EMU and business sectors

EMU study

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This study has been prepared by HM Treasury to inform the assessment of the five economic tests

This study has benefited from comments and analytical inputs from Department of Trade and Industry officials; and from review by Dr Martin Baily, working in a personal capacity as an academic consultant to HM Treasury. Professor Tony Venables provided advice on theory as part of work as a consultant to HM Treasury up to spring 2002. All content, conclusions, errors and omissions in this study are, however, the responsibility of HM Treasury alone.

This is one of a set of detailed studies accompanying HM Treasury's assessment of the five economic tests. The tests provide the framework for analysing the UK Government's decision on membership of Economic and Monetary Union (EMU). The studies have been undertaken and commissioned by the Treasury.

These studies and the five economic tests assessment are available on the Treasury website at:

www.hm-treasury.gov.uk

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CONTENTS

Executive Summary

Key issue: EMU and business sectors

1 A key consideration in determining whether it would be in the UK's economic interest to join Economic and Monetary Union (EMU) is the impact of membership on UK business sectors. To what extent might EMU entry help, hinder or reshape the UK's industrial performance, and how might this impact be distributed across different UK industries and over different time periods?

2 Entry into EMU would offer UK industry potential opportunities as well as challenges. The removal of the exchange rate between the UK and the euro area would reduce a barrier to doing business across a huge market. As a result, cross-border trade and investment between the UK and the euro area could rise. Over time, the level of competition in EU industry and markets might increase. Strong, competitive business sectors would prosper and find new opportunities to expand; weaker industries, however, would have to adapt to an environment of increased competition.

3 EMU entry would also have important macroeconomic implications for UK industry. The loss of an independent monetary policy and nominal exchange rate flexibility would fundamentally alter the way in which the UK economy adjusts to economic change and unexpected disturbances. Much of this adjustment would take place through changes in the industrial environment.

4 While this study takes into account these macroeconomic issues and their potentially important consequences for business sectors, its focus is on the microeconomic implications of EMU entry for UK business sectors. A standard result of economic theory is that the removal of a barrier to cross-border transactions usually enhances economic welfare. This means that the emphasis of this study is on the potential benefits of EMU. It is, however, important to recognise that these potential benefits would not be realised unless the UK had joined EMU on the basis of sustainable and durable convergence. If this were not achieved because, for example, the transition to membership required a significant change in the exchange rate or the interest rate, or because economic structures in the UK and the euro area were different, then EMU entry could lead to increased macroeconomic instability and, over the longer term, potentially lower output and employment.

5 The study addresses five key questions:

- how do UK and EU industrial structures compare?
- what is the right framework for thinking about the potential microeconomic impact of EMU over the short, medium and long term?
- what has been EMU's impact to date on cross-border sectoral trade and investment; what is the potential effect on foreign direct investment (FDI) in particular, and what does this imply for the medium term?
- is there longer-term evidence that EMU may lead to increased competition or affect specialisation and concentration, and what does this imply for the incidence of shocks?
- in the future, what can be said about the way in which EMU might affect different industries, depending on specific sectoral characteristics?

6 The baseline, or counterfactual, for this study – as for the other EMU studies and for the five tests assessment – is that, outside EMU, the UK would be a full and active member of the EU. This means that UK industry would have full access to the Single Market in goods and services and to EU capital markets, both now and in the future in an enlarged EU.

7 The analysis in this study informs the investment test and the growth, stability and jobs test – the third and fifth of the Government's five economic tests for EMU entry. It also complements the analysis in several of the EMU studies by HM Treasury which focus on the potential microeconomic impact of EMU, such as *EMU and trade, Prices and EMU* and *EMU and the cost of capital*. The potential costs of adjustment in EMU are the subject of the EMU studies *Modelling shocks and adjustment mechanisms in EMU* and *The exchange rate and macroeconomic adjustment*.

The context: UK and EU industry structures

8 When addressing these issues, it is important to understand how the UK's industrial structure compares with that of countries in the euro area:

- the UK displays **similarities** in a number of respects. Manufacturing in both the UK and the rest of the EU has declined in relative importance and services have increased. Germany remains an outlier insofar as its manufacturing sector is still relatively large. UK trade with non-EU regions has fallen markedly over time as a proportion of total trade, and integration in goods trade with the EU is now comparable with Germany and other large EU countries; but
- there remain important **differences**. Services account for a higher proportion of total trade in the UK, due in part to the more prominent UK financial services sector. Although some countries have begun to catch up in recent years, the UK has historically received larger amounts of FDI than other EU countries, especially from the US, and continued to do so in 2001.

9 These similarities and differences would play an important role in determining the impact of EMU on UK business sectors. For example, the UK's relatively large service sector and its high level of service sector trade with non-EU countries may mean the UK has a different response to an EU-wide shock.

EMU's impact in theory

10 The analysis of how the single currency might affect the supply-side conditions faced by UK business sectors is set within a dynamic framework of immediate, short to medium-term and longer-term effects:

- **immediate effects**. The immediate impacts of joining a single currency include the removal of currency conversion costs, reduced exchange rate volatility within the euro area, greater price transparency and the introduction of one-off changeover costs;
- **short to medium-term effects**. Stemming from the entry effects, these are potentially increased cross-border trade, potentially increased investment and changes to the mechanisms for economic adjustment; and
- **longer-term effects**. Over the longer term, EMU could potentially promote competition and influence trends in concentration and specialisation.

The evidence on short to medium-term effects

I1 The operation of EMU to date provides a narrow but informative evidence base on the potential short to medium-term effects of EMU on cross-border trade and investment, and in particular on FDI. Positive effects on **cross-border trade** at an aggregate level are broadly confirmed by analysis at a sectoral level. Data on **cross-border investment** seem to suggest significant changes in investment flows in recent years. There is evidence that the UK's share of inward investment from outside the EU has fallen relative to other EU members since the introduction of EMU. This must, however, be considered against a backdrop of factors such as the rapid global increase in FDI over the late 1990s, largely driven by increased merger and acquisition activity, and the sharp fall since 2000, as well as the UK's leading position within Europe in terms of inward investment. It is difficult to detect with any confidence a specific EMU effect.

The evidence on longer-term effects

I2 A look back over recent decades leads to the following conclusions about the potential longer-term impact of EMU:

- the Single Market Programme (SMP) and US experience highlight increased **competition** as a key potential long-term implication of EMU. The SMP appears to have promoted price convergence through the 1990s. There is as yet little to indicate an additional EMU effect on competition over and above other effects;
- evidence drawn from the experiences of the US and the EU over recent decades implies that EMU will promote greater **specialisation**. However, as the EU remains less specialised than the US, it should be less vulnerable to asymmetric shocks stemming from industrial structure; and
- the evidence is inconclusive on geographical **concentration**, with manufacturing exhibiting strong sectoral variations. At the level of the overall economy, however, the expansion of the more dispersed services sector exerts a dampening influence on geographical concentration.

Different impacts on different industries

I3 The nature and intensity of the effect of EMU on individual sectors and, therefore, on UK business if the UK were to join would vary with a range of different characteristics.

I4 Sectors which are highly **open** or **exchange rate sensitive** (for example, tourism) would be more affected by EMU than those which have smaller trading propensities, though the impact would vary depending on whether exposure or sensitivity was primarily to euro area or non-euro area currencies (machinery and equipment, and electrical and optical products are, for example, sensitive to both exchange rate volatility and US dollar-based competition).

I5 The impact of EMU membership would be influenced by **pricing behaviour**. EMU would be most likely to facilitate price convergence in sectors where products are differentiated, where prices are outside the range of large euro area members or where markets are not segmented by national preference or regulation. EMU would be unlikely to facilitate price convergence in sectors producing commodity goods (for example, steel), where prices are within the range of large euro area members (for example, food), which are segmented by national preference or regulation (for example, cars), or which have strong branding (for example, sports clothing).

I6 Different **market structures** imply different EMU impacts. Sectors where acquisition potential is high, or where customer arbitrage is feasible (for example, travel), would tend to be more affected. Sectors segmented by national tastes (for example, domestic electrical appliances), in which undifferentiated products are sold in a global marketplace (for example, steel) or where sunk costs are determined in part at a firm level (for example, R&D and advertising intensive sectors such as pharmaceuticals) would be less affected.

17 **Firm size** is an important characteristic. While the absolute cost savings generated by EMU would be greater for large firms, the benefits (and the increase in competition) would be relatively pronounced in sectors characterised by smaller firms (for example, the manufacturers of car components rather than finished cars). More integrated product and capital markets may, at the same time, facilitate the development of multinational enterprises.

18 In terms of **finance and ownership,** enhanced capital market competition and integration would have a clear effect on sectors in which firms make extensive use of external funding (for example, telecommunications), operate in relatively new or specialised fields (for example, biotechnology), are able to absorb FDI (for example, machinery and equipment), form strategic alliances (for example, pharmaceuticals) or have separate managerial control and ownership.

19 To the extent that the loss of an independent monetary policy implies greater **volatility of demand**, there may be a greater impact on sectors which have highly cyclical demand (e.g. consumer durables) or which find cyclicality to be particularly damaging (for example, commodity chemicals).

Conclusions

20 A fully quantified cost-benefit analysis of the potential impact of EMU entry on individual UK business sectors is not feasible, for reasons of data availability, reliability and complexity. Nevertheless, a combination of theory, evidence, history and comparison allows an informed judgement to be reached as to the potential dynamic consequences of EMU membership for the UK industrial base, and the possible implications for different industry sectors. The effect of membership of EMU would have to be gauged relative to a changing and evolving EU industrial landscape. The push to complete the Single Market in goods and services and further integration of capital markets are key elements of this change. Against this backdrop, several conclusions can be drawn:

- the potential increase in competitive pressure generated by membership of EMU could occur through both product and capital markets. While open and exchange rate sensitive industries would feel the impact of EMU most directly, all sectors and firms – however domestic their focus – would be affected by improved access to capital which facilitated expansion and restructuring;
- increased competition would be of particular benefit in many service sectors which have, to date, been less exposed to the effects of the Single Market than the goods sector. Greater competition and openness would help to raise productivity (especially important in services which affect business competitiveness such as distribution or business services) and deliver substantial benefits to consumers;
- by removing a currency barrier to trade, and potentially improving access to funding, EMU membership should be of disproportionate benefit to small and medium-sized enterprises (albeit less so to micro-enterprises); and
- at the opposite end of the size spectrum, EMU could also facilitate the development of multinational enterprises. This could help to raise aggregate productivity.

21 The potential increase in competition, trade and cross-border investment facilitated by EMU will help shape the euro area's industrial base and influence in the process the industrial structures of euro area trading partners and competitors. Irrespective of the UK's EMU decision, UK industries cannot avoid being affected by the euro, though the quantitative and qualitative effects and the adjustment costs will clearly differ. Inside or outside of EMU, its existence places an increased premium on the flexibility and resilience of UK firms, business sectors and the economy as a whole.

22 Whether or not the UK joins EMU, the Government is committed to creating the best possible environment for enterprise and investment across all UK regions, sectors and industries. This is important for the Government's long-term economic goal of closing the productivity gap which exists between the UK and its major competitors. In an EU context, the Government is committed to the economic reform strategy agreed by EU Heads of Government or State at Lisbon in March 2000. The Government's vision is of a dynamic, job-creating EU characterised by full employment, high living standards and social cohesion. Challenging reforms of labour, product and capital markets are needed to achieve this goal.[1]

23 The conclusions of this study are based on the assumption that if the UK were to join EMU, it would do so on the basis of sustainable and durable convergence. If this were not the case, UK business sectors would be faced with an environment of greater macroeconomic instability and, over the longer term, potentially lower output and employment than would otherwise be the case. These issues are considered further in the assessment of the five economic tests for EMU entry.

[1] See *Meeting the Challenge: Economic Reform in Europe* (HM Treasury, 2003) for full details.

INTRODUCTION

1.1 A key consideration in determining whether or not it would be in the UK's economic interest to join Economic and Monetary Union (EMU) is the impact of membership on UK business sectors. This study considers the extent to which EMU entry might help, hinder or reshape the UK's industrial performance, and the distribution of this impact across different industries and over different time periods.

1.2 The Treasury's 1997 assessment of the five economic tests (HM Treasury, 1997) noted that there were certain features of the UK business landscape that made it different from other EU countries, and that potentially made it susceptible to different types of shocks. The 1997 assessment also argued that EMU would potentially increase trade, investment and competition, but that these benefits would only be realised if the UK were to join EMU on the basis of sustainable and durable convergence.

1.3 EMU entry would offer UK industry possible opportunities as well as challenges. The removal of the exchange rate between the UK and the euro area potentially reduces a barrier to doing business across a huge market. As a result, cross-border trade and investment between the UK and other euro area markets could rise and, over time, the level of competition in euro area industry and markets increase. Competition drives growth, productivity and job creation, and facilitates an efficient distribution of resources between enterprises and sectors. Strong, competitive business sectors would prosper within EMU and find new opportunities to expand; weaker industries, however, would have to adapt to an environment of increased competition.

1.4 Whether or not the UK joins EMU, the Government is committed to creating the best possible environment for enterprise and investment across all UK regions, industries and sectors. This is important for the Government's long-term economic goal of closing the productivity gap which exists between the UK and its major competitors. In the EU context, the Government is commited to the economic reform strategy agreed by Heads of Government or State at Lisbon in March 2000. The Government's vision is of a dynamic, job-creating EU characterised by full employment, high living standards and social cohesion. Challenging reforms of labour, product and capital markets are needed to achieve this goal.[1]

1.5 This study employs an analytical framework which divides EMU's microeconomic impact on business sectors into immediate, short to medium-term and longer-term effects. It considers evidence on the extent to which potential short to medium-term effects have been observed since the start of EMU. It uses evidence on the impact of the Single Market Programme (SMP) in the EU, as well as comparisons with the United States (US), to consider the potential long-term effects of EMU. The study then draws on both theory and evidence to consider the potential consequences of EMU entry for UK business sectors in a forward-looking context, depending on specific sector characteristics.

[1] See *Meeting the Challenge: Economic Reform in Europe* (HM Treasury, 2003) for full details.

Links to other studies

I.6 This analysis draws on several other EMU studies by HM Treasury on the potential microeconomic impact of EMU: *Prices and EMU*, *EMU and trade* and *EMU and the cost of capital*. It also considers the macroeconomic implications of EMU for business sectors, drawing on the EMU studies *Modelling shocks and adjustment mechanisms in EMU* and *The exchange rate and macroeconomic adjustment*. However the main focus of the study is on the microeconomic impact of EMU for business.

The analytical framework

I.7 The study takes as its starting point the basic assumption of economic theory, which is also an assumption of Government policy towards EMU, that the removal of a barrier to cross-border transactions in principle enhances overall economic welfare. As noted above, the analytical framework of this study considers the microeconomic impact of EMU over three time frames: the immediate effects, short to medium-term effects and the longer-term effects.

The evidence

I.8 Recognising the potential effects of the euro is one thing, but identifying and quantifying their nature, magnitude and timing is quite another. Much of the economic literature on the sectoral impact of a single currency has a relatively short pedigree and empirical evidence in a European (and particularly EMU) context is, by definition, of an even more recent nature.

I.9 To an extent, EMU affords a controlled experiment in that not all members of the EU Single Market have joined the single currency. This is, however, complicated by EMU being just one of many factors which have shaped the development and decisions of business sectors in recent years. EMU's impact is overlaid on (and potentially obscured by) the effects of other drivers shaping the European business landscape[2] such as: supply-side changes (for example, outsourcing and consolidation); financial innovation; a changing business environment, especially in terms of regulation; and globalisation. The regulatory, social and institutional environment will itself shape the way in which any EMU specific influences are felt.

I.10 In an EU context, the business environment has also been influenced by the SMP and its associated increase in integration and competition, as well as by multilateral and bilateral initiatives to promote free trade. The SMP was agreed in principle in 1985 and was laid out formally in the Single European Act in 1986. Countries were required to remove intra-EU barriers in capital, product and labour markets by the end of 1992.

I.11 EU enlargement constitutes a further change in the business environment, in a context of globalisation which allows shocks to be transmitted and trends established increasingly quickly at a global level.

I.12 These developments provide the baseline against which this study considers the potential impact of the membership of EMU on business sectors.

[2] These drivers are discussed in more detail in the EMU study by HM Treasury *The location of financial activity and the euro*.

Effect on sectors

1.13 Adding to the difficulty of isolating EMU-specific effects is the fact that any effect will be felt by different sectors to different degrees at different times. The implementation of the SMP demonstrated the extent to which industry response times to changes in their operating environment can vary. Differences in reaction times may themselves affect the dynamics of industrial change, complicating *ex ante* analysis of any specific event; a key reason why the SMP merits particular attention in a study of this nature.

1.14 The way in which UK membership of EMU would affect any particular sector will vary with sectoral and industry characteristics. This study focuses on six characteristics of particular relevance: openness and exchange rate sensitivity, pricing behaviour, market structure, firm size, financing and ownership, and cyclicality.

1.15 Depending on their combination of characteristics, some sectors and firms would be relatively insulated from, and others more exposed to, the various effects of EMU.

What the study does and does not do

1.16 The approach taken by this study is not in itself unique. The study does, however, go further than other assessments in attempting to approach these issues in a systematic way and from an explicitly UK perspective. Its use of immediate, short to medium-term and longer-term time frames reflects the nature of the UK decision at the present time; the need to take full account of both the evidence of EMU's operation to date and the potential for dynamic change in the future. The study does not provide a detailed, disaggregated sector-by-sector analysis, but provides a rigorous analysis of the ways in which industries with different characteristics would be affected by EMU.

The structure of the study

1.17 Section 2 sets the scene for the study as a whole, with a broad overview of the industrial structures of the UK and the EU economies to address the issue of how they compare.

1.18 Section 3 forms the analytical core of the study. Drawing on economic theory, it considers how the single currency might affect the supply-side conditions faced by business sectors over the short, medium and long run. It considers the potential impact of the euro on trade and investment, the costs and benefits of adjusting to the new operating environment and the longer-term consequences for competition, specialisation and concentration.

1.19 Section 4 explores the extent to which a 'euro effect' is observable in practice. With only at most four years' data to draw on, the focus is on changes in cross-border trade and investment and includes a full analysis of the recent trends in **foreign direct investment**. The section also looks back to the experience of the SMP which represented a shift in the European competitive environment and provides useful insights for any further change generated by the single currency.

1.20 Section 5 considers longer-term issues. EMU was launched in a Europe already being reshaped by global, sectoral and secular shifts in competition, specialisation and concentration. Drawing again on the experience of the SMP, this section looks at how EMU might reinforce, redirect or offset these underlying trends.

1.21 Section 6 combines the theoretical and empirical aspects of the preceding analysis to focus on the potential consequences of EMU entry for UK sectors in a forward-looking context, depending on specific sectoral characteristics. Section 7 concludes.

2 Comparing the Industrial Structures of the UK and the EU

The UK's industrial structure is similar in many respects to that of the EU as a whole, though not necessarily to that of individual Member States. The UK's output and employment structures are, for example, similar to those of France, but different to Germany due to Germany's still large manufacturing sector. UK trade with non-EU countries has fallen markedly over time as a proportion of total trade, and integration in goods trade with the EU is now comparable to that of other large Member States.

There remain, however, important differences. More UK workers are employed in large firms than is the case in the EU as a whole, and UK firms are more accustomed to raising external funding directly from equity markets. Services account for a higher proportion of UK trade, due in part to the invisible earnings of international wholesale financial services located in London. The UK has also historically received a larger amount of FDI than other EU countries, especially from the US.

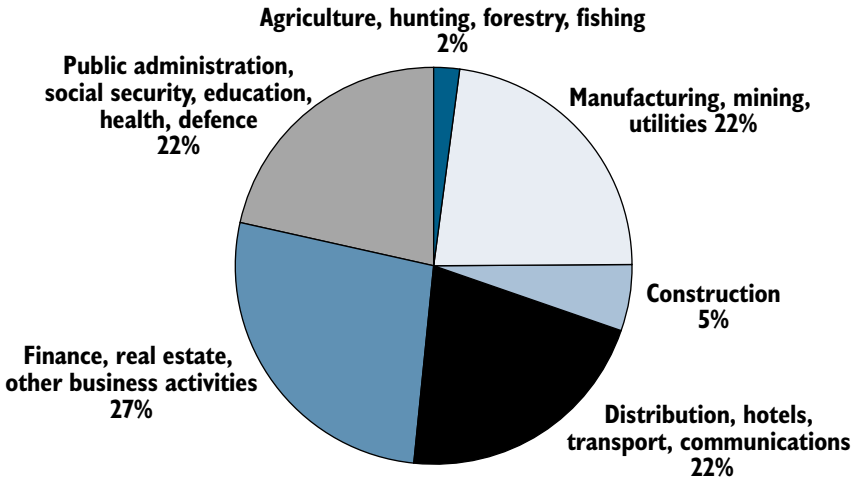
2.1 This section sets the context for the theoretical and evidence-based analysis that follows, by outlining the key characteristics of the UK and EU industrial structures. Where appropriate, it also refers to a long-standing currency union, the US, as indicative of how the EU economy might develop as the Single Market is completed and as the full effects of the single currency are felt. Comparison is made between the UK and the EU in several respects:

- the composition of output;
- the composition of employment;
- the composition and direction of trade;
- the level and pattern of investment;
- foreign direct investment (FDI);
- relative firm size and ownership; and
- productivity.

Output

2.2 The share of manufacturing in total output and employment peaked in most developed countries in the 1960s or 1970s. There has been a subsequent shift towards service sector output in recent decades. Chart 2.1 provides a snapshot of the sectoral composition of EU gross value added (GVA) in 2001. The only two sectors in the chart to report a rising share of GVA in the 1990s, were 'finance, real estate and other business activities' and 'distribution, hotels, transport and communications'. Services accounted for virtually all of the EU net job creation in the latter part of the 1990s. Table C1 in Annex C presents data on the contribution of individual sectors to gross domestic product (GDP) in the UK, France, Germany, Italy, Japan and the US.

