

# The consequences of saying no

*An independent report into the economic consequences of the UK saying no to the euro*

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This report assesses the economic consequences for the UK if it rejects the euro. Although funded by Britain in Europe, the Commission was independent and free to draw the conclusions it thought warranted.

The Commissioners, all professional economists of international standing, were appointed by the Commission's Chairman, Professor David Begg. The Commission's composition was designed to reflect a range of views about the UK's adoption of the euro.

As a result of its investigation, the Commissioners reached substantial agreement about the lessons to be drawn from economic reasoning and economic evidence.



### Our logic

- It is widely accepted that, for the UK, adoption of the euro has costs as well as benefits, and is risky. It is far less appreciated that remaining outside the euro is also risky.
- The Commission's investigation focuses on the latter issue. Being clearer about what is likely to happen if the UK rejects the euro is a necessary input to any comprehensive evaluation of In versus Out. These considerations will be critical to the UK government's assessment of its five economic tests, due by June of this year.
- There are two forms of Saying No. Not ever, and not yet. Neither can be taken at face value. Permanent rejection of the euro is unlikely given the continuing deepening of links between the UK and the euro-zone countries.
- Conversely, delay by the UK is not merely a chance to wait and see. The patterns of business and the institutions of the euro-zone continue to evolve. An important window for reform - in monetary policy, financial regulation, and fiscal design - is now opening.
- By failing yet to commit, the UK may have less influence over the redesign of the euro-zone's architecture. Since the UK has a valuable contribution to make, its weaker influence will be bad for the evolution of the euro-zone. In turn, this may make future UK entry less likely.
- Temporary delay is thus an option with a price. Delay makes sense only if its short-term benefits outweigh these short-term costs.
- There are two possible benefits of delay: allowing time for UK interest rates to completely converge to euro-zone levels, and allowing time for the UK exchange rate to depreciate to a more competitive level.
- However, UK interest rates exceed those in the euro-zone for structural as well as cyclical reasons, which may persist as long as we are outside the euro. And there is no guarantee that the next movement in sterling's exchange rate will be downwards. The benefit of waiting may not exceed its cost.
- The alternative to adoption of the euro is not the status quo, which reflects a balance of probabilities about whether the UK will join or not. Permanent rejection of the euro would adversely affect trade, inward investment, and the location of financial markets. The UK would lose its current status as a possible Pre-In. Nor will existing euro-zone institutions continue unaltered. But how they alter may depend on whether the UK quickly signals a firm intention to join.
- It is mistaken to argue that the UK should simply wait until the five tests are passed. Delay has clear costs as well as possible benefits. If the UK is likely to eventually join EMU it is only worth delaying until the marginal benefit of further delay equals its marginal cost. Waiting until the marginal benefit of further delay is zero means waiting too long.

### Supporting arguments

- Monetary unions affect international trade. We review recent empirical research and endorse two conclusions: monetary unions *do* promote trade between their members but *do not* reduce bilateral trade between their member states and countries outside such unions. This has two implications. First, by keeping the pound, the UK misses out on much of the trade creation now occurring within its principal trading partner, the euro-zone. Second, even if it stays outside, UK trade with euro-zone countries is likely to keep increasing, albeit at a slower rate than trade within the euro-zone.
- Trade creation within the euro-zone will boost productivity and incomes, and raise competitiveness. Higher euro-zone incomes help UK exports, but cost reduction within the euro-zone hurts the UK traded goods sector. Even if the volume of trade with the UK rises, the UK traded goods sector will be squeezed: profits will fall, wages will fall, or both.
- Staying out of EMU is likely to reduce UK inward investment. Inward investment to the UK has already fallen sharply. In part this reflects developments in the US and in the global economy, but the UK share of inward investment has also fallen.

- Evidence on corporate pricing behaviour can reveal how quickly trade, investment and competition effects of EMU are coming through. Broadly, this evidence supports the conclusion that EMU is giving rise to greater competition within the euro-zone and reducing market access of UK firms relative to their euro-zone competitors.
- EMU will also make the euro-zone more competitive in financial services. Already, some parts of the cluster known as the City of London have relocated to the euro-zone. Some of this relocation will occur whether or not the UK joins EMU. But a single financial market within the euro-zone allows for the emergence of comparative advantage previously latent when financial markets were fragmented by national currencies and national regulations.
- Activities in which network externalities are substantial - for example, investment banking and foreign exchange markets - are likely to remain in London whatever the UK decides. Other activities may be affected by the decision: for example, the ECB wants the infrastructure for the euro (clearing and the payments system) to be located within the euro-zone.
- For all these reasons, in the long run the status quo for the UK as an Out may deteriorate. What about short-run issues concerning temporary delay of the UK entry decision beyond 2003/4?
- First, we examine cyclical convergence and monetary transmission. The need for a different monetary policy reflects either differences in shocks or differences in the transmission mechanism through which interest rates affect the real economy. Significant convergence has taken place already.
- This reflects trade patterns, geography, and policymaking. Trade patterns have strengthened, economic distance is falling, and policy divergences are closing. Financial structure has been converging rapidly in the last decade. The gaps are not fully closed, but EMU membership will strengthen the correlation of business cycles and the similarity in the underlying economic and financial structure.
- One institutional change that would further close the gap would be a switch in UK housing finance from variable-rate to fixed-rate mortgages. This would be desirable whether the UK joins the euro or not. We explain why the market has resisted such a change, despite the benefits for borrowing households and for pension funds and life assurance companies that want to lend long term.
- We discuss how fixed-rate mortgages could be encouraged, based on the proven system that already operates in the US. Since UK and euro-zone long rates have already converged, switching to the euro would then have few consequences for the housing market. However, it may take several years before such a system could be in widespread use in the UK.
- Temporary delay would not guarantee that the UK could join EMU at a more favourable exchange rate. For example, fiscal expansion in the UK might eventually induce a rise in UK interest rates, and continuing German stagnation might eventually induce further reductions in ECB interest rates. Sterling could appreciate as well as depreciate.
- Continuous changes in the design of the ECB or the Stability and Growth Pact undermine their credibility. There may be only one chance to amend initial defects. Incumbent member states will want to complete these reforms before the wave of new accession countries are allowed a voice. Similarly, the creation of the single currency is causing a step change in European financial markets. Again, there is a particular but finite window in which the corresponding redesign of financial institutions and regulations will occur.
- Good arguments, and the demonstration of an alternative successful experience, can have an effect. Even so, the UK's influence during this window of reform will be greater if the UK has announced clearly that it intends to join in the near future.
- As an Out, the UK will face a status quo that evolves rather than stands still. Since our central forecast is that UK-euro-zone links will deepen, UK public opinion may eventually find the euro more attractive than it does today.
- The alternative - an early declaration of UK entry that commits to a clear timetable - would not guarantee a dramatic increase in UK influence within the euro-zone. All options are risky. But engagement now may offer the UK the best chance of eventual safety. The default option of simply retaining the pound forever is much less appealing than is commonly supposed.

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# 1 Introduction

## 1.1 Terms of reference

The UK government has laid down five tests for deciding whether or not the UK should adopt the euro. These are (1) whether the UK and the euro-zone have converged sufficiently to make a single monetary policy desirable; (2) whether the UK economy is sufficiently flexible to join a common currency; (3) how adoption of the euro would affect investment; (4) how adoption of the euro would affect the City of London; and (5) how adoption of the euro would affect employment and growth more generally.

An initial assessment by the Treasury [HM Treasury (1997)] concluded that the tests had not yet been met but might be capable of being met at some future date. More recently, there have been several independent assessments [for example, the favourable judgements reached by Barrell (2002), and Ardy *et al* (2002); and the adverse judgement by the No Campaign in Bush (2001)]. The most comprehensive assessment of all, being conducted by the Treasury itself, is expected to appear before June 2003.

Most of the popular debate assumes that the UK has a perfectly good default option, namely to remain as it is today. Since the UK is currently doing better than many countries within the euro-zone, the momentum of the current debate often lies with those opposing early UK adoption of the euro.

Recognising that momentum matters, Britain in Europe wished to rebalance the public debate by commissioning an independent investigation of whether the status quo is an accurate guide to how the UK will develop if it remains outside the euro. By deciding to retain the pound, the UK may progressively gain or progressively lose relative to its position today. Assessing how the status quo may evolve is the purpose of this report.

Any comprehensive judgment about whether the UK should adopt the euro must compare what is likely to happen to the UK if it enters the euro-zone with what is likely to happen if it remains outside the euro-zone. With limited resources at its disposal, our Commission has thus confined its analysis to elaborating the counterfactual to UK entry to the euro-zone. In so doing, we hope to make a distinctive and timely contribution to the public debate.

Accordingly, the terms of reference for the Commission's enquiry are:

- To assess whether the status quo can be sustained if the UK remains outside the euro.
- If it cannot, to examine whether the UK's economic position will improve or decline the longer it remains out.

## 1.2 What is meant by Saying No to the euro?

The UK has expressed the wish to join the euro-zone but laid down five tests for when joining may become feasible. At present, the UK thus has the status of a potential Pre-In country.

The status quo inevitably reflects this. Market assessments, both in pricing assets and in locating businesses, currently reflect various probabilities of UK entry at different dates, but also some probability of permanent rejection of the euro by the UK.

Saying No to the euro might mean one of two things. It might mean Not Yet, thereby removing the possibility of entry in 2003 without precluding later entry. Saying No in 2003 would change the status quo by reducing the chances of early entry. However, repeatedly deferring this decision year after year must eventually reduce substantially the perceived probability of eventual entry. Somewhere along this path, the UK would move from a likely Pre-In to a Probable-Out.

Alternatively, saying No might instead mean an early decision to say Never. The distinction between these two definitions of saying No can be overdrawn: neither the decision to stay in nor to stay out is irreversible. A decision of Never would simply shade the odds a bit more against permanent entry. As is well known, Ireland and Denmark have recently reversed previous referendum judgements on Europe.

Just as saying Never may be reversed at some future date, saying Not Yet may have more permanent implications than is commonly supposed. Several imminent reforms in the organisation and operation of the euro-zone will have a lasting effect. If the UK cannot influence these effectively, reforms may take the euro-zone in a direction that then makes subsequent UK entry less likely.

Despite these ambiguities, our report endeavours to distinguish between the permanent effects of staying out indefinitely and the likely effects of temporarily deferring entry. It is necessary to discuss both.

### 1.3 Outline of the report

Chapter 2 discusses the effect of EMU on UK trade patterns and on trade between euro-zone members themselves. In the last decade, there has been a profusion of empirical research arguing that monetary unions enhance trade between their member states. Whether monetary unions cause this additional trade, or are the symptom of it, has been the subject of some controversy.

Even allowing for all subsequent criticisms, which diminish the magnitude of the estimated monetary union effect, it is not possible to eliminate this effect: we conclude that there is now robust evidence that monetary unions do foster trade between their member states. In turn, additional trade links imply a larger market, greater competition, opportunities for cost reduction, and more rapid output growth.

By remaining outside the euro-zone, the UK will sacrifice the opportunity to enjoy these beneficial effects. Will trade creation within EMU promote or impede bilateral trade between the UK and EMU countries? A larger EMU market may foster trade with the UK but a more competitive EMU market may have adverse effects on UK trade.

To date, empirical studies of trade diversion conclude that, whereas free trade areas tend to cause trade diversion, not least because they are associated with changes in external tariffs, monetary unions do not cause absolute trade diversion. We present early evidence for European trade consistent with the view that UK trade may actually have been stimulated a bit by the creation of the euro-zone.

Thus, in terms of UK trade, the principal cost of remaining outside the euro is not the deterioration of UK trade relative to its current level but rather the failure to enjoy the more rapid rise in trade that EMU membership would bring.

However, the magnitude of trade flows is not the whole story. A rise in competitiveness in the euro-zone relative to the UK will also affect profit margins in industries that display imperfect competition, which is after all the main driving force of the intra-industry trade between EU member states. In such a framework, the effects of monetary union then include both profit shifting, as profit margins are affected, and cost changes, as opportunities for scale economies increase or decrease. The welfare impact of these changes can be substantial. Chapter 2 concludes that the adverse effect on the UK will be larger than that merely measured by what happens to the volume of trade.

Chapter 3 extends this discussion to the location of firms and foreign direct investment. The location of firms and their factories depends on the pattern of costs of production relative to the pattern of demand for their output. If the creation of EMU enhances market access for those within the euro-zone, other things remaining equal this will increase the relative attractiveness of the euro-zone as a location for inward investment, and will diminish the relative attractiveness of the UK.

Again, this is not the end of the story. Equilibrium is ultimately restored by induced changes in profits and, especially, in wages. In an open economy, much of the latter may eventually be accomplished by a change in the real exchange rate that alters the international value of non-traded labour services. Chapter 3 calibrates a simple model, using mainstream empirical estimates, to investigate how large such effects could be. Induced effects on wages are larger than the eventual effect on GDP, since the impact effect arises only in the traded goods sector.

If the UK remains outside EMU, investment is likely to be diverted from the UK to the euro-zone, which will eventually reduce UK real wages, either directly or via a real depreciation of sterling. Can any evidence of such effects yet be detected? UK inward investment has fallen sharply in the last few years. Some of this may be the beginning of an EMU effect, which would be no surprise. However, we document the historical volatility of UK inward investment. The recent fall may partly reflect both the end of abnormally high inward flows in the late 1990s and the impact of the US slowdown. A few more years of evidence may allow a much sharper distinction between these competing explanations.

Since impact effects may show up more quickly in prices than quantities, Chapter 4 uses evidence on pricing behaviour to infer what is happening more generally to competition within Europe. This discussion has several dimensions. First, we quantify the reduction in price dispersion within Europe and assess the scope that remains by examining US evidence as a baseline. Second, we document the trend for euro-zone companies to reduce price discrimination across the different euro-zone countries and compare this with the pricing behaviour of UK firms selling into the euro-zone market.

These assessments confirm that EMU has led to greater market integration within its member states, from which they may therefore expect to derive the benefits identified in Chapters 2 and 3.

Chapter 5 examines financial markets more generally. Financial clusters, such as the City of London, reflect network and location externalities. In such cases, inertia matters. Nevertheless, some activities are easier to shift than others. Chapter 5 explains which financial markets and institutions are likely to relocate to the euro-zone.

In some cases, the creation of the euro and integration of euro-zone markets has created a pull that London will find irresistible whatever the UK now decides. In some cases, inertia is so strong that activities are likely to remain in London whether or not the UK now adopts the euro. In a few cases, the eventual location of financial institutions may actually depend on whether the UK joins the euro-zone or not. We explain which activities are likely to be affected in this way. We defer until Chapter 9 two final considerations: how the UK decision on the euro will affect the direction of financial regulation in the euro-zone, and what impact this will have on the UK.

Chapter 6 deals with business cycles and the appropriateness of a single monetary policy. The standard discussion of optimal currency areas begins by asking how correlated the economies of potential member states are, and what flexibility they display. Greater correlation implies that a single monetary policy will be more appropriate for all, and greater flexibility implies that domestic adjustment can more readily cope with any country-specific shocks to which the single monetary policy will not react.

Empirical assessments have usually concluded that the core economies of the euro-zone are fairly correlated with one another, but that peripheral Europe, including the UK, are less well correlated with the euro-zone average. However, lower transport costs and better communications have been raising these correlations steadily over time, and geographical proximity continues to be the most reliable determinant of trade patterns. In short, these correlations are increasing and likely to do so further.

We discuss how these correlations are likely to evolve and how this will affect the status quo. Recent research suggests that the act of joining the euro-zone would itself steadily increase cyclical convergence between the UK and the euro-zone.

The effectiveness of the single monetary policy also depends on how similar the transmission mechanisms from interest rates to the real economy are in the different member states. We discuss early evidence of the differences across countries. Since transmission mechanisms primarily reflect the structure of financial institutions, we also examine recent trends in financial structure, which in many aspects have exhibited surprising convergence both between euro-zone member states and between the euro-zone and the UK.

As time elapses, the cost to the UK of living with a single euro-zone monetary policy is thus diminishing. But such a cost clearly continues to exist. The UK is not yet economically in the heart of Europe, and its geographical position makes it hard to be in the inner core. The case for UK adoption of the euro cannot rest on the desire to get a more appropriate monetary policy for the UK. Rather it must rest on other factors, for example better access to the markets of its principal trading partners.

One aspect of adopting the single monetary policy that remains problematic for the UK is the fact that short-term interest rates in the euro-zone have been consistently below those in the UK. Immediate entry would therefore appear to confront the UK government with Hobson's choice: to accept a monetary stimulus that the Bank of England had already rejected or to tighten fiscal policy to offset the expansionary effect of switching to the euro-zone's monetary policy.

Chapter 7 argues that this is a false dilemma. UK long-term interest rates have already converged to euro-zone levels. Hence, if housing finance could be switched from variable rates to fixed rates, EMU entry would then be easier for the UK. We discuss how this might be accomplished, argue that it would anyway be beneficial whether or not the UK joins EMU, but note that conversion on a scale adequate to facilitate easy EMU entry would probably take two or three years to accomplish. In short, this proposal would facilitate an early announcement of future entry, but not an early announcement of imminent entry.

In the long run, closer UK links with euro-zone countries may make eventual UK membership very likely. What then are the costs and benefits of temporary delay? Having argued that waiting a few years is no guarantee of convergence of short-term interest rates, which is why a more radical alteration of UK housing finance is required, Chapter 7 then discusses another possible benefit of temporary delay, namely to allow time for a further depreciation of sterling against the euro. On balance, we agree that sterling was overvalued against the euro, that sterling's recent depreciation as far as 1.48 euros has been welcome, and that some further real depreciation would be helpful. Waiting might accomplish this, but might not.

Although we have only limited knowledge of what propels floating exchange rates in the short run - witness the frustration regularly expressed by the Monetary Policy Committee - we also know that credible announcements can steer markets in the right direction. For example, the pre-announcement of conversion rates to the euro for initial members, proposed in CEPR (1997) and subsequently adopted as EU policy, achieved precisely the desired effect.

Whilst agreeing that (a) the entry rate of sterling is a consideration of some significance, (b) some further depreciation is desirable, and (c) both euro-zone precedents and formal treaties preclude substantial final depreciations in the run up to euro-zone membership, Chapter 7 argues that it might be possible to resolve this question satisfactorily in the entry negotiations with the euro-zone. Precisely how that might work is a question we discuss in Chapter 9.

Chapter 8 contrasts arrangements to promote fiscal discipline. Within the euro-zone, the Stability and Growth Pact lays down ceilings on budget deficits, and the conditions under which fines on national governments can be imposed for exceeding these limits. Within the UK, the Code for Fiscal Stability limits government borrowing over the business cycle to the amount needed to finance government expenditure on capital formation.

To date, as a device to reconcile long-run discipline with short-run flexibility the CFS appears superior to the SGP. The latter is cumbersome and has been widely criticised for being arbitrary, for imparting a deflationary bias, and for establishing a system of central interference in national economies that, by arousing political resentment at national level, risks undermining the very credibility of the Pact itself.

However, discussion of reform of the Pact is now under way, and it can be given a more sensible and appealing structure. Moreover, the Code for Fiscal Stability is not without its own weaknesses - is education current or capital expenditure? - and is only as good a commitment device as the determination of the Chancellor to be bound by it. Moreover, if a UK recession persists, the credibility of the Chancellor in asserting that current deficits are nevertheless consistent with the CFS may be increasingly questioned even if that judgement is entirely correct. In short, a reformed Stability Pact may become as appealing a device for fiscal discipline as the Code for Fiscal Stability.

The Stability Pact is not the only aspect of institutional reform within the euro-zone that is on the agenda. Two other areas are also of great importance. First, the departure of the first President of the European Central Bank creates an opportunity to reassess how the single monetary policy is designed and conducted. Second, as European financial markets become ever more integrated, prompted in part by the creation of the euro itself, the regulation and supervision of European financial markets are also undergoing major changes.

In all three areas - SGP, ECB, financial regulation - a window for reform has opened but will shut again. Incumbents will want to reach a deal before the wave of new accession countries are entitled to a vote, and some decisions may be taken within the next two years. Chapter 9 therefore assesses the relationship between the UK entry decision and the direction of reform. Would a clear early signal of UK entry enhance UK influence, thereby raising the probability that reforms took place in directions favoured by, and favourable to, the UK? Could continued ambivalence, or even outright rejection of the euro, dilute UK influence to the point where euro-zone institutions then evolve in ways that the UK dislikes, making subsequent UK entry itself less likely?

To put some flesh on the bones of the political economy of the entry decision, Chapter 9 cites existing evidence of what we know about how voting intentions of individuals depend on identifiable characteristics of the economy in which they live. If the UK remains an Out for many years, economic linkages with the neighbouring euro-zone are still likely to deepen, itself a force for a gradual movement of public opinion towards euro-zone entry. In such circumstances, having allowed euro-zone institutions to be reformed in ways that then deterred UK entry would be unhelpful.

Chapter 9 then uses cartel theory to identify the considerations relevant to a UK assessment of how its entry decision relates to its leverage over reform within the euro-zone, the issues raised about how a UK referendum might then be framed, and how negotiations with the euro-zone might be conducted. Essentially, the dilemma is that any unconditional referendum result then reduces subsequent UK bargaining power, but delegating too much subsequent negotiating power to the government risks blurring the terms on which a referendum can then be conducted. We discuss the extent to which a conditional referendum can solve this dilemma.

Can the UK have its cake and eat it, influencing euro-zone reform by example and argument from outside the euro-zone without actually having to indicate any early intention to join? Relevant evidence and cogent argument is always useful, but the history of EU policies and institutions reveals a clear lesson: deals are struck by those at the table, and subsequent amendment of those deals is difficult. Had the UK been an EEC member when the Common Agricultural Policy was hammered out, the ensuing decades might have been very different. And no amount of subsequent discussion has managed to overturn that arrangement, however compelling the logic or the evidence.

Together, the nine chapters of this report argue that the status quo is fragile and probably unsustainable. It may look tempting to reject the euro on the grounds that, by keeping the pound, the UK can simply continue as it is today.

But things will not stand still if the UK rejects the euro. In the long run, euro-zone members will trade more with one another as their single market deepens. This will have beneficial effects on which the UK will miss out. UK profitability and/or wages will suffer even if there is no absolute decline in UK trade flows. Relative to today when the UK is as much a Pre-In as a sure Out, investment on balance is likely to relocate towards the euro-zone market. Some financial markets and institutions will follow.

Even if the UK decides to join the euro eventually, it may be tempted to defer the decision for a few years hoping things will become easier. There may be benefits in waiting - time for interest rates to converge, for transmission mechanisms to become more similar, for the exchange rate to depreciate - but there are also costs. Waiting a while does not guarantee further convergence. Meanwhile, UK influence will be diminished during a finite window of reform in key euro-zone institutions.

If the UK is happy to join the euro only if a propitious conjuncture of events occurs, the option to wait and see is perfectly coherent. But this entails being prepared to reject the euro forever if necessary. The more the UK leans towards the opposite judgement, that its eventual membership is likely because eventually it will be desirable, the more it must heed the cost of delay as well as its benefit.

