productivity and faster productivity growth, to be more innovative, and to conduct more R&D. These qualities also enable them to pay higher wages and support more sustainable employment;
- Benefits from the reallocation effects of trade are large. In the UK, gains in market share achieved by UK exporters contributed the largest share of aggregate productivity growth. Combined with faster within firm productivity growth, exporters have accounted for 60% of UK productivity growth. Non-exporters have contributed mainly through net exit of low productivity firms;
- Dynamic competition effects of trade also impact positively on the aggregate level of innovation and R&D in the economy, as exporters tend to be more innovative, and much more R&D intensive than non-exporters.

The evidence reviewed in Chapter 5 indicates that exporting also has significant positive effects on the productivity, innovation, and R&D of the exporting firms themselves. The interactions between these factors are complex, and there is strong evidence that causality runs in both directions, with exporting also enhancing the

³⁵¹SMEs are defined here as having under 250 employees.

productivity effects of innovation. The evidence also indicates that there are multiple mechanisms through which the effects of exporting occur:

- Exporting stimulates productivity growth through a combination so scale economies, learning from exporting and exposure to new ideas, and re-allocation of resources across product lines to focus on the firm's comparative advantage;
- Exporting stimulates innovation and R&D through exposure to new ideas and competitors, through increasing the returns to investment in R&D, and through increased revenues, which increase the internal financial resources available to the firm for such investment.

Whatever the potential for increasing UK exports, and the potential economic benefits from doing so, these changes will only occur in a market economy if firms have sufficient motivations to make them. Chapters 3 and 4 identified some factors which do motivate UK firms to increase their exports, and also provided some evidence that many are actively seeking to do so.

Foremost among the motivations for increasing exports is to enable the firm to achieve a level of growth not otherwise possible. Other strong motivations were the need for increased exports to allow existing capacity to be utilised more fully, a desire to reduce dependence on the UK market, and a recognition that exporting raised the profile and credibility of the firm. Firms who were seeking to increase their exports also saw a need to enter new markets in order to achieve this aim.

In Chapter 6, we reviewed evidence on the market failures and other barriers which hinder UK firms from achieving these aims, and which deter many other UK firms from exporting, or from increasing their exports through expanding into new markets.

- Non-policy barriers to doing business overseas are significant, and help to explain the fact that many firms with export potential do not export, or do so only to a limited range of markets;
- The incidence of these barriers across firms is not explained by firm size, and is not limited to new exporters. Innovative and high growth firms experience greater incidence and intensity of barriers;
- Social networks, associated with historical cultural ties and common language, play a significant role in determining bilateral trade patterns. The weakness of such networks in some markets, and new exporters' lack of access to these networks, present significant barriers to entering new markets for firms of all sizes. Networks are especially important for firms selling innovative products and services;
- Management resources and other costs of entering new markets are seen as important from the perspective of businesses, but quantitative evidence suggests that financial performance does not significantly influence firms' decision to export. Perceptions of resource issues are likely to be influenced

both by capabilities, and by management attitudes towards the potential benefits and risks of exporting or entering new markets;

- Limited internationalisation capabilities and management attitudes are important barriers to SME internationalisation. These can be a stronger influence on the decision to export than structural factors, including productivity and R&D;
- A limited pool of UK business people with skills, knowledge, and expertise relating to overseas markets which are culturally more remote from the UK is likely to hinder the ability of UK exporters to respond quickly to emerging opportunities in these markets.

The review of market failures suggests that there is likely to be under investment by potential exporters in seeking support to overcome barriers to exporting, and in gaining the skills and knowledge necessary to enter export markets. This is due to the underestimation of the benefits of exporting, the positive externalities for the wider economy of increasing skills and knowledge, and the spillovers for other firms when a firm in their industry or supply chain starts to export.

The chapter concluded that if not addressed by appropriate policy action, the barriers and market failures identified are likely to have a material adverse impact on the UK's ability to exploit overseas business opportunities. In particular:

- innovative and high-growth potential companies will not be able to fulfil their potential without the capabilities and access to networks which are necessary for successful internationalisation;
- the UK business community's response to opportunities in the fastest-growing markets, and sectors of growing overseas demand, may continue to be relatively weak or sluggish, with adverse effects on prosperity;
- the potential for many more UK businesses to increase their export intensity, and to strengthen their performance and growth through exporting, and through expanding into new export markets is likely to remain unrealised.

The evidence cautions strongly against encouraging more firms to export indiscriminately, however, as firms who lack the productivity and innovation strengths necessary for successful exporting can be harmed by attempting to do so. Indiscriminate encouragement of more exporting would also risk increasing exporter churn, with limited effect on the total number of exporters.

The paper then reviewed evaluation evidence on the extent to which Government has proved able in practice to intervene cost-effectively to address the issues identified. The evidence indicated that export services generate high benefit cost ratios, partly due to success in attracting businesses which are innovative, actively seeking to grow, and have the management qualities to benefit from support. Benefits were found to derive from:

- Substantial positive impact on the profit and medium term performance of supported firms, supporting stronger business growth;
- Substantial positive impact on business R&D and innovation, suggesting lasting positive effects on business competitiveness in both domestic and overseas markets;
- Substantial positive impact on business skills and know how relating to exporting;
- Enabling firms to gain better access to contacts, networks, and information about opportunities overseas.

The evidence showed that export support is also a highly cost effective means of generating additional business R&D, enabling firms to increase internal resources available for such investment, as a by-product of successfully helping them to gain access to new markets.

Inward investment trends

The review of recent trends showed that the UK has continued to be highly successful in attracting inward investment, the largest share coming from the US.