Chart 2.1: Sector contributions to EU GVA, 2001



Source: Eurostat.

GVA and GDP

2.3 Many of the charts and tables in this section refer to industry contributions to, or shares of, GVA rather than GDP. GVA corresponds to the difference between the value of what is produced and the inputs consumed in production, and gives a more comparable measure of the composition of industrial output across different economies. GVA measures the contribution to the economy of each individual producer, industry or sector, and is used in the estimation of GDP. The link between GVA and GDP is that GVA measured at 'basic prices' plus taxes on products less subsidies on products equals GDP at market prices.

2.4 Table 2.1 summarises the main differences in the composition of output between the UK, France and Germany. Compared with the UK and France, Germany has a larger manufacturing sector and a smaller services sector (although the differences are not great). However, similarities at this level may mask differences at more disaggregated levels. For example, 'finance, real estate and other business activities' account for a smaller proportion of GVA in the UK than in France and Germany. Within this, however, the share of financial intermediation is higher than in either Germany or France.

Table 2.1: Sectoral share of GVA, 2001

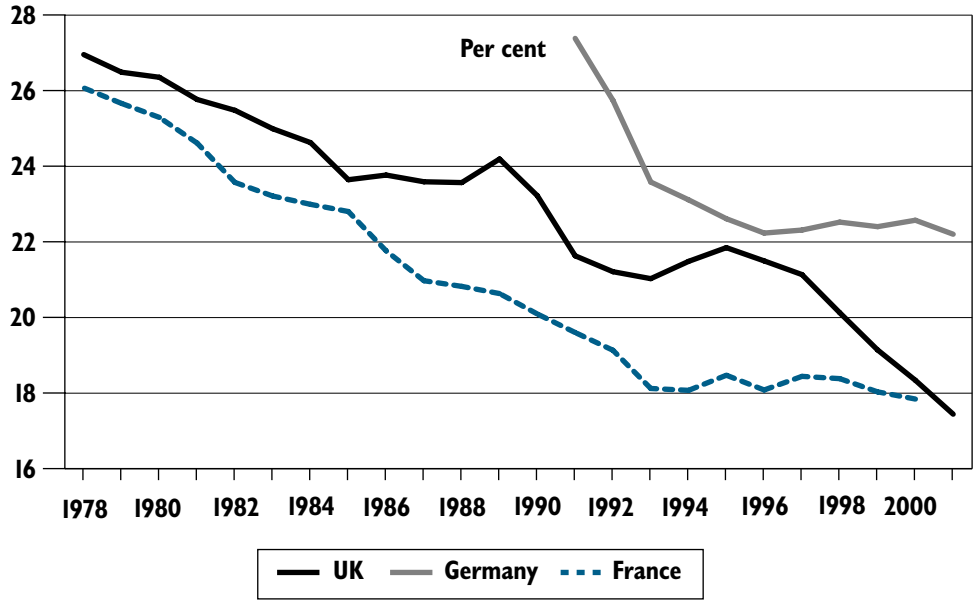
Per cent of total GVA	UK	Germany	France
Agriculture, hunting, forestry, fishing	0.9	1.2	2.8
Manufacturing, mining, utilities	21.1	24.4	20.1
Construction	5.1	4.8	4.7
Services total	72.1	69.7	72.4
Of which:			
Distribution, hotels, transport, communication	22.4	18.7	19.3
Finance, real estate, other business activities	27.8	29.7	30.1
Public administration, social security, education, health, defence	21.9	21.3	23.1

Source: Eurostat.
Note: Figures may not sum due to rounding.

Manufacturing

2.5 The magnitude, pace and timing of the fall in manufacturing output as a share of total output has varied across EU countries. UK manufacturing output, for example, accounted for around 24 per cent of UK GVA in 1987, but had fallen to less than 18 per cent by 2001. In Germany, manufacturing's share of GVA fell from 27 per cent in 1991[1] to 22 per cent in 2001 (see Chart 2.2, which excludes mining and utilities).

Chart 2.2: Manufacturing output as a share of total GVA



Note: Excludes mining and utilities. German data are only available from 1991 onwards. Data for 2001 not available for France.
Source: ONS, Eurostat and HM Treasury calculations.

2.6 The relative decline of manufacturing in the EU and the increase in the relative importance of the service sector reflects a combination of factors:

- manufacturers switching from in-house supply to outsourcing of external services, causing some functions previously classified as manufacturing (e.g. software design) to be classified as services;
- structural change in the EU economy favouring the service sector, with efficient organisation, high-technology skills and knowledge, innovation, brand creation and customised services featuring as sources of competitive advantage;
- increased intensity of global competition as a result of lower tariff barriers, reduced transport costs, improved communications and increased capital flows; and
- growing prosperity and consumers spending more of their rising incomes on services and proportionately lower amounts on less income elastic consumer goods.

[1] The earliest year of available data. All data from Eurostat.

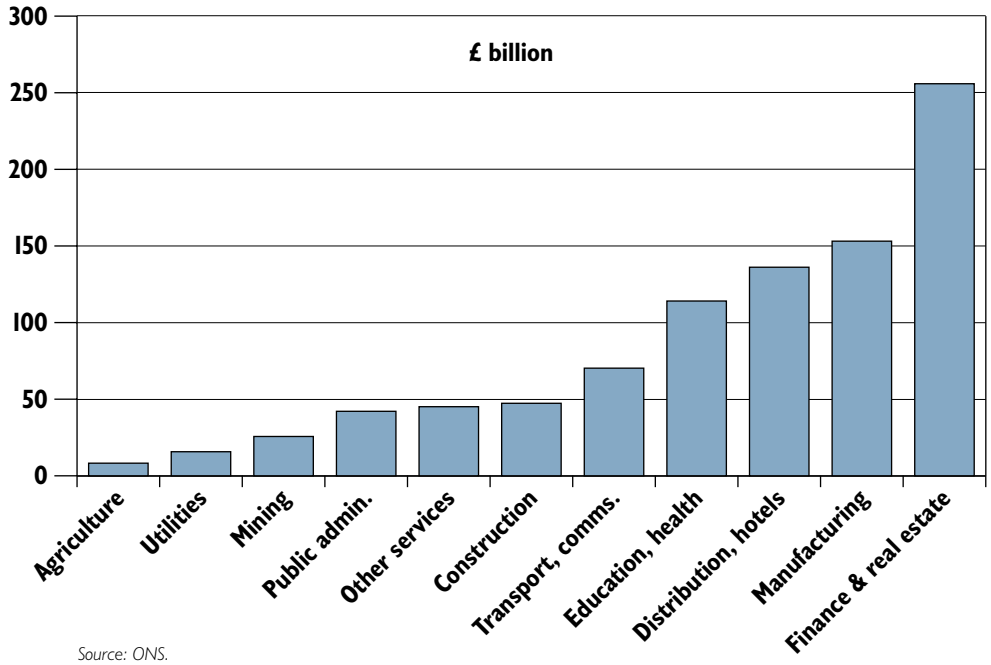
UK manufacturing

2.7 In the UK, as in the EU, manufacturing's share has fallen in terms of both total value added and employment. Manufacturing is, however, still a crucial sector, directly employing almost 4 million people and accounting for the majority of UK exports. In 2001, manufacturing was the second largest contributor to total output (£153 billion) out of eleven industrial sectors (see Chart 2.3).

Government policy towards manufacturing

2.8 The Government has a comprehensive strategy for helping manufacturers fulfil their potential in the UK,[2] and has identified seven pillars for manufacturing success. These pillars will help to build a dynamic, knowledge-intensive, high-skilled manufacturing base and comprise: maintaining macroeconomic stability, increasing investment, raising science and innovation performance, adopting best practice, raising skills and education levels, a modern infrastructure and achieving the right market framework.

Chart 2.3: UK gross value added at basic prices by industry, 2001



Source: ONS.

Three large manufacturing sectors

2.9 At a disaggregated level, manufacturing in both the UK and EU is dominated by three large industries[3] (see Table C2 in Annex C for details):

- **chemicals**, which ranks as one of the top three industries in 11 Member States and first in three;
- **machinery and equipment**, which ranks as one of the top three industries in seven Member States and first in three; and
- **food and beverages**, which ranks as one of the top three industries in nine Member States and first in six.

Services

2.10 Services accounted for 72.1 per cent of the UK's gross value added in 2001; comparable with the EU average and slightly more than in Germany (69.7 per cent), although slightly less than in France (72.4 per cent). Professor Iain Begg, in his contribution to the EMU study *Submissions on EMU from leading academics,* states that the UK has been one of the most

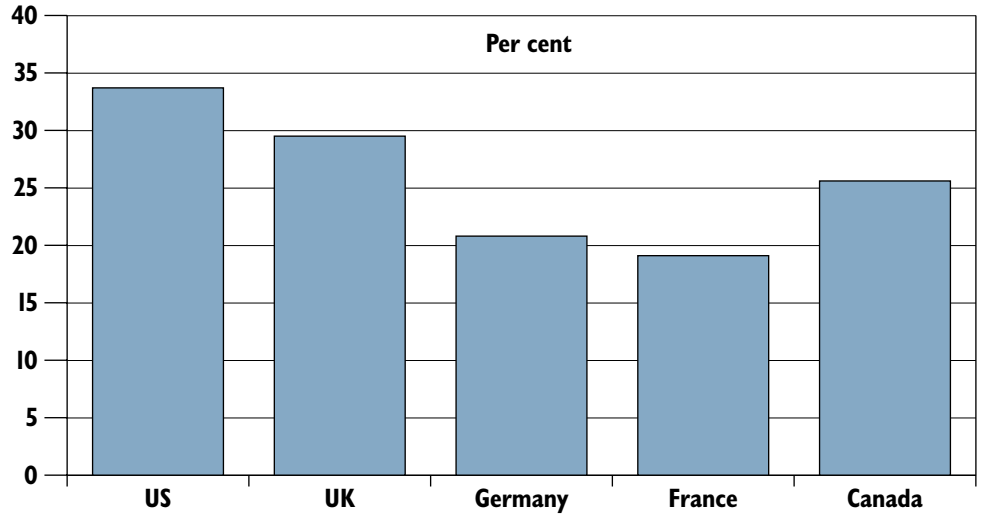
[2] As set out in the Department of Trade and Industry (DTI) publication, *The Government's Manufacturing Strategy* (DTI, 2002).

[3] Eurostat.

successful Member States in the financial and business services industries. Financial intermediation accounted for 5.3 per cent of total GVA in the UK in 2001, compared with 4.2 per cent in Germany and 4.6 per cent in France.[4]

2.11 Services in the UK have grown rapidly in recent years in comparison with other large economies (see Chart 2.4). Much of this increase can be accounted for by real estate and letting activity, which accounted for 17.4 per cent of UK GVA in 2001.

Chart 2.4: Service sector cumulative growth in output, 1991-99



Source: OECD.

A shift towards services

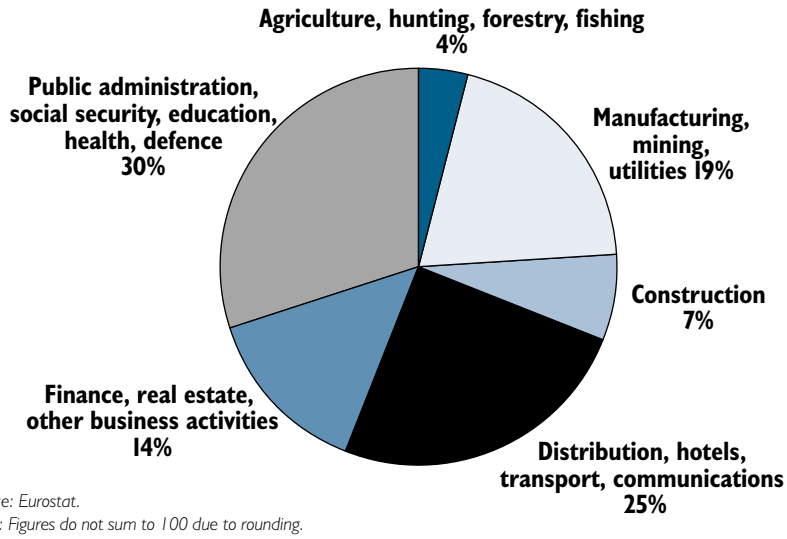
2.12 Over the longer term, demographic and social trends imply an ongoing shift to services. Ageing populations and longer life spans suggest growing consumer demand for services; so, too, do a rising proportion of dual income, single parent and single person households.

Employment

2.13 Employment in manufacturing has fallen since the 1970s. Manufacturing now accounts for less than a fifth of total employment across the EU as a whole (see Chart 2.5). The distribution of employment by sector differs from that of output in that employment shares of both 'public administration, social security, education, health and defence' and 'distribution, hotels, transport and communications' are higher, and the share of 'financial, real estate and other business activities' is correspondingly lower.

[4] Eurostat; French data refer to 1999, the latest available year.

Chart 2.5: Sector contributions to EU employment, 2000



Source: Eurostat.
Note: Figures do not sum to 100 due to rounding.

2.14 A more dissaggregated comparison by country (Table 2.2, which uses a different data source to Chart 2.5) reveals broad similarities across the three largest EU countries in terms of the composition of total employment, though distinct national differences remain:

- the share of agricultural employment in the UK is smaller than in France or Germany;
- employment in the manufacturing sector is significantly larger in Germany than in France or the UK; and
- compared with France and Germany, a relatively large share of UK employment is in the 'hotels and restaurant', 'real estate, renting, and business activity', 'transport, storage and communication, 'education', 'health and social work', 'wholesale, retail trade and vehicle repair', and 'financial intermediation' sectors.

Table 2.2: Comparative employment structure, 2001

Per cent of total employment	UK	Germany	France
Agriculture	1.3	2.5	4.0
Manufacturing	16.5	23.7	18.6
Construction	7.4	8.0	6.4
Wholesale, retail trade, vehicle repair	15.1	14.3	13.1
Hotels and restaurants	4.2	3.3	3.4
Transport, storage, communication	7.4	5.9	7.1
Financial intermediation	4.4	3.7	3.1
Real estate, renting, business activity	11.3	8.1	9.7
Public administration	6.7	8.2	9.2
Education	8.0	5.5	7.5
Health and social work	11.1	10.1	10.5
Other employment	6.3	6.6	5.4

Source: European Commission, DG Employment and Social Affairs, 2002.

2.15 The breakdown of employment between the public and private sectors may also be relevant for assessing the implications of EMU entry. It is, however, difficult to find accurate and comparable data on public sector employment across countries. Table 2.2, for example, indicates employment in public administration, defence, social security, education, health and social work, but these categories include both public sector and private sector employees. The ONS estimate that UK employment in these categories is 23 per cent of total employment (compared to 26 per cent in the European Commission estimates in Table 2.2), and that actual public sector employment in the UK is 17.5 per cent of total employment (ONS, 2002).

Trade

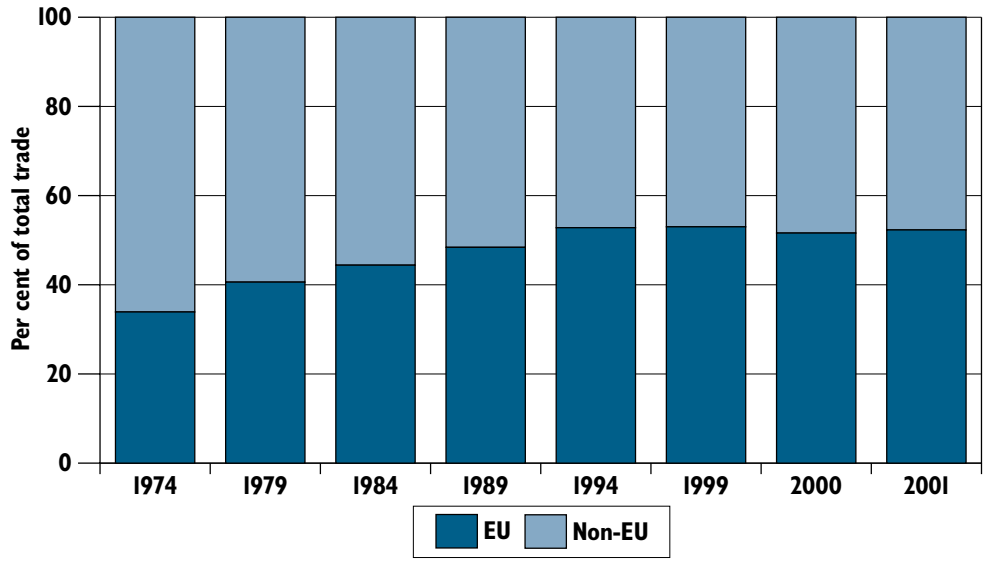
A different picture for UK trade...

2.16 The EMU study by HM Treasury *EMU and trade* looks in detail at the similarities and differences between the UK's trading patterns and those of other Member States. One of its key findings is the steady expansion in the EU's share of UK trade in goods and services from the 1960s through to the early 1990s (see Chart 2.6). Since the mid 1990s, however, that share has been steady at around 50 per cent of total UK trade.

2.17 While the EU is the UK's primary trading partner, UK and EU trading patterns differ in several important respects. The main stylised facts established by the EMU study *EMU and trade* are:

- intra-EU trade accounted for around 60 per cent of the current account credits and debits of most large EU Member States in 2001. For some smaller countries, including Portugal and Belgium, the figure exceeded 70 per cent. The EU share of UK current account transactions in 2001 was around 50 per cent;
- only 40 per cent of the UK's services credits are from the EU. This reflects in part the importance of global business and financial services to the UK, as well as the large number of tourists who visit the UK from outside the EU;
- for most EU countries between half and two thirds of income credits and debits are connected with the EU; for the UK, the figure is around 40 per cent. The UK is a major recipient of inward investment from non-EU countries, especially the US. It is also a larger outward investor in non-EU countries than are most EU Members States; and
- compared with most large Member States, the UK trades more (relative to its GDP) in services.

Chart 2.6: UK trade with the EU and the rest of the world



Source: ONS and HM Treasury calculations.

...but not necessarily differences which matter

2.18 As the EMU study *EMU and trade* also notes, however, the argument that the UK trades in a very different manner from comparable large EU countries is exaggerated. Certainly, with respect to trade in goods, the UK has greater ties to the US than do other EU countries. At the same time, however:

- there has been a great deal of convergence between the UK and other large EU countries. The relative importance to the UK of non-EU trade has fallen markedly over time and the share of goods trade with the EU is now in line with that in Germany and not far below the other large EU countries; and
- remaining divergences are concentrated on trade in services and income flows, where the EU share in UK trade in these current account components is well below the EU average. Nevertheless, given the greater importance of services trade to the UK, service exports from the UK to the EU are higher, as a proportion of GDP, than those of France, Germany or Italy.

Investment

Domestic investment

2.19 As with economic output, the composition of investment expenditure is broadly comparable across the UK, France and Germany (see Table 2.3). Two important differences are, however, that as a share of national gross fixed capital formation (GFCF), the UK has a relatively high share of investment spending in 'metal products and machinery' and a relatively low share of housing investment (see the EMU study by HM Treasury *Housing, consumption and EMU* for a discussion of the latter point).

Table 2.3: Sectoral share of gross fixed capital formation (GFCF) expenditure, 2001

Per cent of GFCF, current prices	UK	EU15	Germany	France
Agriculture	0.4	0.2	–	0.4
Metal products and machinery	37.5	30.1	30.6	26.6
Transport equipment	9.4	10.1	9.4	10.6
Construction: housing	16.7	23.7	31.5	20.8
Construction: other	26.6	25.1	22.8	23.9
Other GFCF	9.4	10.7	5.7	17.6

Source: Eurostat.

2.20 Another notable difference is that, historically, UK private sector investment levels have been consistently below those of other economies, resulting in lower capital intensity. In 1999, the US and Germany had capital stocks nearly 50 percent higher than the UK, while France's capital stock was 77 per cent higher (O'Mahony and de Boer, 2002).

The recent weakness of UK business investment

2.21 The UK has seen a substantial fall in business investment in 2002 reflecting the severity of the global economic slowdown in 2001 and 2002, which was concentrated in investment industries such as ICT, and uncertainty over the geopolitical situation.

2.22 This has had a similar impact on investment and business confidence across industrialised countries, although the global slowdown in ICT seems to have had a particularly strong effect on UK business investment. However, business investment is historically cyclical and is equally likely to grow strongly when the world economic recovery gathers more momentum. The Government is committed to raising investment levels in the UK economy and is introducing targeted reforms to remedy market failures at the microeconomic level, while maintaining a stable macroeconomic environment to help business plan and undertake long-term investment projects.

Foreign direct investment

2.23 In 2001, the UK had the second largest stock of foreign direct investment (FDI)[5] in the world, lower only than the US, and equivalent to around one third of UK GDP (compared with less than a tenth in 1970). With stocks of almost $500 billion, the UK held 19 per cent of the EU total. This compared with the second and third largest (Belgium and Luxembourg, and Germany respectively), both at 18 per cent of the total. Fourth largest was France, with 12 per cent.

Source of FDI stocks

2.24 The importance of FDI is discussed in more detail in Sections 3 and 4. Table 2.4 highlights the differences between FDI stocks in the UK and other EU countries at the end of 2000, the latest year for which disaggregated data are available. The primary difference stems from the UK's large proportion of US inward investment, and consequently higher share of non-EU FDI. Shares of FDI from Asia and Japan are, in contrast, much more similar across the UK, Germany, France and the EU as a whole.[6]

Table 2.4 Source of inward investment stock, 2000

Per cent of national total	UK	Germany	France	EU15
EU	47	74	71	67
Non-EU	53	26	29	33
of which:				
US	34	18	15	20
Asia	5	3	3	3
Japan	3	2	2	2
Total (€ billion)	**468**	**483**	**277**	**2,737**

Source: Eurostat and HM Treasury calculations.