The Sixth Test should be whether the further gains of waiting outweigh the further costs of waiting. Those who argue that the UK can afford to wait until the convergence tests are met 'beyond reasonable doubt' have ignored the first lesson of economics. Optimal behaviour equates the marginal cost and the marginal benefit. Driving the marginal benefit of waiting to zero means waiting too long.

## 2 UK trade and the euro-zone

### 2.1 Optimal currency areas

Since the seminal papers of Mundell (1961), McKinnon (1963) and Kenen (1969), it has been understood that the benefits of joining a currency union are larger (a) the greater the trade with countries in that union, (b) the greater the cyclical correlation of output with countries in the union, and (c) the greater the degree of labour market flexibility.

Greater interdependence through trade enhances the benefits of exchange rate stability. Greater convergence of business cycles makes a single monetary policy more appropriate for all members of the monetary union. Greater labour market flexibility allows adjustment of domestic wages and prices to alter competitiveness even if the nominal exchange rate is fixed.

Table 2.1 gives a brief summary of the importance of trade shares and output correlations, showing averages for the period 1978-98, the two decades prior to EMU. It confirms that the initial composition of EMU was no accident. Judged either by trade links or similarity of business cycles, members of the euro-zone are more integrated with one another than they are with the UK, Sweden or Denmark, the three EU countries that have yet to join. We deal with business cycle correlations in Chapter 6. First, we focus on trade linkages.

Table 2.1 Why the Ins wanted In

		Averages during 1978-98	
		Bilateral trade (% of GDP)	Bilateral output variability
INS:	Mean with EMU countries	0.49	1.9
OUTS :	UK - EMU	0.31	2.5
	Sweden - EMU	0.34	2.2
	Denmark - EMU	0.29	2.6

Source: Barr, Breedon, Miles (2003), forthcoming in *Economic Policy*

Note: Bilateral output variability is the average absolute deviation between output gaps (relative to their time series means) using OECD estimates of output gaps

The 20-year averages in Table 2.1 exaggerate the distinction between EMU members and the EU countries outside the euro-zone. First, intra-EU trade has been steadily rising, not merely because of falling transport costs and easier communications but also because of deliberate policies to create a Single Market within the EU by removing non-tariff barriers<sup>1</sup>. Averages based on data during 1978-98 understate the extent of trade links within the EU at the start of the 21<sup>st</sup> century. Table 2.2 shows how trade links have been rising over time, both between the countries that decided to join the euro-zone but also more generally within the EU. Table 2.3 shows how UK trade patterns have evolved during the last four decades.

Table 2.2 Increasing trade links within the EU

(Trade with EU-15 as % of total trade)

	1948-1952	1968-1972	1998-2001
EU-6	44	62	62
UK, Ireland, Denmark	33	44	57
Spain, Portugal, Greece	48	52	69
Austria, Finland, Sweden	53	63	62
EU-15	41	58	62

Source: IMF (1998) *Direction of Trade Statistics*, Statistical Office of the European Communities (2002), COMEXT: The Eurostat Foreign Trade Database

1 For an evaluation of the success of this programme, see Allen, Gasiorek and Smith (1998)

Table 2.3 UK trade patterns 1948 -2001

(% of total UK trade)

	1948-1952	1968-1972	1998-2001
EU-6	13	21	39
EU-15	26	39	55
Rest of OECD	34	30	25
Other	40	31	20

Source: As for Table 2.2

Although the UK is less integrated in trade with EMU countries than they are among themselves, integration is continuing and UK trade links with both the euro-zone and the wider European Union have risen considerably. Over half of all UK trade is now with euro-zone countries and this share is likely to continue to rise.

## 2.2 How EMU itself affects trade links

Technical advances and trade liberalisation are not the only forces at work. The architects of EMU hoped that the creation of a common currency would itself enhance market integration and trade linkages. Initially, academic economists were sceptical about this argument. There had been a large empirical literature failing to find much solid evidence that exchange rate variability affected trade adversely.<sup>2</sup> For many EMU countries, there had in any case been long periods of exchange rate stability within the EMS.

Within the last decade, new academic research has changed this conclusion significantly. This section discusses what we have learned about the effect of monetary unions on trade. It is now believed that monetary unions *create* additional trade between their member states.

Their effect on near neighbours is more complicated: trade creation within the monetary union may induce *greater* trade with their neighbours; however, if trade creation within the union enhances the competitiveness of Ins in relation to Outs, this may *reduce* trade between Ins and Outs. Understanding these processes is important not merely in assessing what happens when an Out joins the euro-zone but also what happens if an Out remains outside indefinitely.

### How a common currency affects trade among its member states

Early scepticism by economists that lower exchange rate variability would boost trade had both a theoretical and an empirical basis. In theory, importers and exporters could hedge exchange rate uncertainty. In practice, econometric studies found little evidence that exchange rate variability had an adverse effect on trade.<sup>3</sup>

The problem with the theoretical argument, however, is that forward and futures markets don't exist for most trading partners and for most longer-term horizons; they entail transaction costs; and it exhibits risk premia that drive a wedge between the forward rate and the expected future spot rate.

The problem with the empirical evidence was that it was mostly based on time series, where it was difficult to sort out other influences on trade, and was mostly based on large industrialized countries.<sup>4</sup> When smaller countries were included in cross-section studies, some effects started to show up. This was particularly true in studies of bilateral trade. Data on trade among 100 countries offer 9900 (100 x 99) observations for each year, allowing a researcher, using the standard 'gravity model' to control for other important determinants of trade, such as country size, bilateral distance, common borders, and so on.<sup>5</sup>

The most important discovery was made by Andrew Rose.<sup>6</sup> In order to assemble a data sample that included many examples of monetary union, Rose collected data not just on large countries but on the many small countries and dependencies that used the currency of a larger country (eg the US dollar, pound sterling, French

2 Examples include Hooper and Kohlhagen (1978), Kenen and Rodrik (1986), and Peree and Steinherr (1989)

3 See previous footnote

4 Surveys of the literature are included in Edison and Melvin (1990) and Goldstein (1995).

5 This gravity model of trade is comprehensively explained in Frankel (1997). Applications to Europe include Havrylyshyn and Pritchett (1991), Hamilton and Winters (1992), Brada (1993), and Soloaga and Winters (2001).

6 Rose (2000), and many subsequent papers including Glick and Rose (2002) and Rose (2002)



franc, Australian or New Zealand dollar, South African rand). He found a statistically significant effect of bilateral exchange rate variability on bilateral trade: less exchange rate variability was associated with larger bilateral trade flows.

Additionally, he found a *large* effect of common currencies on bilateral trade. With enough examples in his data sample, Rose was able to isolate this effect. His estimate, by now replicated in various forms many times, was that a common currency *triples* trade among members.

Table 2.4 shows estimates from Rose (2000). It confirms that bilateral trade flows rise with the income of the two countries and with their geographical proximity (hence the reference to gravity, whose force also depends on distance). Significantly, Table 2.4 implies that countries within a monetary union trade more between themselves both because they have lower exchange rate volatility and because of other effects of the monetary union itself. Low exchange rate volatility alone has a much smaller effect.

Table 2.4 Gravity model estimates of bilateral trade

Effect of	Estimated coefficient	Robust standard error
Currency union	1.21	0.14
Exchange rate variability	-0.17	0.002
Log output	0.80	0.01
Log output per capita	0.66	0.01
Log bilateral distance	-1.09	0.02
Dummies:		
Common border	0.53	0.08
Common language	0.40	0.04
Common free trade area	0.99	0.08
Same nation	1.29	0.26
Same coloniser	0.63	0.06
Colonial relationship	2.20	0.07
1970 - 90	22946 observations	R <sup>2</sup> = 0.63

Source: Rose (2000)

If a monetary union triples trade between its members, this effect is huge. Understandably, this finding provoked considerable dispute, for four principal reasons. First, the statistical association between currency links and trade links may not reflect a causal link of monetary unions on trade but rather reflect links caused by a third factor, such as colonial history, political affinity, and so on. In short, countries may have formed monetary unions because their trade links were unusually strong (see eg Persson, 2001). It is then inappropriate to infer that forming a monetary union would triple trade flows.

Second, can one infer from cross-section evidence what would be the effect in real time of countries adopting a common currency? Even if a monetary union has causal effects on trade, how quickly might such linkages develop after a monetary union is formed? Third, the estimated effect on trade (and on income, as discussed in the next section) just seems too big to be believable. Fourth, Rose's evidence came entirely from countries that were small (eg, Ireland, Panama, African members of the CFA franc zone) or tiny (eg, Falkland Islands, Gibraltar, and Saint Helena). Can such estimates be extrapolated to larger countries?

Each of these four arguments has some validity, yet it has also been possible to rebut some of the force of their criticism. First, regarding the endogeneity of the decision to adopt a currency union and the possible influence of third factors, Rose has done a thorough job of controlling for common languages, colonial history, remaining political links; the large estimated effect of a common currency remains. Without disputing the likely relevance of third factors influencing both currency choices and trade links, extensions of the original research leave a clearly identifiable role for the effect of monetary unions on trade.<sup>7</sup>

<sup>7</sup> Rose (2001) and (<http://faculty.haas.berkeley.edu/arose/RecRes.htm#CUTrade>) offer extensive replies to his critics. Frequently, attempts by critics to resolve issues of endogeneity or of country size have the consequence of disregarding many of the small countries, thereby reducing the sample size so much that it becomes difficult to obtain statistically significant results at all.

Second, regarding the dynamics of how quickly any trade effects might occur, subsequent research using time-series data finds that a substantial share of the cross-section effect (presumably the long-run effect) shows up within a few decades of a change. Using a 1948-1997 sample that includes a number of countries that left currency unions during that period, Glick and Rose (2001) find that trade among the members was twice as high in the currency union period as afterwards. This suggests that roughly two thirds of the tripling effect may be reached within three decades of a change in regime.<sup>8</sup>

Third, regarding the surprisingly large magnitude of the estimates, it is important to take account of something else that we have learned in recent years: home country bias. Empirically, it is clear that people trade with their fellow citizens far more easily than with those living in other countries. This finding emerges whether one looks at the volume of trade flows between locations, or at the ability of arbitrage to keep prices in line across locations. It holds even when one controls for the effects of distance, trade barriers, and linguistic, social and historical differences. It holds even between the US and Canada.

Canadian provinces have been found to be 20 times more prone to trade with each other than with US states.<sup>9</sup> This magnitude halved after the Canadian-US free trade area went into effect,<sup>10</sup> and falls further once we control for other factors.<sup>11</sup> Nevertheless, a substantial bias remains - around threefold - and the bias is even higher for some other country pairs.<sup>12</sup>

Similarly, studies of arbitrage and price differentials find that price differentials between adjacent regions either side of the US-Canadian border exceed those between the east and west coast of Canada despite the much greater geographical distance of the latter,<sup>13</sup> and the effect of national frontiers is even greater for other pairs of countries.<sup>14</sup> What can explain these remarkable findings of home bias in quantity and price data? Different currencies is a leading candidate for the explanation, especially given the paucity of alternative explanations.<sup>15</sup>

How safe is it to extrapolate from inferences based on data for small countries to predict what may happen to large countries? Tiny geographical units, such as Gibraltar, are so dependent on international trade, because of the inadequate scale of the domestic market or insufficiently diversified inputs, that one might expect currency unions or free trade areas to have a larger effect on them than on larger, more self-sufficient economies.

However, two arguments go the other way. First, Rose (2000) and Frankel and Rose (2002) have checked whether there are important differences between small and very small countries in his sample, and failed to find any significant difference. Second, although affected by country size, the home country bias operates reliably even for large countries. Doubling the size of the economy, whether by joining two small units or two large units, seems to reduce trade/GDP by about 20%. To the extent that currencies explain this, the effect is not limited to small countries.

Finally, we now have three years of data since EMU began in January 1999. Using data on European countries solves the tiny country problem, especially if Luxembourg and Liechtenstein are omitted. Barr, Breedon and Miles (2003) estimate a gravity model for the period 1978Q1 to 2002Q1 for countries in the EU and EFTA, except for Luxembourg and Liechtenstein, giving 11 Ins and six Outs. This yields 136 observations per quarter during 1978Q1 to 2002Q1. The authors also recognize that trade flows and the decision of whether to join EMU may have common influences, and estimate the model by instrumental variables, treating EMU membership as endogenous and using past output co-movements and price co-movements between countries as instruments.

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8 Reaching such a conclusion requires two caveats: that effects are symmetric with respect to entry and exit from monetary unions, and that the countries which leave monetary unions do not do so because of third factors that already ensured that their trade was abnormally low in the first place.

9 McCallum (1995).

10 Helliwell (1998).

11 Wei (1996).

12 Using the same gravity methodology, Nitsch (1997) finds that intra-national trade within EU countries is about seven times as high as trade with EU partner countries of similar size and distance.

13 Engel and Rogers (1998).

14 Parsley and Wei (2000, 2001).

15 The currency union variable ranks in magnitude and explanatory power roughly equal with the FTA variable, behind the colonial relationship, and ahead of common language and the residual political union effect. This claim is confirmed by Rose and van Wincoop (2001), who estimate that half the typical border barrier is due to different sovereign monies.

Table 2.5 Trade effects of EMU

(Dependent variable: log of bilateral trade)

	Coefficient	(Standard error)
Currency Union	0.29	(0.04)
Exchange Rate volatility	-0.12	(0.01)
Log (Output)	1.24	(0.01)
Log (Output per capita)	0.20	(0.03)
Log (Distance)	-1.24	(0.02)
Contiguity	0.18	(0.02)
Language	0.27	(0.02)
EU membership	0.46	(0.02)

Source: Barr, Breedon, Miles (2003)

All variables are significant and have the expected signs. EMU itself has already added 29% to the level of trade among members, and the associated reduction in exchange rate volatility also mattered. Since the authors have only three years of EMU data in their sample, presumably the eventual effect on trade will be larger than this impact effect.

Combining the EMU effect and the consequent change in exchange rate volatility, Table 2.6 shows the estimated effect for each of the remaining Outs if it joined the euro-zone. The effect on the UK is largest - its trade with current Ins is estimated to rise by 72% - because the UK also gains significantly from lower exchange rate volatility. This estimate again is based only on EMU effects that have come through during the first three years. Eventual effects might be much larger.<sup>16</sup>

Table 2.6 Predicted rise in trade with EMU countries

(Rise in trade when an Out joins EMU)

	EMU effect	Lower exchange rate volatility effect	Total impact
Denmark	29 %	4 %	33 %
Sweden	29 %	20 %	49 %
United Kingdom	29 %	43 %	72 %

Source: as in Table 2.5

Another recent study compares results using data from European countries alone and data from a wider set of 22 developed countries. Micco, Stein, and Ordoñez (2002) find that, for bilateral trade between the 12 Ins, to date the EMU effect has been a rise in trade of between 12 and 19%, depending on which data set is used.

Like the estimate in Barr, Breedon and Miles, this estimate is significantly less in magnitude than in the original Rose studies that relied relatively heavily on data for dependencies and small countries to create examples of monetary union. Evidence from small countries may overstate the effect that will be found in Europe, or the eventual effect of EMU may become much larger as we acquire data not merely on its initial effect but on its eventual effect.

In this spirit, Bun and Klaasen (2002) update gravity estimates, and make dynamic projections, concluding that the euro has significantly increased trade, by 4% in its first year, and with a long-run effect projected to be about 40%.

<sup>16</sup> For an Out, the trade effect of joining EMU is not simply the rise in bilateral trade with EMU countries. Section 2.3 discusses whether higher trade with Ins merely diverts trade away from other countries. It also emphasises the need to think about effects on profit margins as well as trade volumes.

These three new studies use data directly relevant to the EMU experiment. And their empirical conclusion is quite clear. A significant EMU effect is *already* statistically evident. As Micco, Stein and Ordoñez (2002) conclude: “The effect of EMU on trade is significant, and economically important, particularly if we consider that our sample only covers the first three years of the EMU, a period in which the euro did not even circulate.”

To sum up, there is evidence that the very act of forming a currency union stimulates trade between its member states. Rose’s original estimate – that trade eventually triples between the Ins – is the upper bound of what is reasonable to believe. Many economists would argue that the estimate should be lower, principally for two reasons: some of the correlation between currency unions and trade linkages is caused by unobserved third factors, and small countries may not fully representative of how larger countries will behave.

Even after allowing for both these concerns, a more modest but significant causal relationship remains. There is already enough evidence from Europe itself post-1999 to bear out this assertion. As further evidence accumulates, we will be able further to refine our estimate of the precise magnitude of this effect.

### 2.3 How a common currency affects non-members

By eliminating exchange risk and reducing transactions costs between member states, the euro-zone will promote trade inside the union. How will this affect trade between the euro-zone and countries such as the UK that are outside the euro-zone? Will more trade within the euro-zone be a locomotive for trade with its neighbours, or will more trade within the euro-zone divert trade away from its neighbours? And how will this affect the price of traded goods?<sup>17</sup>

We approach these questions in four stages. First, since monetary union works principally by reducing transactions costs, we summarise evidence from previous trade liberalisation in Europe.<sup>18</sup> Second, we cite previous evidence of the effects on monetary unions. Third, we examine the EMU evidence to date. And finally, we discuss implications not merely for trade flows but for wages and profitability in the traded goods sector.

#### Evidence from trade liberalisation

Frankel (1997) summarizes both the early literature on trade liberalisation and the plethora of more recent gravity-based estimates from the 1990s. Some studies find evidence of trade diversion, others conclude that trade creation within a bloc enhanced trade with countries outside that bloc. Empirical analysis of the effects of regional trading arrangements have found that results differ from case to case, unsurprising given the huge variety of institutional arrangements and trade structures.

Significantly, although several studies find most recent regional blocs caused little trade diversion, this conclusion does not apply in Europe, where evidence of trade diversion has been found. Whereas most recent blocs have substantially liberalised internal and external trade simultaneously, Europe has liberalised its external trade only slowly.

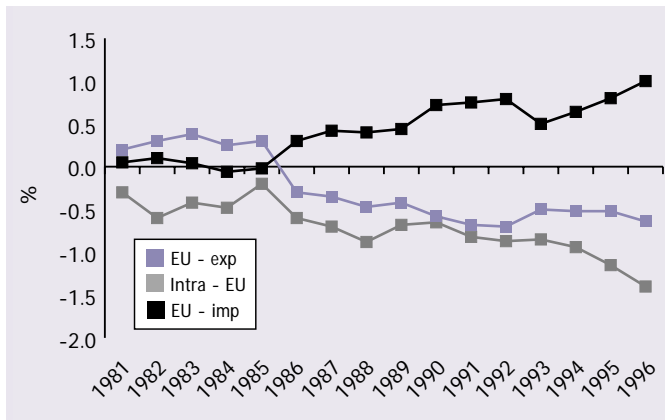
Figure 2.1 shows “EU-effects” during 1980-96 (early EU enlargement and the single market), taken from research by Soloaga and Winters (2001). They examine a series of single-year cross-section estimates from a sample of 58 countries with nine regional trade arrangements. Changes in these estimated coefficients between 1980-82 and 1995-96 are statistically significant. Over time, EU countries’ concentration on intra-regional trade grows, but the depth of their links with non-members declines, both in the sourcing of imports and the destination of exports. Closer integration, induced by the single market, raised the relative competitiveness of European goods and diverted trade away from third parties.

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17 For the argument that trade prices are more relevant than trade volumes, see Winters and Chang (2000) and Chang and Winters (2002).

18 Since lower transactions costs are not identical to lower tariffs, evidence based on trade liberalisation is at best suggestive.

Figure 2.1 How European integration affected trade flows



Notes: EU is EU intra-bloc trade; EU-Imports and EU-Exports refer to EU trade with non-members. The vertical axis shows how much trade is above or below values expected without European integration.

Source: Soloaga and Winters (2001)

Similar results exist for the earlier creation and enlargement of the EU. Bayoumi and Eichengreen (1997) found that the formation of the EEC reduced the annual growth of member trade with other industrial countries by 1.7 percentage points. The formation of EFTA had similar, if smaller, effects. Frankel and Wei (1998) found that trade diversion had, by 1990, largely erased the EEC's tendency to trade unusually heavily with the rest of the world. Sapir (1997) found during 1960-72 that "EFTA exports to the EC suffer[ed] from their non-preferential status," as did other European non-member countries' exports in later periods.

Thus, European integration has usually been associated with trade diversion. Of course, tariff reduction is not identical to lower transactions costs. It is possible that the trade creation caused by extra growth within EMU will dominate any effect of trade diversion. If so, the UK would not then suffer, relative to the status quo, by remaining outside EMU. However, if growth in EMU countries is strong enough to overcome other trade diverting effects, the opportunity cost of not joining will then be large.

#### Trade diversion: evidence from small countries

We now look directly at previous evidence from monetary unions. Working again with a large data sample entailing some genuine currency unions, often a major partner and several much smaller states or dependencies, Frankel and Rose (2002) provide a powerful pair of empirical results: for member states of a monetary union, the Ins trade three times as much as normal between themselves, but also trade 40% more than normal with the Outs. The *trade creating* effects on third parties thus outweigh any *trade diverting* effects.

Why might a currency union raise trade, not just between the Ins, but also between the Ins and Outs? In this data sample, most currency unions entail small countries adopting the currency of a much larger partner. If small countries retain their own currencies, markets are thin and trading costs very large. Tiny countries benefit disproportionately from giving up their own currency in favour of a major currency in which markets are thick and trading costs low.

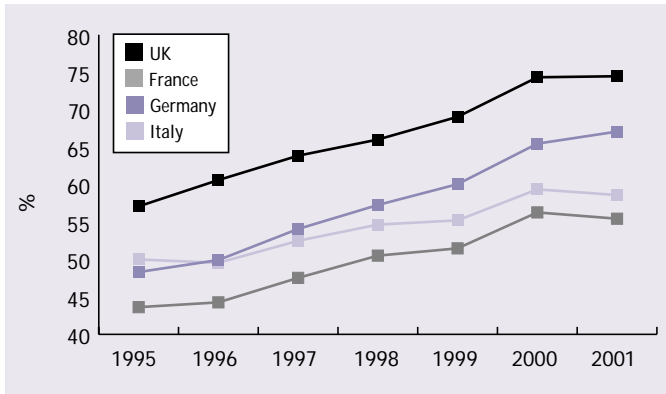
By adopting the pound, the Falkland Islands not only simplifies its trade with the UK, but also with the US, the euro-zone and Japan. Think how thin each of the foreign exchange markets would be separately against a Falklands shilling. It is no surprise that tiny countries that belong to currency unions on average have third party trade that is 40% higher than what they would otherwise have. But the avoidance of thin markets by joining a currency area cannot directly be extrapolated to the adoption of the euro by the UK or Germany, for whose currencies forex markets have been well developed for a long time.

Thus, in theory the trade creating effects of a currency union could be larger for a tiny country adopting a larger country's currency than for the already-large UK joining EMU. On the other hand, Rose (2000) found that tiny countries behave no differently, and Frankel and Rose, in the NBER Working Paper version of their subsequent (2002) paper, also checked that dropping tiny countries made no difference to their conclusion that monetary unions foster trade even between the Ins and the Outs.