Inward investors now account for around half UK manufacturing output, and just over two fifths of output in the services sector. Their shares in Gross Value Added and employment are lower, due to greater use of purchased inputs and relatively low labour intensity. Inward investment has accordingly increased demand for skilled labour while reducing demand for unskilled labour, contributing to a change in the structure of labour demand in the UK. The effect on wages and employment tends to be positive for skilled labour but negative for unskilled labour.

The increased market share of inward investment in the UK has contributed substantially to increased UK labour productivity growth, due to lower labour intensity and higher use of purchased inputs and other resources per employee among these foreign owned firms. These factors underpin higher average wages.

In Chapter three, the paper reviewed evidence on the factors which motivate FDI, and at factors which influence FDI location decisions. This concluded that:

- A primary motivation for FDI is that firms have some intellectual property, or other knowledge related asset, on which returns can best be maximised via this mode of market entry. This type of FDI can be described as ‘technology exploiting’;
- Another motivation for FDI is to be near to centres of expertise, knowledge, or research. For some firms this motivation may be secondary to technology exploiting motivations. However, for other firms, gaining access to technology may be a primary motivation. This latter type of FDI can be described as ‘technology seeking’;
- Serving the UK market is the most common primary motivation reported by inward investors into the UK, followed by keeping close to customers who are investing in the UK, and serving the EU market;
- There is clear evidence of the importance of the business environment to choice of location, including a stable economic environment; favourable bureaucratic, political, and regulatory environment; good communications infrastructure; a knowledgeable and skilled workforce, and a trustworthy and ethical business culture.

The attraction of an established community of other relevant businesses was also clearly evident, with ‘*an important centre for businesses in your sector*’ being among the factors most frequently cited by investors as important to their decision.

Chapter 4 looked at the contribution which inward investment makes to the economy through dynamic competition. It showed that as total factor productivity among foreign owned firms in the UK is higher than the UK industry average, it is likely to have had a positive ‘batting average’ effect on average total factor productivity. However, as total factor productivity of most inward investors is not greater than that of UK multinationals, expansion of the UK market share of UK multinationals would have similar productivity ‘batting average’ benefits.

The dynamic competition effects of inward investment on UK business R&D were less clear. Inward investors contribute to UK business R&D broadly in line with their contribution to output, reflecting much lower R&D intensity than among UK owned exporters. Consequently, the effect of increasing inward investment market share on average UK R&D intensity depends crucially on which UK firms are losing market share in this process. Displacement of UK owned exporters would tend to pull down average UK R&D, while displacement of non-exporters would have the opposite effect. In addition, R&D intensity is higher among inward investors who export from the UK, so the ‘batting average’ effects on average UK R&D intensity will also depend on which inward investors are gaining market share.

Chapter 5 turned to evidence on the contribution which inward investment may make to productivity growth within UK firms, either through productivity enhancing

spillovers, or through management change following mergers or acquisitions. The review highlighted an important distinction between 'technology exploiting' inward investment, and 'technology seeking' projects. Evidence of significant productivity spillovers was found only for high quality projects, likely to be 'technology exploiting'.

Evidence from firm level studies indicated that most technology exploiting inward investment was likely to come from countries, such as the USA, which are leading sources of new technologies as measured by international patents. US owned inward investors in the UK were also identified as having the highest productivity levels, the only group for which studies had found total factor productivity levels above that of UK owned multinationals.

Foreign mergers and acquisitions in general were not found to lead to improvements in efficiency, as measured by total factor productivity. However, there were exceptions, and acquisitions in services sectors from outside EU and USA did show some positive effects. Foreign mergers and acquisitions were found to increase labour productivity, as a consequence of changes in the balance of resource use, to decrease labour intensity while increasing the use of capital and purchased inputs.

Looking at effects of inward investment on employment, the evidence indicated that there were also important differences by type of project:

- 'technology exploiting' inward investment has positive effects on skilled jobs, while 'technology seeking' projects have negative effects on skilled jobs;
- greenfield investment was found to have a net positive effect on employment, mainly for skilled labour, while mergers and acquisitions tend to lead to a fall in employment at firm level, associated with the shift to less labour intensive modes of operation.

A key finding of the review was thus that the potential benefits of inward investment depend crucially on the characteristics of the investment project. High quality projects, capable of contributing positively to productivity, UK R&D, and skilled jobs, are likely to be mainly technology exploiting, greenfield investment, most of which is likely to come from technological leaders such as USA.

Furthermore, the incidence and magnitude of productivity benefits was also found to depend on links and proximity to UK firms which have the absorptive capacity needed to benefit from them. In general, UK exporters are more likely to benefit from productivity enhancing spillovers, because they have the 'absorptive capacity' to do so. They are also most likely to be in a position to benefit from export enhancing spillovers, including access to new knowledge and networks through linkages with a foreign investor's parent company, and its subsidiaries in other markets.

These findings suggest that there are likely to be advantages to a national approach to Government support for inward investment, as opposed to a more decentralised approach. This is because benefits to the national economy are likely to be optimised if the best possible match can be achieved between the investor's needs and the capabilities of the business community in the selected location within the UK.

Chapter six looked at the barriers and market failures which may hinder optimal levels of inward investment into the UK. This concluded that:

- There was evidence of productivity enhancing spillovers for some types of inward investment. As these benefits are not internalised by the investor, they suggest that markets unaided would not deliver optimal levels of investment;
- Barriers faced by potential inward investors are similar to those encountered by UK businesses seeking to enter new overseas markets, with access to the right contacts and networks an equally prominent issue. Other issues with which inward investors are likely to need help include access to information not otherwise available, and guidance in navigating the legal and regulatory framework in the UK;
- Barriers to inward investment in the UK also include limited knowledge about the UK's attributes as a place to invest, and in some cases adverse perceptions of the UK. There was evidence that businesses in overseas markets who feel well informed about the UK also tend to have more positive perceptions of the UK as a potential investment location.