[5] The International Monetary Fund defines FDI as an international investment aimed at establishing a lasting interest in an overseas enterprise. It implies a long-term relationship, and substantial investor influence on the way the enterprise is managed. Such an interest is statistically defined as owning 10 per cent or more of the ordinary shares or voting power on the board of directors or the equivalent for a non-incorporated enterprise.

[6] These stock shares represent cumulative investment flows that are not indicative of FDI inflows in any particular year.

2.25 The first three columns of Table 2.5 show UK, French and German FDI stocks by sector as a share of total EU FDI. The UK has a large share of total EU FDI in 'mining and quarrying', 'electricity, gas and water', 'hotels and restaurants' and 'transport, storage and communication', reflecting its long history of attracting relatively large amounts of FDI in these sectors.

2.26 The last three columns of Table 2.5 also show differences across the three largest EU members in their national stock of FDI in different sectors:

- a larger share of UK FDI stock is in 'mining and quarrying', than is the case in either France or Germany;
- a larger share of UK FDI stock than of German FDI stock is in manufacturing, but the UK share is comparable to that in France;
- a higher share of UK FDI stocks is accounted for by 'transport, storage and communications', and financial intermediation; and
- 'real estate and business activities' comprise a lower share of UK FDI stock than is the case in either France or Germany.

Table 2.5: Stock of inward FDI by sector, 2000

	Per cent of EU15 total[1]			Per cent of national total[1]		
	UK	Germany	France	UK	Germany	France
Total	17	18	10	100	100	100
Agriculture	12	12	10	–	–	–
Mining and quarrying	68	1	1	9	–	–
Manufacturing	14	6	8	24	10	24
Electricity, gas and water	48	2	6	4	–	1
Construction	14	3	2	–	–	–
Trade and repairs	21	12	10	10	6	8
Hotels and restaurants	41	5	4	2	–	–
Transport, storage and communication	44	2	2	19	1	1
Financial intermediation	22	8	10	21	7	16
Real estate, business activities	5	41	15	9	75	47

[1] *Rounded to the nearest whole number.*
– indicates less than 1 per cent.
Source: Eurostat.

Firm size and ownership

The EU

2.27 The vast majority of EU businesses are small or medium-sized enterprises (SMEs).[7] SMEs represent about two thirds of European private non-primary sector employment, split roughly equally between micro enterprises employing less than 10 employees, and small and medium-sized enterprises of between 10 and 249 employees. Employment growth through the 1990s tended, in the US, to be stronger in large-scale enterprises than in SMEs; in Europe, the reverse was the case.[8]

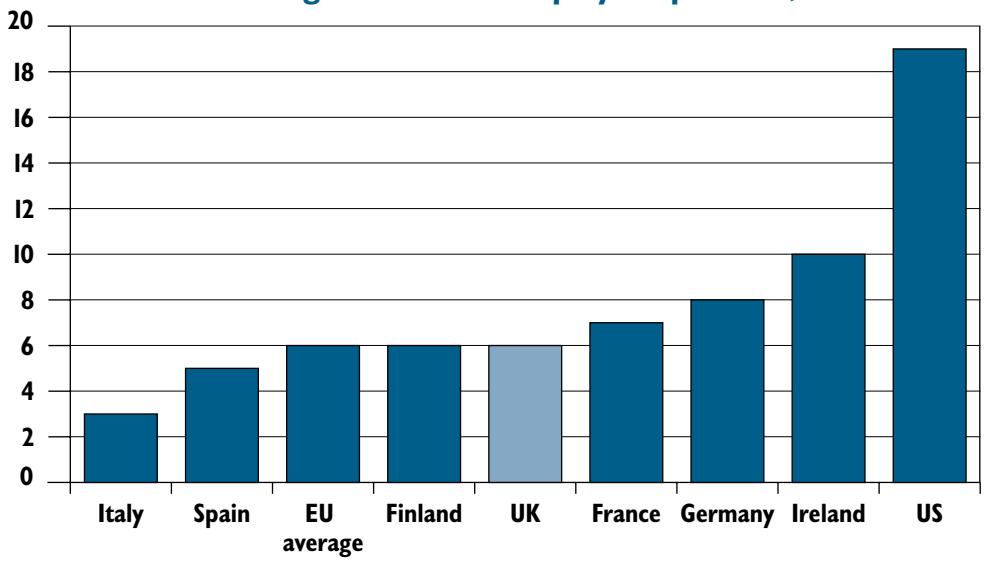
2.28 The importance of SMEs varies across Member States and sectors. They account for over 40 per cent of manufacturing value added in Italy and almost a third in Spain, but less than 10 per cent in Ireland. Across the EU as a whole their importance is particularly marked in the 'food, beverages and tobacco', in 'textiles, clothing and footwear' and 'wood, paper, publishing and printing' sectors.[9]

The UK

2.29 Around 95 per cent of UK enterprises have less than 10 employees: these micro-enterprises account for around 30 per cent of UK employment (see Table C3 in Annex C). Within manufacturing, micro-enterprises account for 88 per cent of enterprises and 15 per cent of employment. Table C4 in Annex C provides a breakdown of the share of small enterprises in sector value added in the EU.

2.30 The average number of employees per UK firm is comparable to the EU average, but lower than in France or Germany and significantly lower than in the US (Chart 2.7). A smaller proportion of employees, however, work in small firms in the UK, than is the case in the EU in general. As Chart 2.8 shows, around 55 per cent of UK employees work in SMEs, compared to figures of around 60 per cent and around 65 per cent for the EU as a whole.

Chart 2.7: Average number of employees per firm, 2000



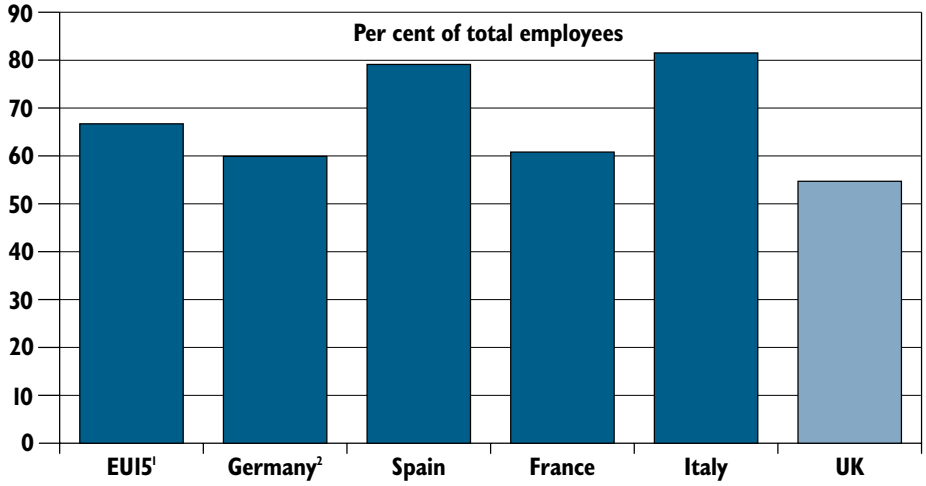
Source: European Commission, DG Enterprise, 2002a.

[7] Defined as firms with less than 250 employees.

[8] European Commission, DG Enterprise (2002a).

[9] European Commission, DG Enterprise (2002a).

Chart 2.8: Employees in firms with less than 250 employees, 2000



[1] Data for EU15 relate to 1999 and exclude mining and quarrying and utilities supply.
[2] Data for Germany relate to 1999 and exclude transport, storage and communication, and real estate, renting and business activities.
Note: Data for industry and services (excluding agriculture, financial intermediation and public administration).
Source: Eurostat.

SMEs and exports

2.31 SMEs have a lower propensity to export than large companies, with only around a fifth engaging in export activity. On average, EU SMEs export 13 per cent of their turnover, compared with 21 per cent for larger-scale enterprises.[10] However, as SMEs frequently act as suppliers to larger companies, their indirect exports may also be significant.

Ownership

2.32 UK industry typically has an equity-orientated external funding structure. This contrasts with the bank-based systems characteristic of many other Member States, where companies are likely to be more highly geared and have thinner equity bases. This contrast should not be exaggerated. Each country's system is, in reality, a mixture of both types of funding and is continually evolving. Nevertheless, different outcomes are evident. The UK's market-driven model facilitates restructuring via shareholder exit and a change of ownership to a greater extent than one which gives greater weight to 'relationship' funding via banks (see the EMU study by HM Treasury *EMU and the cost of capital* for a fuller discussion). Takeovers, and especially hostile takeovers, are a much more common means of corporate restructuring in the UK than elsewhere in the EU; a reflection in part of the size and regulatory structure of the London capital market, and the role of institutional investors.

Productivity

Productivity per worker

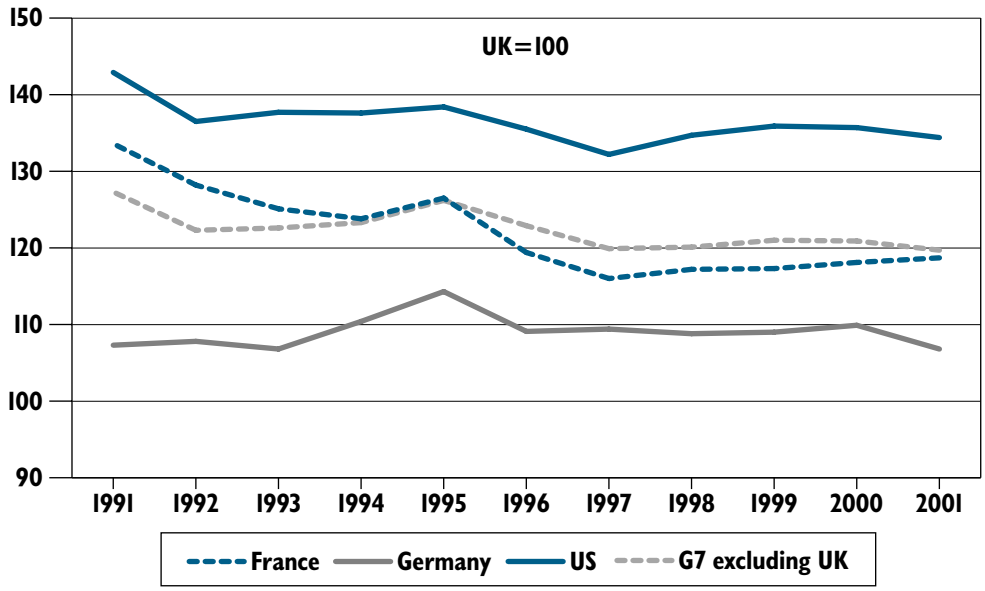
2.33 The Government's long-term economic objective is that the UK should achieve a higher rate of productivity growth than its main competitors, closing the productivity gap. This is vital to delivering rising living standards and achieving the objectives of tackling poverty and improving public services. Gauging a country's productivity performance over time is, however, difficult; and comparing productivity across different countries is even more problematic. Different methodologies can produce very different results. The Government's usual measure is produced the Office for National Statistics (ONS). However, official statistics available from the ONS only allow comparisons between countries at the whole economy level.

[10] European Commission, DG Enterprise (2002a).

Productivity per worker

2.34 Chart 2.9 shows GDP per worker over the past decade in France, Germany and, the US and for the G7 average (excluding the UK), relative to the UK. The substantial productivity gap between the UK and other G7 nations is striking, especially with respect to the US. The productivity gap has narrowed slightly over time, but remains substantial.

Chart 2.9: International comparisons of whole economy productivity



Note: Productivity defined as GDP per worker. Figures do not include changes in UK employment statistics reflecting the recent Census results.
Source: ONS.

Productivity per hour

2.35 Output per hour is arguably a better measure of productivity than output per worker, because the former adjusts for the extent to which a difference in performance reflects the number of hours worked by employees. Even on this measure, ONS data[11] show that the UK still had a large productivity gap in 2001 with the US, Germany and France.

2.36 Data difficulties notwithstanding, various academic studies have attempted to compare sectoral productivity across countries. Sector productivity data for the US, France and Germany, relative to the UK, produced by O'Mahony and de Boer (2002), are reproduced in Table 2.6. The UK has a marked productivity lead in mining (reflecting mainly the performance of its large oil and gas extraction sectors). The UK also leads individual countries in some sectors; the US and France in personal services, for example, or Germany in 'electricity, gas and water' and 'transport and communications'. Equally, however, the UK lags behind all three countries in a much larger number of sectors.

[11] Classified as experimental by the ONS.

Table 2.6: Relative output per hour worked by sector, 1999

UK=100	US	Germany	France
Agriculture, forestry and fishing	189	51	104
Mining	78	20	43
Electricity, gas and water	157	65	114
Manufacturing	155	129	132
Construction	114	101	108
Transport and communication	113	88	101
Distributive trades	161	112	150
Financial and business services	153	161	126
Personal services	97	147	93
Non-market services	84	87	107

Source: O'Mahoney and de Boer, 2002.

Conclusion

2.37 While the UK is similar to the EU in a number of respects, it differs markedly in others. Box 2.1 highlights the key similarities and differences. However, the importance of these cannot properly be assessed within a static framework. The following sections of this study draw on these similarities and differences, and apply them in a dynamic and more forward-looking context to aid the analysis of the potential impact of EMU on UK business sectors over time.

Box 2.1: Key similarities and differences between the UK and rest of the EU

	Key UK and EU similarities	Key UK and EU differences
Output	Declining relative importance of manufacturing; increasing relative importance of services.	UK growth of service sector output has been more rapid, especially in finance and other business services.
Employment	UK employment structure is broadly comparable with that of other large member states such as France.	Relatively high UK employment share in service sectors; a relatively low share in manufacturing (especially compared with Germany) and agriculture.
Trade	UK trade in goods is dominated by intra-EU trade.	A larger proportion of UK services and income flows represent extra-EU trade.
Investment	Composition of UK investment is broadly similar to the EU.	Relatively high proportion of investment spending on metal products and machinery, and less on housing. Relatively low total investment as a per cent of GDP.
FDI	Share of UK FDI stock from Asia and Japan is similar to EU average.	The sectoral composition of the UK FDI stock differs in many respects from France and Germany. A higher proportion of UK FDI stock is sourced from outside the EU.
Firm size and ownership	Average number of employees per firm is similar to the EU average. The majority of enterprises are SMEs.	A larger proportion of UK employees work for large firms than is the case in the EU as a whole. External financing is market based rather than bank based. Takeover is a much more common means of industrial restructuring.
Productivity	UK productivity gap with other G7 nations has narrowed slightly over time.	UK still has a substantial productivity gap with other G7 nations, and in a number of sectors.

3 The Theoretical Framework

The theoretical framework used in this study to examine the potential impact of EMU on business sectors distinguishes between the immediate effects, the short to medium-term effects and the longer-term effects.

The immediate effects of joining a single currency include the removal of conversion costs, reduced exchange rate volatility within the euro area, greater price transparency and one-off changeover costs.

These in turn spur the short to medium-term effects of potentially increased cross-border trade, increased investment and changes to the mechanisms for economic adjustment. There is a broad consensus in the economic literature that currency unions boost trade. The theoretical literature on the impact on investment is less clear-cut.

In the longer term, EMU potentially facilitates a more competitive environment and may impact on the existing trends of specialisation and concentration within the euro area.

The theoretical discussion highlights six key sector characteristics which would be expected to be important in determining the impact of EMU on business sectors: openness and exchange rate sensitivity, pricing behaviour, market structures, firm size, finance and ownership, and cyclical exposure.

3.1 This section sets out a theoretical framework for considering the potential impact of EMU on business sectors. A key component of this framework is the division between immediate effects of entry, the short to medium-term effects and the long-term effects.

3.2 Much of the existing research in this area has focused on the entry effects, which include the removal of exchange rate transaction costs, reduced exchange rate volatility and increased price transparency within a single currency area. These will create immediate one-off gains for business and consumers. However, the more significant effects may occur over longer time periods, as firms react to the entry effects by changing business strategies and, perhaps, increasing trade or investment. Over the long run, these changes may lead to greater integration of EU labour, product and capital markets, and increased competition. Such dynamic change offers potentially significant benefits in terms of increased productivity, lower prices and greater consumer choice.

3.3 Three EMU studies by HM Treasury are particularly relevant to the analysis in this section: *EMU and trade, Prices and EMU* and *EMU and the cost of capital*. These studies consider the potential impact of EMU on the key microeconomic issues of trade, competition and investment at the aggregate level. This study brings this analysis together into an all-encompassing framework for considering the microeconomic impact of EMU on the business environment. It also extends the analysis in these aggregate-level microeconomic studies to focus on the sectoral level. Several EMU studies by HM Treasury consider the impact of EMU on the mechanisms through which an economy adjusts to shocks, for example *Modelling shocks and adjustment mechanisms in EMU* and *The exchange rate and macroeconomic adjustment*. While the focus of this study is on the microeconomic implications of EMU, these macroeconomic issues are also relevant.

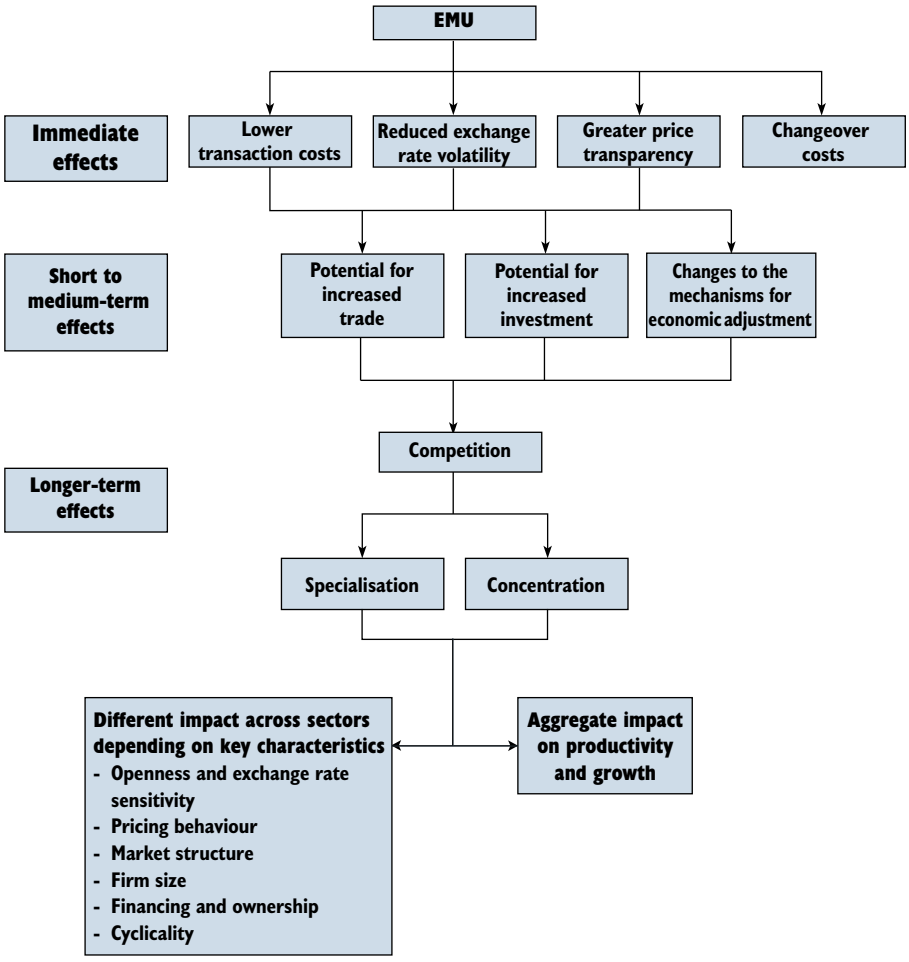
Outline of the theoretical framework

3.4 Chart 3.1 summarises the immediate, short to medium-term, and long-term framework used throughout the study:

- the **immediate effects** of EMU entry on business are: the removal of exchange rate transaction costs within the euro area; the removal of intra-euro area exchange rate volatility; an increase in the transparency of prices across the euro area; and changeover costs in converting to the new currency. The first three of these immediate effects are analogous to the removal of barriers to cross-border transactions in the euro area;
- over the **short to medium-term**, theory would suggest that the removal of such barriers would promote trade and investment. The removal of an independent nominal exchange rate and monetary policy will also affect the way in which business adjusts to economic change and disturbances; and
- over the **longer-term**, an increase in cross-border trade and investment will lead to greater integration of the euro area market. This should promote increased product and capital market competition, induce price convergence and increase consumer choice driving productivity gains. As firms respond to the new operating environment, the industrial landscape will also change with respect to, for example, specialisation and concentration.

3.5 These different time frames are considered in more detail in the sections which follow. Box 3.1 provides an overview of the microeconomic theory of EMU.

Chart 3.1: Impact of EMU on business sectors



Box 3.1: The microeconomic theory of EMU

To what extent would EMU membership benefit or hinder the performance of UK industry? Economic theory suggests two possible approaches to addressing this question:

- **the theory of optimal currency areas; a currency union is more likely to be income-improving if the industry and trade structures of its members are similar. The less mobile labour and capital are, the more important differences in structure become; and**
- **the theory of regional economic integration which treats a single currency as a further integrating step.**

Economic efficiency requires that the prices of goods and services accurately reflect both the value which consumers place on their consumption and the marginal cost of their production. Such a scenario is less likely when barriers at or inside national borders pose obstacles to search and exchange, create a wedge between domestic and import prices, and prevent fair and open competition.

Traditional analysis of cross-border trade views national currencies as an example of a non-tariff barrier. Reducing or removing any such barrier erodes the difference between domestic and import prices, exposes less efficient domestic producers to competition, and promotes integration of the economies concerned as trade expands.