## What can we learn from recent European data?

As time elapses, we acquire more and more European data from which to make direct inferences, rather than relying on evidence from past trade liberalization or from monetary unions elsewhere in the world. Initially, however, some care is required. Over any short period, cyclical effects can obscure underlying trends. Even abstracting from cyclical effects, there are many other influences on recent data. Reliable quantification of effects in Europe will take a longer period of data than is yet available, but this should not inhibit us from making the best estimate currently possible.

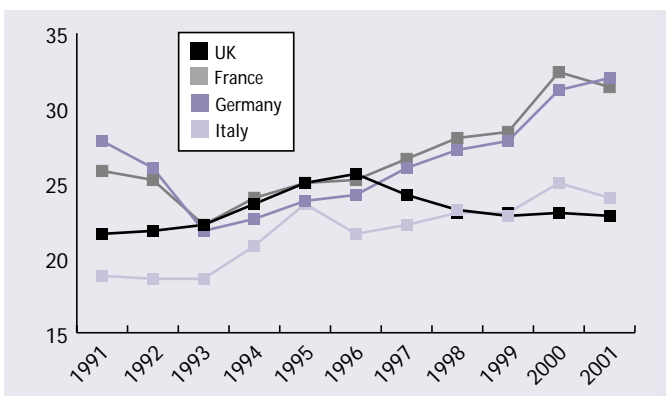
Figure 2.2 Openness ratios for large EU countries



Source: Eurostat

Figure 2.2 plots openness ratios  $[(X+M)/GDP]$  for the large European countries since 1995. All show strong growth in 1999 and little or negative growth in 2001. In part these reflect valuation effects with the rise and fall of the US dollar, especially in relation to EU trade with non-European countries. Given lags in adjusting contracts, a dollar depreciation implies that a fixed dollar value of trade translates into fewer euros, reducing openness measures in Europe. Over the whole period, European countries' openness grew, but it is difficult to detect differences between the UK and the other three as a group.

Figure 2.3 Intra-EU trade (% of GDP)



Source: Eurostat

More interesting are the data on intra-EU trade (exports plus imports), plotted relative to GDP in Figure 2.3. Since most of the EU is in EMU, intra-EU trade is a good proxy for the trade that should have been stimulated by EMU. Here we find strong growth for France and Germany since 1997, mild growth for Italy and actual decline for the UK. A lower UK trade share with the EU might reflect absolutely lower UK trade with other EU countries, but more probably reflects the trade creation on which the UK missed out by failing to join EMU.

One recent study examines this question head on. Micco, Stein and Ordoñez (2003) estimate a gravity model for 22 industrial countries between 1980 and 2001, relating bilateral trade to income, per capita income, and dummy variables for membership of a free trade area, for EU membership, for both being EMU Ins, for being an Out trading with an In, and unreported dummies for each calendar year and each possible country pair. There are thus 231 country pairs.

Amalgamating Belgium and Luxembourg, there are 10 EMU members in their sample, and thus 45 country pairs with a common currency, plus 120 country pairs with an In and an Out, and 66 country pairs where both countries are Outs. Table 2.7 summarises their results for all countries, both during the entire sample 1980-2001 (with EMU dummies becoming relevant after 1999) and estimated simply on the post-1999 period alone.

Table 2.7 Does EMU lead to trade diversion?

(Dependent variable: log of bilateral trade)

	1980-2001		1999- 2001	
	Coefficient	(t-statistic)	Coefficient	(t-statistic)
Dummies: Both Ins	0.29	(10.86)	0.26	(12.67)
In & Out	0.12	(5.41)	0.13	(7.47)
Log GDP	0.69	(10.59)	2.67	(9.78)
Log Per capita GDP	-0.07	(1.31)	-2.23	(7.81)
Free trade agreement	0.07	(3.69)	0.01	(0.66)
EU	0.16	(7.12)	0.07	(3.30)

Source: Micco, Stein, Ordonez (2003)

As in Barr, Breedon, Miles (2003), these results of Micco *et al* suggest that EMU led to trade creation of just under 30% for bilateral trade between the Ins. However, Table 2.7 also identifies the effect on trade between an In and an Out: trade *increased* by around 13%.

By comparing euro-zone-UK trade and trade between the euro-zone and other Outs, the authors also confirm that euro-zone trade with the UK behaved the same way as trade between the euro-zone and other Outs. Although EMU induced the same percentage rise in trade shares for In-Out trade, the absolute size of these increases depends of course on the initial share of euro-zone trade in the total trade of any particular Out.

To sum up, trade liberalization in Europe may have induced trade diversion, but EMU has been associated with trade creation between the Ins and the Outs. Trade creation between the Ins has been stronger still. For two reasons, estimates of the size of these effects, based on measurements before and after 1999, understate the true effect. First, since EMU was anticipated in advance, some trade creation preceded 1999, so comparison of pre-1999 and post-1999 magnitudes understate the EMU effect because the pre-1999 data would have been different had EMU not been in prospect. Second, since altering trade patterns takes time, the long-run effect of EMU has not yet been fully experienced.

How does all this affect the UK? It corroborates that the UK is missing out on substantial trade creation by not belonging to EMU. But it also reveals that EMU is continuing to deepen trade linkages between the euro-zone and the UK. This increases the probability that the UK is likely eventually to join EMU.

#### Trade effects don't just operate through the magnitude of trade flows<sup>19</sup>

The previous section established that EMU has raised UK-euro-zone trade, but by less than it would have done had the UK joined EMU already. There has been no absolute trade diversion, but there has been trade diversion relative to the counterfactual of UK entry.

However, changes in trade flows don't tell the whole story about the effect on national welfare. If traded goods are priced at marginal cost, the welfare effect of altered trade patterns is principally the temporary cost of adjusting production. However, for much of the intra-industry trade that characterised trade within the EU, traded goods are priced above marginal cost because the market structure is one of imperfect competition.

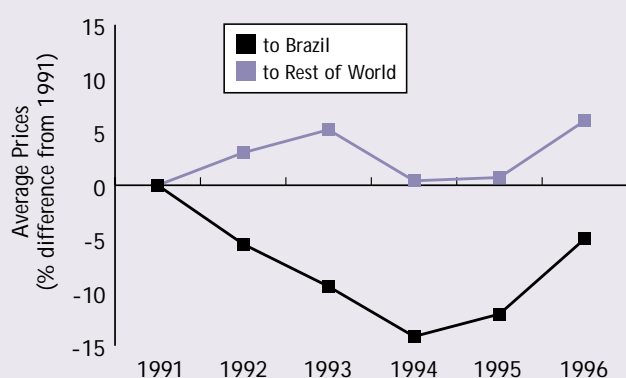
For an Out, trade creation then entails higher profits but by less than they would have risen in the counterfactual of early EMU entry. Moreover, if scale economies are not yet fully exploited, the Out is missing out also on the opportunity to achieve lower costs. Thus, for the creation of the single market, an example in which the Outs experienced absolute trade diversion, EFTA countries expected to be hurt significantly (Haaland and Norman, 1992).

<sup>19</sup> The arguments of this section are explored at greater length in Chang and Winters (2001).

Nor are profit margins independent of the level of trade. Suppose export prices to the euro-zone market rise with output, because imperfectly competitive firms charge higher margins if demand is higher. With uniform pricing, profits of UK exporters then rise with the level of exports, not merely because volumes have risen but because margins have risen too. Equally, however, if the reduction in transactions costs on intra-euro-zone sales make euro-zone suppliers more competitive, the margins of other suppliers may have to fall, and they will lose net income, possibly even when their volume of sales rises.

### Box 2.1 Terms of trade effects can be large

Despite being central to trade theory for over a century, terms-of-trade effects of trade policies are only now entering the econometric literature. Winters and Chang (2000) found that Spanish entry to the EU led to falls in the price of engineering exports to Spain from non-EU countries. Similarly, Chang and Winters (2002) show how the creation of Mercosur affected the prices of exports to Brazil. US exporters, who cut prices by about one-fifth of the preferential margin offered by Brazil to Argentinean exporters, suffered terms-of-trade losses worth over half a billion dollars annually.



Source: Chang and Winters (2002)

### Summing up

The effect of EMU on Outs, such as the UK, is theoretically ambiguous since it reflects two effects that operate in different directions: trade creation within the euro-zone is a force for more trade between Ins and Outs, but greater competition and lower transactions costs within the euro-zone is a force for the displacement of trade between Ins and Outs.

Prior evidence from trade liberalisation warns us that trade diversion for the Outs may occur. Prior evidence from other monetary unions finds no evidence of trade diversion. This difference may arise because reducing tariffs is similar, but not identical, to reducing transactions costs.

The most recent evidence, comparing pre-EMU and post-EMU trade flows within the industrial countries suggests that EMU has increased trade between Ins and Outs, by roughly half as much as it has increased trade between the Ins themselves. If subsequent evidence continues to corroborate this conclusion, UK trade will have benefited from the creation of EMU but by less than it would have done had the UK joined EMU at the outset.

Changes in trade flows in turn affect profits in the traded goods sector when imperfect competition prevails. Stimulating trade flows also boosts profit margins and reduces average costs, enhancing the value of trade creation and increasing the cost of trade diversion.

Even if the UK experiences absolute trade creation, it loses out relative to what it might have had by joining EMU. Moreover, the imperfectly competitive industries most affected are typically also the most advanced and most dynamic, so these losses could feed back strongly into productivity and growth by failing fully to exploit the research-intensive dynamic modern sectors needed to support high incomes and economic advance.



### 3 Industrial location and foreign direct investment

EMU not only affects trade flows conditional on the inherited levels of production capacity but also provides incentives to alter that capacity. How will EMU affect the attractiveness of the UK as a location for production? This section offers an analytical outline and discusses the limited amount of available evidence.

Foreign direct investment (FDI) may be viewed in two ways. First, it may be thought of as an attempt by firms to diversify risk by relocating production so that goods are produced in countries or regions closer to key inputs or eventual purchasers of their output. From this perspective, the relevant analytical tool is portfolio theory, whose principal lesson is that it is not volatility or variances that count, but the way outcomes co-vary with other uncertain outcomes.

An equity whose price moves systematically against the rest of the stock market offers valuable insurance, making that asset highly demanded. Reducing the volatility of its price would reduce its attractiveness since it would no longer offer valuable hedging properties. To the extent that particular locations are desirable because their risk characteristics offer a hedge against other risks, eliminating exchange rate and other country-specific risks might actually reduce incentives for flows of foreign direct investment.

Most of the literature on FDI ignores this point, adopting a second perspective, namely that fixing exchange rates lowers trade costs and stimulates FDI. This latter perspective may be appropriate when addressing EMU issues because the existence of the single market within the EU, and similarity of resource endowments, often means that risks are positively correlated across member states. Prior to EMU, relocation of production offered an opportunity to diversify exchange-rate risk; but, if this was small relative to other risks, and if those other risks were incapable of diversification through relocation of production within the EU, the main effect of EMU was not to diminish hedging opportunities but rather to reduce trade costs.

EMU then affects the attractiveness of the UK as a production base in two ways. First, trade creation within EMU, by raising income and market size within EMU, boosts UK exports (conditional on any given exchange rate) and thus the profitability of producing in the UK. Second, pulling in the opposite direction, lower trade costs then make the euro-zone an even more profitable location, diverting investment from the UK to the euro-zone.

How large is this 'investment diversion' effect? We can think either about the change in the level of investment or about how much UK wages would need to fall to *prevent* such diversion. In an open economy, much of this change in real wages is achieved by a real depreciation of the exchange rate. The latter approach has two advantages: it focuses on UK income, in which we are interested, and it lets us use recent empirical research on the location of industry.

#### Market access affects wages

Ease of market access affects firms' location decisions. Transport and other transaction costs of reaching consumers are substantial, even within the EU, and EMU reduces some of these transaction costs. Lower transactions cost between euro-zone countries improves market access for firms located in the euro-zone and induces relocation of firms to the area with the better market access.

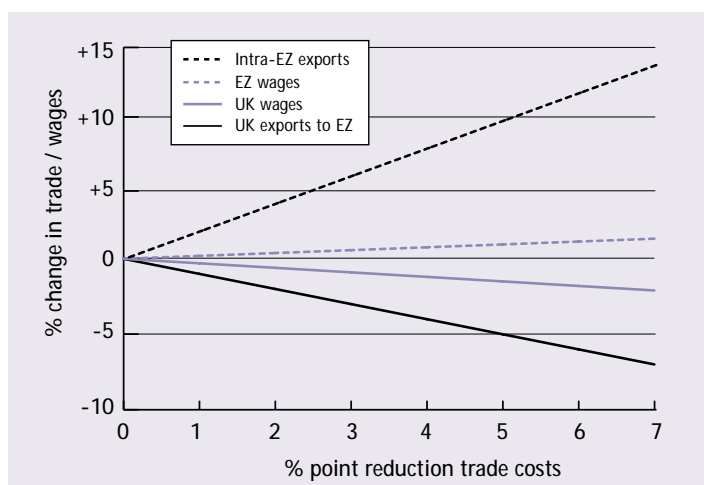
Equilibrium is eventually restored by two mechanisms. First, fewer firms located in the UK implies that the UK market is less well supplied and has less competition, raising prices in the UK and partly restoring profitability of remaining UK firms. Second, relocation puts downward pressure on wages until profitability is restored. Eventually, investment and employment levels are broadly unchanged. However, against foreign competitors the UK has lower real wages (essentially the real value of sterling has depreciated). Moreover, UK firms are more domestically orientated, and UK markets display less competition than before.

Figure 3.1 illustrates these points through a simple example, whose magnitudes are calibrated to reflect mainstream estimates from empirical research. There are five economies of equal size. Four of these economies then enjoy lower bilateral trade costs, but the fifth is left outside. The horizontal axis shows the size of the fall in trade costs, and the curves give exports and wages in the integrating countries (the euro-zone) and the outside country (the UK). The top and bottom curves illustrate trade creation for the euro-zone and trade diversion for the UK, and the inner curves give changes in wages, after these have adjusted to the new situation.<sup>20</sup>

Thus, at a 5 percentage point trade cost reduction (lower transactions costs worth 5% of the value of trade) intra-euro-zone exports rise by 10%, but UK exports to the euro-zone fall by 5%.

<sup>20</sup> Thus, if the principal long-run effect of EMU is to change transactions costs and market access, there are theoretical reasons to expect trade diversion to occur. Chapter 2 contrasted the evidence from prior trade liberalisations, in which trade diversion typically occurred, and the evidence from direct studies of the impact of monetary union, which as yet have found no evidence of trade diversion.

Figure 3.1 Illustrative trade and wage effects



Source: Authors

The inner curves are wages: lower trade costs raise euro-zone wages by something less than 1% and reduce those in the UK by around 1.5%.

Figure 3.1 is just an example, but shows how a change within the euro-zone may affect the Outs. The direct effect is a reduction in transactions costs and improved market access within the euro-zone. In the long run the relocation decisions this induces lead to the differential wage changes illustrated. If the potential cost saving is only a few percentage points of the value of trade, this is likely to produce only modest trade changes. If EMU is to induce a doubling or trebling of trade *within* the euro-zone, cost savings must be substantial and induced wage changes will also then be large.

The illustration in Figure 3.1 may understate the effects for sectors where intermediate goods are important. If EMU lowers trade costs, this will affect trade in intermediates as well as in final goods. Euro-zone firms can now get imported intermediates more cheaply than UK firms, creating a further effect and shifting the wage curves outwards. Additionally, in activities that are prone to cluster - perhaps because of networks of firms producing components for related activities - relocation effects can be more dramatic than indicated so far. On the one hand, clustering provides a 'lock-in' effect: it takes a large change to undermine the City of London's cluster of financial services. But on the other hand, once the cluster starts to unravel, substantial cumulative change may then occur. If the components sector of some industry were to relocate to the euro-zone then linkages would be lost and UK activity in the industry as a whole might be threatened. Clustering raises the stakes, and the possibility that losses could be larger than indicated in Figure 3.1.

Finally, notice that the argument above is couched in terms of the tradable sector. A 1% fall in wages in this sector is not a 1% fall in UK real income, because most of the economy produces non-tradable where any change in UK wages will be broadly matched by a change in prices, with no net effect on real income.

#### Investment diversion, market access and wages: quantification

The preceding section introduced the arguments and illustrated them with a simple example based on a model and parameter values that have some empirical support. To say more about quantification, it is necessary to discuss empirical estimates more carefully. How does the formation of the euro-zone affect UK firms' market access? And how does market access affect wages?

EMU means that euro-zone firms get larger market shares in euro-zone markets, at the expense of the Outs. Whether we should eventually expect to detect absolute trade diversion for the UK depends on whether the loss of market share outweighs the fact that the EMU market gets larger. Investment effects, and their full impact on trade flows, operate only as capacity changes. Thus, even if *for a given capacity* trade volumes and trade prices react relatively quickly to changes in trade costs, further effects operating through induced changes in capacity necessarily take longer.

Of course, the EMU start date of January 1999 was laid down well in advance, so it might be argued that some investment may have anticipated this. Even so, as late as 1998 the exact composition of the Ins had yet to be confirmed, so introducing investment effects is likely to make adjustment more protracted. This means that any evidence to date is not a reliable guide to what may eventually occur.

The arguments outlined above should affect investment from all sources. However, investment rates are difficult to interpret, being dominated by investment in non-tradable activities and by firms that engage in little or no foreign trade. Study of foreign direct investment (FDI) flows allows a sharper focus on how different locations are perceived by a set of investors who are able to choose between these locations, and provides some evidence on the way in which investors trade-off market size and wages.

Braunerhjelm *et al* (2000), in a study of foreign investment by Swedish based multinationals, show that, with a 10% smaller market, investment flows will remain unchanged only if wages are about 7.5% lower. Brainard (1997), using outwards FDI from the US, reaches a similar conclusion. Using a completely different methodology, Redding and Venables (2001) find that a 10% reduction in a country's market access induces a fall in wages of between 3% and 6%.

To get a feel for the orders of magnitude, suppose one assumes that permanent trade diversion is 5% of initial UK-EU trade, which is about half of all UK trade. Real wages in the traded goods sector might be 1.5% lower in perpetuity. If traded goods are around a third of GDP, and wages are 70% of net output, this might imply a fall in real GDP of around 0.35% a year in perpetuity. Conversely, if EMU ends up boosting UK trade, UK real GDP would increase correspondingly. However, Chapter 2 made clear that any such effects, in either direction, will be much smaller than the beneficial effects experienced by EMU countries, for whom trade creation will be larger.

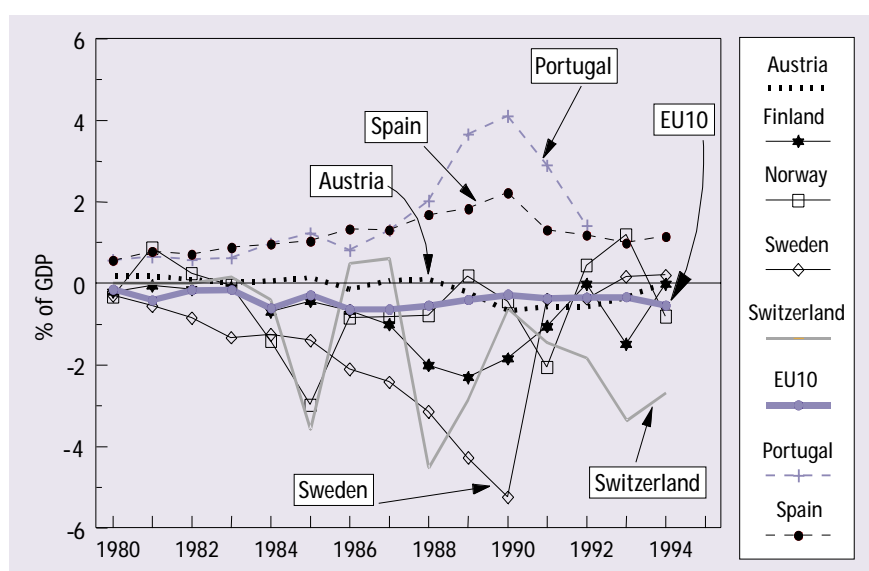
### Regional integration and investment diversion

The large empirical literature on FDI points to a number of key factors determining the attractiveness of a location as a destination for FDI. The most important factor is market access, typically measured simply by market size. Studies of inward investment in the EU also suggest that relative cost considerations are important (Pain and Hubert, 2002). This has been used as an argument against entering the euro-zone at an overvalued exchange rate (Pain, 2002). However, FDI data is considerably worse than trade data, and econometric studies of the effects of regional integration - let alone common currencies - on investment flows have not been undertaken.

Although we do not have econometric studies, Baldwin *et al* (1996) provide a careful description of the evolution of foreign direct investment flows into European countries at the time of the 1992 single market programme (the Single European Act was signed in 1986). Examining net FDI flows between 1980-95, they argue that anticipation of the single market programme was a major force diverting FDI away from countries outside the EU.

Figure 3.2, reproduced from their paper, makes apparent the net FDI outflows from Sweden, Switzerland and Finland. Baldwin (1995) further argues that investment diversion was a factor driving 'domino regionalism', encouraging the subsequent EU entry of Sweden, Austria and Finland. Figure 3.2 also illustrates inward FDI surges in Spain and Portugal. The positive effects of joining the EU on FDI inflows are widely reported (see Pain and Hubert, 2002, for a discussion).

Figure 3.2 Net Foreign Direct Investment, 1980-1994

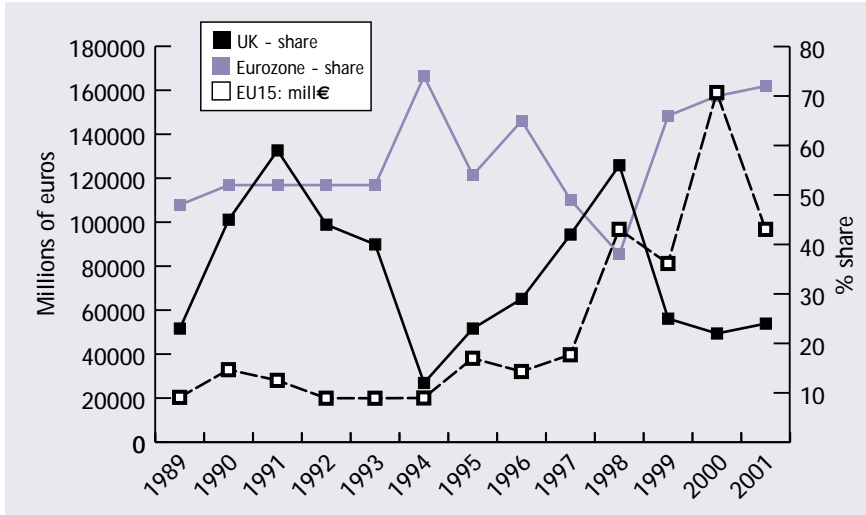


Source: IMF IFS data

### Recent trends in FDI

Do recent trends in FDI flows into EU countries indicate an emerging EMU effect? Figure 3.3 shows the UK share and EMU share of total inflows of FDI into the EU from non-EU countries. The UK share peaks at nearly 60% in 1998 before dropping to 24%, while the EMU share rose from 40% to 70% over the same period. These are very substantial changes, although they look less dramatic against the 13 year record of Figure 3.3. The UK share has fluctuated widely through the entire period, and despite the recent fall, still remains above its level of 1994-95.