There was also some evidence that overseas businesses which have more positive perceptions of the UK were more likely to invest in the UK. Although causality of these associations could not be determined, there is a sound theoretical basis for expecting that the reputation of the UK as a place in which to invest is likely to have some influence on the UK's ability to attract inward investment.

If not addressed by appropriate policy action, these issues are likely to have an adverse impact on the UK's ability to attract optimal levels of high quality inward investment. In particular, high productivity and knowledge intensive overseas firms are less likely to fulfil their potential contribution to the UK economy if they are deterred from approaching the UK, or if they find it too difficult to access the right networks, contacts, and information within the UK.

Finally, in Chapter 7, the paper looked at evidence on the ability of Government to intervene effectively to address these issues. This showed that:

- Advice and help to inward investors is an effective means of influencing investor decisions, both with respect to locating in the UK, and with respect to scale and scope of the project;
- Support has significant influence on investors' use of UK based suppliers, involvement in joint R&D in the UK, and other linkages which are likely to be conduits for productivity enhancing knowledge spillovers;
- The influence of support is mainly due to helping inward investors to overcome barriers, for example by facilitating access to contacts and information not otherwise accessible, or by helping them to navigate the legal or regulatory framework. For high quality projects, help with gaining access to contacts at universities, or other knowledge centres can be an important issue;

- Most inward investment clients believe they could not have obtained similar advice or help from another source;
- Benefits are highly dependent on the quality of project, and on strong linkages with UK firms which have the ability to absorb new knowledge and ideas.

Benefit cost ratios could not be estimated for inward investment support due to the difficulties in identifying and measuring spillover effects.

Policy conclusions

This review of evidence has made clear that there is a strong economic rationale for well focused Government support for exporting and inward investment, based on three essential criteria:

- There is evidence of substantial potential economic benefits to the UK from exporting and inward investment. As these benefits are contingent on the characteristics of the firms involved, the evidence indicates a need for a well targeted approach;
- There is evidence of market failure, and other barriers to exporting and inward investment, which would prevent the private sector unaided from fully realising these potential benefits. This evidence points to a need for Government action in a number of specific areas;
- There is evidence that Government is able to intervene effectively in the areas identified. For export services, benefits to the participant firms could be quantified, and show consistently high benefit cost ratios; for inward investment, benefits could not be quantified, but there was consistent evidence of the ability of services to influence high quality investment in ways likely to benefit the UK economy.

In terms of targeting, the evidence showed that export support should be focused on firms which have the productivity and innovation characteristics necessary for long term export success, and are seeking to grow. Many UK SMEs with these characteristics are still not exporting, or are not exploiting overseas markets to the extent which would enable them to optimise their growth potential. The evidence cautioned strongly against encouraging firms to export who lack the qualities necessary for sustainable export success.

The need for careful targeting was also shown to be highly important for inward investment, as the potential benefits to the UK depend crucially on the characteristics of the project. This suggests a need for policy focus on high quality projects, capable of generating productivity enhancing spillover benefits, and likely to contribute positively to knowledge intensive business activity in the UK, including R&D.

Roles for Government

In summary, theory and evidence reviewed in this paper show that there is a need for government action in the following areas:

- Strengthening the social networks which underpin international trade and investment flows, and helping individual businesses to gain access to key contact networks, by serving as a trusted intermediary;
- Strengthening the internationalisation capabilities of innovative and high-growth businesses;
- Providing access to information and advice which the private sector alone would not or could not provide, both to inward investors and to UK businesses seeking to exploit opportunities overseas;
- Facilitating beneficial co-operation among UK businesses, enabling them to work together to overcome barriers and develop potential overseas business opportunities, and to promote the reputation of the UK through showcasing UK capabilities in key overseas markets;
- Overcoming legal or regulatory barriers to market access which affect particular firms or sectors, including through political and diplomatic support, and support for open international trade and investment policy regimes.

References

Ahn (2001) Firm Dynamics and Productivity Growth: A review of micro evidence from OECD countries. OECD Economics Department Working Paper (2001) 23.

Alfaro, L., Chen, M. (2010) Surviving the Global Financial Crisis: Foreign Direct Investment and Establishment Performance. Harvard Business School Working Paper 10-110

Amador, J., Opromolla (2008) Product and Destination Mix in Export Markets Banco de Portugal Working Papers 17 | 2008

Andrews, M., Bellmann, L., Schank, T., Upward, R. (2007) Foreign-owned Plants and Job Security. GEP Research Paper 2007/36

Arndt, C., Buch, C., Mattes, A. (2009) Barriers to Internationalisation: Firm-level evidence from Germany. EFIGE working paper 09.

Arteaga-Ortiz, J., Fernandez-Ortiz, R. (2010) Why Don't we Use the Same Export Barrier Measurement Scale? An Empirical Analysis in Small and Medium-Sized Enterprises. Journal of Small Business Management 48(3):395-420

Aston Business School (2010) A Comparative Evaluation of the Impact of UK Trade and Investment's R&D Programme and Other UKTI Support that Impacts R&D. Final report submitted to UKTI.

Aw, B.Y., Roberts, M.J., Xu, D.Y. (2009) R&D Investment, Exporting and Productivity Dynamics

Bailey, D., Driffield, N. (2002) Hymer and uneven Development Revisited: Foreign Direct Investment and Regional Inequalities. Contributions to Political Economy (2002) 21:55-68

Baldwin and Yan (2010) Death of Canadian Manufacturing Plants. Economic Analysis Research Paper Series No 061. Statistics Canada. Ottawa

Baldwin, J.B., and Gu, W. (2006) Competition, Firm Turnover and Productivity Growth Economic Analysis Research Paper Series No. 042. Statistics Canada. Ottawa.