This increase in trade is a function of the gains from specialisation and exchange based on comparative advantage. At a global level, and among the smaller EU economies, increased inter-industry trade suggests that this is, in fact, what has happened as trade barriers have been reduced. For the largest EU economies (Germany, UK, France and Italy), however, trade is almost entirely within rather than between industries; a problem for traditional trade theory to explain. Other features of the real world have also prompted revisions to thinking. Economies of scale challenged the assumption of constant returns, while the idea of perfect competition contrasted with the evidently imperfect competition prevailing in most markets.

Incorporating scale economies and imperfect competition into new trade theory results in greater consideration being given to the dynamic consequences of market size and to the rationale for investment in locations or sectors which might not coincide with what comparative advantage would suggest. It does not, however, affect the central role given to competition or the conclusion that a reduction in intra-EU trade barriers is beneficial for competitiveness and hence for economic performance.

THE IMMEDIATE IMPACT OF EMU ENTRY

Removal of transaction costs

3.6 UK entry to EMU would remove exchange rate transaction costs on intra-EMU trade and investment. UK firms would no longer pay either the direct financial costs of exchanging currency or the in-house accounting costs of dealing with different currencies in the euro area. In 1990, the European Commission's *One Market, One Money*[1] study put the potential savings from removing transaction costs for the then European Community at between 0.1 per cent and 0.9 per cent of GDP. The range of savings varied quite widely across countries, with much smaller gains for large countries with widely traded currencies. Increased competition can be assumed to have pushed total costs down towards the lower end of this range by the time of EMU's launch.

[1] European Commission, DG Economic and Financial Affairs, 1990.

3.7 Overall, the removal of transaction costs is not likely to represent a large saving for UK firms, though in proportionate terms it would be greater for small firms. The EMU study by HM Treasury *EMU and trade* outlines three reasons why small firms are likely to benefit to a greater extent than large firms from the removal of transaction costs:

- they may lack the relevant knowledge and expertise, and may not go to the best service provider;
- the size of deals they require may mean they have less negotiating leverage; and
- in forward transactions, they may be perceived as a worse credit risk than larger firms.

Removal of exchange rate volatility

3.8 The removal of exchange rate volatility between the UK and the euro area may represent a more important saving for both large and small firms than the removal of transaction costs. At a macroeconomic level, variable exchange rates can be an important economic adjustment mechanism. Equally, however, exogenous movements in the exchange rate may act as a source of instability and an additional cost in cross-border transactions. The argument as to whether a flexible exchange rate constitutes primarily a useful adjustment mechanism or a source of instability is considered in detail in the EMU study by HM Treasury *The exchange rate and macroeconomic adjustment*.

3.9 The argument that exchange rate volatility is a cost to cross-border transactions rests on the assumption that most short-term movements in the exchange rate are unexpected. Although industry has access to forward exchange markets which allow hedging against currency risk, these generally only cover the risk attached to short-term assets and liabilities, and even here may be too expensive or inaccessible for some firms (Friberg and Vredin, 1996). Persistent deviations of the exchange rate away from trend may also constrain cross-border transactions. Long-term hedging is more complicated than short-term hedging, requiring continual revision as expectations and conditions change, and is frequently problematic for industries with long lead times or high levels of inventories.

3.10 Evidence suggests that large companies, especially in which production and revenues are spread across a number of countries, may view hedging as a reasonably expensive inconvenience rather than a major headache. Daimler Chrysler, for example, has put its annual post-EMU savings on currency hedging at €50 million; a substantial sum, though less so in the context of revenues of €150 billion (Financial Times, 2002a). For small companies, the costs in terms of money and time of undertaking hedging may be much greater and the fixed cost charged by banks for currency conversion on small transactions greater as a proportion of overall sales. Research by the Confederation of Finnish Industry and Employers (1998) found, for example, that currency hedging and conversion costs as a proportion of the overall value of the transaction, were higher for SMEs than for larger companies. It estimated the costs at around 1-2 per cent of the turnover of small firms.

3.11 While hedging and conversion costs are often regarded as relatively small, they may be underestimated because surveys and analysis take into account only instances where firms found it worthwhile to engage in an international transaction. Many small firms may simply have found the exchange rate barrier too high to overcome and therefore stayed in the home market. The single currency might persuade some of these firms to enter overseas markets.

Price transparency

3.12 A single currency makes it easier for consumers to compare prices across countries. Consumers should then find it easier to purchase the best value good from across the single currency area. This could promote increased trade and increase competitive pressures on firms, perhaps leading to narrower price differentials across countries. As the EMU study by HM Treasury *Prices and EMU* explains, the Internet may be an important catalyst for this process as it provides a platform through which consumers are able to compare prices across countries.

Changeover costs

3.13 A changeover to the euro would inevitably have resource implications for UK firms. The experience of the euro area demonstrates that it is not possible to estimate accurately the costs of changeover and very few organisations have tried to do so either before or after the event. The cost for any particular organisation would depend on the specific approach taken. Furthermore, not all of the capital or IT costs incurred in the changeover can be attributed to the changeover; account must also be taken of normal cost replacement profiles.

3.14 It is nevertheless important to understand the cost implications of differing approaches. The experience of the euro area shows that costs can be minimised through careful and early planning. Organisations can affect the resource impact of a changeover through:

- the timing of investment decisions;
- the extent to which euro compatibility is built in as part of ongoing work (for example, buying multi-currency financial systems or tills which are capable of dealing with more than one currency); and
- the level of euro services which are offered at key points during the transition period.

3.15 These issues are covered in the assessment of the Government's five economic tests for EMU entry.

THE SHORT TO MEDIUM-TERM IMPACT OF EMU

3.16 The immediate effects of EMU entry would promote potentially important dynamic changes in the business landscape over the short to medium term. This section focuses on three key potential developments:

- an increase in trade;
- an increase in investment; and
- changes in the way in which the economy adjusts to economic disturbances.

3.17 These effects are discussed below. In each case, the general expectations of theory at the macroeconomic level are considered and the important sectoral implications are highlighted.

The potential impact of EMU on trade

3.18 The theory of trade is discussed in detail in the EMU study by HM Treasury *EMU and trade*. It concludes that there are sound theoretical reasons for expecting the adoption of a single currency to lead to increased trade among the members of a single currency area. The removal of exchange rate volatility and exchange rate transaction costs constitutes a reduced barrier to trade which appears to have a greater positive effect in the case of a single currency than a fixed exchange rate system.

Sectoral implications

3.19 There are a number of reasons why the impact of EMU on trade may vary across sectors. For example:

- the most immediate effect would be on firms in the tradeable sector. There would be an indirect impact on firms in the non-traded sector – firms which, for example, supply goods and services to exporters or purchase imported goods;
- Section 2 notes that firms which export tend to be larger firms in the manufacturing sector. Smaller businesses may be dissuaded from exporting by the assumption that hedging costs are prohibitive. For smaller firms, the removal of transaction costs and exchange rate volatility may be of proportionately greater benefit; and
- sectors where firms have a high degree of market power, perhaps because of strong product differentiation, may be less sensitive to price and exchange rate changes. Demand for homogeneous goods, in contrast, may be more price sensitive, meaning that EMU may have a greater effect on these sectors.

The potential impact of EMU on investment

3.20 The second potential effect of EMU over the short to medium term is an increase in cross-border investment. Investment is a key driver of productivity; one of the Government's five economic tests for EMU entry considers whether joining EMU would improve the conditions for firms making long-term decisions to invest in the UK. The analysis in this study provides important supporting material for the assessment of the investment test.

3.21 The theory of investment is considered in detail in Annex A. This section summarises its primary conclusions, distinguishing between the impact on domestic business investment and that on foreign direct investment (FDI). FDI is distinct only in that the ownership of the investment is from a business overseas (see Box 4.2 in Section 4 for a detailed explanation of the definition of FDI). The determinants of both types of investment are very similar. A firm will invest if the expected returns from investment exceed the cost of investment. However, FDI flows may be especially affected by EMU, and in particular by the removal of the nominal exchange rate between the UK and the euro area. FDI is, for this reason, considered separately.

Domestic business investment

3.22 A central assumption of economic theory is that a firm will invest if the expected returns from the investment exceed the cost of capital. EMU may affect both sides of this relationship:

- reduced exchange rate volatility may affect expected returns for firms, especially those which trade with the euro area. The impact of EMU on domestic macroeconomic stability is also important; and
- reduced transaction costs and exchange rate volatility, and increased price transparency, could enhance integration in the UK and the euro area capital markets and thereby reduce the cost of capital.

Expected returns

3.23 One of the most important recent developments in the literature on the economic drivers of investment has been the increased importance attached to **uncertainty**. Although its impact on investment is ambiguous in theory, empirical evidence largely supports the conclusion that uncertainty, including exchange rate uncertainty, reduces investment. EMU will affect uncertainty through its impact on macroeconomic stability. For UK firms,

exchange rate volatility with the euro area – one source of potential uncertainty – would be removed on entry. At the same time, however, domestic demand volatility might increase in EMU because the loss of an independent monetary policy removes one adjustment mechanism for dealing with economic shocks and disturbances. The nominal exchange rate is also a potentially important adjustment mechanism, so its loss could also increase output volatility.

Cost of capital

3.24 The EMU study by HM Treasury *EMU and the cost of capital* looks in detail at the composition of the cost of capital, which it breaks down into the credit risk-free rate and a market risk premium. UK entry into EMU would be unlikely to have a significant impact on the **credit risk-free rate**. This can be proxied as the rate of return on government bonds in major industrialised economies. After stripping out cyclical effects, UK government bond yields are very close to those of the euro area, reflecting the expectation that both the UK and euro area monetary policy regimes will maintain low and stable inflation. The **market risk** element of the cost of capital is the premium attached to investing in a particular firm or project rather than in a risk-free asset. If EMU entry were to result in UK firms gaining increased access to a large and integrated euro area financial market, this could result in a fall in the market risk premium. Recent work for the European Commission (London Economics, 2002) suggests that a potentially significant fall in the EU cost of capital could be achieved through full EU financial market integration.

3.25 The removal of the currency barrier to raising funds in the euro area financial market would, in principle, be relatively more important for SMEs. In practice, SMEs tend to raise funds through local retail financial providers due to the importance that providers place on local knowledge of firms and economic conditions. However, EMU may over the long run promote greater competition in retail finance.

Sectoral implications

3.26 Business investment might, therefore, be increased by EMU entry in sectors which:

- are open to trade, since any increase in trade resulting from the single currency would be expected to induce increased investment. The reduction in exchange rate volatility on sales to the euro area would reduce uncertainty for exporters and importers;
- are characterised by relatively high levels of external financing. Firms in these sectors may be well-placed to exploit and benefit from any broadening and deepening of euro area capital markets, and easier and cheaper financing; or
- have a high proportion of SMEs (though not necessarily of micro-enterprises). EMU could increase the choice of funding sources for SMEs and promote greater competition in the market for bank lending in the longer term, although the overall impact would be constrained by the local nature of much small business financing.

Foreign direct investment

3.27 EMU may lead to changes in FDI flows into and out of the UK. The decision to invest overseas is affected by many factors. The UK's historically strong FDI performance is based on its attractive regulatory and tax regime, a stable macroeconomic environment, flexible labour and product markets, innovative capital markets, and a skilled labour force. Many of these factors would not be affected directly by EMU and EMU entry would not necessarily detract from the UK's excellent record in attracting FDI.

FDI and the exchange rate

3.28 A clear influence on FDI, and one which is relevant to the decision of whether or not to join the single currency, is, however, the exchange rate. The actual and expected level of the exchange rate is an important determinant of the decision to invest overseas. If firms are investing overseas in order to serve export markets, the exchange rate will affect the profitability of that project. Exchange rate movements also have implications for overseas investments targeting the host market, as earnings from foreign subsidiaries will at some stage need to be converted back into domestic currency. The discussion in Annex A suggests that:

- persistent deviations of the exchange rate from some measure of the long run or medium run equilibrium have a potentially important effect on FDI. A prolonged depreciation will increase FDI inflows, and a prolonged appreciation will decrease them; and
- exchange rate volatility (where a currency moves with high frequency around its short-run mean value) is found, in the economic literature, to have an ambiguous impact on FDI flows.

Sectoral implications

3.29 FDI is heterogeneous and subject to a variety of influences, and hence unlikely to behave uniformly in the face of exchange rate movements. It is more likely to be undertaken in sectors characterised by large firms and multinationals. Individual firms, however, choose to invest overseas for a number of reasons:

- market-seeking firms may choose to locate in a particular country to serve either the domestic market or to export to other countries;
- resource-seeking firms seek specific resources which are unavailable in the home country; and
- efficiency-seeking firms choose to locate in a country that allows them to produce more efficiently, perhaps because of the availability of more productive labour.

3.30 These motives suggest that FDI can be broadly categorised as comprising two types, vertical and horizontal, which may be affected in different ways by EMU:

- vertical, where different stages of production are located in different countries and the location choice is more likely to reflect factor endowments; and
- horizontal, where similar final production activities are undertaken in different countries.

3.31 This discussion suggests that firms investing overseas for different reasons will be affected in different ways by EMU. These issues are returned to in Section 4, where the evidence on the impact of EMU on FDI in the euro area is considered.

The potential impact of EMU on the mechanisms of economic adjustment

3.32 While EMU offers potential benefits over the short to medium-term, there are also potential short to medium-term costs. These potential costs are both structural and cyclical in nature.

Structural adjustment

3.33 Changes in the industrial landscape, perhaps promoted by increased trade and investment, would involve potentially costly structural change. Firms would need to adapt to a more competitive environment; this may include the need to change marketing and trading strategies or to retrain their labour force. The trade and investment effects outlined above would not, in other words, occur seamlessly and without cost for the industrial sectors involved.

Cyclical adjustment

3.34 There are also potentially important costs relating to changes in the mechanisms by which an economy adjusts to economic shocks inside a monetary union. An example would be if the UK were to experience a shock which reduced demand for its exports, due perhaps to a downturn in demand in one of its main export destinations. Outside EMU, the monetary policy authority might adjust interest rates to keep output close to trend, or the nominal exchange rate might depreciate, stimulating demand for UK exports.

3.35 Inside EMU, these mechanisms would not be available to the same degree. Monetary policy would be set by the European Central Bank on the basis of euro area wide conditions, and the nominal exchange rate would be shared across the euro area. This would place the burden of adjustment to shocks on alternative mechanisms such as relative wage and price changes. To boost demand for exports in the face of such a shock without a nominal exchange rate depreciation, UK wages and prices would have to fall relative to those in other countries. This type of wage and price adjustment might take longer to return output to trend than a nominal exchange rate adjustment, with the result that the economy would be faced with longer periods of below trend output and employment.

Sectoral implications

3.36 Other EMU studies by HM Treasury, in particular *Modelling shocks and adjustment mechanisms in EMU* and *The exchange rate and macroeconomic adjustment*, address these important issues. Some aspects of the adjustment process that are especially important for business sectors are as follows:

- one cost of adjustment relating to openness to trade is the loss of a flexible nominal exchange rate. In EMU, movements in the exchange rate would no longer be able to compensate for strong wage growth or weak productivity to the same degree. This issue is discussed further in the contribution by Professor Wendy Carlin and Dr Andrew Glyn to the EMU study *Submissions on EMU from leading academics*. Their main conclusion is that, within EMU, the traded sector would have to rely on keeping wage or productivity growth close to that of other EU countries. In the absence of an independent nominal exchange rate, and if UK wage growth exceeded that in other EU countries without an offsetting productivity gain, UK export levels could fall and firms would have to reduce output and employment;

- another cost concerns the need for sectors to change their behaviour in the face of potentially increased cyclicality of demand. This could be more costly to sectors which face highly cyclical demand or find cyclicality to be particularly damaging; and

- the market structure of a sector would also influence firms' adaptability and exposure to adjustment costs. Sectors that enjoyed a high degree of protection would be less exposed to EMU-related adjustment costs. Sectors in which products are highly differentiated would derive some protection against adjustment costs from their brands. Sectors which produce homogeneous products and compete primarily on price are likely to be more exposed.

LONGER-TERM IMPACT OF EMU

3.37 By their nature, the longer-term dynamic consequences of these short to medium-term effects are harder to discern and more gradual. However, these potential effects are significant, including:

- an increase in competitive pressures in product and capital markets, which in a UK context would run alongside trends already shaping the supply side of the economy;
- greater specialisation, as increased trade, investment and competition allowed and encouraged firms to exploit comparative advantage and economies of scale across larger markets. Theory suggests this will benefit the economy overall, though with adjustment costs for some sectors; and
- further concentration in some sectors and dispersion in others. One important question is whether increased agglomeration would benefit regions which are already relatively well off, to the detriment of the poorer periphery.

Competition

3.38 Alongside euro area capital market integration, the main long-run lever for change on the supply side stemming from EMU is integration of product markets and greater competitive intensity. This occurs through four channels:

- larger product markets, meaning that firms face a larger number of competitors in their home market;
- greater integration in product markets, i.e. a reduced cost of trading or investing in other EMU countries, which reduces barriers to entry for new firms, whether by trade, FDI or merger and acquisition (M&A) activity;
- increased price transparency in the euro area, which increases consumer power and boosts price competition between firms; and
- greater capital market competition due to larger and more integrated capital markets.

3.39 The single currency enhances existing tendencies towards greater competition in the EU. The Single Market Programme and a succession of domestic reforms on the part of Member States have done much to enhance competition and brought significant benefits to both EU firms and consumers.

Competition and price convergence

3.40 The EMU study by HM Treasury *Prices and EMU* considers in depth one potential indicator of competition – the extent of price convergence. If EMU were to lead to the increased integration of product, labour and capital markets, economic theory predicts that prices across euro area countries should converge – the 'law of one price'. This 'law' rests on the assumption that, if prices for a given good differed between locations, arbitrageurs could profitably buy the good at the cheaper location and sell it at the more expensive location, bringing about price convergence by balancing demand and supply in both locations.

3.41 In practice, from the buyer's perspective, arbitrage may result in a lower purchase price but itself incurs costs:

- search costs, including the cost in terms of both time and money of collecting and evaluating information about the options available;
- shipping and delivery costs, again in terms of both time and money; and
- uncertainty costs, for example the enforcement of contracts, the quality of a product bought unseen and the standard and availability of after-sales service.

3.42 The elimination of currency exchange costs and increased price transparency should reduce search costs. The willingness of consumers to take advantage of lower search costs will depend on the costs of arbitrage, both in absolute terms and relative to the product price. Consumers may be willing to spend several hours researching the possibility of saving 5 per cent on the purchase price of, for example, a computer, but are unlikely to consider the same time well spent to purchase a cheaper box of breakfast cereal.

Capital market competition

3.43 Competition may be increased not only in product markets but also in capital markets. The increase in the size and the further integration of capital markets in the euro area countries may lead to an increase in capital market competition and an expansion in the number of potential borrowers and lenders. This may facilitate further merger and acquisition activity, increase competitive pressure and reduce search and transaction costs of raising capital across markets.

The importance of competition

3.44 Capturing the effects of greater competition is important for overall economic performance. Competition drives growth, both at the level of the overall economy and the individual firm.[2] It ensures that the benefits of cost reduction and innovation are passed on to consumers in the form of lower prices, increased quality and/or greater choice.

3.45 In a competitive environment, firms have a continuous incentive to innovate. Competition quickly erodes both market share and higher (super-normal) profits derived from existing product lines and production methods. Only by innovating can firms temporarily earn excess profits.

3.46 Product market integration due to the larger potential customer base itself increases the potential return to innovation and thereby reduces the marginal cost of R&D, further encouraging innovation. Product market integration and increased competition can thus be supportive of a higher rate of technological progress and faster adoption of new technologies and best practice. It may therefore lead to increased long-run economic growth; a result that has been confirmed in numerous firm-level studies.[3]

Reallocating resources

3.47 A more competitive environment is also conducive to a more efficient allocation of resources, both within and between firms. Academic literature suggests that this latter effect – the shift of resources away from inefficient firms to more productive and innovative competitors, and especially to new entrants[4] – is particularly important. While new entrants are generally less productive at the outset than most incumbents, those which survive quickly improve their performance and raise the overall level of productivity.[5]

[2] See, for example, Nickell (1996) and Blundell *et al.* (1995).

[3] Nickell (1996), Nickell, *et al.* (1997), Blundell *et al.* (1995), Bottasso and Sembenelli (2001), Januszewski *et al.* (1999) and Griffith (2001). See Aghion and Howitt (1998) for an overview of the underlying theory.

[4] Baumol *et al.* (1982) and Porter (1985) for example, argue that entry, and the threat of entry, are important determinants of overall competitive pressure in a market.

[5] Evidence for the US comes from Foster *et al.* (1998) and for the UK from Disney *et al.* (1999) and Barnes and Haskel (2000).

3.48 There is a possibility that EMU might pose anti-trust risks by, for example, creating large firms through acquisitions and mergers, which might then be tempted to engage in oligopolistic practices such as collusion or cartels. The preponderance of cartel cases involving fairly homogeneous services or products[6] suggests that it is primarily in these types of industry that cartels pose possible anti-competitive threats. At the same time, however, the increased price transparency and potentially stronger competition fostered by EMU could help make collusive behaviour more difficult.

3.49 Increased competition is, as has been noted, a key driver of UK economic performance. The literature finds strong evidence that increased competition improves firms' operating efficiency by reducing slack, putting downward pressure on costs, promoting more effective oversight and management and providing incentives for the efficient organisation of production. Any increase in competition in UK markets, irrespective of its source, should increase UK firm efficiency and hence UK consumer welfare.

Specialisation

3.50 Specialisation describes the extent to which the activity of a given region occurs in a small number of industries and is conventionally defined relative to other countries or regions. A country is relatively specialised in a specific sector if that sector accounts for a relatively large proportion of its activity: for example, the UK is specialised in an EU context in refined petroleum products.