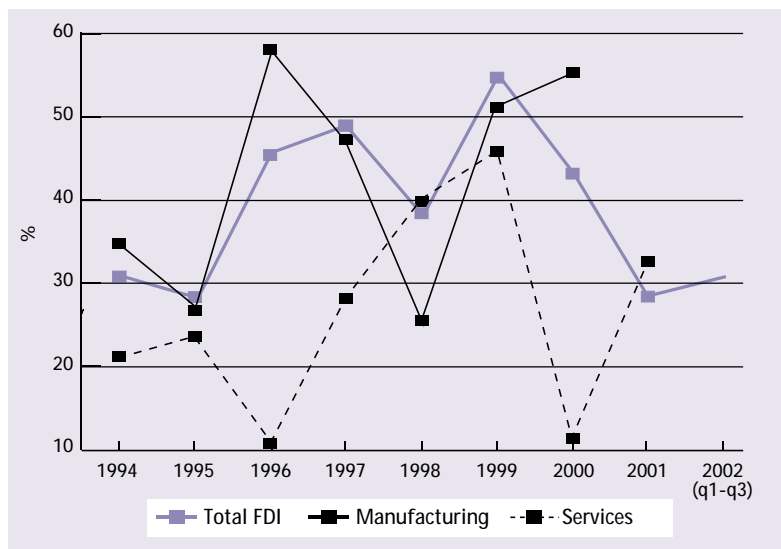
Figure 3.3 FDI flows from non-EU to EU



Source: Eurostat

The US provides detailed data on US investments, by sector and by destination. Figure 3.4, based on data from the US Bureau of Economic Analysis, reports the UK share of inward US FDI to the EU, showing services, manufacturing, and total FDI. They paint a similar picture, indicating a sharp decline in the UK share in 2000 - 2001. However, the series are volatile, and current levels are similar to those of the mid 1990s. Data for 2002 is not yet available by sector and is subject to revision. However, the total FDI series (including sectors such as construction, utilities and oil, which are unlikely to be affected by EMU) fell very sharply from 1999 to 2001, apparently stabilizing in 2002.<sup>21</sup>

Figure 3.4 UK Share in US FDI to EU15



Source: US Bureau of Economic Analysis

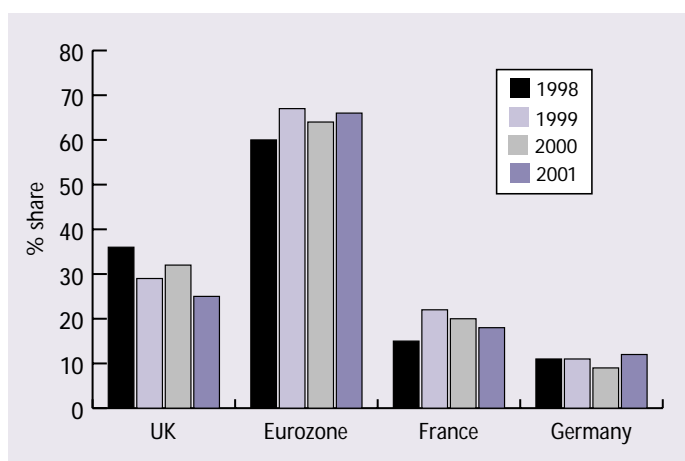
<sup>21</sup> Barr, Breedon, Miles (2003) report the UK share of this total FDI as 11% in 2002. Already, this estimate has been revised upwards to 31% as shown above, and further data revisions are likely.

One further source of data is reported in Figure 3.5, based on Ernst and Young data for number of FDI projects undertaken. While the UK share of EU FDI projects has been falling since 1998, no such falls have occurred in France or Germany, and the euro-zone share shows a modest increase.

Inevitably, the data reported above is backwards looking, based on projects that have been undertaken. For a forward-looking view, information comes from surveys of investor attitudes. The most recent, undertaken by the Financial Times (Financial Times, Feb. 18 2003), surveys 40 foreign companies with manufacturing bases in the UK. Of the 31 who responded, 61% said they were less likely to invest in the UK if it failed to decide whether to join the euro, while 39% said that the single currency would make little difference.

On balance, the recent experience therefore indicates a negative effect, as theoretical reasoning would suggest. However, the picture is far from clear-cut, and the falls follow a period of exceptionally good performance in the late 1990s.

Figure 3.5 Share in EU FDI projects



Source: Ernst and Young European Investment Monitor

## Conclusions

Whereas our assessment of trade creation and trade diversion was able to embed assessments of the EMU effect within well-developed econometric models of bilateral trade flows, our assessment of FDI creation and diversion is necessarily more tentative since the corresponding econometric models are less well developed.

However, the two assessments ought to be connected. The more reliable our estimates that the euro-zone has been associated both with strong trade creation among the Ins, and much less trade creation or even trade diversion for the Outs, the more likely it is that FDI will be diverted from the UK to EMU in pursuit of these better opportunities for trade. However, FDI effects are likely to be much more protracted, and empirically unscrambling the relevant dynamics is considerably more complicated.

Moreover, whereas most of EU trade is trade within the EU, inward investment to the EU necessarily comes from outside the EU. This makes recent evidence more tainted by the simultaneous effects arising from 9/11 and indeed from the dot.com bust that hit the US particularly hard.

UK inward investment fell during the last two years, not just absolutely but relative to the Ins. This deterioration of the status quo is consistent with the adverse effects caused by the euro, as proponents of UK entry to the euro-zone have been quick to point out.<sup>22</sup> Our assessment has tried to guard against the charge of post hoc, propter hoc.

Some aspects of the UK deterioration can be explained away by undue vulnerability to cyclical or short-term problems. However, it is difficult to fully explain the recent decline by these means. Subsequent data will be of great interest, showing either that this was an aberrant blip or that the UK's share is continuing at much lower levels than previously.

<sup>22</sup> See eg Layard *et al.* (2002)

One final remark. The strength of sterling in recent years cannot have been conducive to inward investment. However, it is hard to say whether this is an EMU effect or an effect independent of EMU. Most economists believe that, had the UK been an early In, sterling would have been fixed at a rate lower than it is now; and that any announcement that the UK was now ready to join would also lead to a depreciation as the market anticipated an entry rate below its current level.

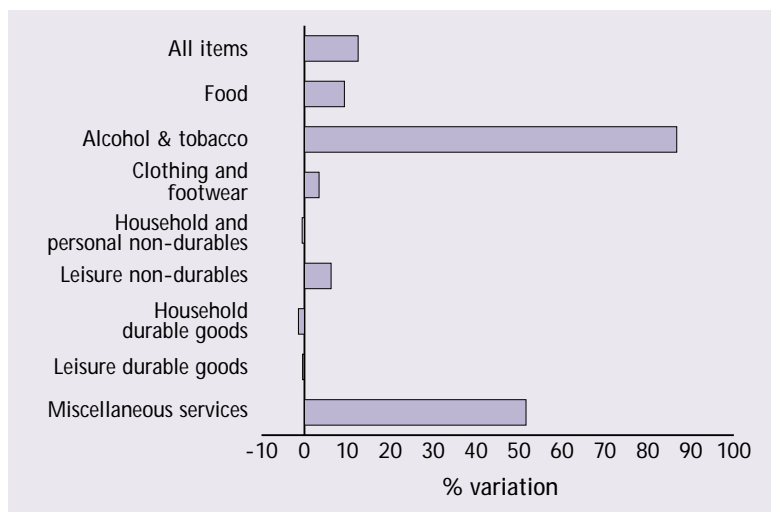
## 4 Competition and pricing

Evidence on what is happening to competition between European firms can be gathered not merely by looking at what is happening to trade and investment flows, but also by looking at prices directly. Prices in the EU converged throughout the 1990s due to the Single Market programme. The single currency ought in theory to reduce price dispersion within the euro-zone: competitive pressures will be greater, and transactions costs will be lower.

Evidence from surveys since 1 January 1999 confirm that this process has continued within the euro-zone since the launch of EMU, despite some one-off 'rounding up' effects on the introduction of euro notes and coins in January 2002. Comparing UK and euro-zone consumer goods, there has also been continued convergence but rather less than within the euro-zone; by mid-2002 UK prices were still on average 12% higher than the euro-zone average, despite the appreciation of sterling since the mid 1990s.

In part this suggests that the transactions costs of using a separate currency continue to segment the UK market from its euro-zone neighbour. However, as Figure 4.1 shows, this price disparity also arises because of differential taxation of alcohol and tobacco or because of different prices of miscellaneous services, some of which are in the non-traded sector.

Figure 4.1 UK prices relative to euro-zone, 2002



Source: Dresdner Kleinwort Wassertein Research

Table 4.1 makes two points. First, unsurprisingly, price dispersion is much lower within the euro-zone than within the EU as a whole. Second, falls in price dispersion since 1999 has been more rapid within the euro-zone than within the EU, particularly in the categories of miscellaneous services and alcohol/tobacco in which the UK remains such an outlier. The abolition of non-tariff barriers within the EU has of course been having an effect throughout the EU, but an extra EMU effect thus appears on top of this.

Table 4.1 Price dispersion within the EU and the euro-zone

EU: standard deviation of prices (%)	1999	2000	2001	2002
All items	24.2	23.5	21.7	21.8
Food	25.3	24.9	23.3	25.0
Alcohol & Tobacco	39.2	39.2	33.4	34.4
Clothing & footwear	16.2	19.6	20.2	19.6
Household & personal non-durables	25.1	20.9	20.7	21.6
Leisure non-durables	20.8	22.3	20.6	19.1
Household durable goods	22.0	17.1	13.6	13.4
Leisure durable goods	14.2	13.5	8.0	8.1
Miscellaneous services	36.4	30.7	27.6	27.3
Euro-zone: standard deviation of prices (%)	1999	2000	2001	2002
All items	19.4	17.9	16.4	16.7
Food	19.3	17.8	17.0	18.8
Alcohol & Tobacco	22.7	22.7	16.5	15.3
Clothing & footwear	15.8	17.9	18.0	18.7
Household & personal non-durables	20.9	16.6	17.4	15.8
Leisure non-durables	16.1	19.6	15.5	16.8
Household durable goods	18.1	12.2	10.1	10.9
Leisure durable goods	14.4	9.2	7.4	6.2
Miscellaneous services	38.7	31.6	26.4	21.9

Source: as in Figure 4.1

Lower cross-border transaction costs promote competition by reducing the cost of market access across national boundaries within the euro-zone. In addition to ending the cost of currency conversion and removing exchange rate risk, the single currency promotes price transparency which in itself breaks down market segmentation and enhances competition.

### Reduced currency volatility

Exchange rate volatility increases price dispersion. Producers are less likely to change their local currency prices in markets whose exchange rate can move significantly against their home currency. They do not want to incur the administrative costs and loss of goodwill involved in adjusting list prices frequently. They are also likely to seek a higher margin in markets with the most volatile exchange rates, as a precaution against a big currency move that would dent their profits. Additional strategic considerations include the fixed costs of investing in a sales infrastructure and building market share overseas.

It is well known that exchange rate fluctuations are not fully passed through into the price of imported goods [see eg Dornbusch (1987), Froot and Klemperer (1989), Asplund and Friberg (2000), Gaulier and Haller (2000)]. Recently, this has been well-documented for car prices within the EU (Goldberg and Verboven, 1998).

Parsley and Wei (2001) have found that institutional integration has a bigger impact on price convergence, and hence market integration, than exchange rate stability achieved merely by using interest rates and other policy instruments to limit exchange rate fluctuations. Estimating how the degree of price convergence can be converted into equivalent reductions in effective external tariff rates, they estimate that eliminating exchange rate volatility using monetary policy is equivalent to a 0.3 percentage point fall in external tariffs. However, eliminating volatility by joining a single currency is equivalent to a 4 percentage point tariff reduction, and full political and economic integration as exists in the US is equivalent to a 13 point reduction in tariffs.<sup>23</sup>

<sup>23</sup> Statistically, this estimate is highly significant since its standard error is 0.8.



## The competitive process

How else might firms adapt to deeper market integration within the euro-zone? Chapter 3 discusses how changes in competition and market access affect FDI. The same forces should affect pricing itself. The extensive literature on 'pricing to market' argues that national borders permit market segmentation and allow price discrimination across markets. A comparison of price dispersion within and between the US and Canada (Engel and Rogers, 1994, 1997) confirms that the border is extremely significant, equivalent to at least 1,700 miles of domestic distance in terms of its effect on prices. The existence of the national border explains about a third of the variation in price pairs between US and Canadian cities.

The decision by businesses to segment their markets, charging different prices, depends on the likely benefit of segmentation compared the cost of erecting these barriers through brand proliferation, advertising, or technical differentiation of the product. Uncertainty about the future exchange rate raises the value of the option to segment because it means optimal prices are more likely to differ between markets (Friebert, 2000).

The acknowledgement that the UK was an Out rather than a Pre-In could thus raise the incentive to invest in further segmentation of the UK from the euro-zone. If so, the small UK market would then exhibit less competition, higher profit margins, and fewer scale economies.

For example, UK firms might come to regard their domestic market as a captive market, concentrating on higher-margin sales at home, but withdrawing from the increasingly competitive market across the Channel. UK productivity would gradually fall both because there was less competitive pressure and because scale economies were sacrificed. In short, to FDI diversion we must now add the potential for productivity diversion.

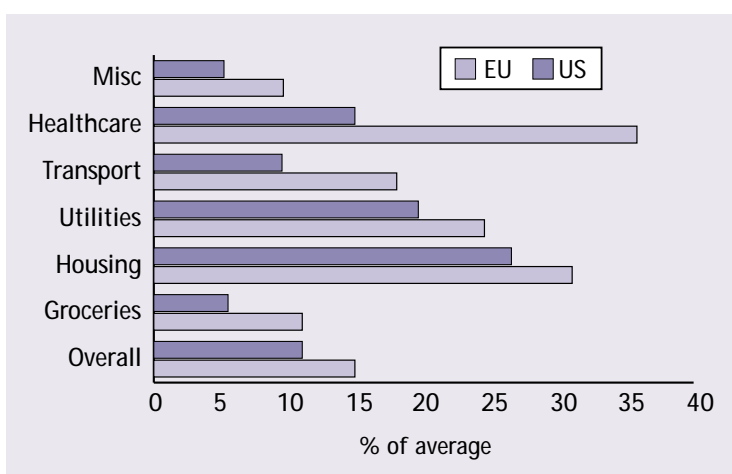
The evolution of some these processes will be difficult to measure. However, both prices and price disparities are relatively easily measured. Monitoring the extent of price convergence - or its absence - is a useful indicator of how these processes are continuing to evolve.

### How far can price convergence go?

Some price dispersion will persist even within markets that are as fully integrated as possible. Reasons for lasting differences include transportation costs to peripheral areas, local variations in consumer preferences, variations in national excise duties and VAT, variations in land-use restrictions and retailing laws, and differing concentrations in market structure, especially in retailing.

Assuming that the level of market integration achieved by the US is a benchmark for the level of integration to which the euro-zone may aspire, the degree of price dispersion within the US is a reasonable indicator of how much price convergence remains to be achieved within Europe. The internal dispersion of US consumer prices is about 10-12% of the national average. For easily transported consumer goods it is as low as 2-3%.

Figure 4.2 Price dispersion, EU and US, 1998



Source: European Commission

Price dispersion in the euro-zone is unlikely to fall quickly to this level: language, legal system, regulatory practice and other barriers continue to segment national markets even within the euro-zone. Even so, the US example suggests there is scope for further price convergence. For many individual goods, price dispersion within the EU is sometimes 70% higher than in the US, and for many goods it is still higher by 30-40%, so closing even half the gap would correspond to a substantial amount of price convergence.

### Continuing price convergence

How quickly will further price convergence take place? After the single market programme, prices within the EU converged quite quickly. The European Commission reported that the standard deviation of consumer prices within the EU fell from 21 percentage points in 1985 to 15 percentage points in 1999, a finding confirmed in other surveys. Evidence since 1999 is limited, and refers mainly to a subset of consumer prices. And the physical euro has only been circulating since January 2002. What kind of evidence will economists be watching for as it becomes available over the next few years?

Comparisons of prices in the US and EU in the 1990s (Rogers, 2001, 2002) report a gradual decline in price dispersion in the EU, especially in traded goods, while price dispersion in the US remained fairly stable. Surveys also confirm some downward price convergence in the EU since 1999. For example, for a basket of easily comparable supermarket goods, branded and generic, an annual Dresdner Kleinwort Wasserstein survey (using prices based on actual transactions) found a coefficient of variation of 21.7% in the EU and 16.4% in the euro-zone in 2001, both nearly 2 percentage points lower than in 2000 when the respective coefficients were 23.5% and 17.9%.

For expensive consumer durables, such as electrical goods, euro-zone price dispersion has fallen very dramatically, from 17.4% in 1999 to 6.2% in 2002. Consumers have a greater incentive to shop around for more expensive items, and many electronic goods are also standardised and easier to compare. The same survey also compared 1999 price dispersion in the 'core' bloc - Austria, Benelux, France and Germany, whose exchange rates had been stable since 1987 - with the EU15. The coefficient of variation for the core group was just 5%, similar to figures in US surveys.

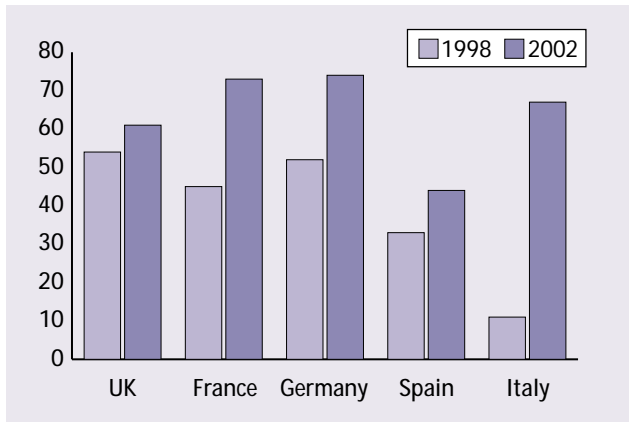
### Post-changeover evidence

The limited evidence available on prices since the introduction of euro notes and coins on 1 January 2002 suggests that a one-off rounding up of prices to reach convenient 'pricing points' in euro terms temporarily interrupted price convergence. However, from any medium run perspective, this one-off effect is of little interest. In any case, its overall impact was small. Eurostat estimated it raised the euro-zone HICP by up to 0.16 percentage points (out of a 0.5 percentage point increase) in January. Similar estimates were produced by INSEE and the Bundesbank.

Nevertheless, the latest DKW survey concludes that the euro-zone's price convergence during 1999-2001 came to a halt in 2002. Within the euro-zone, the coefficient of variation for the prices was 16.7% in 2002, compared with 16.4% in 2001, having fallen from 19.4% in 1999. However, by examining individual prices in the survey (250 matched items in 9 cities) to see what proportion were at attractive 'pricing points' in euro terms, compared to the proportion reflecting pricing points in legacy currency terms, the study concluded that the rounding-up process due to changeover was 90% complete by the end of June.

Companies are starting to move towards setting a single price for their goods within the euro-zone. BMW intends to charge the same price, exclusive of taxes, for its new 7-series in all 12 euro-zone countries, and will eventually price all its models this way. A recent *European Enterprise Barometer* published by 3i shows a significant increase during 1998-2002 in the proportion of 3i-backed companies selling at the same price in the different euro-zone countries (Figure 4.3). In France and Germany the fraction has climbed from half to nearly three-quarters. Even in the UK, 61% of 3i-backed companies now operate single prices for their exports for all parts of the euro-zone. 33% of 3i-backed companies in Europe expect their prices to converge because of the increased price transparency.

Figure 4.3 Proportion of firms charging common Eurozone prices



Source : 3i website

However, a survey by the Bank of England's agents reports that, although invoicing in euros by UK businesses has been growing, fewer than 45% of respondents were doing so in early 2002, compared with the 60% who had expected by that time to be doing so. A *growing* majority of the UK businesses surveyed by the Bank of England - almost 70% in early 2002 - said they did *not* expect to set common prices across the euro-zone, because markets remained segmented and because the cost of sales and the regulatory environment differed in different markets.

This reveals that UK-based companies are typically pursuing a different pricing strategy from that pursued by companies based in the euro-zone. It is consistent with fears of FDI and productivity diversion to which we have referred in other parts of the report, and may even signal that we cannot rule out trade diversion too. Taken as a whole, the evidence on price dispersion suggests that important changes in competition and competitiveness are taking place within the euro-zone, that these processes are likely to continue if measurements resembling anything like the US are to be eventually achieved, and that there is already an identifiable disadvantage to being out in the cold.

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24 See, for example, the Elkins-McSherry data on equity market trading costs ([www.elkins-mcsherry.com](http://www.elkins-mcsherry.com)).

Opponents of UK entry into EMU often say that the City of London has little to fear if the UK remains an Out. There has, they say, been no sign of a decline in the City's share of financial business since 1999, in particular in the wholesale markets and investment banking. Moreover, adopting the euro would require a substantial (one-off) outlay. By retaining its independence, the City will become the major offshore centre for Europe (see Chrystal *et al*, 2002, for survey evidence of these views in the banking sector).

Such views are mistaken. The idea that the UK can retain regulatory independence by remaining outside the euro is illusory. The relevant financial regulatory regime that constrains the UK from outside resides in the authorities of the EU not those of the euro-zone.

Thus, joining EMU would sacrifice only the independence that is already gone. Indeed, the UK is likely to have less influence on the regulatory process if it stays outside the mainstream of financial decision-making in the EU, which inevitably will be the countries in EMU. Moreover, those countries may seek to maintain or increase barriers to entry into the EMU markets, while the euro promotes the erosion of barriers within the euro-zone (eg, charges for cross-border bank transfers or for using a credit card in another euro-zone country).

A further cost of staying out is the restriction of the 'domestic' market to the existing UK customer base, while euro-zone financial institutions increasingly enjoy a broader market. That market will grow as additional countries enter EMU in the next decade. Meanwhile, the euro is affecting euro-zone capital markets in many ways (see Perée and Steinherr, 2001; Walter and Smith, 2000), many of them positive; again, the UK as an Out misses out.

This chapter considers more specific determinants of benefits and costs and how they affect various financial markets and institutions. We discuss the factors underlying the location of financial markets, and then examine the regulatory issues raised above. We characterize the current position of the City relative to the rest of Europe and consider the prospects for wholesale and retail markets, financial services, and financial institutions if the UK were to stay permanently outside the euro-zone. We assess the implications for the cost of capital and draw some broader conclusions.

### The location of financial markets and institutions

Walter and Smith (2000) give a comprehensive discussion of how financial centres compete. Specific characteristics that influence the location of financial activity include language, urban infrastructure (especially transport), labour market flexibility and regulation, the supply of skilled labour, and transaction costs (more broadly, the efficiency of capital markets - more narrowly, nowadays, the specific electronic infrastructures for trading). London has many strengths, but is weak on transport and transaction costs.<sup>24</sup> The latter are likely to deteriorate, relative to the euro-zone, as a larger euro-zone market raises liquidity and lowers transactions costs.