Baldwin, J.B., Gu, W., (2005) The Impact of Trade on Plant Scale. Production-run Length and Diversification Economic Analysis Research Paper Series No. 042. Statistics Canada. Ottawa

Baldwin, J.B., Gu, W. (2004) Trade Liberalization: Export-Market Participation, Productivity Growth, and Innovation. Oxford Review of Economic Policy, Vol. 20, No 3: 372-392

Barry, F., Bergin, A. (2010) Ireland's Inward FDI over the Recession and Beyond. IIS Discussion Paper No. 321 Trinity College Dublin.

Bartlesman, Haltiwanger and Scarpetta (2004) Microeconomic Evidence of Creative Destruction in Industrial and Developing Countries Tinbergen Institute Discussion paper TI 2004-114/3

Bellone, F., Musso, P., Nesta, L., Schiavo, S. (2008) Financial Constraints as a Barrier to Export Participation. OFCE Working Paper No. 2008-29. OFCE. Paris

Bernard, A., Jensen, J.B., Redding, S.J., Schott, P.K. (2009) The Margins of US Trade, US Census Bureau Discussion Paper CES09-18

Bernard, A.B., Jensen, J.B., Redding, S.J., Schott, P.K. (2007) Firms in International Trade. *Journal of Economic Perspectives*. 21(2): 105-130

Bernard, A., Redding, S., Schott, P. (2006) Multi-product firms and Trade Liberalization CEP Discussion Paper 769. London School of Economics and Political Science. London, UK

Bernard, A., Jensen, J, Schott, P. (2005) . Importers, Exporters and Multinationals: A Portrait of Firms in the US which Trade Goods. Peterson Institute for International Economics Working Paper Series Number WP 05-10

Bernard, A., Redding, S., Schott, P.(2004) Comparative Advantage and Heterogenous Firms. Institute for Fiscal Studies Working Paper WP04/24

Bernard, A.B., Eaton, J., Jensen, J.B., Kortum, S. (2003) Plants and Productivity in International Trade. *American Economic Review* 93(4): 1268-1290

Bernard, A.B., Jensen, J.B. (1999) Exceptional Exporter Performance: Cause, Effect or Both? *Journal of International Economics* 47, 1-25.

Bernard, A., Jensen, J.B., Lawrence, R.Z. (1995) Exporters, Jobs, and Wages in U.S. Manufacturing: 1976-1987. *Brookings Papers on Economic Activity*. *Microeconomics*, Vol. 1995 (1995), pp. 67-119

Besedeš, T., Prusa, T. (2005) A Search Cost Perspective on Duration of Trade. Paper presented at the CEPR European Research Workshop on International Trade Rotterdam, 16-19 June 2005

Bessant, J., Phelps, B., Adams, R. (2005) A Review of the Literature Addressing the Role of External Knowledge and Expertise at Key Stages of Business Growth and Development. Final Report August 2005.

Bevan, A., Estrin, S., Meyer, K., (2004) Foreign Investment Location and Institutional Development in Transition Economies. *International Business Review* 13 (2004): 43-64

BIS (2010a) BIS Economics Paper No 8 UK trade performance: Patterns in UK and global trade growth

BIS (2010b) BIS Economics Paper No 5. Internationalisation of Innovative and High Growth Firms.

Bloom, N., Sadun, R., van Reenen, J. (2007) Americans do I.T. Better: US Multinationals and the Productivity Miracle. CEP Discussion Paper No 788

Breinlich, H., Mion, G., Nolen, P. (2011) Secondary Analysis of Data from UKTI Performance and Impact Monitoring Survey (PIMS) Final Report to UKTI January 2011.

Burke, A., Gorg, H., Hanley, A. (2007) The Impact of Foreign Direct Investment on New Firm Survival in the UK: Evidence for Static v. Dynamic Industries. GEP Research Paper Series 2007/09. University of Nottingham

Carlin, W., Charlton, A., Mayer, C. (2006) Capital Markets, Ownership and Distance. CEP Discussion Paper No 744

Cassiman, B., Golovko, E. (2007). Innovation and the Export-Productivity Link Working Paper No 688

Casson, M., Burke, S., Pemberton, J., and Strang, M. (2006) Network Approach to the Design of Case Studies for the Evaluation of Business Support, with Special Reference to the Evaluation of UK Trade & Investment International Sectors Group: Final Report; Reading Business Group, 1 May 2006.

Castellani, D. (2002) Export Behaviour and Productivity Growth: Evidence from Italian Manufacturing Firms. *Weltwirtschaftliches Archiv*. 138: 605-628.

Chaney, T. (2005) Liquidity Constrained Exporters. University of Chicago *Mimeo*

Chetty, S., Campbell-Hunt, C. (2003a). Explosive International Growth and Problems of Success amongst Small to Medium-sized Firms. *International Small Business Journal*. 21 (1) 5-27.