Drivers of specialisation

3.51 The argument that a single currency promotes specialisation rests on two elements of the economic literature:

- **comparative advantage:** resources should be employed in activities in which their relative efficiency is superior to that of others; and
- **economies of scale:** the average cost of producing something falls as the volume produced rises. If the euro helps reduce trade and transaction costs, it would enable companies to reap economies of scale and encourage national specialisation in industries where comparative advantage is greatest.

3.52 The argument that increased trade, facilitated by a single currency but also by more general developments related to the development of the Single Market and trends in globalisation, might lead to greater specialisation is an important one. The EMU study by HM Treasury *EMU and trade* assumes that trade encourages countries to specialise in activities where they have a comparative advantage. Greater levels of cross-border investment may also augment specialisation as investment is a crucial conduit for the reallocation of productive resources. Competition is a key driver of greater allocative efficiency and could reinforce specialisation where there is comparative advantage or economies of scale.

Macroeconomic impacts of specialisation

3.53 The microeconomic benefits of specialisation are accompanied by concerns about whether greater specialisation might, in a monetary union, increase vulnerability to macroeconomic asymmetric shocks (Krugman, 1993). Traditional trade models imply that trade and the gains from trade will be greatest between countries which are the least alike in their economic structure. These countries have the most to gain from specialising according to their comparative advantage and reallocating resources to where they earn the highest

[6] In 2001 the Commission imposed fines on 10 cartels: two service industries – airlines services and banking, suppliers to two national EU beer markets and suppliers of six intermediate industrial products (graphite electrodes, sodium glutamate, vitamins, citric acid, zinc phosphate and carbonless paper).

returns. At the aggregate level, such models predict that the removal of currency volatility would encourage further specialisation in national economies, exposing particular countries to sector-specific shocks (see the EMU study *Analysis of European and UK business cycles and shocks* by Professor Michael Artis for a fuller discussion).

3.54 Contrary to the predictions of traditional trade models, however, new trade theory observes that most trade occurs between countries with similar factor endowments and that this trade is predominantly intra-industry rather than inter-industry. Growing intra-industry trade could (though does not necessarily) imply that trade could rise without a comparable increase in sector specialisation; an argument highlighted by Barry Eichengreen in the EMU study *Submissions on EMU from leading academics*. This would suggest that the removal of the currency barrier might have only limited implications for vulnerability to asymmetric shocks stemming from the industrial structure. Section 5 looks at this in practice, using both the experience of the SMP and evidence from the US.

Concentration

3.55 Industry concentration describes the extent to which activity in a given industry or sector takes place in a small number of firms, while geographical concentration describes the extent to which activity in a given industry or sector takes place in a small number of countries or regions. Industry concentration tends to decline as markets expand because the minimum efficient plant size falls in relation to the market. In R&D-intensive or advertising-intensive sectors, however, there may be a lower limit to concentration (as discussed further in Section 6), while the possibility that EMU might encourage mergers and acquisitions has already been noted.

Drivers of geographical concentration

3.56 This study focuses mainly on geographical concentration. Firms concentrate their activities in specific locations to take advantage of external scale economies or other advantages such as those of reputation. Examples of spatially concentrated clusters of activity are found in sectors such as financial services (the City of London) and films (Hollywood). Positive externalities or centripetal forces can attract activity to a cluster. These include greater business opportunities for firms compared to other locations and the availability of skilled labour. According to theories of new economic geography, covered in more detail in the EMU study by HM Treasury *The location of financial activity and the euro*, these factors offer competitive advantages for firms compared to other locations that attract them to the cluster. For a cluster to grow, these centripetal forces need to outweigh negative externalities or centrifugal forces, such as the costs of congestion and high commercial rents.

3.57 Krugman and Venables (1990, 1995a,b) show that lower transport costs (or, in the context of EMU, lower conversion costs and reduced exchange rate volatility) can influence the location of firms. They demonstrate that firms tend to locate in larger markets when trade costs, such as transport costs, are neither too high nor too low. If transport costs are high, then firms will disperse to avoid product market competition. If transport costs are low, then the choice of location is determined by the cost of factor inputs and the ability to exploit internal scale economies. With low trade costs, markets can be served easily from any location, meaning firms have the opportunity to exploit scale economies. Proximity to markets is less important as a determinant of location than, for example, the cost of production and the positive externalities offered by locating in a cluster.

Impacts of concentration

3.58 The Krugman and Venables model raises the question of whether EMU would drive firms to locate in successful 'core' regions in order to exploit, for example, the external economies of scale offered by clusters, or whether they would move to 'periphery' regions where lower costs of production offset increased transport costs. In a UK context, this invites the question as to whether UK regions are 'core' or 'periphery' and how EMU might affect

their attractions as business locations. If joining EMU were to lead to a reduction in transport costs, it might hasten the decline of poorly performing regions as firms relocated. Set against this, however, might be better financing opportunities and improved information flows (though these might also provide new growth opportunities for successful regions).

CONCLUSIONS: KEY SECTORAL CHARACTERISTICS

3.59 Building on this theoretical discussion, Section 4 reviews the evidence to date on the short to medium-term effects of EMU, while Section 5 considers evidence on the potential longer-term effects. Section 6 draws the theory and evidence together in a dynamic and forward-looking context, considering the ways in which EMU may affect a sector depending on its specific sectoral characteristics. The theoretical discussion in the present section has highlighted six key characteristics which will be important determinants of the impact of EMU. These six characteristics are used as a tool for judging the evidence in Sections 4 and 5 against the expectations of economic theory, and are also the focus of the forward-looking analysis in Section 6:

- **openness and exchange rate sensitivity**. The discussion of the potential impact on cross-border trade and investment in this section suggests that sectors which are open to trade may be affected more strongly then non-traded sectors. An important issue is whether exposure is primarily to euro area or non-euro area currencies;
- **pricing behaviour**. The discussion of the potential impact of EMU on competition underlines the importance of pricing behaviour. The impact of EMU on sectors will depend on the primary pricing currency in a sector, the degree to which firms set prices and the degree of price convergence;
- **market structures**. The degree of product differentiation is an important factor affecting the potential impact of EMU on trade. If products are highly differentiated and firms have market power, then trade may be less sensitive to prices than in sectors which produce homogeneous goods;
- **firm size**. The removal of exchange rate transaction costs and exchange rate volatility may represent a greater relative saving for small firms. The discussion on the potential impact on investment in this section suggests that the benefits of more integrated wholesale capital markets may be greater for larger firms, while small firms may benefit to a greater extent from developments in retail financial markets;
- **finance and ownership**. The potential impact of EMU on cross-border investment and on capital market integration may vary depending on the degree to which firms use external finance and on the form of managerial control and ownership; and
- **cyclical exposure**. The discussion of the impact of EMU on the mechanisms by which economies adjust to shocks and change illustrates the importance of the degree of cyclical sensitivity of a sector's output or the extent to which a sector finds cyclicality damaging.

4 Evidence on Cross-Border Trade and Investment

Given the many other factors shaping the business landscape, and after only four years of EMU, it is difficult to discern with certainty an EMU effect on cross-border trade and investment. However, the analysis here suggests that:

- **intra-euro area trade has outpaced that of the non-euro area countries of Europe in a number of those sectors which economic theory and the analysis in this study would suggest as the most likely to be affected by EMU;**
- **service sector trade exhibits no clear pattern, although EMU would not be expected to have as great an effect on services trade as on goods trade;**
- **domestic investment spending in euro area countries has outpaced that of the EU15 as a whole, although by sector there is no discernable pattern, and there is little evidence that this is as a result of EMU;**
- **there is evidence that the UK's share of inward foreign direct investment (FDI) from outside the EU has fallen relative to other EU members since the introduction of EMU. This must, however, be considered against a backdrop of factors such as the rapid global increase in FDI over the late 1990s, largely driven by M&A, and the sharp fall since 2000, as well as the UK's leading position within Europe in terms of inward investment. It is difficult to detect with any confidence a specific EMU effect; and**
- **changes in FDI stocks at a sectoral level before and after the start of EMU show no clear pattern, this analysis being particularly complicated by the multiplicity of factors influencing FDI.**

Evidence from introduction of the euro

4.1 This section focuses on the evidence on the potential short to medium-term effects of EMU. It considers the extent to which there has been any indication in the euro area, since the start of EMU, of:

- increased cross-border **trade**; and
- increased **investment** and **foreign direct investment** (FDI).

4.2 This section does not consider evidence on changes to economic adjustment mechanisms, the third of the short to medium-term effects identified in Section 3. This issue is covered at the macroeconomic level in the EMU study by HM Treasury *Modelling shocks and adjustment mechanisms in EMU*.

4.3 This is essentially a static analysis, based on the evidence and circumstances to date. The analysis in Section 6, which focuses on industry characteristics and how these might be affected by a decision to join the EMU, is more forward looking. The assessment of the five tests is also explicitly forward looking.

Evidence from the SMP

4.4 There are inherent difficulties in attributing shifts in sector behaviour specifically to the euro; not least, the variety of other factors shaping the European industrial landscape, and the limited time period from which evidence can be drawn. To address this latter difficulty in particular, this section supplements analysis of the current period with references to an ongoing episode of European integration – that following the implementation of the Single Market Programme (SMP) in 1992. The aim of the SMP was to achieve the free movement of goods, services, labour and capital across the EU, and it introduced sweeping changes to the European business environment intended to boost openness and competition. This section draws on the latest internal market scoreboard from the European Commission, which surveys EU companies' perceptions of the business environment and aims to identify the impact of the SMP on business.

Trends in trade

4.5 The EMU study by HM Treasury *EMU and trade* concludes that there are sound theoretical reasons why EMU should enhance trade. These stem, as was noted in Section 3, from reduced exchange rate uncertainty, lower currency transaction costs and greater price transparency.

4.6 The EMU study *EMU and trade* also undertakes a rigorous review of empirical research on trade and currency unions. It finds that there is evidence in favour of a potentially significant euro effect on trade in goods. It also concludes that the scale of these benefits is likely to increase with the degree of trade integration between the UK and the euro area. It finds that trade intensity within the euro area has increased since the euro's launch. Extra-euro area trade, however, appears to have risen faster than trade within the euro area since the start of EMU. The study suggests four possible explanations:

- buoyant growth in the US in the late 1990s;
- oil price rises;
- ongoing integration and economic cooperation between the EU and the Central and Eastern European (CEE) economies; and
- possibly, the depreciation of the euro against the US dollar since 1999.

4.7 The EMU study *EMU and trade* also examines post-EMU developments in trade in services. It finds that there was a sharp upward trend in intra-EU services trade throughout the 1990s, except in France and Italy; this was mirrored in extra-EU trade only among smaller EU countries. This secular trend may be a reflection of the progressive implementation of the SMP. There is no evidence of enhanced integration since 1999.

4.8 Overall, the EMU study *EMU and trade* concludes that a reasonable range for the potential increase in UK trade with the euro area resulting from UK membership of EMU would be between 5 and 50 per cent, without any trade diversion from the non-euro area. Complementing the macroeconomic level analysis of that study, this section takes a more in-depth look at sectoral trade in the EU. It examines sector-level trade patterns within the euro area and the wider EU since 1999, and compares these with the pre-EMU period and with both the predictions of economic theory (outlined in Section 3).

EMU's impact on trade in goods by sector

4.9 It is difficult in the relatively short period since 1999 to identify clear sectoral trade impacts from the introduction of the single currency. This section examines how import growth from within the euro area has, in each sector, performed relative to import growth from outside the euro area since the advent of EMU.

4.10 Table 4.1 lists the 30 euro area manufacturing sectors which have a trade share of at least 1 per cent of total euro area imports. (Table C5 in Annex C includes a longer list of sectors for which trade shares exceed 0.5 per cent). It ranks these sectors by the difference between the change in intra-euro area import growth and the change in extra-euro area import growth. In each case, the change in import growth is measured between the periods 1996 - 1998 (the three years before the euro came into existence) and 1999 - 2001 (the period since the single currency has been in operation, and for which data are available). If the single currency were having an effect, the change in intra-euro area import growth might be expected to exceed the change in extra-euro area import growth. More detail of this methodology (variations of which are used in Tables 4.4, 4.5, 4.7 and 4.8) is provided in Box 4.1.

Box 4.1: The 'difference in differences' method of analysis

This section uses a 'difference in differences' method of analysis to compare the performance of the euro area economies with that of the UK or other non-euro area economies since the introduction of EMU.

The analysis begins by looking at growth of a particular variable in a euro area country and observing how the rate of growth has changed since EMU began. It then looks at a comparator country – in this case a non-euro area country – and observes whether the rate of growth of the variable in question has changed since the beginning of EMU. The two changes in rates of growth are then compared, with the aim of observing whether any change in the euro area has been greater than that in the non-euro area.

The table below sets out a hypothetical example to aid interpretation of this methodology. It considers two countries, one euro area (A) and one non-euro area (B), and one variable, import growth. Country A's import growth in the years before EMU was 10 per cent and increased to 15 per cent in the years after the start of EMU, representing an increase in the growth rate of 5 percentage points. In country B, import growth was also 10 per cent in the years before EMU, and increased to 12 per cent in the years after. Hence the increase in import growth between the two periods was 2 percentage points. Finally, to assess whether country A's rate of growth has increased more or less than country B's since the start of EMU, the change in import growth of country B is subtracted from the change in import growth of country A, giving in this case a figure of 3 percentage points. Since the beginning of EMU, the rate of import growth in country A has increased by more than that in country B.

	Euro area country A			Non-euro area country B			
	1996-1998	1999-2001 (per cent)	Difference in growth between two periods (percentage points)	1996-1998	1999-2001 (per cent)	Difference in growth between two periods (percentage points)	Change in A's import growth relative to B's
Import growth	10	15	5	10	12	2	3

4.11 Column 2 of Table 4.1 does not, however, suggest such an effect. The difference in intra-euro area import growth before and after EMU exceeds the difference in extra-euro area import growth before and after EMU in only a third of the sectors (those with a positive differential and highlighted in bold), and match it in just two. In the remaining 18 sectors, the difference in intra-euro area import growth between the two periods is less than the difference in extra-euro area import growth.

Table 4.1: Difference between change in intra-euro area and change in extra-euro area import growth rates between 1996-1998 and 1999-2001

1	2	3
	Difference between:	
Manufacturing sector	Intra-euro area and extra-euro area import growth (percentage points)	Intra-euro area and extra-euro area Western Europe import growth (percentage points)
Motor vehicles	**11**	**8**
Motor vehicle parts and accessories	**6**	**22**
TV, radio, sound, video recording apparatus	**5**	**22**
Basic iron and steel and ferro-alloys	**5**	**3**
Aircraft and spacecraft	**4**	–5
Basic chemicals	**4**	**5**
Office machinery and computers	**1**	**5**
Electricity distribution and control apparatus	**1**	**4**
Rubber products	**1**	**8**
Plastic products	**1**	**4**
Other fabricated metal products	0	**3**
Furniture	0	**3**
Measuring, checking etc instruments	–1	**1**
Other chemical products	–1	–5
Basic precious, non-ferrous metals	–2	**2**
Non-vehicle mechanical machinery	–2	**1**
Other wearing apparel, accessories	–2	**5**
Machine tools	–2	–1
Other special purpose machinery	–2	0
Other food products	–3	0
Pulp, paper, paperboard	–3	0
Pharmaceuticals, medicinal, botanical prods.	–3	–5
General purpose machinery	–4	**2**
Footwear	–5	–5
Electronic valves, tubes, other components	–7	–23
Medical, surgical, orthopaedic equipment	–8	–5
Meat processing, preserving, products	–8	–2
Electrical equipment not elsewhere classified	–11	**9**
Refined petroleum products	–14	–5
TV, radio transmitters and apparatus	–17	**9**

Note: The table shows the difference between the change in growth of intra-euro area imports before and during EMU (1996-1998 and 1999-2001) and the change in growth of extra-euro area imports over the same period. A positive number, highlighted in bold, indicates that the change in intra-euro area import growth over this period exceeded the change in extra-euro area import growth. See Box 4.1 for details of the methodology.

Source: Eurostat; HM Treasury and DTI calculations.

4.12 Rather than comparing intra-euro area trade with all extra-euro trade, a better control group may be the non-euro countries of the EU and Western Europe.[1] These countries are similar to the euro area in terms of trading patterns, incomes and economic conditions. This means that trading data are less likely to be distorted by, for example, a secular shift of low value-added manufacturing towards locations other than the EU or Western Europe in general, such as the Central and Eastern European economies or elsewhere in the world.

4.13 Using these countries as a baseline, a different picture emerges. As Column 3 of Table 4.1 illustrates, the change in intra-euro area import growth exceeds the change in trade with the rest of Europe in 18 of the 30 sectors (and matches trade performance in three sectors).[2] This provides some tentative evidence that an EMU effect may be taking place, at least in

[1] Denmark, Norway, Switzerland, Sweden and the UK.

[2] A more detailed table is provided in Annex C, covering industries accounting for at least 0.5 per cent of total euro area imports. The results of the extended table are broadly similar to those discussed here, with positive figures for 27 sectors out of 48 and an equal performance in five (see Table C5).

some sectors. It does not, however, show whether the overall effect is trade creating (overall trade increases) or trade diverting (euro area trade benefits at the expense of non-euro area EU markets). The macro-level evidence reviewed in the EMU study *EMU and trade* posits, however, that EMU is trade creating.

4.14 A second question is whether there is any pattern to the manufacturing industries that have outperformed (or underperformed) in terms of import growth. A range of characteristics that might render sectors more exposed to EMU's impact on trade were introduced in Section 3 and are the focus of Section 6. Three of those characteristics are analysed here:

- exchange rate sensitivity: proxies include sectors with high inventory ratios or which generally have long lags between production and payment, which will be relatively exposed to exchange rate fluctuations;
- market structure: in particular, product differentiation. Relatively un-differentiated products (proxied by low advertising expenditure) are more price and hence exchange rate sensitive, and would be expected to experience a greater trade effect from EMU; and
- firm size: the removal of transaction and hedging costs is likely to be of greater benefit to small firms than to large.

4.15 Table 4.2 lists manufacturing sectors characterised by low levels of advertising or high levels of inventory or work in progress, or in which small firms account for a large share of output. Such sectors[3] might be expected to benefit most from any boost to trade delivered by EMU. As is suggested by the sectors highlighted in bold (which represent those, drawing on Table 4.1, where the intra-euro area trade performance has outpaced trade performance with non-euro area Western Europe) this does indeed appear to have been the case.[4]

Table 4.2: Sectors where trade might be particularly affected by EMU

High stocks and work in progress as a proportion of turnover, low advertising expenditure as a per cent of turnover; and/or a high share of small firms[1] in turnover	
Basic iron, steel, ferro-alloys	Footwear
Basic precious, non-ferrous metal	Pharmaceuticals
Aircraft, spacecraft	**Non-vehicle machinery**
Motor vehicle parts	**Measuring instruments**
Basic chemicals	**Other fabricated metal prods.**
Other wearing apparel	**Furniture**
General purpose machinery	
Plastic products	

[1] Annual turnover of less than £10 million.
Note: Figures in bold indicate that intra-euro area trade outperformed trade with non-euro area Western Europe, post-EMU relative to pre-EMU, based on column 3 of Table 4.1.
Source: HM Treasury and DTI.

[3] Based on UK data. Sector characteristics in terms of advertising expenditure (proxy for market structure), small firms (proxy for firm size) and high stocks/work in progress (proxy for exchange rate sensitivity) are detailed in Table C6 in Annex C. Table 4.2 uses the top five firms accounting for more than 1 per cent of imports from each category.

[4] Clearly the application of these proxies for the theoretical characteristics cannot be used in a blanket way. There are some obvious exceptions which do not fit the pattern, aircraft and spacecraft, for example, are classified as having low advertising expenditure, hence implying a relatively undifferentiated product. But this is clearly not the case.

4.16 If a majority of the sectors that might be expected to be sensitive to EMU's trade effects have indeed experienced faster intra-euro area trade growth post-EMU than pre-EMU compared with the change in exra-euro area trade growth, this does not necessarily imply that the relationship works in both directions. Of the 18 sectors in which intra-euro area trade outperformed trade with the rest of Europe, just over half would have been predicted to do so on the basis of their low advertising expenditure, high share of small companies or high stocks/work in progress relative to turnover. Overall, therefore, there is tentative evidence of a trade effect of EMU at a sectoral level.

Trade in services

4.17 Services are a key component of overall international trade. As was shown in Section 2, this is particularly true for the UK. Assessing the impact of EMU on sectoral service trade is much more complicated than for goods. Services data are not available at a detailed level across the EU and disaggregated data are only available at current, not constant, prices. Analysis of services trade over time, unlike that of goods, is thus distorted by price as well as volume changes.

4.18 It is, nevertheless, useful to consider differences in the composition of UK and EU trade in services. Table 4.3 shows the destination of UK and EU service exports as a percentage of total service exports in both 1998 and 2001. UK service exports are more concentrated on the US market than are EU exports. The difference has, however, narrowed since 1998, with a rising share of UK service exports going to the EU and a rising share of EU service exports to the US.

Table 4.3: Destination of UK and EU service exports

	UK			EU		
Per cent of total	**Intra EU**	**Extra EU**	**US**	**Intra EU**	**Extra EU**	**US**
1998	38	62	23	54	46	15
2001	41	59	22	55	45	17
Change 1998-2001 (percentage points)	3	–3	–1	1	–1	2

Source: Eurostat and HM Treasury calculations.

4.19 The composition of service exports is broadly similar across the EU; transport, travel and other business services typically make up around three quarters of total service exports. The UK is, however, also characterised by sizeable financial service exports, as highlighted in the EMU study by HM Treasury *The location of financial activity and the euro*.