Two broader factors will work to London's advantage, regardless of the entry decision. History matters greatly - the outcome depends partly on the path, and the path long ago brought the City to a dominant position, which will be difficult to challenge. The exceptional size of London's financial sector gives it economies of scale relative to others. Second, there are agglomeration (cluster) economies and network externalities. These also reinforce inertia - that is, the pre-eminent position of London in Europe.

Clark (2002, p 451) argues that 'Frankfurt and Paris could not match the complementarities and liquidity of London or the depth of talent...[so] London never actually demolishes Frankfurt and Paris but uses those centres to organise the continental flow of funds into the world'

This view ignores four points that recur below: differential influences on, and effects of, EU regulation (especially important for retail product markets - life insurance, mutual funds, pension funds); the inability of an Out to provide infrastructure for the euro-zone (payments, clearing, settlement); the effect of 'home market' size in strengthening competing financial institutions (securities exchanges); and the role of liquidity.

Nevertheless, investment banking and the foreign exchange markets are likely to stay in London. Investment banking in Europe is heavily concentrated in London - not just the American banks, but also the European investment banking arms of all the major European players. Much of the foreign exchange trading is done by these same big banks and requires a large pool of dealers. Neither banks nor traders will move unless London becomes unliveable. Investment banking is a clear case of a sector with strong network externalities and inertia.

Table 5.1 documents the evolution of UK market share in different international financial markets in the past decade. It confirms that the UK is losing market share in equities and derivatives, but not in foreign exchange, bank lending, bond issuance, or fund management.

**Table 5.1 The UK and international financial markets, 1992-2002**

(market share of UK, %)

	1992	1998	2001	2002
Cross-border bank lending	16	20	19	19
Foreign equities turnover	64	65	56	56
Foreign exchange dealing	27	33	31	na
Exchange-traded derivatives	12	11	7	6
International bonds				
primary market	60	60	60	na
secondary market	70	70	70	70
Fund management	na	9	8	na

Source: Centre for Economics and Business Research, 2003

Table 5.2 shows in more detail that the advent of the euro has not threatened London's primacy in foreign exchange dealing: the UK market share remains stable, and the market share of France and Germany has not risen.

**Table 5.2 Foreign exchange dealing**

(market share of UK, %)

	1989	1992	1995	1998	2001
UK	26	27	30	33	31
US	16	16	16	18	16
Japan	16	11	10	7	9
France	3	3	4	4	3
Germany	na	5	5	5	5
All others	39	38	35	33	36

Source: Bank for International Settlements, 2002

## Regulation

There is no euro-zone regulatory institution or anything like one, except for the European Central Bank, which has no regulatory authority over financial institutions or securities markets and no capacity to legislate.

Legislation, normally proposed by the European Commission, is subject to co-decision with the European Parliament and the European Council (governments). Enforcement also lies with the Commission. The UK is already subject to this process, as we have seen for example with the negotiations on the taxation of income from savings.

The issue, therefore, is whether the UK would be better placed to influence the EU financial legislative and regulatory environment from within the euro-zone or outside it. Being outside ensures that our voice is heard clearly - we need not present a united front with France, Germany *et al.* Indeed, to date the UK has been able to continue to play a major role in EU financial sector governance - for example, we now chair the committee of EU banking supervisors. Our strong representations on the faults of the draft directive on the common securities prospectus were partly disregarded, but the City's representatives lobbied successfully to remove some of the most objectionable features.

But the 'unification of regimes' will continue - eg, for market abuse and wholesale trading rules. All this is part of the Financial Services Action Plan, which aims to create a true single market in financial services across the EU by 2005. The Financial Times writes of the 'City's disenchantment with the action plan' (Norman, 2002), quoting Sir Howard Davies's 'growing anxiety...[especially with] the "maximum harmonisation approach"'. He argues that since national regulators are not allowed to add further requirements to EU law, the latter becomes too detailed, as each member state seeks to get its special priorities into the general legislation.

The City's differences specifically with euro-zone financial centres on regulatory issues were exhibited in the two visions set out at the end of November 2002 by the Mayhew-Wicks committee and by Eurofi 2000, a Paris-based lobby. They were in the event somewhat closer than expected. London had thought Eurofi 2000 would propose writing a European Securities and Exchange Commission into the constitution being formulated by the Convention; Eurofi 2000 representatives were surprised that the London contingent did not exclude gradual evolution towards a European SEC in the long run.

Even so, the Chair of the European Parliament Committee for Economic and Monetary Affairs, Christa Randzio-Plath, strongly criticized the Mayhew-Wicks report, saying it 'dismisses out of hand the need for financial regulation and legislation' and was 'going in the opposite direction [to what is needed]... Without a set of rules, we shall never achieve an integrated financial market... This will not happen by itself and it cannot be achieved by the markets alone.' (Randzio-Plath, Financial Times, 10/10/02) That reaction is symptomatic of strong underlying disagreements.

The issues are wide-ranging and important. They include revising the Investment Services Directive and capital adequacy rules; the rules for corporate governance; company law, including takeover legislation, bankruptcy codes, and regulations governing IPOs; the legal framework for interoperability of pension funds; barriers to retail market integration (taxation, in relation to life insurance and pension funds; and consumer protection, in relation to pensions); and enforcement.

As long as the UK is a Pre-In, it can play a major role in shaping these regimes. As soon as it becomes a long-term Out, the UK will become 'offshore', with a commensurate role and influence: no more committee chairmanships, no more say. But it will not achieve the corresponding freedom: it will still have to play by rules drawn up to suit the euro-zone. This takes on greater significance because the recent scandals and crises have ended the period of 'light' financial regulation in New York and London. And the EU as a whole is unlikely to take a different direction (another theme of Randzio-Plath's FT letter). The heavier the regulatory burden, the more one should wish to be in under the wing of the regulator.

### The current position

Although Tables 5.1 and 5.2 give detailed data on the position of the City in the various financial markets, such data must be interpreted with care. For example, consider Eurex, the Frankfurt-based derivatives exchange, where activity has risen greatly over the past few years. In fact, 40% of trading on Eurex is now done by London-based traders using the exchange's screens - so what weight do we give to comparisons between Eurex and the London International Financial Futures Exchange (LIFFE) on the number of contracts traded? In addition the over-the-counter derivatives markets further complicate any assessment.

CEBR (2001) gives data on the UK share of various financial markets. In all categories except exchange-traded derivatives and marine insurance, the UK is much more important than France or Germany combined. Moreover, except for exchange-traded derivatives and foreign equity trading turnover, UK market shares did not fall significantly between 1998 and 2001. But about one-third of the City's turnover in securities and derivatives came from other EU countries. This must be regarded as vulnerable if euro-zone countries move back towards their 'domestic' market. Two-thirds of London Stock Exchange trading in international equities was in euro-zone stocks. Changes in transactions costs and liquidity could easily move this to euro-zone exchanges.

### Prospects: the wholesale markets

Foreign exchange markets will stay in London, barring an exceptional adverse shock. In the latest BIS survey (conducted in April 2001, published in 2002), London had 31% of global forex trading, with New York a distant second at 16%. Language, skills, and network effects operate strongly here. As for the role of the currency itself, the euro has essentially replaced its predecessor currencies outside the euro-zone. With that comes the seigniorage that accrues because many non-euro-zone residents hold euro currency (in the changeover, the predecessor currencies were exchanged predominantly for euro cash, and also for euro deposits - very little for dollars). Staying out, the UK forgoes a share of this seigniorage.

The euro-zone government bond markets have made major progress towards integration in the past four years. There are widely used common trading platforms (in particular, MTS); there are fairly clear and stable relationships between spreads as well as emerging benchmarks (Dunne, Moore and Portes, 2002); the cross-border share of transaction volumes and new issue placements has risen sharply. Overall turnover for the major countries is up 200-300% (Galati and Tsatsaronis, 2001, p 8). All this brings greater liquidity and lower spreads overall. The cost of staying out is forgoing this greater liquidity associated with a much larger market, as well as the resulting lower borrowing costs. The UK government could of course issue in euros as an Out, but such sovereign international bonds would carry currency risk and higher spreads as well as possibly undesirable contractual terms.

The rise of the corporate bond market in the euro-zone has been the single most striking result of EMU. Issuance has risen explosively - up 370% in 1999, to €140bn, and a further 50% in 2001. Volumes are now comparable to the United States. There has been a strong shift down the credit curve, so more medium-size firms can enter the market; almost half of new issues in 2002 carried a rating below A. In other categories of corporate securities, the same phenomena are observed. Euro-denominated commercial paper volumes are up threefold. Italy and the Netherlands are catching up with the UK in volumes of asset-backed securities. Again, UK corporates could issue in euros, and some do. But this is not practical for smaller firms, and the major borrowers with primarily UK-based activity will not want to take on the currency risk. So if the UK stays out, its firms will not enjoy this much larger market with greater liquidity and lower cost of capital.

For both government and corporate securities, staying out of the euro-zone and maintaining markets in sterling will mean that those markets will be increasingly marginalized alongside the larger, dynamically expanding euro-denominated markets. That will mean higher borrowing costs and higher volatility. And the higher borrowing costs translate into lower investment, and hence lower growth.

The picture is analogous for venture capital, primarily because the larger market has improved the prospects for eventual liquidation of initial investments through IPOs. The recession and technology stock crash of 2000-01 evidently had a chilling effect on IPOs, and venture capital activity has also fallen, though not dramatically. Total EU private equity investment was €14b in 1998, almost doubled to €25b in 1999, rose a further 40% in 2000, then fell back in 2001 to the 1999 level. The UK still takes the largest share, but three-quarters of that is in buyouts; Germany, France and the Netherlands have now passed the UK in volume of start-up investment, and many more firms in France and Germany receive venture capital funding than in the UK. Here too it is reasonable to believe that the larger, unified euro market will be a permanent advantage for firms in the euro-zone countries.

### Prospects: financial services and retail markets

So far, there has been much less integration across the euro-zone country borders in financial services and retail markets than in the securities markets. There are serious obstacles: differences in taxation, some of which are straightforward protectionist discrimination; national differences in consumer protection; and the independent national supervisory authorities, which jealously guard their prerogatives and differentiate themselves while 'cooperating' in multiple committees. There are also regulatory and political barriers to cross-border M&A, especially in banking (Danthine, *et al*, 1999; Belaisch, *et al*, 2001).

But the Financial Services Action Plan and heavy pressure from the financial sector itself will ultimately break down many of these barriers. Until then, it will be hard to sell pension products and insurance across borders; hard for commercial banks to sell services and products to households and firms across borders; and hard for mutual funds to enjoy the benefits of a large single market. All these problems and their costs are documented in a recent report from the European Financial Services Round Table (2002).

Even when these barriers are brought down, UK banks, pension funds, mutual funds, and insurance companies will still face currency risk when selling into the euro-zone. One could argue in some cases that portfolios can be constructed to match assets and liabilities by currency as desired, so that UK sellers could retail asset products to customers in euros without hindrance. But there are economies of scale in portfolio construction and management. Hence UK institutions will continue to focus on customers who use sterling, and the corresponding products will not be sold easily in Paris or Frankfurt.

Moreover, as an Out, the UK will have less influence on the regulatory harmonization necessary to eliminate national barriers. The particular details of these regulations will matter for financial services and retail markets.

### Prospects: financial institutions

The European Central Bank, which plays a significant role in the monetary infrastructure of the euro-zone - payments, clearing, settlement mechanisms, and institutions - has explicitly stated that an Out should not expect to be able to host such institutions:

'In order to reap the benefits of the single currency in the financial markets, the securities industry needs a "domestic" infrastructure for the euro-area as a whole. The Eurosystem takes the position that the infrastructure for the euro should be located in the euro-area, as is the case for the core infrastructures of any monetary area. It is naturally in central banks' interests to have the infrastructure for their currency located within their area of jurisdiction. This enables them to address regulatory concerns efficiently and means that they can address any liquidity problems that may be triggered by payment, clearing and settlement systems' (Hämäläinen, 2002).

This does not mean that the ECB expects these institutions to be based in Frankfurt, but it does mean that the City could seek to participate only if the UK were to enter EMU. The landscape of securities market institutions has already changed dramatically with the advent of EMU. Both Deutsche Börse (DB) and Euronext (the merger of Paris, Brussels and Amsterdam) have built up positions rivalling the London Stock Exchange (LSE), which has stood still. DB has consolidated and expanded the Eurex derivatives exchange, which 'repatriated' the Bund futures contract from LIFFE. DB also now has a wholly owned clearing subsidiary, one of the two major such institutions in Europe. Euronext has brought in further exchanges beyond its original triangle base, and it has purchased LIFFE, in competition with the LSE. Both Euronext-LIFFE and Eurex are aggressively entering the US markets.

It is difficult to imagine that this activity in the euro-zone would have or even could have taken place before or outside of EMU. With the expansion of the euro-zone and the Continental 'catch-up' with the UK in 'equity culture', DB and Euronext can look forward to expanding domestic markets, while that of the LSE is likely to remain stagnant. And if the UK stays out, the attractiveness of listing in London rather than with either DB or Euronext will fall (see Pagano *et al*, 2001, on the determinants of listing choices). Since the US corporate scandals have made US accounting standards seem less attractive, and the Sarbanes-Oxley legislation also creates disadvantages to listing in New York, the euro-zone alternatives look more inviting.

### Implications for the cost of capital

In this section, we ask two questions: has the formation of the euro-zone already reduced the cost of capital for firms within the euro-zone, and would UK firms enjoy any reduction in their cost of capital if the UK were to adopt the euro?

The elimination of separate currencies within the euro-zone in principle has three effects. First, it eliminates the cost of managing currency risk across these countries, for example the costs incurred through hedging. Second, it eliminates the cost of currency conversion, and thus reduces transactions costs. Third, as a consequence of the first two, it promotes a larger market by breaking down segmentation into national markets. If a larger market then increases liquidity, the cost of capital will fall not merely because conversion and hedging costs are eliminated but also because the cost of liquidity is thereby reduced.



Although this logic is correct, two caveats are also appropriate. First, the increasing ability of individual countries, and the firms within them, to access global capital markets means that some reduction in the cost of capital, relative to its initial position, would anyway have been enjoyed. The correct counterfactual for establishing any 'EMU effect' is therefore what these countries would have experienced now as Outs, not what they used to experience before the EMU process began. Second, a common currency may not be a sufficient condition for complete integration of capital markets within the euro-zone: some segmentation into national markets may remain because of other sources of 'home bias' that are country specific rather than currency specific.

In seeking to quantify the extent to which EMU *per se* has reduced the cost of capital in its member states, we are not blessed with a profusion of recent empirical work on which to draw; nor do existing studies always answer the questions that we wish to ask. For example, Hardouvelis *et al* (1999) estimate a model of evolving risk premia during 1992-98, concluding that on average the cost of capital fell by between 120 and 190 basis points as a result of capital market integration.

If true, this would reflect a substantial fall in the cost of capital. However, much of the period corresponds to what we now know to have been a stock market bubble in which *ex post* stock market returns were high. For example, the authors estimate the *ex ante* cost of capital in the UK to have been 20% a year during 1996-98: their model is clearly picking up *ex post* surprises as well as *ex ante* expectations. By overstating the *ex ante* risk premium, it also overstates the potential gain from a reduction in the currency risk premium. Moreover, their estimates identify the reduction in the cost of capital relative to the initial position rather than relative to the counterfactual of what these countries would have enjoyed as an Out<sup>25</sup>. They cannot therefore be used to isolate any EMU effect directly.

We also have estimates of the currency risk premium from the government bond markets just prior to EMU (Blanco, 2001). These are calculated by comparing swap rates in the currency of denomination of the bond and swap rates in DM. They suggest that the 'foreign exchange factor' in 10-year bond yield spreads was negligible for currencies tied tightly to the DM (Austria, Belgium, France, Netherlands) but it was 37 basis points for Ireland, 41 basis points for Finland, 96 basis points for Spain and 132 basis points for Italy. Again, however, it is not straightforward to deduce a currency-risk effect on the cost of capital for firms.

That said, the early lead of London as Europe's principal stock exchange is gradually being overhauled. Events of the last decade - not merely EMU but also moves towards common financial regulation within the EU, technical advances that reduce transactions costs, and other aspects of the greater integration of financial markets on a global scale - have all reduced the cost of capital in what were previously small European markets heavily segmented from one another. Given the volatility of asset prices and equity returns, quantifying this effect with any reliability will take much more data than we yet possess.

Previously, London and the investors therein enjoyed the advantages of inherited size and liquidity, less regulation, and thus a greater ability to diversify portfolios internationally as well as domestically. One key issue is whether recent developments have merely allowed Continental Europe to begin to catch up, or whether they have allowed Continental Europe to overtake London.

In both cases, the competitive advantage of London, and of the UK firms that it finances, has been reduced and may deteriorate further if the UK remains an Out; much of that is inevitable. But the position of euro-zone markets relative to the UK is relevant to our second question: would the cost of capital to UK firms now fall if the UK joined the euro-zone?

Lacking any reliable empirical estimates, we cannot give any direct answers to this question. We can however use the evidence cited earlier in this chapter - for example, the loss of stock exchange business from London shown in Table 5.1, and the Elkins-McSherry data that shows transaction costs are now higher in London than in some of its euro-zone competitors - to make an informed guess. Cost of capital is now unlikely to be lower in London than in the euro-zone.<sup>26</sup>

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25 The authors use (forward) interest rate differentials with Germany to infer the market probability of EMU entry, thereby inferring that the UK was expected to be an In. However, any credible disinflation would have induced substantial convergence of nominal interest rates. It is therefore hard to know whether estimates for the UK should be interpreted as the counterfactual of what would have happened to an Out or reveal that the market had really expected the UK to be an early EMU entrant.

26 Why don't UK firms then issue equities in Frankfurt? UK firms still incur currency risk and conversion costs to which their euro-zone competitors are not subject. However, exporting UK firms may, and probably will, issue bonds in Frankfurt at very little currency risk because of their existing exposure on the revenue side.

## Broader considerations

According to ECB Executive Board member Tommaso Padoa-Schioppa (2002), the euro is the basis for the financial integration process and the creation of a 'European financial system...tied together by the same single currency'. He argues strongly for a directing and driving role for the public institutions - in this case, the ECB and the European Commission - in bringing about the necessary cooperation of private market participants. In its implications for the Out scenario, this is just a more far-reaching version of our earlier discussion of regulation. Insofar as market participants are guided in their decisions by public authorities that give the euro-zone and its requirements a privileged status, the needs of UK markets and institutions will get less attention.

Finally, there is the UK's role in discussions and decisions on international financial regulation - in the BIS, the IMF, and the wide range of international committees that now deal with codes and standards. There are two alternative hypotheses here: either the UK's influence diminishes as the euro-zone progressively develops a single view and voice, with corresponding weight, and in which the UK has no influence; or the UK gains by not being submerged in the broad euro-zone and retaining its own distinct voice. This balance is hard to draw a priori.

## Summing up

We have seen several important examples in which even a temporary delay of entry, if it were interpreted as the UK remaining out for an indefinite period, could be permanently costly to UK interests. Our financial institutions and markets will lose some business, and together with the UK government, will also lose influence over the design of euro-zone legislation, regulation and policies. The default option - continue as you were - is not available.

### 6.1 Business cycles

Having discussed the evolution of linkages through trade and foreign investment, and their implications for pricing and competition, we turn next to the implications for the correlation of business cycles. The more correlated the business cycles in the UK and the euro-zone are, the more appropriate the single monetary policy will be for the UK. Tables 2.1 - 2.3 showed that trade links between the Ins were stronger than the links between the Ins and the UK, but that UK links with euro-zone countries had been steadily deepening for decades.

Early studies of business cycle correlations (eg Bayoumi and Eichengreen, 1993, 1994) confirmed that the inner core of potential euro-zone countries displayed stronger cyclical correlations of output with one another, than they did with the UK or the other countries on the periphery of the EU. Subsequent research has replicated these results many times. For example, Takata (2002) reports this as the mainstream view after surveying ten studies of UK-EMU cyclical correlations.

Of course, some of these results have been induced by policy. The UK decision to suspend EMS membership in 1992 in order to lower interest rates shifted UK and continental European business cycles out of phase and cast a long shadow thereafter. Business cycles might appear more correlated if the UK had, and was expected to have, the same monetary policy as the euro-zone.

Two other arguments go in this direction. First, the elimination of exchange rate uncertainty is more important the higher the level of trade is as a proportion of GDP. Hence, McKinnon (1963) argued that a key factor determining the advisability of fixing the exchange rate is the ratio of tradable goods to GDP. If trade among the members of the EU is increasing over time, they will satisfy the optimum currency area criteria more strongly in the future than in the past. Even if business cycles are not strongly correlated before entry into EMU, they may become more strongly correlated after entry, and partly as a direct result of entry itself. By deepening integration, for reasons discussed in the previous two sections, EMU membership may induce closer correlation of national business cycles. Frankel and Rose (1998) call this the 'endogeneity of the optimum currency area criterion'.

#### Evidence on cyclical correlations

Artis and Zhang (1995) find that outputs of most EU countries were more highly correlated with the US during 1961-79, but for ERM members, became more highly correlated with Germany after they joined the ERM.<sup>27</sup> For a wider cross-section of countries, Frankel and Rose (1998) find that when a reduction in bilateral exchange rate variability encourages bilateral trade, it also raises the bilateral cyclical correlation.<sup>28</sup>

The view that specialisation makes a monetary union more problematic, whereas diversification makes it easier, dates back to Kenen (1969). Eichengreen (1992), Bayoumi and Eichengreen (1994) and Krugman (1993) have also conjectured that, because a higher trade level would lead to greater specialization, EMU would reduce the correlation of shocks hitting national economies.<sup>29</sup>

Yet this conjecture is precisely what is refuted by the work of Frankel and Rose (1998) and others. Empirical research concludes that the correlation of business cycles in their member states is strengthened not weakened by the creation of monetary unions.

Whether these effects operate quickly is another matter. Rockoff (2000) argues that it took 150 years before the United States met the criteria for an optimum currency area, and that asymmetric regional shocks posed severe problems for much of its history. Kim (1997) finds that regional specialization within the United States rose in the 19<sup>th</sup> and early 20<sup>th</sup> centuries. Although it diminished a bit thereafter, it remained higher than within Europe.

27 Eichengreen pointed out that these correlations may reflect the loss of monetary independence rather than increased trade.

28 Fidrmuc (2001) extends the results to take account of intra-industry trade. However, there are dissenting voices to the general story. Imbs (1999) claims that trade is not a major determinant of cyclical correlations, and Kalemli-Ozcan, Sorensen, and Yosha (1999) argue that the degree of risk-sharing via integrated capital markets is what determines industrial specialization.

29 "Theory and the experience of the US suggest that EC regions will become increasingly specialised, and that as they become more specialised they will become more vulnerable to region-specific shocks. Regions will, of course, be unable to respond with counter-cyclical monetary or exchange rate policy" (Krugman, 1993). Hughes Hallett and Piscitelli (1999) call this "the traditional view" (and add some modelling of demand-driven transmission previously missing from this debate). Bush (2002) is among those asserting that EMU is likely to generate a degree of specialisation that undermines the insulation against shocks necessary for a common currency.