China Council for the Promotion of International Trade (CCPIT) (2010) Survey on Current Conditions and Intention of Outbound Investment by Chinese Enterprises

Crespi, G., Criscuolo, C., Haskel, J., Slaughter, M., (2007) Productivity Growth, Knowledge Flows and Spillovers. CEP Discussion Paper No 785

Crespi, G., Criscuolo, C., Haskel, J., (2006) Productivity, Exporting and the Learning-by-Exporting Hypothesis: Direct Evidence from UK Firms. Working Paper No. 559 Department of Economics. Queen Mary University of London. April 2006

Criscuolo, C. (2005), "The Contribution of Foreign Affiliates to Productivity Growth: Evidence from OECD Countries", *OECD Science, Technology and Industry Working Papers*, 2005/8, OECD Publishing. doi: 10.1787/534235088410

- Criscuolo, C., Martin, R., (2005). Multinationals and US Productivity Leadership: Evidence from Great Britain. CEP Discussion Paper No.672
- Criscuolo, C., Haskel, J.E., Slaughter, M.J. (2005) Global Engagement and the Innovation Activities of Firms. NBER Working Paper No. 11479
- Disney, R.F., Haskel, J., Heden, Y. (2003) Restructuring and Productivity Growth in UK Manufacturing. *Economic Journal*, 113: 666-694
- Driffield, N. (1999) Indirect Employment Effects of Foreign Direct Investment into the UK. *Bulletin of Economic Research* 51(3): 207-221
- Driffield, N., Girma, S., Henry, M., Taylor, K (2010) Wage Inequality, Linkages and FDI. IZA Discussion Paper No 4722
- Driffield, N., Love, J., Taylor, K. (2008) Productivity and Labour Demand Effects of Inward and Outward FDI on Uk Industry. Sheffield Economic Research paper Series SERP Number 2008001
- Driffield, N., Love, J., (2007) Linking FDI Motivation to Host Economy Productivity Effects: Conceptual and Empirical Analysis. *Journal of International Business Studies* 2007) 38: 460:473
- Driffield, N., Love, J., (2005) Who Gains from whom? *Scottish Journal Political Economy Scottish Economic Society*, vol. 52(5), pages 663-686
- Driffield, N., Taylor, K., (2005) Are foreign firms more technologically intensive? UK establishment evidence from the ARD. *Scottish Journal of Political Economy* 52 (1) 38-53
- Driffield, N., Taylor, K. (2000) FDI and the Labour Market: a Review of the Evidence and Policy Implications. *Oxford Review of Economic Policy*: 16(3): 90-103
- DTI (2006) Department of Trade and Industry Economics Paper No.18. International trade and Investment – The Economic Rationale for Government Support
- DTI (2005) Department for Trade and Industry Economics Paper No. 11 R&D Intensive Businesses in the UK.
- Eaton, J., Lima-Fieler, A.C., Santacreu, A.M. (2007a) Mapping the Match between UK Exports and Demand in Emerging Markets. Final Report for the Asia Task Force UKTI. Report submitted June 2007
- Eaton, J., Eslava, M., Kugler, M., Tybout, J. (2007b) Export Dynamics in Columbia: Firm-Level Evidence. Laurier Business and Economics Department of Economics Working Paper Series 2007-04 EC: Wilfred Laurier University, Ontario, Canada.
- Eaton, J., Kortum, S., Kramarz, F. (2004) Dissecting Trade: Firms, Industries and Export Destinations. Federal Reserve Bank of Minneapolis Research Department Staff Report 332.

EIM (2010) Internationalisation of European SMEs. Entrepreneurship Unit, Directorate General Enterprise and Industry, European Commission.

Ericson, R., Pakes, A (1995). Markov Perfect Industry Dynamics: a Framework for Empirical Analysis. *Review of Economic Studies*. 62 (1) 53-82

Foster, Haltiwanger, Krizan (2001). Aggregate Productivity Growth. Lessons from Microeconomic Evidence. in Hulten, C., Dean, E., Harper, M (Eds) *New developments in Productivity Analysis*. University of Chicago Press

Girma, S. (2005) Absorptive Capacity and Productivity Spillovers from FDI: A Threshold Regression Analysis. *Oxford Bulletin of Economics and Statistics* 67 (3): 281-306

Girma, S., Gorg, H., (2007). Evaluating the foreign ownership wage premium using a difference-in-differences matching approach. *Journal of International Economics* 72 (2007) 97-112

Girma, S., Gorg, H. (2006) Multinationals' Productivity Advantage: Scale or Technology? GEP Research Paper 2006/22 University of Nottingham.

Girma, S., Gorg, H., (2003) Blessing or Curse? Domestic Plants' Survival and Employment Prospects after Foreign Acquisitions. IZA Discussion Paper No. 706

Girma, S., Gorg, H., Pisu, M., (2008) Exporting, linkages and productivity spillovers from foreign direct investment. *Canadian Journal of Economics* 41(1): 320-240

Girma, S., Kneller, R., Pisu, M. (2005) Exports vs FDI: An Empirical Test Review of *World Economics* 141(2) 193-218

Gorg, H., Kneller, R., Muraközy, B. (2008) What makes a Successful Exporter? GEP Research Paper 2008/01. University of Nottingham

Greenaway, D., Guariglia, A., Kneller, R. (2007) Financial Factors and Exporting Decisions. *Journal of International Economics* 73: 377-395

Greenaway, D., Kneller, R., (2007) Industry Differences in the Effect of Export Market Entry: Learning by Exporting? *Review of World Economics*. 143(3): 416-432

Greenaway, D., Yu, Z. (2004) Firm Level Interaction between Exporting and Productivity: Industry Specific Evidence. GEP Research Paper 2004/1. University of Nottingham Research Paper Series Globalisation, Productivity and Technology

Griffith, R., Redding, S., Simpson, H. (2004) Foreign Ownership and Productivity: New Evidence from the Service Sector and R&D Lab. CEP Discussion Paper No. 649.

Harris, R, (2011) Distribution of UK Exports in 2000 and 2006. Unpublished Mimeo

Harris, R., (2009). The Effect of Foreign Mergers and Acquisitions on UK Productivity and Employment. Report submitted to UKTI October 2009.