4.20 Because of data shortcomings, only a basic analysis of the change in service sector exports since EMU is possible. Table 4.4 describes the change in the UK share of intra-EU service sector exports between 1998 and 2001 compared with the changes in the French and German shares. Where the growth in the UK service trade share outpaced that of the French or German share over the three-year period, the figure shows a positive differential and is highlighted in bold; where it lagged, a negative differential is showing. With respect to total services trade, for example, a stable UK share compared with a decline in the German share of 1 per cent is presented as **1** in the table.

Table 4.4: Differences in share of intra-EU service sector export growth for UK, France and Germany, 1998-2001

	Percentage point difference between growth of UK share of intra-EU service sector exports and share of:	
	Germany	France
Total services	**1**	**3**
Transport	0	**3**
Travel	–2	–4
Communications	**4**	–3
Construction	–1	–2
Insurance	–2	**9**
Financial	0	**2**
Computer and information services	–1	–5
Royalties/licence fees	**8**	**8**
Other business services	**3**	**8**
Personal, cultural and recreational	0	**1**

Note: indicates difference between the growth of UK share of intra-EU service sector exports over 1998-2001 and the growth of the share of France and Germany. Positive numbers, highlighted in bold, indicate that the growth of the UK share exceeded that of France or Germany.
Source: Eurostat and HM Treasury calculations.

4.21 Growth in the UK share of intra-EU service sector exports outpaced that of both France and Germany in two sectors: 'royalties/licence fees', and 'other business services'. UK growth in 'financial services' exports was faster than in France and equal to Germany, but growth was slower than in both countries in 'travel', 'construction' and 'computer and information services.'

Empirical analysis of sectoral trade patterns

4.22 Two empirical studies have considered the impact of exchange rate volatility on sectoral trade. Maskus (1986) focuses on US trade with the UK, Germany, Canada and Japan over the period 1974-1984. The analysis looks at overall trade and trade in seven sectors in each of the four countries.[5] Exchange rate uncertainty was measured as that part of the percentage change in the real spot rate that was unexpected at the beginning of each quarter. For 26 country sectors out of the 64 which were examined, exchange rate volatility was shown to have a negative and statistically significant impact on US trade, and such impacts were generally greater for the non-manufacturing sectors. However, in only one case did the presence of exchange rate volatility reduce trade by more than 7 per cent.

4.23 Stokman (1995) applies a sectoral approach to trade among five EU members, namely Germany, France, Italy, Belgium and the Netherlands, using five sectors.[6] Trade is measured as the volume of exports of a commodity from a particular country to the then European Community. Based on quarterly data over the period 1979 to 1990, the study concludes that exchange rate volatility has a negative and statistically significant impact on trade for most countries and in most sectors. However, after averaging the results across the various equations, elimination of exchange rate risk was estimated to increase aggregate trade by less than 3 per cent overall.

The impact of the SMP on trade

4.24 The SMP is a useful cross-reference for the impact of EMU as it also focused on the reduction of transaction costs and removing barriers to trade in the EU. The European Commission DG Internal Market (2002) estimates that the SMP has added just under 0.2 percentage points a year to GDP growth since its completion in 1992, leaving EU GDP 1.8 per cent higher than it would have been without the SMP.

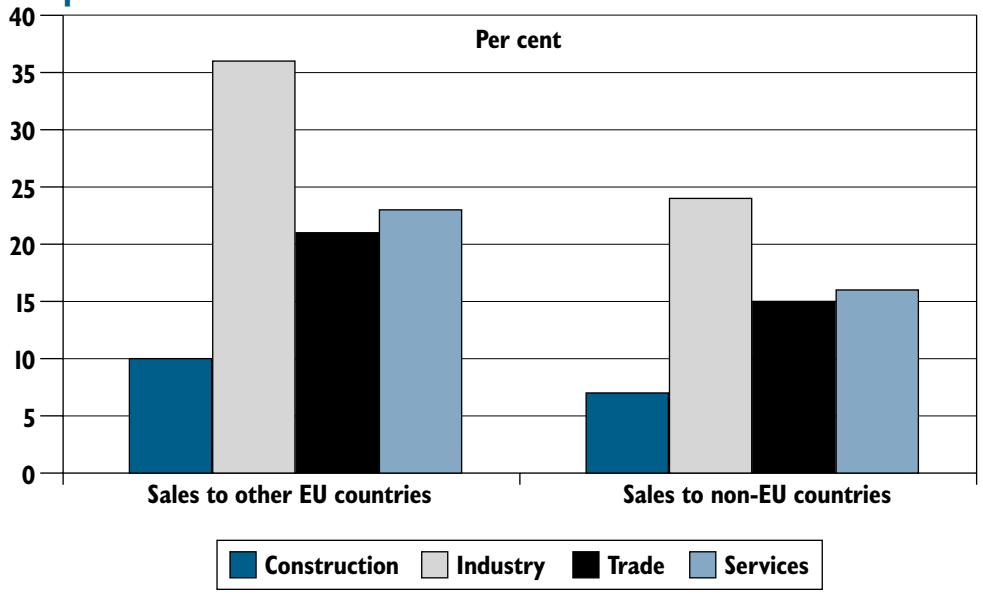
[5] Agriculture, crude materials, chemicals, transport equipment, machinery, manufactured goods classified chiefly by material and miscellaneous manufactures.

[6] Food (SITC 0 and 1), raw materials (SITC 2 and 4), chemicals (SITC 5), manufactures (SITC 6) and machinery (STIC 7).

4.25 At an aggregate level, the SMP appears to have contributed to a significant increase in intra-EU trade[7] (European Commission, DG Internal Market, 1996a). Between 1985 (when the SMP was agreed in principle) and 1995, the market share of intra-EU imports increased by 7.9 per cent in those sectors which had previously been characterised by high non-tariff barriers and could therefore be regarded as potentially 'SMP sensitive'. This compared with a 3.1 per cent rise in other manufacturing sectors[8] (see Section 5 for further detail). Furthermore, the composition of trade flows shifted from inter-industry to intra-industry trade, and towards goods differentiated by quality rather than price.

4.26 The impact of the euro might be concentrated on those sectors 'missed' by the SMP. The latest *Internal Market Scoreboard* from the European Commission (Gallup Europe, 2002) asked companies in four broad sectors – construction, industry, trade and services – whether they thought the Single Market had led to increased or decreased overseas sales inside and outside the EU, or had been of negligible importance. Chart 4.1 suggests that in all sectors, and especially services, trade and construction, most companies did not consider that the SMP had had a positive effect on sales. In general there is some tentative backing for the proposition that there are still potential gains to be realised, particularly in broad sectors such as services.

Chart 4.1: Firms considering that the Single Market has had a positive effect on sales to other EU and non-EU countries



Note: Firms with 10+ employees only.
Source: Gallup Europe, 2002.

Conclusion on sectoral impacts of trade

4.27 It is difficult to judge EMU's effect on sectoral trading patterns on the basis of data covering, for the most part, only the euro's first three years (and these data do not incorporate any impact from the introduction of euro notes and coins). It is, however, possible to draw some tentative conclusions:

[7] In 1996 there was a large-scale evaluation of the Single Market Programme. A good summary of the various studies' findings can be found in European Commission, DG Internal Market (1996a). See also individual studies, such as European Commission, DG Internal Market (1996b,c).

[8] The SMP also had a positive impact on trade from outside the EU. Its overall effect seems to have been trade creating rather than diverting.

- intra-euro area import growth appears to have out performed non-euro Western European import growth in a number of sectors. Most of these sectors are those which economic theory and the analysis in this study would suggest are the most likely to be affected by EMU. There are, however, a significant number of exceptions; and

- EMU would not be expected to have as great an effect on service sector trade as on goods trade. Were EMU the only new development, the stronger growth of UK service exports compared to France and Germany in a number of sectors since the start of EMU would be somewhat surprising. There is, however, no clear pattern to services sector data and relative performance is likely to reflect a variety of non-EMU related factors.

4.28 Overall, the sectoral evidence does not contradict the economy wide finding of evidence of a positive effect of EMU on trade between euro area members in the EMU study by HM Treasury *EMU and trade*.

Trends in investment

4.29 The second of the potential short to medium-term effects of EMU identified in Section 3 is the impact on cross-border investment and total business investment.

4.30 The theory discussed in Section 3 and Annex A identifies the following main channels through which EMU might lead to increased domestic investment:

- reduced exchange rate volatility, leading to reduced risk and lower uncertainty, especially for those firms which trade with the euro area; and

- reduced transaction costs and increased price transparency leading to enhanced integration of capital markets, and a reduced cost of capital.

4.31 The EMU study by HM Treasury *EMU and the cost of capital* divides the cost of capital to firms into two components: the credit risk free rate (generally proxied by the interest rate paid by government bonds) and the market risk rate (reflecting firm-specific credit risk and liquidity risk). It finds evidence that the prospect of EMU membership has contributed to a fall in the credit risk free rate in euro area countries previously characterised by high and volatile inflation (e.g. Spain and Italy), but finds no evidence of a similar EMU related fall in larger, low inflation countries (e.g. Germany and France). While there is evidence of growing integration in euro area and EU financial markets, there is not yet conclusive evidence that this has fed through to a lower market risk premium.

Gross fixed capital formation

4.32 Section 2 described the broadly similar composition of gross fixed capital formation (GFCF) in 2001 in the EU, UK, France and Germany. This section examines changes in GFCF by sector before and after the introduction of the euro. As the data are very limited and not available across the EU in detail, drawing conclusions is inevitably difficult.

4.33 Table 4.5 shows growth in GFCF expenditure in the euro area and the EU in two three-year periods – 1995 to 1998 and 1998 to 2001. The final two columns indicate the difference between the growth rates in each period. In each sector (except 'other investment products'), this difference is greater in the euro area than in the EU as a whole, indicating that investment growth between 1996-1998 and 1999-2001 has been stronger in the euro area than in the EU as a whole.

Table 4.5: Euro area and EU growth of GFCF by sector, 1996-1998 and 1999-2001, 1995 prices

Per cent	Growth, 1996-1998		Growth, 1999-2001		Percentage point change in growth between 96-98 and 99-01	
	Euro area	EU	Euro area	EU	Euro area	EU
Total	**9**	**11**	**10**	**10**	**1**	**–2**
Agriculture	1	5	7	0	6	–6
Metal products and machinery	19	23	15	15	–4	–8
Transport equipment	23	24	18	16	–5	–9
Construction: housing	3	3	1	0	–1	–3
Other construction	–2	–1	10	9	12	10
Other investment products	23	23	15	16	–8	–7

Note: Numbers may not sum due to rounding.
Source: Eurostat; HM Treasury calculations.

4.34 From a sectoral perspective, it is interesting that the euro area's stronger GFCF growth is spread across all sectors (though this may be due to a number of country-specific factors). The greatest difference between euro area and EU growth are in agriculture (which accounts for only a very small proportion of total GFCF). Moreover, the overall pattern of investment growth may also be influenced by the economic cycle and its timing, since investment tends to be among the most cyclically sensitive of expenditure categories.

Trends in foreign direct investment

Importance of EMU for FDI

4.35 Foreign direct investment (FDI) is an important element of total investment, Section 3 discusses the motivations behind FDI and how these might be influenced by EMU entry.

4.36 This section focuses on the evidence on FDI inflows. Although they are not covered in detail here, FDI outflows (on which UK-owned businesses benefit in terms of earning income on capital invested abroad) are also important to the UK's economic performance and its contribution to global performance.

4.37 This sub-section sets out the stylised facts on FDI in the UK and the euro area, and discusses the difficulties associated with interpreting FDI data. It then reviews the evidence as to whether the UK's FDI position has been affected to date from being outside the single currency and for any EMU effects within the euro area. The analysis is structured as follows:

(i) **FDI stocks:** the most reliable FDI data refer to FDI stocks. These are calculated as the accumulation of FDI flows over time, added to the revaluation of historic stocks. While useful for observing underlying trends and sectoral positions, they are by definition backward looking and take some time to compile. Short-term trends can often be masked by sharp revaluations;

(ii) **FDI flows:** more volatile than stocks, FDI flows capture the flow of funds into a country in any given year and are prone to sharp swings. Flow data are useful for picking up new trends and are frequently quoted in international comparisons. In this study, flow data are used to differentiate the recent boom in merger and acquisition (M&A) activity from underlying FDI statistics, analyse the change in the UK's share of EU FDI in recent years and identify the main sources of FDI into the UK and EU;

(iii) **project numbers:** collected by Government agencies such as Invest UK for the UK, and companies such as Ernst and Young, these are useful for providing an indication of the latest views of new and potential investors. Although not as rigorous as official data, they add qualitative information; and

(iv) **other survey evidence:** is an additional source of potentially useful information of a more forward-looking nature.

4.38 This section also includes a discussion of the more general lessons of the SMP concerning the impact of lower investment barriers on FDI flows.

Key caveats

4.39 There are particular difficulties in drawing conclusions from just a few years' of FDI data. Such a short time series makes it difficult to identify trends, particularly when there have been volatile contributing factors such as the peak in European M&A activity in 2000. There may also be substantial lags associated with the feed through of investment decisions into FDI statistics.

4.40 The definition and collection of FDI data also makes its interpretation difficult. Some of the problems involved are outlined in Box 4.2.

4.41 In addition, it is difficult to gauge the impact of the perceived likelihood or timing of UK EMU entry on FDI decisions to date. Had the UK been perceived as remaining permanently outside EMU (which is not the basis for the Government's policy), FDI flows in and out of the UK might have been very different. Alternatively, of course, they might not have been; there is no adequate counterfactual for comparison. Survey findings suggest that in autumn 2002 over two thirds of engineering firms expected the UK to have adopted the euro by 2005 (Engineering Employers Federation, 2002).

4.42 These data difficulties, supplemented by a lack of data on bilateral FDI flows, mean that it is not possible to undertake an econometrically rigorous economy-wide analysis of the potential impact of currency unions on FDI, analagous to the body of evidence and analysis on the impact on cross-border trade discussed in the EMU study by HM Treasury *EMU and trade*. Nevertheless, comprehensive and detailed analysis of available data sources is, as noted above, an important part of this study.

The UK: stylised facts

4.43 As a starting point, some stylised facts highlight the UK's strong position in terms of both inward and outward FDI (UNCTAD, 2002):

- the UK had the **second largest stock of inward investment in the world in 2001**. At nearly US$500 billion, this made up almost a fifth of total EU FDI stocks and 7 per cent of world FDI stocks;
- the UK received the **second largest amount of inward investment flows in the world** in 2001.[9] At almost US$54 billion, this was higher than any other European country and second only to the US;
- the **UK's stock of outward investment in 2001 was almost US$950 billion**, around 14 per cent of the global outward investment stock and one third of the EU outward investment stock; and
- the UK is a **large outward investor**, investing US$39 billion abroad in 2001 and US$253 billion in 2000,[10] making the UK the largest outward investor in that year. UK outward investment constituted 6 per cent of total global outward investment in 2001 and 10 per cent of EU outward investment.

[10] The last full year of data.

[11] Largely reflecting the acquisition of Mannesmann by Vodafone.

Box 4.2: FDI data – problems of interpretation

Definition of FDI data

The International Monetary Fund defines FDI as an international investment aimed at establishing a lasting interest in an overseas enterprise. It might be thought to imply a long-term relationship and substantial investor influence on the way the enterprise is managed. Such an interest is statistically defined as owning 10 per cent or more of the (for an incorporated enterprise) or the equivalent (for an unincorporated enterprise).[a] Acquiring less than 10 per cent of a company is regarded as portfolio investment, although this distinction is arbitrary. An alternative and helpful distinction may be drawn with respect to whether investors themselves are financial or non-financial investors (Wójcik, 2001).

Three FDI statistical series are widely available: flows, stocks and earnings. For the purpose of this study's analysis, it is the first two which are of primary interest. Within these, FDI is split into three broad sub-categories: equity capital, reinvested earnings and other capital transactions. Equity capital consists of transactions involving shares, such as mergers, acquisitions, and other share purchases not involving a change of ownership. Reinvested earnings are simply those earnings not distributed as dividends and those earnings not remitted back to the home country. Other capital transactions consist of mainly inter-company transactions, such as the borrowing and lending between parent and subsidiary companies.

Difficulties in interpreting FDI data

It is a common misconception to assume that all FDI is 'greenfield', e.g. a large foreign manufacturer opening a new plant in the UK. While much of this is included in FDI flow statistics, not all of it will be. For example, investment undertaken by domestic subsidiaries of foreign-owned firms using local finance and therefore with no flow of money across borders would not appear in FDI flow statistics. Furthermore, greenfield investment is, in practice, likely to be dwarfed by the substantial flows of equity and other capital transactions for financial reasons, not to mention investment in existing physical capital.

Even if it were possible to identify greenfield FDI, the lags associated with investment decisions could complicate any conclusions about the impact of EMU.

While the data for source-country FDI can be useful in identifying where inward investment into a country comes from, it does not always indicate its ultimate origin. For instance, FDI into the UK which originates in the US, but comes via the Netherlands, is recorded as FDI from the Netherlands. One reason why foreign firms might invest in the UK via a third country is that they have their headquarters based in that country (for example, many firms have a single European headquarters), and investment into third countries flows via the headquarters. These countries are typically characterised by large inflows and outflows relative to GDP. Belgium and Luxembourg, for example, had inflows and outflows of around $250 billion in 2000; equivalent to more than 300 per cent of GDP, compared with 50 per cent in Germany and 90 per cent in the UK. That Belgium and Luxembourg have typically received a large amount of FDI relative to their size is underlined by the UNCTAD inward FDI index[b] which measures this ratio. Belgium and Luxembourg took first place between 1998 and 2000, whereas the UK was ranked 25th. This did not mean, however, that the UK peformed poorly; it was ranked higher than any other G7 country during this period.[c]

[a] The 10 per cent rule is an internationally-agreed convention. In the UK, for example, the ONS adopted this definition in 1997, having previously assumed a convention of 20 per cent. The effect on the statistics was minimal and pre-1997 data have not been revised to reflect this change.

[b] The UNCTAD inward FDI index measures the ratio of a country's share in global FDI flows to its share of global GDP (UNCTAD, 2002).

[c] G7 rankings: US (74th); Canada (30th); Germany (43rd); France (69th); Italy (115th) and Japan (131st).

(i) Trends in FDI stocks

4.44 FDI stocks are the net accumulation of FDI flows plus annual revaluations, and tend to give a more stable measure of FDI than do flows. They can, however, be less useful than flows in identifying recent trends, as the complexities in constructing the data mean they are typically less timely and can be distorted by revaluations.

FDI stocks compared

4.45 As illustrated in the stylised facts above, the UK is a global force in terms of both inward and outward investment. The UK has historically received large amounts of inward FDI; UK inward investment stocks were only slightly lower than those of the US in 1980 (see Table 4.6). By 1985, however, UK FDI stocks had fallen behind the US, but were still much higher than in Germany. Although Germany has subsequently caught up with the UK, the UK had the second largest stock of inward investment in the world in 2001 and the largest of any EU economy (Table C7 in Annex C provides a breakdown of EU FDI stocks by sector).

Table 4.6: Inward investment stocks, selected countries

US$ billion	UK	Germany	US	World total
1980	63	37	83	636
1985	64	37	185	913
1990	204	120	395	1,872
1995	200	193	536	2,912
2001	497	481	1,321	6,846

Source: UNCTAD, 2002.

4.46 As highlighted in Section 2, US FDI forms a larger proportion of UK FDI stocks than it does of FDI stocks of other large EU Member States. The UK consequently has a relatively high share of extra-EU FDI in its overall FDI stocks. Shares from Asia and Japan are, however, broadly similar to those of the EU as a whole.

Sectoral FDI stocks in the UK and EU

4.47 Sectoral breakdowns of FDI are even more prone to the data interpretation problems outlined in Box 4.2 than are the aggregate figures. As was shown in Section 2, the UK has a large share of the EU inward investment stock in sectors such as 'mining and quarrying', 'electricity, gas and water', 'hotels and restaurants' and 'transport, storage and communication'. As a proportion of national FDI stock, the UK is relatively strong in 'financial intermediation', 'manufacturing' and 'transport, storage and communication'.

4.48 Nevertheless, it is possible to consider changes in inward investment stock across individual sectors since the introduction of the euro. The lack of sector information from many Member States means that it is not possible to produce a reliable euro area figure. However, the UK can be compared with a limited number of countries. France and Germany, being of comparable size, are used here.

4.49 Taking a similar approach to the sectoral trade analysis, this analysis looks at differences between the change in average annual growth of UK FDI stocks in the years before and after EMU, compared with France and Germany. This analysis compares annual average growth over the three years before EMU (1996-1998) with annual average growth in the period since EMU (constrained by data availability to the two years 1999 and 2000).

4.50 Tables 4.7 and 4.8 compare, for intra-EU FDI and extra-EU FDI respectively, the difference between the rise (or fall) in average annual UK FDI stock growth since EMU and the change in French and German average annual FDI stock growth. A positive number indicates a more rapid acceleration (or a slower deceleration) in UK FDI stocks, since EMU; a negative number indicates sectors in which, comparing post-EMU with pre-EMU performances, French or German FDI growth has outpaced that of the UK.

4.51 A simple example may aid interpretation of these results. Average annual growth in the UK's stock of 'hotels and restaurants' FDI from the EU was 12 per cent between 1999 and 2000, and 35 per cent between 1996 and 1998. This represents a slowing of the growth rate of 23 percentage points between the two periods. Average annual growth in Germany's stock of 'hotels and restaurants' FDI from the EU was 5 per cent before EMU, and 10 per cent after. This represents an increase in the growth rate of 5 percentage points. Thus the difference between the UK's fall and Germany's rise in the growth rate is minus 28 percentage points (see Table 4.7). The minus sign in the table reflects the fact that the growth rate of the UK's stock of EU FDI in the 'hotels and restaurants' sector increased more slowly between the two periods than did the equivalent growth rate for Germany.