Clark and van Wincoop (1999) find that the historically lower cyclical correlations within Europe, relative to the US, reflected less internal trade and less sectoral specialisation. Evidence in Honkapohja and Pikkarainen (1992) also supports the idea that countries with a high degree of specialisation are more likely to find it desirable to peg their exchange rate.

### Summing up

The empirical evidence does not speak with a strong unambiguous voice but, in our judgement, on balance it supports the view that EMU is likely to strengthen business cycle correlations. Moreover, trends in European integration unconnected with monetary union per se have also been enhancing trade links and cyclical correlations.

If linkages and correlations are rising anyway, the status quo will improve from the UK viewpoint. Since UK business cycles are as yet, not as well correlated with the EMU average as are those of most EMU members, can the UK reduce the cost of EMU membership by delaying entry until these correlations improve? If these trends were unaffected by EMU membership itself, the answer is clearly yes. This would then constitute one benefit of waiting, to be set against other costs and benefits of waiting discussed in the rest of this report.

However, EMU membership itself has consequences. First, correlations between the Ins are still rising as a consequence of their membership, so the UK would then be trying to catch up with a target that had moved further away. Second, by remaining outside EMU, the convergence of UK cycles on the EMU average may be somewhat delayed, both because of delays in structural convergence and because there is less pressure on policies in the UK and the euro-zone to move in phase with one another.

Unfortunately, even if we have evidence about the likely eventual result, we have very little evidence about the speed with which these correlations are likely to change. For this reason alone, it is hard to argue that delay by one or two years will make a major difference. However, a permanent and credible rejection of EMU would reduce the likelihood of further convergence in UK and euro-zone business cycles.

## 6.2 Convergence in the transmission mechanism of monetary policy?

Thus far, our discussion of cyclical correlations has focused on how trade and industrial structure affect the likely shocks hitting the real economy and the consequent correlation of business cycles. Implicitly, this assumes that more correlated cycles are less problematic since the single monetary policy will then be more appropriate.

However, this presumes that the single interest rate within EMU will have similar consequences in different member states. If there are national differences in the transmission mechanism of monetary policy - the dynamic profile through which interest rate changes feed through into the real economy - then highly correlated business cycles might not be sufficient to make a single monetary policy appropriate for all members.

Whereas measurement of national business cycles, and identification of the demand, supply, and policy shocks that cause these cycles have received considerable empirical scrutiny, there has been less empirical examination of asymmetries in monetary transmission mechanisms.

### Early evidence on transmission mechanisms

In 1995 the Bank for International Settlements (BIS, 1995) first examined whether we could detect cross-country differences in the transmission mechanism and whether these could be related to cross-country differences in financial structure. It used the large econometric models developed by the national central banks and the multi-country macro-econometric model covering G7 countries built by the staff of the Board of Governors of the Federal Reserve. All models considered use quarterly data, and were used to run the same policy experiment: a temporary (8 quarters) rise of 1 percentage point in the domestic interest rate set by the local central bank.

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30 Subsequent UK inflation targets were thus explicitly framed for a price index that excludes mortgage interest rates.

Table 6.1 Monetary transmission in models of national central banks

Exchange rate	Output change (basis points from baseline path)			Inflation change (basis points from baseline path)		
	year 1	year 2	year 3	year 1	year 2	year 3
Floating						
USA	-7	-50	-121	-3	-21	-68
Germany	-15	-37	-30	-3	-14	-31
Austria	-8	-14	-2	-2	-4	-5
UK	-35	-89	-59	+89	+127	-46
Fixed inside ERM						
France	-18	-36	-20	-5	-15	-25
Netherlands	-10	-18	-15	-13	-35	-35
Belgium	-3	-12	-23	-14	-48	-79
Italy	-18	-44	-34	-16	-43	-53

Source: BIS (1995)

Note: Within ERM, Germany free to choose interest rate and implicit external exchange rate; other countries then peg exchange rates against Germany.

Table 6.1 reports the responses of output and inflation. In the first group of countries (Germany, Austria, the UK, and the United States) the exchange rate is endogenous. In the second group (France, Netherlands, Belgium and Italy) intra-European exchange rate is fixed; however, this is hard to reconcile with a unilateral rise in their domestic interest rate.

In any case, the sets of simulations are not directly comparable since different exchange rate policies are assumed. Subject to these serious caveats, the UK and Italy appeared to be the countries where monetary policy had the strongest impact on output, in part because households in France, Germany and Austria are partly insulated from monetary policy because mortgage finance is long-term, at fixed, not variable interest rates. The initially perverse effect of monetary tightening on UK inflation also reflects the role of higher interest rates on the cost of mortgage borrowing.<sup>30</sup>

An alternative set of estimates for the differential effects of monetary tightening were obtained using the Federal Reserve's Multi-Country Model (MCM). This exercise yielded smaller cross-country disparities. Some of the BIS differences may thus have reflected differences in national procedures for estimating national econometric models. However, the simulations with the Fed's MCM reported in BIS (1995) assumed all exchange rates were endogenous, which is not very instructive in view of EMU. This of course alerts us to the fact that the effects of monetary policy depend on what other policies are in force at the same time.

An alternative approach is to cut through the complexities and instabilities of large macroeconomic models and the inbuilt policy assumptions by examining instead results of small vector autogressions. Although appealing, this requires the same health warning that results will, and should, often depend on what other policies are simultaneously in force.

The pioneering studies were conducted at the BIS by Gerlach and Smets (1995), and at the Bank of England by Britton and Whitley (1997). Gerlach and Smets examine a trivariate VAR in prices, output and the short-term interest rate. Britton and Whitley examine a richer model including domestic demand, imports, exports, short and long rates, inflation, the nominal exchange rate and some exogenous variables, including the oil price and tax rates.

The G&S paper uses quarterly data from 1979-1993, while B&W consider a longer period from 1964-94, also using quarterly data. G&S include all the G7 countries, while B&W use a subset comprising of France, Germany and the UK. Neither model allows for simultaneity across countries.

Both studies concluded that cross-country differences in the transmission of monetary policy shocks were much smaller than in the previous findings from large-scale econometric models. In fact, cross-country differences in the effects of monetary policy shocks on output and prices (both in overall magnitude and in timing) were rarely statistically significant.

A study conducted for the IMF by Ramaswamy and Sloek (1997), also based on VARs, found some cross-country differences, but surprisingly, not in the patterns one would *ex ante* have expected. For example, the effect of a monetary shock in the UK, Germany, Belgium and Holland took twice as long to affect output, but was then twice as deep as it was in France, Italy, Spain, Portugal, Sweden and Denmark.

This body of empirical research was all based on pre-EMU data and on specifications that did not allow for the effects of EMU. Many of them assumed the exchange rate to be flexible. Dornbusch *et al* (1998) attempt to estimate cross-country differences in the transmission mechanism, allowing for the shift in monetary regimes associated with the euro. Unlike previous estimates of reduced forms, in which coefficients were a combination of structural parameters and parameters from the central bank's reaction function, this paper isolated the two effects separately.

Table 6.2 Output elasticities for a permanent change in interest rate

(Holding intra-EU exchange rates constant)

	Interest rate cut in		
	One country alone	All EU together	
	Impact effect	After 2 years	After 2 years
Germany	0.23 (0.10)	0.73 (0.32)	0.73 (0.32)
France	0.28 (0.10)	0.59 (0.19)	1.02 (0.33)
Italy	0.75 (0.34)	0.80 (0.34)	1.74 (0.54)
Spain	0.00 (0.11)	0.00 (0.21)	0.66 (0.21)
UK	0.37 (0.09)	0.80 (0.12)	0.80 (0.12)
Sweden	0.72 (0.22)	1.43 (0.37)	1.62 (0.50)

Source: Dornbusch *et al* (1998)

Table 6.2 reports output elasticities with respect to a permanent change in expected domestic interest rates, having controlled for the exchange rate. Three results are significant. First, the impact effect of a change in the short rate only becomes significant after 8 months in Italy, Spain, Sweden and the UK, 9 months in Germany, and 12 months in France.<sup>31</sup>

Second, the impact effect on output is always significant, but differs across countries. Impact elasticities in Germany, France, the UK and Italy are around -0.5, smaller in Spain (-0.4), but larger in Sweden and Italy (-1.0). However, the hypothesis that all elasticities are equal is not rejected at a 10% critical level.

Third, after two years, cross-country differences are more marked. The hypothesis of equal impact was now rejected at the 1% level. The two-year impact was lowest in the UK, partly because UK output was less correlated to the European business cycle. If UK correlation with the rest of the EU increases further, this asymmetry will become smaller.

31 Note that the estimated model imposes long-run adjustments by the end of year 2.

The most recent study, reported in Bean, Larsen and Nikolov (2001), examines two types of evidence: simple correlations among the main macroeconomic variables in the euro-zone, the UK and the USA, and vector autoregressions estimated for each of these areas. With respect to the former, they conclude: ‘the dynamic behaviour of macroeconomic aggregates in these areas is very broadly similar. This in spite of the known structural differences in credit, housing, and goods markets, and in the degree of openness.’

As with Table 6.2, the assessment is partly in the eye of the beholder. Does one emphasise the broad similarity or the detail of the differences? Moreover, all such assessments depend on examination of data from the past, but cross-country differences may become smaller as the structure of different economies converges. Since differences in financial structure are often cited as the major factor affecting monetary transmission, we next look at the extent to which financial structure in the EU, and between the UK and the EU has converged.

### The financing of firms and households

Are there important differences in the structure of financial systems, both between different member states within EMU, and between the EMU average and the UK? Have these differences been converging or diverging since the euro was launched? We now show that the UK financial structure is becoming more like that of EMU countries, and has moved further in that direction since 1999. Within the euro-zone, the adoption of market instruments in the financing of firms has been most marked in France and Finland, which have moved significantly towards the practices prevalent in the UK and US.

We examine data for two samples. The first sample is taken from the recent report by the European Central Bank (ECB, 2002) on the financial structure of nine euro-zone countries; this we augment by UK data from the UK Office of National Statistics. The second sample is an annual study by R&S (Ricerca & Sviluppo, the research branch of the Italian investment bank Mediobanca) of the 256 largest industrial and telecommunication firms that operate in Europe, US and Japan.

For non-financial companies, Table 6.3 reports the structure of the liabilities, as a percentage of both GDP and the total liabilities of the sector. By the end of 2000, the UK was close to the euro-zone average, whether we look at equities or loans, measure them as shares of total liabilities, or relative to GDP.

Table 6.3 The structure of financing of non-financial companies, end-2000.

	UK	Euro-zone average
<b>As % of GDP</b>		
Equity finance	162	168
Loans	72	73
Other finance	38	39
Total liabilities	272	280
<b>As % of total liabilities of non-financial companies</b>		
Equity finance	60	55
Loans	26	31
Other	14	14

Source: ECB

Note: Euro-zone average for 9 countries in ECB study: Austria, Belgium, Germany, Spain, Finland, France, Italy, Netherlands, and Portugal

Table 6.4 documents first and foremost the rapid convergence in the financing structure of the largest German companies. In 1990 74% of their liabilities were bank loans, compared with just 42% in the UK. By 2001 the respective figures were 33% for Germany and 27% for the UK. By facilitating the creation of a very liquid euro market for corporate bonds, the single currency has helped make the capital structure of German firms much more like that of UK firms. Table 6.4 shows similar, if less dramatic changes in the capital structure of other countries.

Table 6.4 makes clear two other points. First, without the stimulus of the single currency, there has been little change in the capital structure of the UK or the USA since 1997. Second, the rapid changes that have occurred in Germany, Italy, and the Benelux countries took place only *after* 1997. Only in France have firms retained their previous capital structure.

Tables 6.3 and 6.4 support the view that the financing of *firms* has already converged substantially between the UK and the euro-zone.

**Table 6.4 The capital structure of non-financial companies**

*(Bank loans as % of total liabilities)*

	1990	1997	2001
Germany	74	59	33
Italy	75	71	53
Benelux	49	47	24
France	37	31	31
UK	42	30	27
USA	10	9	9

Source: *Ricerca & Sviluppo*

What about households? Household borrowing exhibits considerable diversity across the EU. Table 6.5 shows that UK households borrow significantly more than the euro-zone average<sup>32</sup> (though not as much as in the Netherlands). In all countries, the principal source of household borrowing is the domestic banking system: here there is greater uniformity and the UK is closer to the euro-zone average. Within bank borrowing, the principal component is usually for house purchase. Again, the UK exceeds the euro-zone average.

**Table 6.5 The structure of household financing, Dec 2000 (% of GDP)**

	Total Liabilities	Of which: From banks	Consumer loans	Of which: Housing loans	Other
UK	82	56	-	43	-
Euro-zone - 9	56	44	6	31	7
Austria	40	29	12	13	4
Belgium	44	34	4	23	7
Germany	74	70	10	43	17
Spain	58	46	8	29	9
Finland	34	28	2	20	6
France	53	37	8	22	7
Italy	31	21	-	-	-
Netherlands	92	67	3	58	6
Portugal	83	60	7	44	9

Source: *ECB (2002), UK Office of National Statistics*

Note: *Since UK data is from ONS, whereas other data is from ECB, definitions may not be fully compatible.*

32 Since the ECB data excludes the UK, Table 6.5 uses UK data from its national statistics office, but data may not be fully comparable.



UK households borrow more than their continental counterparts. Whether this makes them more vulnerable to changes in short-term interest rates depends not only on how much they borrow but also on whether more of this borrowing is at variable interest rates than would be the case in the euro-zone. Chapter 7 examines this issue of household finance in more detail.

### Summing up

In this section we have reviewed what is known about the evolution of the transmission mechanism of monetary policy both within the euro-zone and in the UK. This reflects the prevailing financial and institutional structure. For the financing of companies, we find considerable evidence that historical differences in structure have been substantially eroded in the last decade. The financing of UK firms is now close to the euro-zone average even though differences still remain within the euro-zone itself.

These changes have been under way for some time: even before the advent of the euro, financial market integration in Europe was boosted by the single market initiative and by global competition in financial markets. Since both of these forces will remain in place, further convergence may occur between different member states of the euro-zone. But the financial structure of UK firms is already very close to the euro-zone average. This is unlikely to change, whether the UK enters the euro-zone or not.

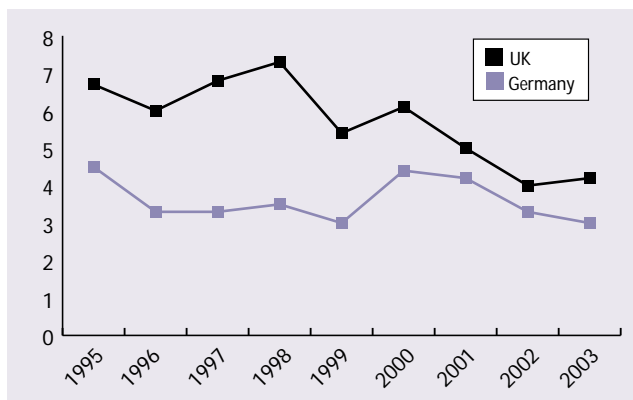
UK households borrow more than their euro-zone counterparts, spend more of this borrowing on house purchase, and are more exposed to loans at variable interest rates. We address this issue explicitly in Chapter 7.

## 7 Waiting for convergence in interest rates and competitiveness?

### 7.1 Interest rate convergence

UK short-term interest rates have been persistently higher than those within the euro-zone. Nor is this a recent phenomenon. Figure 7.1 shows that that UK short rates have persistently exceeded those in Germany.

Figure 7.1 Short-term interest rates (%)



Source: OECD Economic Outlook, December 2002

Immediate UK entry to EMU would therefore entail a sharp fall in UK interest rates, which are currently 125 basis points higher than in the euro-zone. If a large monetary stimulus had been desirable for the UK, it would already have been undertaken by the Monetary Policy Committee of the Bank of England. Despite forecasts of UK output growth being steadily revised downwards, easing of monetary policy has been rejected for two reasons. First, UK inflation is currently above its target rate. Second, the Bank has not wished to exacerbate the rapid growth of UK house prices, which it has repeatedly warned is unsustainable: fuelling further house price inflation would increase the danger of a subsequent collapse of house prices.

Hence, immediate adoption of low euro-zone interest rates would pose economic problems for the UK. If a monetary stimulus is unwelcome, a simultaneous fiscal contraction can be applied. This would restrain demand but immediately be christened a 'euro tax' by opponents of UK entry. Being difficult to win a referendum of this ticket, the UK government might then be reluctant to recommend UK entry at this juncture.

Part of the logic of the convergence element of the five tests is therefore that UK entry should be postponed until UK and euro-zone interest rates are sufficiently similar to avoid any sharp fall in interest rates if the UK adopts the euro. This strategy raises two questions: is waiting sufficient, and is it necessary?

#### Waiting may not be sufficient

If monetary policy is used countercyclically to stabilise inflation and output, countries will tend to have higher interest rates during booms and lower interest rates during slumps. If UK and euro-zone business cycles are out of phase, there may come a point at which the UK interest rates fall and euro-zone interest rates rise sufficiently that the two are equal.

If this occurs merely because of the temporary intersection of interest rate cycles that remain out of phase, it offers no easy solution. A gap will quickly re-emerge between the euro-zone interest rate and the interest rate appropriate for the UK business cycle. Pressure to adjust UK fiscal policy would quickly re-emerge too.

The deeper issue therefore is not whether UK and euro-zone interest rates coincide at a point within the cycle but whether the UK can comfortably cope with euro-zone interest rates throughout the cycle. This has two aspects: the medium-term inflation rate, which affects the nominal interest rate, and the monetary-fiscal mix, which affects the real interest rate.

The current UK inflation target is symmetric around 2.5% whereas the current ECB inflation target is within the range 0-2%. If both central banks perform equally well, on average UK inflation will be 1% higher than euro-zone inflation<sup>33</sup>: other things remaining equal, one should expect UK nominal interest rates also to be 1% higher than euro-zone rates. It would be possible to avoid this systematic discrepancy by reducing the inflation target of the Bank of England or by raising the inflation target of the European Central Bank.

The latter is more desirable - Japan continues to remind us that deflation is a destination to be avoided, and the ECB's target range is uncomfortably close to this situation - however it is improbable that the ECB will now raise its target range for inflation within the euro-zone. Conversely, the UK could take unilateral action to reduce the Bank of England's inflation target. This would eventually make adoption of the euro easier, but has two drawbacks. First, it raises the possibility that the UK may experience deflation. Second, squeezing inflation down to an average level of 1% would initially require a tighter monetary policy and thus higher interest rates, inducing a larger wedge between UK and euro-zone interest rates.

Even if inflation became similar in the UK and the euro-zone, real interest rates may continue to differ. If the UK government continues to increase government spending, and does not fully finance it with higher taxes, the Bank of England will eventually be driven to raise UK interest rates to offset this fiscal relaxation.

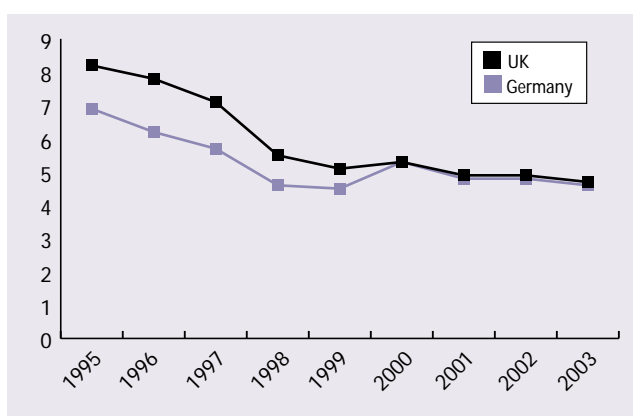
Reform of the Stability Pact may allow a similar fiscal expansion within the euro-zone. But if a weak German economy continues to weigh down the euro-zone economy, and if restrictions remain on the extent to which fiscal expansion can provide a stimulus, the euro-zone economy is going to entail low real interest rates for some time to come.

To sum up, we cannot preclude the continuation of a significant gap between UK short rates and euro-zone short rates. Waiting a year or two may not resolve the problem of how the UK would cope with lower interest rates on joining the euro-zone. Temporary delay is not the best way to overcome this problem. Nor is it the only way.

#### Waiting for convergence is unnecessary

The key to understanding what is required is to forget the systematic excess of UK short-term interest rates over corresponding euro-zone rates, and instead to compare long-term interest rates. Figure 7.2 shows, spectacularly, that convergence in long rates has already occurred. If UK housing finance could be converted from variable-rate to fixed-rate lending, UK adoption of the euro would impart no shock to the UK housing market, which would cease to be an impediment to UK entry to the euro-zone.

Figure 7.2 Long-term interest rates (%)



Source: OECD Economic Outlook, December 2002

<sup>33</sup> The measure of inflation targeted by the UK is the Retail Price Index but the euro-zone inflation target is based on the Harmonised Consumer Price Index. Differences in the composition of the two indices and divergent trends in the components probably imply that 2.5% RPI inflation is equivalent to 2% HICP inflation.

Transforming UK housing finance from variable-rate to fixed-rate lending is desirable whether or not the UK joins the euro. Variable rates force households to bear substantial risk when they borrow to finance house purchase. When short-term interest rates rise sharply (and thus unexpectedly), households face higher debt service at the very time that the value of their housing collateral is falling. In extremis, this leads to negative equity, as in the early 1990s in the UK. With inflation now better anchored, swings of this magnitude are less likely. However, precisely because interest rates are lower than in the 1990s, a change by a given number of basis points is now a larger percentage change than before. With households more highly leveraged than ever before, household distress remains a possibility in the UK.

Allowing households to borrow long term would insulate households, individually ill-suited to bear risk, from temporary fluctuations in interest rates. Who takes over this risk is an issue we discuss shortly.

Fixed-rate loans for housing finance have substantial benefits whether the UK joins the euro or not. Before making this a policy priority, several issues need to be addressed. Why does the UK have the system of housing finance that it does? What prevents the private market offering such contracts anyway? What forms of contract are possible? Is government support required? And can fixed-term contracts be reconciled with the unilateral right of the borrower to repay on demand and without penalty, or would borrowers then be locked into long-term loans that entailed substantial penalties for early redemption.

UK housing finance reflects its origins in mutual self-help savings societies. Some of these remain as building societies, others were transformed into banks, and other banks have subsequently entered the business. Most of these institutions borrow short term, through retail deposits. To match maturities of assets and liabilities, they cannot simply lock into fixed-rate loans. UK housing finance is therefore variable rate<sup>34</sup>, tantamount to rolling forward a series of short-term loans. Nor is the UK unique in having adopted such a system, which essentially prevails also in southern European countries such as Italy, Spain and Portugal.