Harris, R. (2008). An Empirical Study of the Respective Contributions of Exporting and Foreign Direct Investment to UK R&D. Report submitted to UKTI November 2008

Harris, R., Moffat, J, (2011) R&D, Innovation and Exporting available http://www.gilmorehillg12.co.uk/media/media_187428_en.pdf

Harris, R., Li, C. (2010) Relationship between Innovation Exporting and the Use of E-Commerce. Report submitted to UKTI June 2010

Harris, R., Li, Q.C. (2009) Exporting, R&D and Absorptive Capacity in UK Establishments. Oxford Economic Papers 61(1):74-103

Harris, R., Li, Q.C. (2007) Firm Level Empirical Study of the Contribution of Exporting to UK Productivity Growth. Report submitted to UKTI March 2007

Harris, R., Li, Q.C. (2006a) Establishment Level Empirical Study of the Links between Exporting, Innovation and Productivity – CIS4. Report submitted to UKTI September 2006

Harris, R., Li, Q.C. (2006b), Review of the Literature: Causal links between innovation and international trade and investment. Report submitted to UKTI April 2006

Harris, R., Li, Q.C. (2005) Review of the Literature: The Role of International Trade and Investment in Business Growth and Development. Report Submitted to UKTI September 2005.

Harris, R., Robinson, C. (2001), Research Project on DTI Industrial Support Policies, Contract A: An analysis of Current DTI Industry Support Patterns, mimeo (http://www.dur.ac.uk/richard.harris/DTI_A.pdf)

Harris, R., Robinson, C. (2004) Productivity impacts and Spillovers from Foreign Ownership in the United Kingdom. National Institute Economic Review No.187: 58-75

Harris, R., Hassaszadeh, P. (2002) The Impact of Ownership Changes and Age Effects of Plant Exits in UK Manufacturing, 1974-1995. Economics Letters 75 (2002) 309-317.

Harris, R.I.D and Robinson, C. (2001) Research Project on DTI Industrial Support Policies. Contract : An Analysis of Current DTI Industry Support Patterns.

Helpman, E., Itskhoki, O., Redding, S. (2010) Trade and Labour Market Outcomes Frisch Memorial Lecture at the World Congress of the Econometric Society 2010, Shanghai

Helpman, E., Melitz, M.J., Yeaple, S. (2003) Export versus FDI. Harvard Institute of Economic Research Discussion Paper Number 1998.

Higon, D.A., Driffield, N. (2010) Exporting and Innovation Performance: Analysis of the Annual Small Business Survey in the UK. *International Small Business Journal* 29(1) 4-24

Higon, D.A., Vasilakos, N. (2010) FDI Spillovers: Evidence from the British Retail Sector. Discussion Paper 10-23, Department of Economics, University of Birmingham

Hijzen, A., Martins, P.S., Schank, T., Upward, R. (2010) Do Foreign-Owned Firms Provide Better Working Conditions than their Domestic Counterparts? A Comparative Analysis. IZA Discussion Paper No. 5259. IZA Bonn, Germany.

HM Treasury, Cabinet Office, National Audit Office, Audit Commission, Office of National Statistics (2001), *Choosing the Right Fabric: A Framework for Performance Information*

Hummels and Klenow (2005) The Variety and Quality of a Nations Exports *American Economic Review*, 95(3): 704–723

IFF Research (2010) BIS SME Business Barometer February 2010. URN: 10/P75b

IFF Research (2009) BERR SME Business Barometer December 2008. URN: 09/P75a

Institute of Directors(IoD)/UKTI (2010) Doing Business Overseas survey, August 2010

Klein, M., Moser, C., Urban, D.M. (2010) The Skill Structure of the Export Wage Premium: Evidence from German Manufacturing

Kneller, R., Upward, R., Wright, P., (2010) A study of the Impact of Exporting on Services Traders. Report submitted to UKTI July 2010.

Kneller and Pisu (2007a) Industrial Linkages and Export Spillovers from FDI. *World Economy* 30 (1): 105-134

Kneller, R., Pisu, M. (2007b) Barriers to Exporting: What are they and Who do they Matter to? GEP Research Paper 2007/12. University of Nottingham Research Paper Series Globalisation, Productivity and Technology

Kraay, A. (1999) Exports and Economic Performance: Evidence from a Panel of Chinese Enterprises. Mimeo World Bank. Washington D.C.

Leonidou.L. (2004). An Analysis of the Barriers Hindering Small Business Export Development. *Journal of Small Business management* 42(3):279-302

Lipsey, R.G., Carlaw, K. (1998) A Structuralist Assessment of Technology Policies – Taking Schumpeter Seriously on Policy. Industry Canada Research Publications Program, Working Paper Number 25. October 1998

Love, J., Ganotakis, P. (2010) Learning by Exporting: Lessons from High Technology Firms. Paper presented at the Druid Summer Conference 2010 on Opening UP innovation: strategy, organisation and technology Imperial College London June 16-18, 2010

Martins, P.S., Opromolla, L.D. (2009) Exports, Imports and Wages: Evidence from Matched Firm-Worker-Product Panels. IZA Discussion Paper No 4646

Mayer, T., Melitz, M. J., Ottaviano, G.I.P. (2010) Market Size, Competition and the Product Mix of Exporters. National Bank of Belgium Working Paper No. 202

Munch and Skaksen, 2006 Human Capital and Wages in Exporting Firms. Copenhagen Business School Department of Economics Working paper 9-2006

Navaretti, G.B., Bugamelli, M., Schivardi, F., Altomonte, C., Horgos, D., Maggioni, D. (2010) The Global Operations of European Firms. Second EFIGE Policy Report.

NIESR (2010) *Analysis of the International Business Strategies, Barriers, and Awareness Monitoring Survey. Final Report to UKTI March 2010*

Nitsch, V. (2007) Die another Day: Duration in German Import Trade. CESifo Working Paper No. 2085

Oberhofer, H., Pfaffermayr, M. (2008) FDI versus Exports Substitutes or Complements? A Three Nations Model and Empirical Evidence. FIW Working Paper No 012

OECD (2008) OECD Benchmark Definition of Foreign Direct Investment. Fourth Edition

OECD (2011) OECD Statistics Brief, February 2011 – No 16

OMB Research (Forthcoming) Evaluation of the Commercial Services Provided by UKTI's Overseas Network.