Table 4.7: Difference in average annual growth in intra-EU FDI stocks in the UK, France and Germany, 1996-1998 and 1999-2000

	Percentage point difference between average annual growth in UK intra-EU inward investment stock, and growth in:	
	France	**Germany**
Agriculture	–	–
Mining	**280**	–26
Manufacturing	**9**	–9
Electricity, gas and water	–33	–14
Construction	**89**	**91**
Trade and repairs	**68**	**58**
Hotels and restaurants	–13	–28
Transport, communications	–168	–305
Financial intermediation	**27**	**26**
Real estate and business activity	**123**	–9
Computer, research, other business	**117**	–4

Note: shows the difference between the average annual growth in UK intra-EU FDI before and during EMU (1996-1998 and 1999-2000) minus the difference between the average annual growth in France or Germany over the same time periods. See Box 4.1 for more details of this methodology. A positive number, highlighted in bold indicates that the change in the growth of UK stock of intra-EU FDI between the two periods exceeded that in France or Germany.
Source: Eurostat; HM Treasury calculations.
– equals one or more years of negative FDI stocks during the period.

4.52 As Table 4.7 shows, Germany outperformed the UK in terms of intra-EU FDI stocks in the majority of sectors, with the largest differential coming in 'transport and communication'. France outperformed the UK in only a minority of sectors, though both France and Germany led the UK in 'transport and communications', 'hotels and restaurants' and 'electricity, gas and water'. (The potential for large M&A deals to distort such data must, however, be kept in mind.)

Table 4.8: Difference in average annual growth in extra-EU FDI stocks in the UK, France and Germany, 1996-1998 and 1999-2000

	Percentage point difference between average annual growth in UK extra-EU inward investment stock, and growth in:	
	France	Germany
Agriculture	**42**	**62**
Mining	–36	**15**
Manufacturing	**4**	**1**
Electricity, gas and water	–	–148
Construction	**372**	**347**
Trade and repairs	**35**	**38**
Hotels and restaurants	**22**	–35
Transport, communications	–40	–78
Financial intermediation	–1	–9
Real estate and business activity	**33**	–39
Computer, research, other business	**16**	–36

Note: shows the difference between the average annual growth in UK extra-EU FDI before and during EMU (1996-1998 and 1999-2000) minus the difference between average annual growth in France or Germany over the same time periods. See Box 4.1 for more details of this methodology. A positive number, highlighted in bold, indicates that the change in the growth of UK stock of intra-EU FDI between the two periods exceeded that in France and Germany.
Source: Eurostat; HM Treasury calculations.
– equals one or more years of negative FDI stocks during the period.

4.53 In terms of extra-EU FDI stocks as Table 4.8 shows, Germany experienced stronger growth than the UK in around half of the sectors identified, while France experienced stronger growth in three out of the ten sectors for which data are available. Both countries once again experienced stronger growth than the UK in 'transport and communications'.

(ii) Recent trends in global FDI flows

4.54 Global FDI flows rose almost ten-fold between 1991 and 2000, to US$1.5 trillion a year. This was a time of unprecedented M&A activity. Reported M&A activity accounted for around three quarters of global investment flows in 2000, compared with around half in 1991. During 2001, however, world investment flows fell by 50 per cent to US$740 billion as economic growth slowed and reported M&A activity also declined sharply.

4.55 The UK, US, and Germany all experienced sharp increases in FDI activity between 1991 and 2000. Having been major beneficiaries of global FDI, they were subsequently among the most affected by the global downturn in FDI in 2001. Inward investment flows fell by 54 per cent in the UK, 59 per cent in the US and 84 per cent in Germany (reflecting in part, the strong M&A activity of 2000, considered below). France, in contrast, saw FDI increase in 2001, though this was in comparison with a 9 per cent fall in the previous year.

EU FDI flows

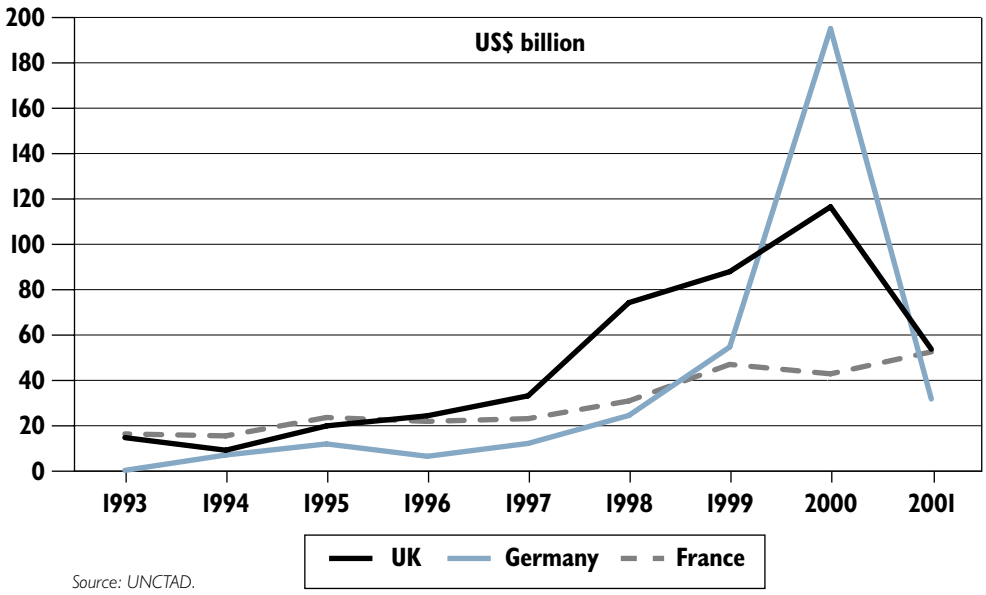
4.56 The EU saw a significant increase in its share of global FDI flows during the 1990s. UNCTAD (United Nations Conference on Trade and Development) data show that:

- in 1985, the EU received less than a third of global FDI flows. This had increased to over 50 per cent by 2000, before falling back slightly in 2001; and
- the EU accounted for less than a third of the global FDI stock in 1985. This increased to around 40 per cent during the 1990s, and has since remained relatively stable.

UK FDI flows

4.57 For the UK as for the EU, the late 1990s saw significant growth in FDI inflows. Chart 4.2 shows inflows into the UK, Germany and France. The peak in German FDI in 2000 largely reflects the acquisition of Mannesmann by Vodafone. This transaction is recorded as UK outward investment. As such, it affects the UK's position in any ranking of FDI inflows (by boosting other countries inflows relative to the UK's) as well as the UK's net FDI flows for the year.

Chart 4.2: Inward FDI flows to UK, Germany and France



Source: UNCTAD.

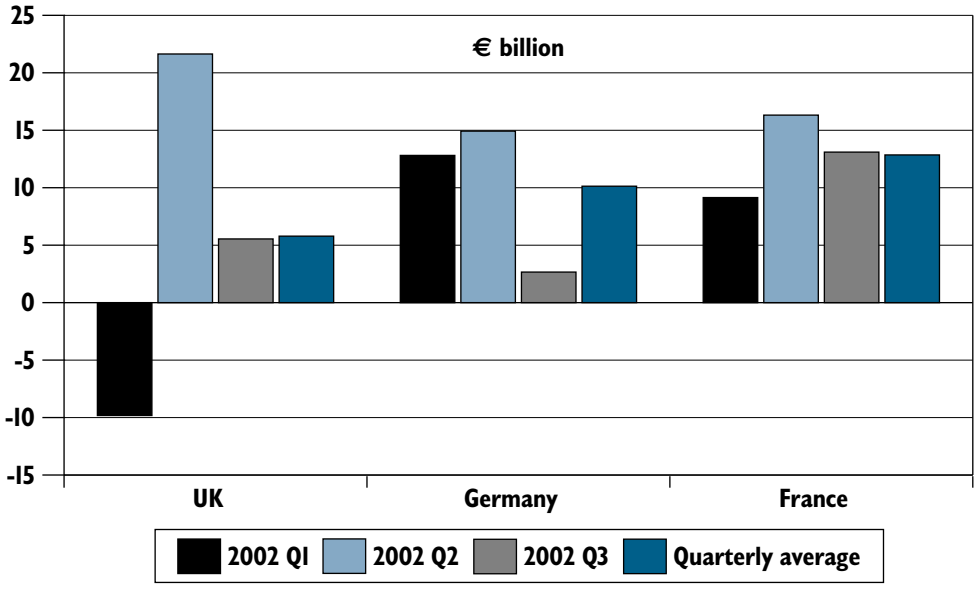
The situation in 2002

4.58 The fall in UK inward FDI in 2001 is mirrored in other countries; the UK's 54 per cent drop is broadly matched by a fall of 60 per cent for the EU as a whole. Although 2002 data are not yet available, recent UNCTAD projections suggest that, in 2002, the UK experienced the largest decline in FDI flows among developed nations, with inward investment falling by 75 per cent (from US$54 billion to US$12 billion).

4.59 These are, however, projections not hard data. FDI flows are inherently volatile and are very difficult to predict and reconcile with any accuracy; reliance is placed on past data to help draw inferences about future values. As Chart 4.3, based on Eurostat flows data shows, the UK experienced negative FDI flows in the first quarter of 2002. This depresses the total and average figures for the year to date, and is not indicative of normal quarterly FDI flows,[11] more likely representing large financial movements within a single company. FDI flows subsequently recovered in the second quarter before falling back in the third (as was also the case in France and Germany).

[11] The UK has recorded negative FDI inflows in only 6 out of the 159 quarters observed since records began in 1963.

Chart 4.3: Quarterly FDI flows in 2002

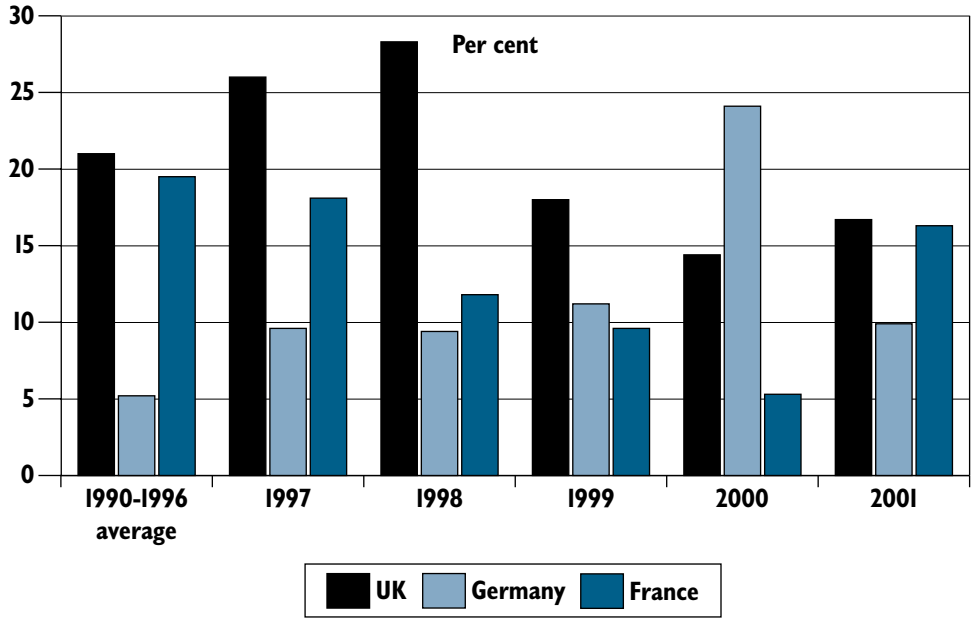


Source: Eurostat.

UK share of EU FDI

4.60 Chart 4.4 compares the UK share of total inward FDI (both intra and extra-EU) with that of France and Germany. The UK's share fell from 28 per cent in 1998 to just under 17 per cent in 2001. Part of the decline may reflect the rapid growth in the FDI share of Belgium and Luxembourg (not illustrated, but which grew from 9 per cent in 1998 to almost 30 per cent in 1999 and 2000, possibly due to factors such as the structure or location of company headquarters – see Box 4.2) and the 2000 acquisition of Mannesmann by Vodafone.

Chart 4.4 Country shares of total EU inward investment flows

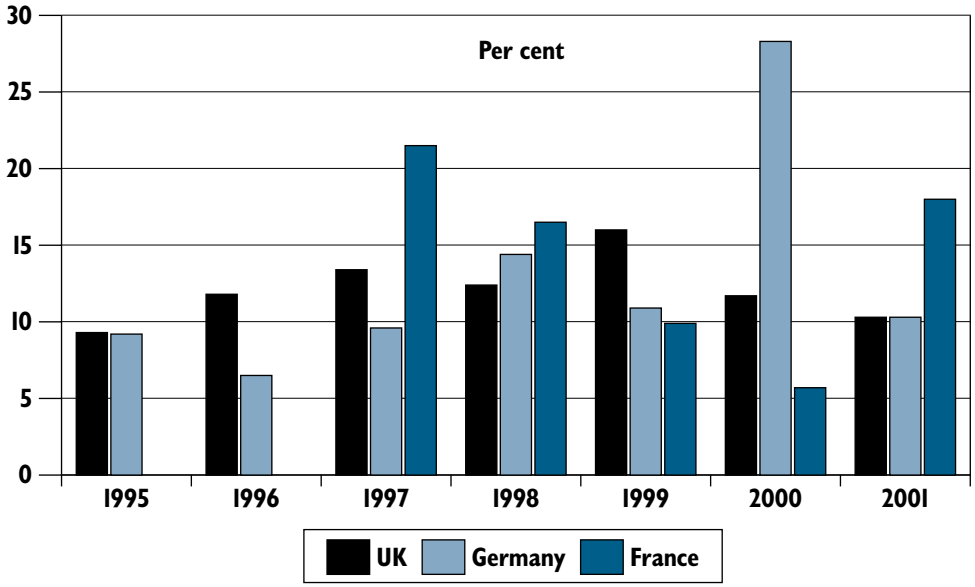


Source: UNCTAD 2002 and HM Treasury calculations.

Intra-EU FDI

4.61 Decomposing inward FDI into its intra-EU and extra-EU constituent parts helps to cast some light on the causes of the UK's recent loss of share. Chart 4.5 shows the shares of the UK, Germany and France in intra-EU FDI, i.e. cross-border investment within the EU. Within a very volatile picture, the UK's share of intra-EU FDI has overall kept pace with that of France and Germany; sometimes higher than one or the other, sometimes lower, but broadly constant. Notwithstanding its decline in 2000 and 2001, the UK's share of intra-EU FDI remains above that of 1995.

Chart 4.5: Country shares of intra-EU inward investment flows

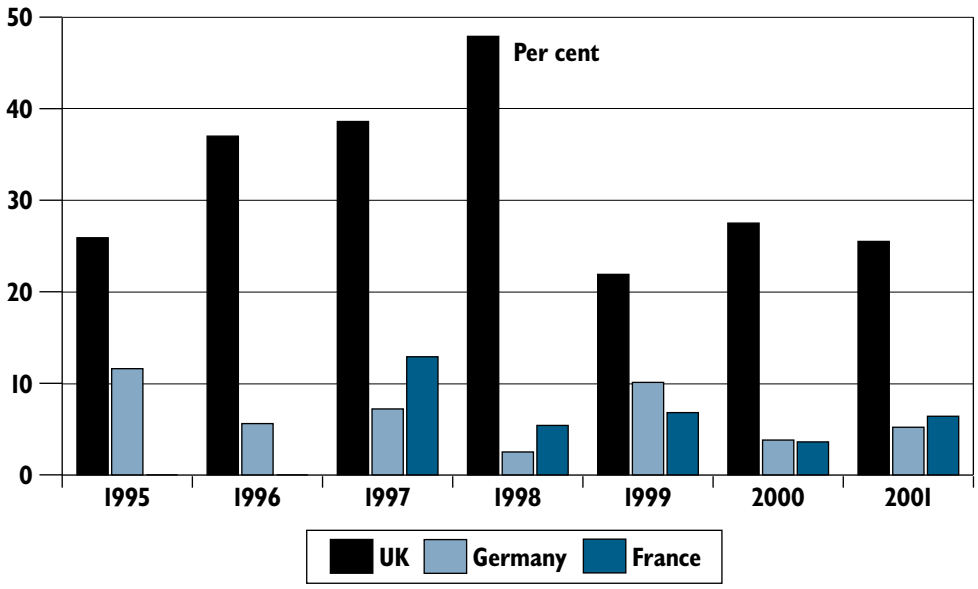


Note: French data not available pre-1997.
Source: Eurostat and HM Treasury calculations.

Extra-EU FDI

4.62 Chart 4.6 shows the UK, German and French shares of extra-EU FDI flows, i.e. investment from non-EU countries. The UK is a major recipient of non-EU FDI flows, its share peaking at almost 50 per cent of the EU share in 1998. While the UK's share has since been eroded, the bulk of the decline was concentrated in just one year, 1999, and appears since then to have stabilised at higher levels than for either Germany or France.

Chart 4.6: Country shares of extra-EU inward investment flows



Note: French data not available pre-1997.
Source: Eurostat and HM Treasury calculations.

4.63 The UK's loss of extra-EU FDI share in 1999 was substantial, at 26 percentage points, and compares with gains in Germany and Belgium (8 percentage points each), Ireland (7 percentage points) and Spain (6 percentage points). Investment into the UK from outside the EU fell in this year by 52 per cent. At the same time, however, investment into the UK from inside the EU increased (Chart 4.5).

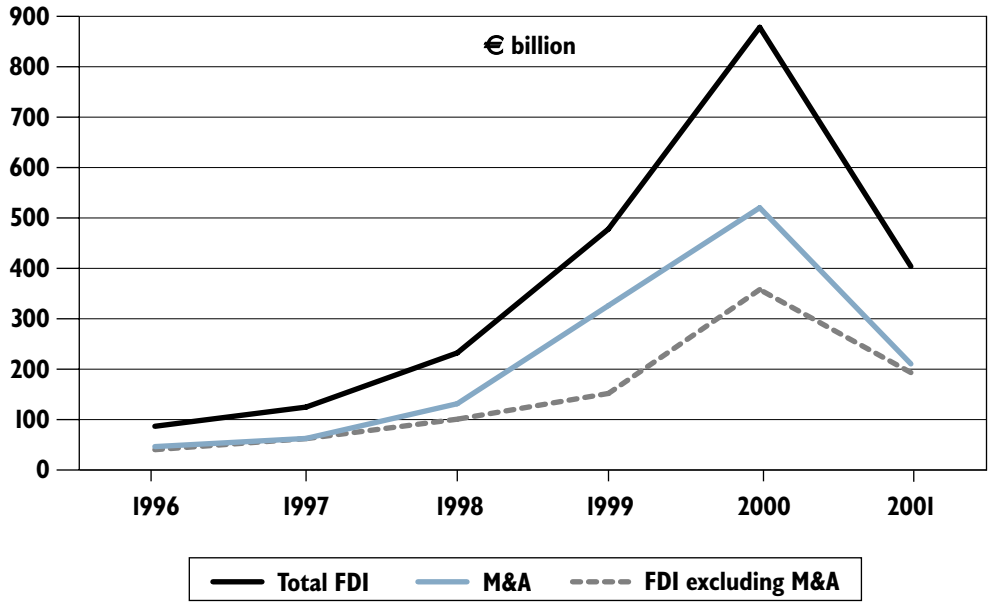
Mergers and acquisitions

4.64 It is not possible, using official flow data, to extract M&A data directly from FDI data. Information on M&A activity relies on reported values and can often be mis-stated.[12] However, it is possible to approximate the level of inward FDI flows, excluding M&A, by extracting the equity capital sub-component from the overall FDI statistics (see Box 4.2 for definition). The drawback of this approach is that other transactions may inadvertently be excluded, such as the purchase of domestic subsidiaries' shares by a foreign parent company, and inter-company transactions associated with M&A might still be captured even after the equity capital component is excluded. As, however, M&A tends in practice to dominate the equity capital account, this method provides a reasonable proxy for comparisons.

4.65 As Chart 4.7 shows, M&A activity has become an increasingly important source of EU investment inflows into the EU since 1998. The introduction of the euro may have promoted this wave of expansion and consolidation, though global demand, market conditions and sector-specific factors (especially in telecommunications) are more likely to have been the main driving factors. A list of the 20 largest M&A deals in 2000-01 is included in Annex C (Table C8), as are country breakdowns of M&A activity by European country (Tables C9 and C10).

[12] Inward M&A activity for the UK in 2001 reported by UNCTAD, for example, exceeds total inward FDI by around $15 billion dollars. While this is theoretically possible, it would require a huge outflow from another part of the inward FDI account.

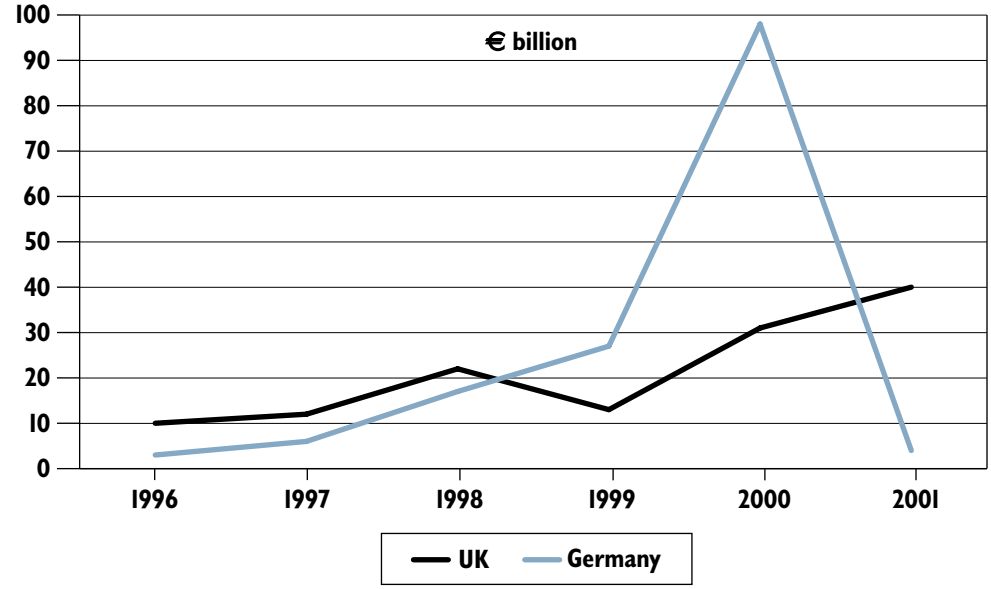
Chart 4.7: FDI inflows into the EU, excluding M&A activity



Source: Eurostat and HM Treasury calculations.
Note: FDI excluding M&A equals total FDI flows excluding the equity capital sub-component.