This is not the only way in which house purchases might be financed. Germany has a long tradition of financing house purchases by long-term loans that combine a fixed rate and considerable penalties for early repayment by the borrower. This Pfandbrief or mortgage bond, being a true long-term asset, can then be financed by long-term borrowing by the financial intermediary, with one proviso: investors demand a residual claim not merely on the financial institution but on the underlying housing collateral itself. Since they cannot be sure that the financial intermediary will survive the 25 or 30 year term, they insist that the real estate provides the ultimate backing if necessary. A Pfandbrief Law is needed to specify that mortgage bonds have these entitlements. Versions of this system operate in Germany, Austria, Sweden, Denmark, and France.

By allowing financial intermediaries to match interest rate risks on both sides of their balance sheets, the Pfandbrief fosters the creation of a genuine private market in long-term lending for housing finance. Pension funds and life assurance companies are natural suppliers of such finance, more enthusiastically now that the precariousness of equity investment has become apparent again. Households are natural demanders of this finance, since they make long-term house purchases and are not well suited to bear the risk of short-term fluctuations in interest rates. Hence, financial intermediaries can profitably arrange the business, borrowing and lending long.

Nevertheless, the system is not without drawbacks. In particular, households are then trapped into a long-term loan that is expensive or impossible to liquidate before its redemption date, the equivalent of a primary bond market with no corresponding secondary market. For households, whose circumstances may change in unforeseeable ways, this introduces considerable risks. It also raises substantial issues of information disclosure and consumer protection. Consumers may not be fully aware of their obligations when taking out such loans. For example, the UK has recently outlawed penalties for early redemption of mortgages even where these were clearly part of the mortgage contract and where borrowers received a period of early subsidised interest rates as the equilibrium price of this repayment condition.

Revealed preference also indicates that these mortgages might not immediately be universally and immediately popular. Ireland recently introduced a Pfandbrief Law but subsequent takeup has been negligible. Is there any sensible third way between the (excessive) flexibility of variable-rate mortgages and the cumbersome restrictiveness of the Pfandbrief system? Not for the first time, the UK government could look for a transatlantic lesson.

The most liquid markets in the world are secondary markets for government debt, which retrade daily the long-term fixed-rate primary bonds issued by governments. The same principle may be applied to housing finance. What is needed is the fostering of a secondary market in long-term mortgages.

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<sup>34</sup> Recent product innovations include offering to cap or fixed interest rates during some initial period of between 2 and 5 years. 40% of new mortgages have such a facility.

Banks and building societies would sell long-term mortgages to households, and finance them by mortgage-backed securities (MBS) that were immediately resold to private capital markets in which pension funds and life assurance companies would be willing and eager buyers. This removes the mortgages from the books of the banks, which has one key implication. Banks would no longer need to be concerned about the unpredictability of early repayment by households. Giving households this unilateral option can be suitably priced into the equilibrium price of the MBS price in the secondary market and hence into the fixed rate that banks charge in the primary market. The secondary market could cope adequately with this risk, and the capital adequacy problem for banks and building societies would evaporate. They have become mere agents who sell and arrange the loans, and provide the back-office services such as sending out statements and collecting repayments.

Why has this market not spontaneously emerged already? Is this evidence of any market failure? What is the appropriate policy solution?

### **Fannie Mae and Gordon Should**

For a secondary market to work efficiently, it is necessary to overcome the problem of how every small investor acquires the information about the constituent components of the individual mortgages that have been bundled together for resale. This problem has two dimensions, scale economies and comparative advantage.

Although repeated scrutiny produces some benefits in competition and reputation enforcement, it also entails wasteful duplication. Delegation of this scrutiny makes sense. We don't individually test the safety of a lift every time we enter an office block, but instead delegate this to a government agency, the Health and Safety Executive. This promotes private competition by confirming that the appropriate market infrastructure is in place.

Securitized mortgage bonds need their own Health and Safety Executive. To make maximum use of comparative advantage, this agency should specify the criteria for 'acceptable' mortgages and then rely on the sales agents (banks and building societies) to make individual judgements knowing that their reputation will then be on the line.

Without the safety inspection certificate, the market for private lifts would literally not get off the ground. Asymmetric information is the source of the market failure and compulsory certification is the solution. Certification may be by a government agency, as with the Health and Safety Executive, or can sometimes be privatised, as with bond rating agencies.

### **How Fannie Mae works**

In 1938 the USA created a government agency, the Federal National Mortgage Association (whose acronym FNMA became Fannie Mae). Fannie Mae bought mortgages from private banks, which it financed by long-term borrowing. Unlike private banks, Fannie Mae<sup>35</sup> was able to borrow long term because it had a government guarantee. This residual claim on the government was the substitute for the residual claim on the houses themselves in the Pfandbrief system. Since the mortgages were assets on the books of Fannie Mae, repayment of mortgages at will and without penalty was prohibited, just as in the Pfandbrief system.

A government guarantee is analogous to deposit insurance. The latter remains a contentious issue in the economic literature on banking. On the one hand, it prevents self-fulfilling panics and bank runs. On the other hand, it is open to moral hazard by those managing the bank, who may take on riskier loans that otherwise would have been the case. The multidimensional nature of banking makes it difficult to fully monitor bank managers. Even in countries without formal schemes for deposit insurance, governments have usually had to bail out private banks at one time or another.

In contrast, the US government never spent a cent making good its guarantee of Fannie Mae, whose business is narrowly defined and more easily monitored. Fannie Mae specifies clearly and ex ante which types of mortgage contract it will purchase from the banks. Banks are free to offer mortgages not meeting these criteria, in the full knowledge that they will not be able to offload these onto Fannie Mae.

Two things then changed in the USA. First, Fannie Mae was privatised in 1968<sup>36</sup>, operating with its own private capital and no longer covered by any explicit government guarantee. Whether an implicit guarantee exists, is believed to exist, or would be honoured in extremis is something about which it is impossible to be certain.

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35 For details, see [www.fanniemae.com](http://www.fanniemae.com)

36 To provide competition for the privatised Fannie Mae, a similar institution Freddie Mac was then created.

Why can Fannie Mae borrow longer term than individual banks? First, its portfolio of mortgages may pool risk more effectively. Second, Fannie Mae may be able to borrow on cheaper terms than private banks. Its loan portfolio is merely mortgages and is not contaminated by illiquid bank lending to firms. Finally, Fannie Mae may be too big to fail. The implicit government guarantee may be worth more than it is for any corresponding private bank, even when the latter enjoys explicit deposit insurance.

The second major development was the development in the 1970s of a secondary market in mortgage-backed securities (MBS). This allowed Fannie Mae to sell on the mortgages rather than continue to hold them on its books. Fannie Mae acquired diverse mortgages from all over the USA, standardised them by rebranding them as Fannie Mae securities and issuing a Fannie Mae guarantee, and then sold them in the secondary market.

Offering a guarantee is of course risky, but so is running an insurance company. Fannie Mae's ability to outcompete individual banks in issuing MBS reveals that it can bear the risk relatively more cheaply.

The issuance of MBS had one dramatic (and predictable) consequence in the USA. Since the mortgages were no longer on the books of Fannie Mae, it was no longer necessary for it to discourage early repayments. A mortgage was simply a fixed-rate loan plus an option to repay without penalty, and the secondary market was quite capable of pricing such an asset *ex ante*. Knowing the terms on which it could borrow, Fannie Mae could lend to households at an appropriate rate whilst earning a suitable spread to cover the cost of its operations, including the guarantee that it had added.

The subsequent equilibrium confirmed that the demand by households for such products is large. They offer insurance against both unforeseen changes in short-term interest rates and insurance against the possibility that the household may subsequently wish to repay the loan earlier than it had originally foreseen. With the right institutional arrangements in place, the equilibrium price of this insurance is low and the demand for it is high.

This suggests that all forms of European housing finance are sub-optimal. The variable-rate system insures households against the wish to make early repayment but leaves them exposed to swings in short-term interest rates. The Pfandbrief insures households against interest rate swings but leaves them exposed to the risk of wishing to repay early.

Three conclusions follow. First, the UK would gain from switching to a system akin to that in the USA. This gain is valuable even if the UK rejects the euro. Second, since UK and euro-zone long-term interest rates have converged, converting the UK system of housing finance from short-term to long-term interest rates would remove the principal concern about how the UK economy would cope with euro-zone interest rates if the UK decided, for other reasons, to join the euro-zone. Households would no longer face a change in mortgage interest rates at the entry date. Third, making UK housing finance more like its continental counterparts is likely to promote greater cross-country convergence in the transmission mechanism from interest rates to the real economy.

### How to get there

There are three reasons why private market participants, unaided by government, may fail to switch to the most efficient system of housing finance. First, the principal players are doing nicely out of the current arrangements. The facility to sell mortgages on to a Fannie Mae might reduce entry barriers to the mortgage industry, thereby undermining the competitive advantage of incumbent banks and building societies. This exercise of market power against the national interest may go undetected if competition authorities confine their attention to behaviour within existing market arrangements.

Second, the latent wish to supply long-term loans to a Fannie Mae may also be unexpressed if its natural clients are unaware of the possibility that such an institution could be created. Pension funds and life assurance companies are natural inhabitants of this portion of the term structure, and they would probably welcome such a development. Their traditional investment strategy - 70% equities, 20% bonds, 10% cash - has taken a hammering, and there have been recent high-visibility exits from the equity market (eg the Boots Pension Fund).

This has led to a resurgence in demand for UK long bonds at precisely the time when the supply has been scarce because in recent years UK governments have been running surpluses that have reduced the UK debt/GDP ratio well below the European average.

In addition to anecdotal evidence, Figures 7.1 and 7.2 provide additional support for this argument. UK long rates are the same as in the euro-zone despite a market belief that UK short rates are, and will remain, in excess of euro-zone short rates for some time. If long rates are average of future short rates, one has to explain why the market is so confident that future UK short rates will be significantly below euro-zone levels (which anyway would become impossible were the UK to join EMU within the next 5 years).

The alternative interpretation of Figures 7.1 and 7.2 is that UK long rates are now below the level corresponding to the average of future short rates, in other words that the current demand for long UK bonds is very strong. In such circumstances, a UK Fannie Mae would be a welcome addition to the long-term market.

The failure of the private sector to create a Fannie Mae not merely reflects the desire of incumbents to protect existing profits and the unexpressed supply of long-term loans that nevertheless exists, but it also reflects the public good aspect of institutions and market infrastructure. The creation of a Fannie Mae would benefit many diverse parties but it is difficult to coordinate their joint decision. All three reasons imply a leadership role for the government.

Neither UK households nor the UK financial services sector can be accused of being slow to exploit a tax break. Witness for example the whole raft of products created in pursuit of PEPs, TESSAs, ISAs, and other forms of tax-exempt saving schemes. And one reason why the UK has such a high fraction of owner occupation of houses is earlier schemes providing mortgage interest tax relief.

If the government concludes that there are many reasons to reform the structure of UK housing finance, one route is to provide a temporary, finite period of tax relief on mortgage interest for those who wish to switch to new fixed-rate mortgages. Since there are few penalties for cashing in existing variable-rate schemes, this would be simple to accomplish. Moreover, Figures 7.1 and 7.2 indicate current UK long rates (5%) are around 25% higher than UK short rates (4%). Hence, providing tax relief at the basic rate of income tax would also have the fringe benefit of preventing any impact on household cash flow during the changeover period.

This Fannie Mae might be a joint venture between incumbent banks and building societies - an easy way to buy off the incumbents - or a freestanding company to which all private investors could subscribe. These are partly issues in competition policy and partly issues of financial supervision and corporate governance. Doubtless, the government would seek advice from both sets of regulators.

The central point however is that the creation of such an institution would be welfare improving, requires no ongoing government involvement, and delegates to the private market that which it does best. Moreover, it is already market tested.

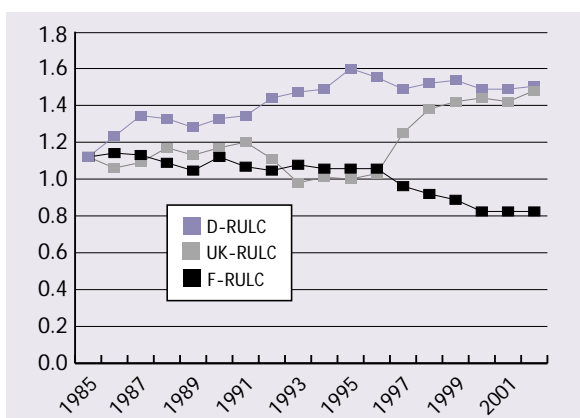
How quickly could such a system be put in place? It would probably take at least 2 or 3 years to establish such a system and achieve sufficient conversion of variable rate mortgages to fixed-rate mortgages then to remove housing market concerns as an obstacle to adoption by the UK of lower euro-zone interest rates.

## 7.2 Sterling and UK competitiveness

Another issue of concern is the level at which sterling would enter the euro-zone. Most economists agree that UK entry at too high an exchange rate would cause the UK an uncomfortable and protracted initial period within EMU. Any prospect that this was likely to occur would make it hard to win an entry referendum in advance.

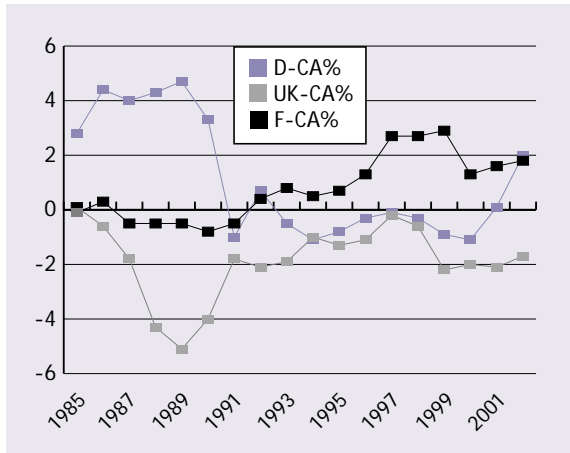
Figures 7.3 and 7.4 are relevant to assessing the UK position. Calibrating French, German and UK relative unit labour costs to be the same in 1985, Figure 7.3 shows that in real terms the UK has faced the same cumulative appreciation as Germany, and thus suffered the same progressive disadvantage against euro-zone countries such as France. The sharp real appreciation of sterling during 1996-2000 more than reversed the competitive advantage gained after the depreciation of sterling in 1992.

Figure 7.3 Relative unit labour costs, 1985-2002, France, UK and Germany



Source: OECD Economic Outlook, December 2002

Figure 7.4 Current account (% of GDP)



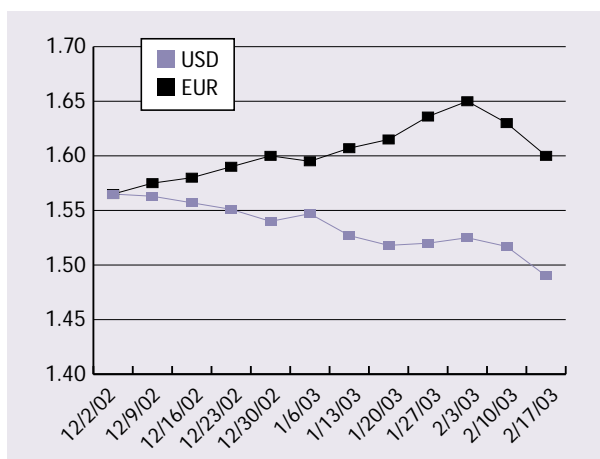
Source: OECD Economic Outlook, December 2002

Figure 7.4 documents nearly two decades of UK current account deficits, albeit fairly small in magnitude since 1992. Although the UK has a sizeable deficit in its trade on goods alone, the position is less worrying when trade in services and net international asset income are included.

Figure 7.4 confirms that the UK is running a current account deficit of around 2% of GDP, which has displayed little trend for many years. For example, the current account deficit, relative to GDP, was about the same during 2000–2002 (the period of supposed overvaluation of sterling) as it was in 1993–94 (the period following sterling's sharp depreciation after Black Wednesday in 1992). Even so, with such a persistent current account deficit, it is probably appropriate to conclude that sterling remains overvalued.

Given the strength of the dollar during much of this period, decomposing the UK's effective exchange rate into its dollar and euro components implies that sterling was probably undervalued against the dollar, and consequently more strongly overvalued against the euro. Within the last few months, there has been a welcome depreciation of sterling against the euro, by about 5% between December 2002 and February 2003. Figure 7.5, based on more recent data than Figures 7.3 and 7.4, also shows a sharp fall in recent weeks against the dollar.

Figure 7.5 Sterling exchange rate, Dec 2002-Feb 2003



Source: Bank of England



What we take out of this analysis is that sterling is beginning to approach a reasonable range against the euro. It is alarmist and inappropriate to dwell on the trade deficit, especially the trade deficit in goods: the appropriate indicator is the UK current account, which continues to display a small deficit. However, since that deficit is persistent, some further depreciation would be welcome, particularly against the euro.<sup>37</sup>

As of mid February 2003, sterling is no longer at a level from which a substantial depreciation is required to join EMU. Nor, for the reasons set out above, is it evident that the UK could make a compelling case to euro-zone countries of the need for an entry rate for sterling that is substantially below its current level. A further modest depreciation of sterling is probably desirable and may be feasible.

### Could this be part of the entry negotiations?

Were the UK to hold a referendum in 2003 or 2004, it would be helpful to indicate before the referendum the range of feasible exchange rates at which entry might take place. Would the financial markets acquiesce, or would they make life difficult?

On the latter, we already have an interesting precedent. The first wave of EMU entrants pre-announced the bilateral exchange rates at which their currencies would eventually be locked down in the conversion to EMU. Viewing this undertaking as credible, financial markets quickly converged on these rates as equilibrium prices without any need for central bank intervention. Just as bond prices converge on their par values as their redemption date approaches, so exchange rates converged on the values on which the politicians had previously agreed.

This example suggests that any negotiated entry rate for sterling would not pose any great problems in financial markets provided, after the referendum, its agreed conclusion was then taken as subsequently irreversible.

The more difficult issue is whether the UK entry negotiations could fix on an exchange rate that was below the actual rate ruling at the time of the negotiations. In spirit, the Maastricht Treaty precludes any attempt at a last-minute depreciation. However, its practical implementation is more ambiguous since the treaty was framed in terms of ERM parities and bands, which at the time had a bandwidth of 30%. Euro-zone countries are hardly likely to advertise their willingness to contemplate depreciations by candidate countries, but if they were keen to encourage UK entry, such a deal cannot be precluded.

We discuss referendum and negotiation procedures more fully in Chapter 9. For the moment, we conclude that the entry level of sterling is a matter of proper concern, that its current level is likely to fluctuate even in the short run, and that the evolution of sterling might therefore make the entry decision easier or more difficult. Those wishing to press the case for entry would probably be best served by indicating in advance what they take a reasonable entry level to be, and might even try to fight a conditional referendum seeking support for entry provided such a condition was subsequently met.

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<sup>37</sup> Long run solvency, the stabilisation of the ratio of net foreign debts to GDP, does not require that the current account deficit is eliminated. Since real GDP grows by around 2% a year, net foreign debt can grow by the same amount, and modest external deficits are compatible with external solvency. This general point, well understood in relation to the sustainability of government budget deficits and discussions of the Maastricht criteria, also applies to the sustainability of external deficits.

## 8 Fiscal discipline

### 8.1 The status quo

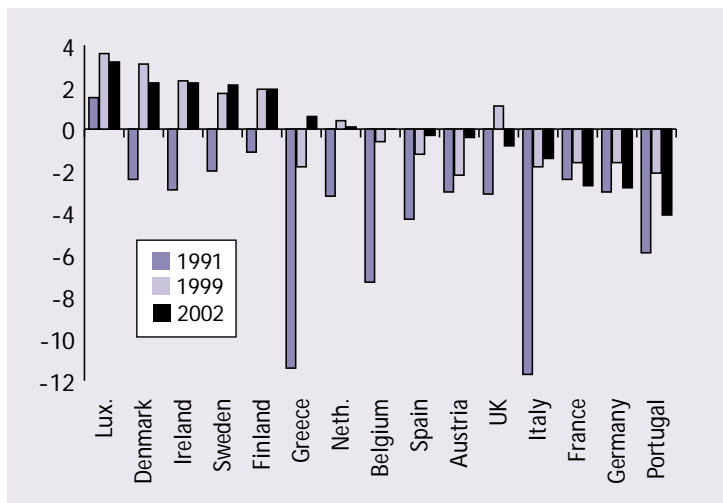
We begin by describing alternative approaches to fiscal discipline in the euro-zone and the UK. Article 104 of the 1991 Maastricht Treaty on European Union established an excessive deficit procedure. Deficits should not exceed a reference value, and a system of surveillance was put in place, accompanied by possible sanctions if deficits continue to be excessive. A protocol to the treaty set this budget deficit threshold at 3% of GDP.<sup>38</sup>

The Stability and Growth Pact (SGP), adopted in 1997, spells out how national budgets are monitored and how fines are imposed. The whole procedure has been embedded in the Broad Economic Policy Guidelines (BEPG) that include a detailed calendar of annual reviews. The BEPG also formalize the understanding that, in normal years, each member state is expected to achieve budget “close to balance or in surplus”. If this is achieved in normal years, there is some room for fiscal expansion during cyclical downturns, either via the automatic stabilisers or by discretionary fiscal loosening, without breaching the 3% deficit ceiling.

In comparison with sizeable fiscal deficits in the early 1990s, Figure 8.1 shows that many of the smaller euro-zone countries pursued responsible fiscal policies after the euro-zone began in 1999. However, Portugal and the three largest countries - Germany, Italy, and France - were clearly in deficit even during the easy years following the launch of the euro. The global slowdown after 2001 was bound to test the limits of the SGP in those particular countries.

As a member of the EU but not EMU, the UK is formally under the ‘convergence programme’. The SGP’s fiscal rules apply, with the crucial difference that sanctions cannot be imposed if the deficit limit is violated.<sup>39</sup> If Britain decides not to join EMU, it will operate under two distinct rules, which may or may not imply the same policies: the SGP, which appears strict but would not bind the UK in practice, and its own Code for Fiscal Stability (CFS), which allows more latitude in the short run over the business cycle but whose effect on long-run discipline depends on the attitude of future UK governments. In practice, both the SGP and the CFS are still evolving.

Figure 8.1 Budget balances (% of GDP)



Source: OECD and *The Economist* (October 5, 2002)

<sup>38</sup> The same texts set a maximum for public debt of 60% of GDP, but this requirement seems to have been quietly shelved.

<sup>39</sup> More precisely, if the UK does not fulfil the conditions it may be declared unfit for EMU.

## 8.2 Comparing the SGP and CFS

The SGP and the CFS differ in aims, in status, and in underlying rationale. The SGP's aim is fiscal discipline through peer pressure and collective sanctions. The CFS aims not merely to promote fiscal discipline but aims to enhance transparency and widen public understanding. Transparency and public scrutiny are achieved through publication by the UK Government of a pre-budget report that presents various scenarios of economic fluctuations and their likely effects on budget figures. In contrast, the SGP and BEPG only include one scenario, with little information about possible alternative outturns.