OMB Research (2010a) 2010 UKTI International Business Strategies, Barriers and Awareness Survey. Report submitted to UKTI June 2010

OMB Research (2010b) UKTI Performance and Impact Monitoring Survey PIMS 16-19 Report August 2010.

OMB Research (2010c) UKTI 2010 Non-User Survey (PIMS) Report September 2010

OMB Research (2010d) UKTI Performance and Impact Monitoring Surveys (PIMS) PIMS 12-15 Follow-Up Report. August 2010

OMB Research (2010e) UKTI Performance and Impact Monitoring Survey (PIMS) Inward Investment. Final Results March 2010

OMB Research (2010f) Performance and Impact Monitoring Survey (PIMS) waves 14-17

OMB Research (2010g) An Investigation of Firms Reporting High Levels of Financial Growth as a Result of UKTI Support. UKTI- PIMS Qualitative Research Report. September 2010

OMB Research (2009a) UKTI Performance and Impact Monitoring Surveys (PIMS) PIMS 8-11 Follow-Up Report. September 2009

OMB Research (2009b) UKTI 2009 Non-User Survey (PIMS) Report September 2009

OMB Research (2009c) Performance and Impact Monitoring Surveys (PIMS) PIMS 8-11 Follow-Up Report. September 2009

OMB Research (2008) UKTI International Strategies, Barriers and Awareness Survey. Report submitted to UKTI October 2008

OMB Research (2007) Internationalisation, Growth and Novel Product Development in Young Innovative Businesses. Research Report submitted to UKTI October 2007

OMB Research (2006) UKTI Performance and Impact Monitoring Surveys (PIMS) PIMS 2 & 3 Main Report June 2006.

ONS (2010) Pink Book

ONS (2008) Pink Book

Pinho, J.C., Martins, L. (2010) Exporting Barriers: Insights from Portuguese small and medium sized exporters and non-exporters. *Journal of International Entrepreneurship* 2010 (8) 254-272

Pisu, M. (2008) Job Creation, Job destruction and firms' international trade involvement. National Bank of Belgium Working Paper No 130.

Rauch, J. E. (1999). Networks Versus Markets in International Trade. *Journal of International Economics*, 48: 7-35

Reading Business Group (RBG) (2005), Design and Analysis of a Survey of UK Trade & Investment's Trade Development and Inward Investment Activities, Final Report.

Reading Business Group (2008): Evaluation of the Trade Development Strategies of UKTI Sectors Group: Stage 2 Final Report to Uk Trade and Investment.

- Riley, R. (2007) The Jobs Content of UK Trade 1995-2004 BERR Employment Relations Occasional Paper. <http://www.berr.gov.uk/files/file42863.pdf>
- Rogers, M., Helmers, C. (2010) Intellectual Property, Exporting and UKTI Support for Export Capability Building. Report submitted to UKTI May 2010.
- Rogers, M., Helmers, C. (2008) Intellectual Property and UKTI Passport Firms. Report Submitted to UKTI March 2008
- Roper, S., Love, J. H., Higon, D., A. (2005) The Determinants of Export Performance: Evidence for Manufacturing Plants in Ireland and Northern Ireland; Economics and Strategy Group, Aston Business School; November 2005
- Rose, A. (2005) The Foreign Service and Foreign Trade: Embassies as Export Promotion, NBER Working Paper 11111
- RSM (2010) UK Reputation in Overseas Markets. Final Report Submitted to UKTI June 2010
- Salomon, R., Jin, B. (2006) Convergence or Capabilities? Explaining Firm Heterogeneity in Learning by Exporting. Working Paper. Available at URL: <http://www.robertsalomon.com/research/Convergence%20or%20Capabilities.pdf>
- Schank, T., Schnabel, C., Wagner, J. (2007) Do Exporters Really Pay Higher Wages? First Evidence from German Linked Employer-Employee Data. Journal of International Economics 72 (2007): 52-74
- Schank, T., Schnabel, C., Wagner, J. (2010). Higher Wages in Exporting Firms: Self-selection, Export Effect, or both? First Evidence from Linked Employer-employee Data. Review of World Economics 146: 303-322
- Schiffbauer, M., Siedschlag, I., Ruane, F. (2009) Do Foreign Mergers and Acquisitions Boost Firm Productivity? ESRI Working Paper No.305.
- Siedschlag, I., Smith, D., Turcu, C., Zhang, X. (2009) What Determines the Attractiveness of the European Union to the Location of R&D Multinational Firms? DYNREG Working Paper 46/2009
- Smarzynska, B., (2002) Does Foreign Direct Investment Increase the Productivity of Domestic Firms? In Search of Spillovers through Backward Linkages. World Bank Policy Research Working Paper 2923, October 2002.
- Sutherland, D. (2010) An Investigation of OFDI Strategies in China's Private Businesses 'Round Tripping' or 'Onward Journeying'?. University of Nottingham China Policy Institute Discussion Paper 65
- SQW,(2010) Evaluation of UKTI Sector Marketing Strategies. Final Report to UKTI
- SQW (2009) UKTI Inward Investment Evaluation Case Studies. Final Report to UK Trade and Investment March 2009.

Wagner, J. (2007) Exports and Productivity: A Survey of the Evidence from Firm Level Data. *The World Economy* (2007): 60-82

Zucchella, A. (2009) Barriers to Internationalisation of SMEs: An Analysis from the Perspective of Support Service Providers. Paper presented at the annual AIB-UK and Ireland Chapter Conference. Glasgow. April 2009.