4.66 Underlying inward investment excluding M&A continued to rise in the UK after 1999, but fell sharply in Germany (see Chart 4.8).[13] M&A tends to be sensitive to the investment behaviour of a relatively small (though increasing) number of countries. The US, the UK, Germany, France and the Netherlands accounted for 82 per cent of international M&A in the 1990s (OECD, 2001a). Most of the M&A inflow into Europe – almost two thirds – was intra-European, stemming in particular from France, the UK and Germany.

Chart 4.8: FDI inflows into the UK and Germany excluding M&A activity



Source: Eurostat and HM Treasury calculations.
Note: FDI excluding M&A equals total FDI flows excluding the equity capital sub-component.

[13] Inter-company transactions associated with large amounts of M&A may not be excluded from these figures.

US FDI into the UK and EU

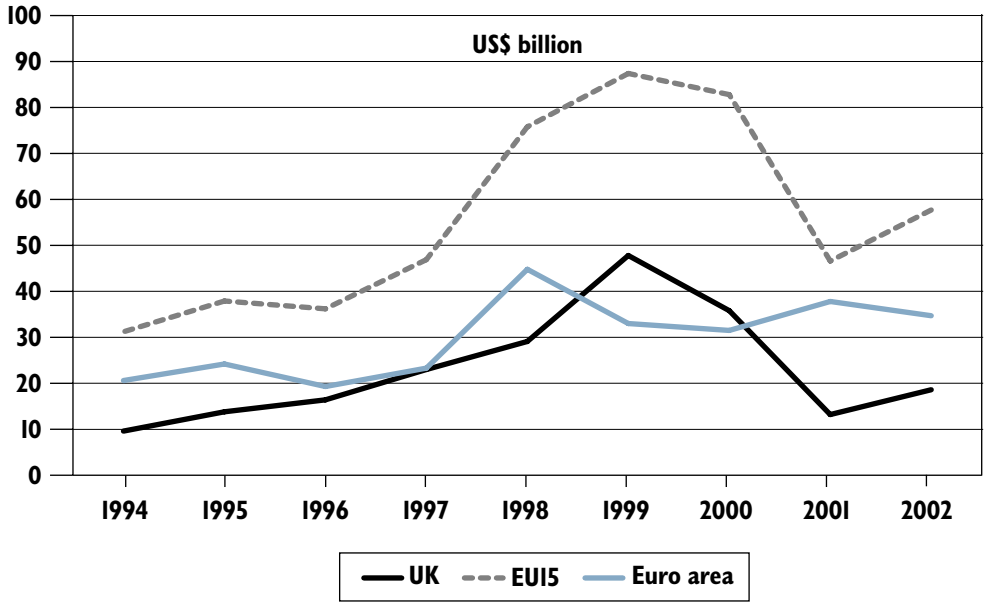
4.67 Detailed data on bilateral FDI flows are generally unavailable. However, data on US investment outflows are published (with some data points withheld to avoid revealing commercially-sensitive information on individual cross-border investments).[14]

4.68 The US was the world's largest outward investor in 2001, accounting for almost a fifth of world outflows. Of the US$114bn invested abroad by the US in 2001, around 40 per cent went to the EU as a whole. The UK attracted a quarter of this (second only to the Netherlands).

4.69 While the UK has traditionally been a leading recipient of US FDI, there is some recent evidence that euro area countries have been attracting a growing proportion of this investment. US FDI flows into euro area countries held up relatively well during the global slowdown in 2001, whereas flows into the UK and the total EU15 fell sharply, as shown in Chart 4.9.

4.70 US FDI into the UK fell by around 60 per cent in 2001. Around half of the fall was due to weaker investment in the 'finance, insurance and real estate'[15] sector, due to the global economic downturn and falling stock markets. The remaining weakness was concentrated in the 'other industries' grouping. Interestingly, manufacturing investment flows from the US to the UK actually increased in 2001.

Chart 4.9: US outward FDI flows to the EU



Source: US Bureau of Economic Analysis and HM Treasury calculations.
Note: data for 1995 exclude Spain and Sweden.

[14] Data provided by the US Bureau of Economic Analysis.

[15] Excludes depository institutions.

4.71 Table 4.9 compares by sector the change in US FDI stocks in the UK and the euro area between 1998 and 2001. It shows broadly similar peformance across most industries. The UK's growth was lower than that of the euro area in 'petroleum', 'service industries' and 'manufacturing' and higher in 'depository institutions' and 'finance, insurance and real estate' (Tables C11, C12 and C13 in Annex C provide further detail on US FDI stocks and flows by sector).

Table 4.9: Growth in US FDI stock in the UK and euro area, 1998-2001, historic-cost basis

Per cent (US$ billion in 2001)	UK	Euro area
Total	36 (249)	35 (367)
Petroleum	–35 (12)	–10 (7)
Manufacturing	31 (55)	34 (129)
Wholesale trade	11 (8)	11 (25)
Despositary institutions	24 (13)	18 (7)
Finance, insurance and real estate	52 (110)	47 (157)
Services	37 (17)	44 (30)

Source: US Bureau of Economic Analysis.

Japanese FDI into the UK and EU

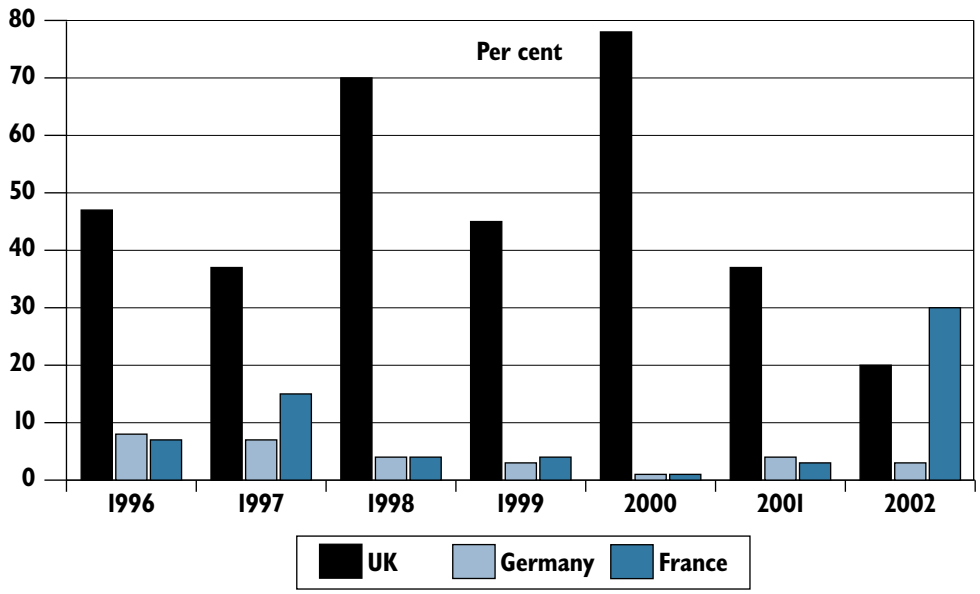
4.72 Japanese investment outflow data are also available. Japanese capital invested in the UK and the rest of EU represents only a small proportion of EU FDI stocks and tends to be concentrated in sectors such as car production and electrical goods. Japanese investment in the UK accounted for a little over 1 per cent of total inward investment flows in 2001, but has historically been considerably higher, accounting for 7 per cent of UK FDI inflows in 2000 and 12 per cent in 1990.

4.73 The UK received 13 per cent of total Japanese outward investment in 2001, over a third of Europe's total share.[16] The UK's share of total Japanese outward investment flows fell, however, to 9 per cent in the first half of 2002. Investment flows into France during the same period accounted for 14 per cent of the Japanese total, up from only 1 per cent in 2001.

4.74 The provisional half-year data for 2002 suggest sharp swings in Japanese investment flows, and as such should be treated with a degree of caution. They indicate that France's share of Japanese inward investment into Europe (see Chart 4.10), rose from less than 5 per cent in 2001 to around 30 per cent in the first half of 2002, while the share received by the UK and Germany declined. However, total FDI flows into the UK from Japan were higher in the first six months of 2002 than in the corresponding period in 2001. The increased FDI into France from Japan seems to reflect higher-value projects rather than a larger number of projects.

[16] Data for EU total not available. All data from Ministry of Finance, Japan: <http://www.mof.go.jp/english/e1c008.htm>.

Chart 4.10: Country shares of Japanese FDI flows to Europe



Note: Shares for 2002 represent the first six months only.
Source: Japanese Ministry of Finance and HM Treasury calculations.

(iii) Project numbers

4.75 Given the difficulties in using FDI data to assess the possible impact of EMU, project numbers based on surveys and interviews with actual and potential investors provide a valuable alternative source of information.

Invest UK annual review

4.76 The Invest UK annual review provides some details of the number of inward investment projects started in a financial year and the sector that the project is in. It can also provide an indication of the level of 'greenfield' investment into the UK economy, so avoiding some of the difficulties discussed in Box 4.2, although it does not measure the value of these projects. The review indicates that the number of projects in the financial year 2001-02 fell by 12 per cent on the previous year to 764 and the number of new jobs created fell by 52 per cent to 34,087. The largest number of projects from a single country was the US, with 288 projects creating 13,750 new jobs. EU countries accounted for around a third of the total projects and over 11,000 jobs.

4.77 Almost 40 per cent of these projects were new ventures and the remainder were shared equally between mergers and expansion. Around a third of the new projects into the UK in 2001-02 were in the ICT sector – still featuring heavily despite its global weakness during this period – and a significant proportion (almost 10 per cent) were in the automotive sector. Invest UK cites the continuing success of the UK in attracting inward investment as reflecting its record of economic stability, low taxes, workforce flexibility and know-how, science and technology expertise, R&D excellence and high skill levels and creativity. This list is very similar to the key drivers of FDI outlined in Section 3.

4.78 In a recent interview with the Financial Times (2003a), William Pedder, chief executive of Invest UK, stated that worries about the impact of the UK being outside of the euro did not appear to be reflected in estimates of inward investment projects for the first six months of the 2002 financial year. He noted that "*There are a huge range of views about the euro, depending on the activities in which companies are engaged*". Mr Pedder stated that the number of inward investment projects in the first six months of the year had remained at similar levels to the previous year but the number of new jobs created had declined. He noted that new investments were increasingly in smaller, but higher-value projects, which in many cases attract higher value jobs.

Ernst and Young project information

4.79 Ernst and Young's (2002) *European Investment Monitor* provides a useful supplement to Invest UK project data. This survey counts the number of inward investment projects for all EU countries, thereby providing useful comparisons across countries. It also breaks the numbers down by sector and source.

4.80 According to this source, between 1999 and 2001, the UK received the highest number of inward investment projects in Europe – a fifth of all projects. While the share fell from 26 per cent in 1999 to 19 per cent in 2001, it remained considerably above that of the second-ranked country, France (13 per cent). In the first six months of 2002, however, the UK's share declined to 16 per cent while that of France was unchanged at 13 per cent. In the absence of data on the value of these projects, it is not possible to estimate what the falling number of projects implies for their overall value to the UK economy.

(iv) Survey evidence

4.81 A recent survey (Financial Times, 2003b) of 40 foreign manufacturers in the UK employing 62,000 people highlighted concerns about UK membership of EMU. Around 61 per cent of the respondents willing to give their views said they were less likely to invest in the UK if it failed to decide whether to join the euro. The remaining 39 per cent said that the single currency would make little difference. More than half of those in favour of UK entry to EMU were firms based in euro area countries, compared to only a third of those with no preference.

4.82 The *FDI Confidence Index* (AT Kearney, 2001) asked business executives what factors might undermine the UK's global position as an FDI location. Half of all continental European executives who were asked said that a decision not to join EMU was the most important factor which would lead them to reconsider investing in the UK. The sterling-euro exchange rate was the second most important factor, while ongoing uncertainty over joining EMU ranked third. Over half of the European executives surveyed stated that a UK decision not to join the euro would dissuade them from investing in the UK. North American executives, in contrast, were primarily concerned with European and US economic growth.

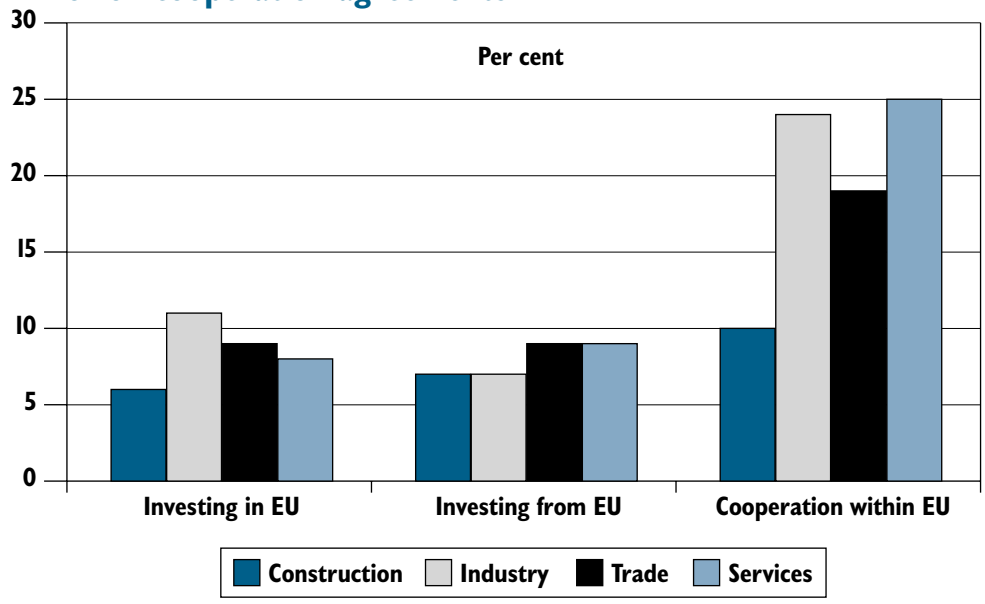
4.83 Not all surveys, however, draw the same conclusions. Some find the UK EMU decision to be of limited importance even to euro area inward investors. A recent survey of German investors into the UK by the German-British Chamber of Industry & Commerce (2003), for example, found that 78 per cent of parent firms considered that the UK remaining outside the euro would have no effect on their future investment, with similar figures for their UK subsidiaries. 84 per cent of subsidiaries viewed UK participation in the euro in the next three to five years as beneficial, although only 56 per cent believed that UK entry would benefit their own companies.

The impact of the Single Market on investment

4.84 The period surrounding the implementation of the SMP may provide some guidance on the possible implications of the euro for FDI. FDI flows appear to have grown after 1992, especially intra-industry and intra-EU flows. In the early 1980s, the EU accounted for around a quarter of worldwide FDI. By 1993 this had risen to 44 per cent, of which around 60 per cent was intra-EU compared with 40 per cent a decade earlier (European Commission, DG Internal Market 1996a). By 2000, the EU's share of global FDI flows was over 50 per cent, though it fell back slightly in 2001.

4.85 From the perspective of the individual firm, however, the effect of the SMP on cross-border investment within the EU appears to have been more muted, at least insofar as is indicated by responses to the 2002 *Internal Market Scoreboard* (see Chart 4.11). As the chart also shows, however, the SMP is viewed as having been extremely influential in facilitating cooperation agreements, especially in the services sector.

Chart 4.II: Firms considering the Single Market to have had an important influence on investment in or from the EU, or on cooperation agreements



Note: Firms with 10+ employees only.
Source: Gallup Europe, 2002.

Is a euro effect discernible?

4.86 In drawing any conclusions about FDI and the potential impact of the decision on EMU, it is important to recap on the key facts from the above analysis:

- **the UK is a major recipient of FDI.** The UK had the second largest stock of inward investment in 2001, higher than any other European country and second only to the US. The UK also had the second largest inflow of inward investment in the world in 2001;
- **the UK is a major outward investor** and had the second largest stock of outward investment in the world in 2001;

- **the UK's share of inward investment in the EU has weakened since 1998.** This has been most marked in extra-EU FDI;
- **the UK is a major recipient of US and Japanese FDI flows.** The UK received 10 per cent of US flows and 13 per cent of Japanese flows in 2001. This is more than any other EU country, apart from the Netherlands; and
- **mergers and acquisitions can distort the FDI picture in any one year.** The recent boom and contraction in M&A activity makes it extremely difficult to discern underlying trends.

4.87 Some particularly interesting developments in EU FDI flows took place in 1999. Three significant shifts occurred:

- **extra-EU FDI flows into the UK fell** by 52 per cent and the UK's share of extra-EU FDI fell by 26 percentage points. Since then, the UK share has remained relatively constant;
- **extra-EU FDI into some euro area countries increased sharply,** in particular to Germany, Belgium, Ireland and Spain. The German and French shares have since fallen back slightly; and
- **intra-EU FDI into the UK increased** and the UK's share of EU inward investment flows increased by 4 percentage points. Since then, however, the UK's share has declined.

4.88 One explanation for these developments could be that firms from outside the EU, which would previously have invested in the UK to access EU markets have been diverted to euro area economies by the lower barriers to trade stemming from EMU. This would be consistent with both the fall in extra-EU FDI to the UK and the increase to euro area economies. At the same time, and against a background of increasing world flows, EU firms still needing to access UK markets continued to invest in the UK.

4.89 There is, however, no shortage of alternative explanations. The UK's share of extra-EU FDI increased sharply between 1995 and 1998. Subsequent developments may simply reflect a return to a more 'normal' level. It is unlikely that the UK could have expected to attract around half of all outside investment into the EU over the medium term, and at around 25 per cent, the UK's share remains large.

4.90 M&A activity complicates the analysis further.[17] M&A has become increasingly important in the EU since 1998 and this development, which reflects a range of global, financial and sectoral factors, may have dwarfed any euro effect. Excluding M&A activity from UK and German FDI flows suggests that UK inward investment continued to rise in 2001, while German inward investment contracted sharply. FDI flows to Germany were, however, much higher in 2000 than those to the UK. These sharp movements in M&A may also have distorted relative movements in intra and extra-EU FDI shares.

4.91 US FDI flows to the UK, EU and euro area countries suggest that US investment to the euro area has performed better during the downturn than that to the UK. However, with just a few years' data available, it is too early to gauge with any confidence the effects of EMU membership on US inward investment, except to note that the euro itself does not appear to have dampened such flows. The growth of US FDI stocks by industry between 1998 and 2001 show little significant difference between the euro area and the UK.

[17] For more information on M&A, see OECD (2001a).

4.92 The UK's share of Japanese investment into Europe almost halved from 38 per cent in 2001 to 20 per cent in the first half of 2002. However, total FDI flows from Japan into the UK were higher in the first half of 2002 than in the first half of 2001.

4.93 The lower volatility of FDI stocks data means that it can assist in the analysis of sectoral patterns post-EMU. This analysis, albeit highly tentative, suggests several sectors where FDI stocks in Germany and France have grown more strongly than in the UK, including 'electricity, gas and water', and 'transport and communications'

Looking forward

4.94 As the EU enlarges, the new Member States may experience a boost to inward investment flows as a result of EU membership (Bevan *et al.,* 2001) placing further downward pressure on the FDI shares of other EU countries and boosting outflows of existing EU members. The prospect of full membership of the EU, free access to the Single Market in most sectors and the opportunities arising from privatisation and deregulation, have already increased the attractiveness of these countries to investors. While the new Member States account for a relatively small proportion of the world's FDI inflows, they have managed to avoid the full effects of the recent contraction in global FDI. World FDI inflows fell by 50 per cent in 2001, while flows into the new Member States fell by only 2 per cent. Their share of world FDI accordingly increased from 1.4 per cent to 2.7 per cent and UNCTAD expects this resilient performance to have been repeated in 2002.

Conclusions on FDI and EMU

4.95 This section has used the available evidence to analyse whether there has been a euro effect on FDI into the UK and the euro area to date. There is evidence that the UK's share of FDI from outside the EU has fallen relative to other EU members since the introduction of the euro. This must, however, be considered against a backdrop of factors such as the rapid global increase in FDI over the late 1990s, largely driven by M&A activity, and the sharp fall since 2000, as well as the UK's leading position within Europe in terms of inward investment. It is difficult to detect with any confidence a specific EMU effect. These issues are considered further in the investment test – the third of the Government's five economic tests for EMU entry.

CONCLUSIONS ON THE SHORT TO MEDIUM-TERM EFFECTS

4.96 The analysis in this section is consistent with (or does not contradict) the theoretical discussion in Section 3 which suggested that EMU could be expected to foster increased trade, investment and cross-border investment. The analysis of sectoral trade flows in this section also provides some support to the theoretical discussion of the sectoral characteristics which may influence the impact of EMU on different sectors.

4.97 The next section considers the evidence on the longer-term effect of EMU on competition, specialisation and concentration. Section 6 draws together the analysis of both the theory and evidence, with a forward-looking discussion of how EMU could affect different industries, depending on specific sectoral characteristics.