APPENDIX 1

Table A1: Barriers to Internationalisation by Innovation and IP

	Total	Innovative			IP Active	
		Yes (alternative)	Yes	No	Yes	No
Base: All exporters	858	378	648	210	210	625
Types of Barriers						
Legal & regulatory	41%	45%	43%	34%	50%	38%
Customs	27%	26%	27%	26%	30%	26%
Contacts	27%	32%	30%	17%	35%	25%
Information	16%	19%	17%	13%	16%	17%
Resource	20%	24%	22%	15%	22%	20%
Language & cultural	19%	20%	20%	18%	21%	20%
Bias	17%	19%	18%	16%	19%	17%
Number of Barriers						
At least one barrier	66%	72%	70%	55%	75%	64%
- One	17%	15%	16%	20%	13%	18%
- Two	15%	18%	17%	11%	17%	15%
- Three	12%	13%	13%	8%	17%	10%
- Four or more	22%	26%	24%	16%	27%	21%
No significant barriers	34%	28%	30%	45%	25%	36%

Source: OMB (2010a)

Table A2: Summary Barriers – By Innovation & Growth

	Growth Objectives			Innovation & Growth		
				Innovative		Non innovative
	Stay same	Mod. growth	Sub. growth	Expect sub. growth	Other	
Base: All exporters	108	482	234	192	456	210
Types of Barriers						
Legal & regulatory	35%	40%	47%	48%	41%	34%
Customs	23%	26%	28%	28%	26%	26%
Contacts	17%	27%	33%	34%	29%	17%
Information	13%	15%	21%	22%	15%	13%
Resource	14%	19%	26%	28%	19%	15%
Language & cultural	19%	19%	21%	23%	19%	18%
Bias	13%	19%	19%	19%	17%	16%
Number of Barriers						
At least one barrier	58%	66%	72%	75%	68%	55%
- One	20%	17%	15%	14%	17%	20%
- Two	11%	15%	19%	21%	15%	11%
- Three	7%	13%	9%	10%	14%	8%
- Four or more	19%	20%	29%	31%	21%	16%
No significant barriers	42%	34%	28%	25%	32%	45%

BIS Economics Papers

BIS places analysis at the heart of policy-making. As part of this process the Department has decided to make its analysis and evidence base more publicly available through the publication of a series of BIS Economics Papers that set out the thinking underpinning policy development. The BIS Economics series is a continuation of the series of Economics papers, produced by the former Department for Business, Enterprise and Regulatory Reform (BERR) which analysed issues central to business and industry.

The main series is complemented by a series of shorter Occasional papers including literature reviews, appraisal and evaluation guidance, technical papers, economic essays and think pieces. These are listed below:

Main BIS Series

12. **Productivity and the economic cycle**, March 2011
11. **The economic consequences for the UK and the EU of completing the Single Market**, February 2011
- 10B **Manufacturing in the UK: Supplementary analysis**, December 2010
- 10A. **Manufacturing in the UK: An economic analysis of the sector**, December 2010
9. **Economic Growth**, November 2010
8. **UK trade performance: Patterns in UK and global trade growth**, November 2010
7. **Understanding local growth**, October 2010
6. **Learning from some of Britains sucessful sectors: An historical analysis of the role of government**, March 2010
5. **Learning from Britain's successful sectors**, March 2010
4. **Supporting analysis for "Skills for Growth: The national skills strategy"**, March 2010
3. **The space economy in the UK: An economic analysis of the sector and the role of policy**, February 2010
2. **Life Sciences in the UK - Economic analysis and evidence for 'life sciences 2010: Delivering the Blueprint'**, January 2010

1. **Towards a low carbon economy – economic analysis and evidence for a low carbon industrial strategy**, July 2009

Main BERR Series

6. **The globalization of value chains and industrial transformation in the UK**, February 2009
5. **China and India: Opportunities and Challenges for UK Business**, February 2009

BIS Occasional Papers

2. **The economic rationale for a national design policy**, August 2010
1. **Research to improve the assessment of additionality**, October 2009

BERR Occasional Papers

3. **Impact of Regulation on Productivity**, September 2008
2. **Evaluation of Regional Selective Assistance (RSA) and its successor, Selective Finance for Investment in England**, March 2008
1. **Cross-Country Productivity Performance at Sector level: the UK compared with the US, France and Germany**, February 2008

Copies of these papers can be obtained from the BIS publications orderline at <http://www.bis.gov.uk/publications> or telephone **0845 015 0010**.

These papers are also available electronically on the BIS Economics website at <http://www.berr.gov.uk/Policies/economics-statistics/economics>.

Further information on economic research in BIS can be found at <http://www.bis.gov.uk/policies/economics-statistics/economics/bis-research>. This site includes links to the various specialist research areas within the Department.

Evaluation reports are available on the BIS evaluation website at <http://www.berr.gov.uk/Policies/economics-statistics/economics/evaluation>.

The views expressed within BIS Economics Papers are those of the authors and should not be treated as Government policy. We welcome feedback on the issues raised by the BIS Economics Papers, and comments should be sent to bis.economics@bis.gsi.gov.uk.

© Crown copyright 2011

You may re-use this information (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence. To view this licence, visit <http://www.nationalarchives.gov.uk/doc/open-government-licence/> or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or e-mail: psi@nationalarchives.gsi.gov.uk.

This publication is also available on our website at <http://www.bis.gov.uk>

Any enquiries regarding this publication should be sent to:

Department for Business, Innovation and Skills
1 Victoria Street
London SW1H 0ET

If you require this publication in an alternative format, email enquiries@bis.gsi.gov.uk, or call 020 7215 5000.

URN 11/805