### Definition of fiscal discipline

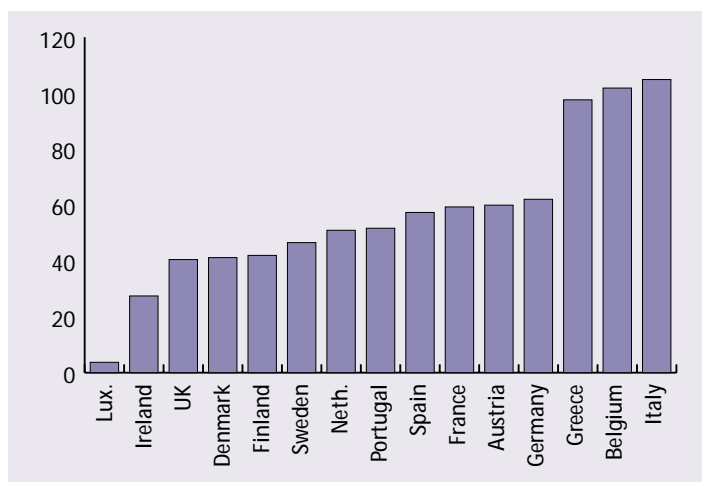
Fiscal discipline is an elusive concept for which annual deficits are a dubious indicator. Sustained budget deficits may be compatible with stable or even declining indebtedness, as in Ireland (see Box 8.1). Fiscal discipline is best defined as ensuring that the public debt is sustainable, meaning that under normal conditions and current settings, it should reach a stable and prudent level. This definition highlights three largely unresolved issues.

First, what are "normal conditions and current settings"? We could ask how the debt would evolve if the current budget were maintained over a whole business cycle, or we could adjust the budget for the cyclical position, by computing the hypothetical budget position had GDP been at potential output, in neither boom nor recession. However, there is no unique way to assess the structural budget balance: computation of potential GDP and of the impact of GDP fluctuations on the budget is imprecise and subject to methodological disagreements.

Second, future liabilities cannot be foreseen exactly. For example, future pension payments vary considerably depending on assumptions on demographic trends, and on possible reforms affecting the retirement age and the generosity of the benefits. Sustainability over the long run requires that these liabilities be factored in - a daunting task.

Finally, there is no agreement on what is a prudent debt level. Less is more prudent than more, but inherited indebtedness varies considerably from one country to another, as Figure 8.2 shows.<sup>40</sup> For highly indebted countries a decline is clearly required, but low-debt countries can afford increases. In the end, it is a matter of judgment on what is an appropriate objective and at which speed the objective ought to be reached. For all these reasons, any numerical target is bound to be both arbitrary and imprecise.<sup>41</sup>

Figure 8.2 Government debt (% of GDP) (Maastricht definition)



Source: OECD Economic Outlook, June 2002

<sup>40</sup> Figure 2 shows gross public debt. In principle, we should look at net debt, subtracting public assets such as buildings, shares in firms, etc. Evaluating the value of state assets is an impossible task.

<sup>41</sup> Moreover, since debt is a stock and GDP is a flow, any assessment of a sustainable debt/GDP ratio will depend on the real interest rate  $r$ , which is the relative price of stocks and flows. If trend real GDP grows at the rate  $g$ , the sustainable debt/GDP ratio for any given primary deficit then depends on the effective discount rate  $(r-g)$ . Changes in perceptions about the long run value of  $(r-g)$  may alter significantly the debt/GDP ratio that it appears possible to sustain.

The SGP focuses on a ceiling for the actual annual budget deficit, applying similarly to all countries, irrespective of the size of their public debts, even though it also refers to a debt target of less than 60% of GDP. In contrast, the CFS entails an assessment over the entire phase of a business cycle, over which budget deficits should be limited to the flows needed to finance public investment. Additionally, a “stable and prudent” level of public indebtedness should be attained.

Separating public-sector consumption from public-sector investment involves arbitrary judgments. Road construction is clearly investment, but what about health or education? What about government purchases of vehicles? Nor is it evident that public investment always earns a rate of return - either directly or through higher tax revenue derived from the higher output that public investment then enables - that covers the cost of funds borrowed to finance it. When many public goods are unmarketed (health, schools) or are basic infrastructure whose contribution to subsequent output is difficult to calculate, the notion that public investment has no effect on government solvency is at best an approximation.

To sum up, the SGP focuses on a target that is theoretically difficult to relate to solvency or fiscal discipline, whereas the CFS makes some approximations that, although crude, at least reflect an awareness of the connection between current stocks and future flows.

Having discussed how the respective targets are framed, we turn next to the big issues in practice: how to deal with business cycles and how to convince people today that fiscal discipline will be appropriately enforced in the future.

### Dealing with business cycles

Budget out-turns reflect business conditions. Tax revenues follow the ups and downs of incomes, sales and profits, while some spending items (unemployment benefits and other transfer payments) fluctuate countercyclically. Setting a budget target independently of the cyclical situation may induce procyclical fiscal policies if spending is cut or taxes are raised to prevent a deficit during a cyclical downturn. Both the SGP and the Code recognize this difficulty, but they proceed differently in their attempts to resolve it.

The SGP relies on two features. First, in a serious recession, the rule is simply suspended. What constitutes a serious recession is made more precise by two thresholds. If a country's real GDP declines by 2% or more, the exemption is automatic. If it declines by 0.75% or more, the country may apply for an exemption. These thresholds, however, correspond to deep and rarely observed recessions. They do not deal with less dramatic, yet highly uncomfortable slowdowns. Economic and political strains emerge when unemployment starts rising, usually when output growth falls below 1.5 or 2%.

Second, the SGP explicitly takes a medium-run view for the budget performance, calling for multi-annual commitments. The horizon must be long enough to allow for the normal ups and downs of an economy. However, the longer they are, the larger is the uncertainty and hence the validity of the assumptions that underline the commitment. The three-year horizon adopted by the SGP, an attempt to cope with this trade-off, is too short in relation to the average length of business cycles but too long for the underlying forecasts to be borne out by subsequent events.<sup>42</sup>

In 2002 the European Commission proposed also to take into account the structural budget balance, which corrects the actual budget for the cyclical position. Given the imprecision of the evaluation of the structural budget, such a proposal may be impractical, especially if assessment of the cyclical correction is the responsibility of nation states themselves, for then the danger of moral hazard is considerable. Governments will be tempted to invent cyclical corrections that bail them out from SGP sanctions, and, foreseeing this, there will be great reluctance to make structural deficits a trigger for the application of sanctions.

One possible solution to this difficulty is to delegate the calculation of cyclical corrections to national budgets to an independent committee, not because it would necessarily have greater expertise than national authorities but because, without any vested interest, its announcements of cyclical corrections to national budgets would carry more authority (CEPR, 2002). For a more general discussion of the delegation of aspects of fiscal policy, see Wyplosz (2002).

In principle, the CFS adopts a sounder solution. Like the SGP, it takes a long-run view. It calls for a long-term strategy, presumably establishing goals for the debt and the budget balance, and for a path on annual budgets that is coherent with the long run. The Code does not specify the length of the long run but refers to the need to cast policy over the economic cycle. Although appropriate in theory, in practice this is another source of ambiguity, since no two cycles are alike.

<sup>42</sup> This has been the case since 1999. The first period was one of fast growth, during which deficits could have been reduced faster in a number of countries. Then most economies have slowed down, suddenly making the multi-annual targets too constraining.

Nor does the CFS finesse the moral hazard problem. What will happen the first time that the Treasury announces that its ballooning budget deficit is entirely appropriate because of its assessment of the depth of the cyclical slump and its confidence that this is temporary? Will this undermine credibility or not? In such circumstances, it might have been useful for the assessment to have been undertaken by an independent body. In fact, this is only a particular example of a much wider issue.

### Who is to judge and sanction?

Even in its current form, with regards to actual budget deficits, the SGP entails a procedure for assessing whether member states are obeying the SGP, and if not, what sanctions will be imposed. This procedure involves both peer pressure in the Council and the European Commission acting as watchdog. The annual updates of the multi-annual commitments are evaluated by the Commission, which prepares a report for each country. The Council then discusses the situation in each country. The Commission is responsible for proposing warnings and initiating any sanction procedure. The Council then decides whether to accept the Commission's recommendations, on a case-by-case basis. Thus the procedure combines formal, automatic evaluation by the apolitical Commission and final decision by the inherently political Council. This is a mix of rules and discretion.

In contrast, the CFS does not involve any formal procedure. It is envisioned that it could be made in legislation, which would then have to define the sanctions to be applied in case of non-compliance. In its current incarnation, the CFS merely relies on the sanction of public opinion. It commits the Government to the publication of a pre-budget report, complete with assumptions on the evolution of the economy and parameters that can help assess possible deviations from these assumptions. "The Government puts its reputation at stake by publishing the Code, and publicly committing itself to it", making public opinion the judge.

However, no UK government can bind its successors on such matters, and even legislation could be subsequently repealed. Since fiscal discipline is necessarily a medium to long-run concept, even the current impact of the CFS on expectations is only as good as people's trust in its continuation by future governments.<sup>43</sup>

### Summing up the differences

On all dimensions, the SGP differs from the CFS in being more precise and more restrictive. However, this precision is largely illusory and potentially counterproductive. Its quantitative definition of fiscal discipline - a budget deficit not exceeding 3% of GDP - addresses only one aspect of fiscal responsibility and is sensitive to cyclical conditions. It has formal teeth, including an elaborate process of surveillance, public reprimands, and sanctions. But reprimands and sanctions by "Brussels" are bound to be so sensitive that political considerations may prevent their imposition.

The CFS suffers from the opposite characteristics. It relies mostly on no-nonsense qualitative principles, but carries no sanction for indiscipline. Its main advantage lies in the Chancellor's decision to stake his reputation on sound principles, but it is therefore dependent on the Chancellor's willingness to make it the centrepiece of fiscal policy making. The CFS has no mechanism to commit future governments. Instead, it hopes to develop a track record that will make it then seem indispensable. But this will take time and may become more difficult if recession persists or the demand for better public services intensifies.

### Implications for the status quo

What does all this imply for how the status quo is likely to evolve if the UK remains outside the euro-zone?

At present, in fiscal policy the status quo looks attractive for the UK. The Code for Fiscal Stability has to date been a success, especially when contrasted with the Stability and Growth Pact, which appears to have theoretical flaws and be cumbersome in practice. Not only are there fault lines in the design of the SGP, but it is also widely blamed for impeding recovery from recession within the euro-zone, in countries such as Germany and Italy.

However, this is likely to be seen in retrospect as the high water mark of the superiority of UK fiscal design. During its early years, the CFS enjoyed the comfort of satisfactory output growth, booming revenues, and inherited commitments to low government spending. As we argued above, it is already coming under pressure from recession, substantial falls in tax revenue, and an outbreak of demands for much higher levels of government spending.

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<sup>43</sup> One could make the same point in relation to the independence of the Bank of England.

Personification of policies in individuals is always likely to be fragile. Prime Minister Thatcher and Chancellor Howe - the no-U turn team that won the Champions League of fiscal austerity in 1981 - had within six years given way to the Lawson boom, despite having the same Prime Minister in charge of team selection. The Major government then had to embark on tough years of fiscal tightening to re-establish stability. Gordon Brown has rightly won plaudits as the Iron Chancellor, but who knows what the future will bring?

Not only may a snapshot assessment today detect the high water mark of the CFS, it may also observe the Stability and Growth Pact at its lowest ebb. The need for reform of the SGP is now widely accepted. If done correctly, it might even deliver a better long-run framework for fiscal responsibility. This reform is unavoidable and will occur sooner rather than later.

From its very early days, the SGP has been criticized. Officially, however, it has been upheld for a number of reasons, mostly bad ones. First, it has been argued that its flaws were unproven.<sup>44</sup> Second, it has been presented merely as the implementation of article 104 of the treaty. Since the treaty is not up for revision, at least on this aspect, the SGP must be upheld. Third, it has been argued that the SGP should be viewed as the only available mechanism for coordination of fiscal policy within the euro-zone. Finally, it has been argued that any early amendment of the SGP will undermine the credibility of the euro.

Despite this attempted defence of the SGP, its flaws were quickly confirmed in practice and have visibly forced a re-think. If it proves impossible to devise a cyclically-adjusted budget ceiling that can form the basis for actual sanctions, a deeper reform will become unavoidable, either now or in the near future. Unless the UK intends to be a permanent Out, the timing of its entry may affect how the SGP is reformed.

### 8.3 Britain's voice

Currently all EMU business is conducted within the Euro Group that meets prior to the full meeting of the Council of Economic and Finance Ministers (ECOFIN). Britain's voice is unheard. By the time Gordon Brown joins the full ECOFIN meeting, decisions have already been taken and Britain's opportunity to influence events is diminished. This situation would change if Britain signalled a firm intent to join by a given date.

Britain has been a source of innovations in policymaking, both in monetary policy with inflation targeting, and in fiscal policy with the Code for Fiscal Stability. Its approach is distinctively different from the mainstream view on the continent. Other large European countries favour rules and legally binding commitments, Britain emphasises institutions and incentives. While its advantages may be currently overestimated, inflation targeting is widely considered as superior to monetary rules of the kind adopted by the ECB.<sup>45</sup> Similarly, it is now being argued that fiscal arrangements, which combine a clear long-run objective and short-run flexibility, and rely on central bank-like institutions rather than rigid rules, are a superior way of achieving fiscal discipline.<sup>46</sup>

External interference in national fiscal affairs creates unnecessary political tensions. The appointment of *national* fiscal committees offers an appealing solution to this difficulty. Nobody argues that the Bank of England's Monetary Policy Committee has to comprise Brussels bureaucrats, and its domestic appeal would be reduced if it were so constituted. Nor has the fact that the MPC has largely comprised UK citizens impeded its ability to act independently, and to be seen to do so. By upholding this national principle, the UK has given a useful lead in implementing the subsidiarity principle that decisions should remain at national level whenever there is no overwhelming reason to the contrary.

To sum up, along with several other smaller and less influential countries, mainly from Northern Europe, Britain has an alternative vision of how fiscal discipline might be achieved.<sup>47</sup> Were Britain, Sweden and Denmark now to join EMU, the terms of the debate would alter significantly, and for the better.

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44 See the text by Jürgen Stark, one of its architects: Stark, J. 'Genesis of a Pact', in: A. Bruni, M. Buti and D. Franco (eds) *The Stability and Growth Pact*, Palgrave, 2001, pages 77-105.

45 Cf, for example, Mishkin, F. S. 'What Should Central Banks Do?', *Federal Reserve Bank of St. Louis Review* 82(6), Nov.-Dec. 2000, pages 1-13.

46 Eichengreen, B., R. Hausmann and J. von Hagen, 'Reforming Budgetary Institutions in Latin America: The Case for a National Fiscal Council', *Open Economies Review* 10(4), pages 415-42; Wyplosz, C., 'Fiscal Policy: Institutions vs. Rules', Report prepared for the Swedish Government's Committee on Stabilization Policy in the EMU, December 2001.

47 In all these countries, policymakers display more readiness to incorporate the implications from economic research into their thinking, in contrast to other countries and the Commission where the "political filter" promotes a high degree to risk aversion regarding new ideas and principles.

## Influence and entry strategy

If the Stability and Growth Pact is to be reformed in the near future, the timing of UK entry to EMU becomes critical. Saying no, now and for the foreseeable future, would freeze the UK out of reform discussions and would mute the voices of like-minded countries. The result is likely to be a reformed SGP that retains its rules-based logic, relying even more on complex and untransparent procedures, reinforcing the perception that the EU is driven by a stubborn bureaucracy. This may deter further British entry, maybe indefinitely.

On the other hand, if credible, an early declaration of firm intention to join, even several years hence, would give Britain a strong voice. This voice would be the louder if suitable reform of the SGP, going some way to accommodate Britain's view,<sup>48</sup> were part of the entry negotiation. In a nutshell, an early positive signal from the UK might influence SGP reform in a way that then made it easier for the UK to feel more comfortable about subsequent entry.

Thus, in relation to the SGP, the UK faces two reasonable strategies and a third that makes no sense. The reasonable strategies are either an early start on a process that leads - possibly later - to EMU membership and contributes to a helpful reform of the SGP, or to decide to stay out for a long period of time and let current EMU members agree on a reform that is at best an inefficient patch-up. Although superficially reasonable, this latter strategy has the drawback that, even as an Out, the UK is subject to the convergence programmes procedure of the SGP. Even though sanctions cannot be levied, Britain faces annoying peer pressure and public warnings. Moreover, by failing to achieve beneficial reform of the SGP, this strategy means that the UK's principal trading partner continues to be impeded by a cumbersome SGP that undermines its performance. The performance of the UK economy is not impervious to how the euro-zone performs. If the euro-zone sneezes, the UK will also catch a cold.

In relation to the SGP, the worst strategy for the UK would be to delay entry negotiations for a few years, miss the opportunity to shape the reformed SGP, but then join an EMU now committed to a flawed fiscal discipline process. Indeed, perceiving the euro-zone institutions to be unattractive, the UK might then prefer not to join at all.

This raises the possibility of two outcomes, each self-fulfilling. Signal unambiguous entry by a fixed date, thereby influencing events in a way that later makes it attractive for the UK to enter; or defer the decision, thereby allowing institutional reform within the euro-zone to drift into places that the UK will later find unappealing.

Similar arguments of course arise in relation to reform of the ECB and the regulation of major financial centres. In the next chapter, we assess political economy considerations more fully. Merely formulating the question in this way makes clear that it is wrong to presume that the status quo is a sustainable option for the UK.

## Conclusions

Today Britain weighs little in EMU discussions, yet it can contribute to the reform of the SGP in important ways. A number of smaller countries, with little collective influence, would follow the UK's lead, arguing for sound domestic-based institutions rather than cumbersome, and sometimes incredible, rules.

An early commitment to euro-zone entry would guarantee Britain an important say on SGP reform, make this more palatable to British citizens, and help preclude the problems to which an inappropriately reformed SGP might give rise. By failing to engage, the UK risks the very things that it fears, making its own future entry less likely.

Thus, as far as fiscal discipline is concerned, Britain's choices are stark. There is no option to preserve the status quo, and doing nothing will not accomplish this. Even temporary delay may fail. Either Britain moves early to influence reform, or its delay may then have considerable costs. These costs would then be larger if the UK entered EMU, but the UK could not escape all the consequences of a limping euro-zone even by remaining outside it.

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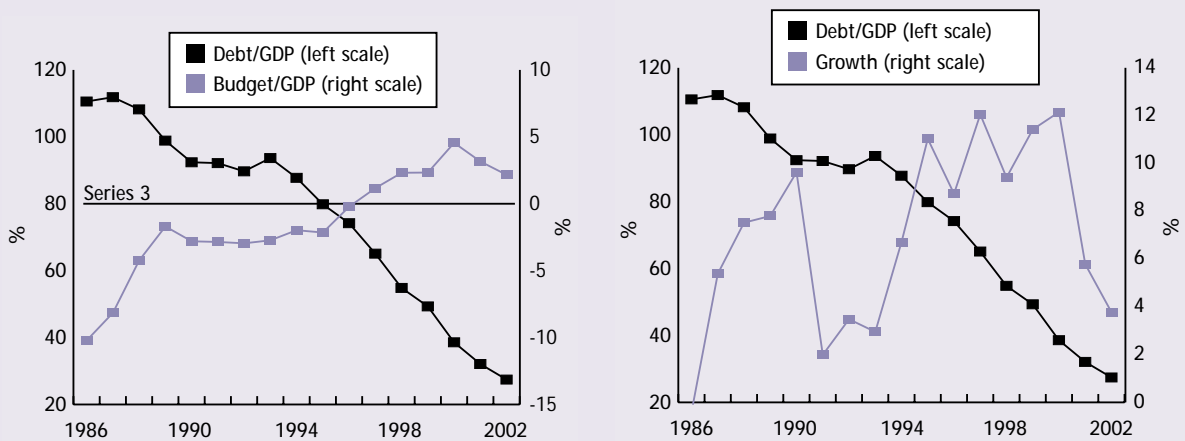
48 Of course, the same logic applies to other impending reforms such as CAP and voting rules, but with less force as these areas are not directly linked to EMU.

Box 8.1 The Irish miracle: fiscal discipline with deficits

The debt/GDP ratio, an indicator of fiscal discipline, may well decline even when the budget is in deficit. Ireland debt fell from 110% to 27% of GDP during 1986-2002, as shown in the left chart below. Its GDP grew faster than its debt accumulated because its deficits were small in relation to GDP growth. The right chart shows that the debt/GDP ratio fell rapidly during 1993-6, despite budget deficits, because GDP was growing annually by 10%. This growth then fed tax revenues, bringing the budget into surplus, thus accelerating the fall in the debt/GDP ratio. Once Europe's most indebted government, Ireland now has the second lowest public debt. Growth, if sustained, is the strongest pillar of fiscal discipline.

Ireland was the first country to be officially warned for fiscal indiscipline in 2001. It is hard to see why: in both 2001 and 2002 it had a budget surplus and its debt/GDP ratio was falling. The sanction was imposed because the surplus was lower than that previously announced within the BEPG. The Commission and the ECOFIN Council considered it a breach of commitment. This episode, which generated considerable resentment in Ireland, shows how the SGP has slipped from enforcing fiscal discipline to a legalistic approach with little economic content.

Ireland 1986-2002



Source: OECD Economic Outlook, June 2002



Suppose that the United Kingdom decides in 2003 or 2004, as the result of a referendum, to retain its own currency. How will that decision affect the politics and economics of subsequent discussions of whether to adopt the euro? How will it affect the evolution of Europe? Do the answers to these questions imply that a positive vote in some future referendum will then become less likely?

This chapter, where these questions are addressed, is necessarily more speculative than its predecessors which have analysed the implications of staying outside the euro for trade, investment, financial markets, competition and prices, business cycles, and monetary and fiscal policy.

To explore the implications for political economy, one must take the conclusions of those preceding chapters, some of which are based on firm evidence but some of which themselves are rather speculative, and add further assumptions about how such economic changes would then affect the political landscape.

For example, Chapter 2 concluded that British trade is likely to become yet more orientated towards Europe even if the UK stays out of the euro for the time being. For the UK, proportionately more trade with Europe will mean additional perceived advantages from eliminating the residual transactions costs associated with the maintenance of a separate currency. Chapter 6 argued that this is likely to imply a stronger business cycle correlation with the euro-zone, diminishing worries in Britain about a "one size fits all" monetary policy.

In turn, a stronger business cycle correlation may encourage the government to conclude that the economic tests for euro adoption have been met, raising the likelihood that British voters will respond positively in some future referendum. To reach such a conclusion, however, it is necessary to make assumptions not merely about how economic variables like trade are affected but also about how politicians and voters then respond to these changes.

### 9.1 Exchange rate policy as an Out

Neither market forces nor policy decisions have caused sterling to move closely with the euro as the latter has fluctuated against the dollar. In practice, sterling has continued to float. The perceived advantages of a separate currency, a national central bank, and an autonomous monetary policy are greater if that monetary autonomy is actively utilised. However, if changes in market structure and performance make it more attractive to conduct British monetary policy so that sterling shadows the euro closely, the perceived advantages of monetary autonomy will be less. Many will then say that Britain might as well adopt the euro, both because sterling is shadowing it anyway and because a euro-zone member can better influence the policies of the ECB and other policies within the euro-zone.

Thus, an initial question is how the evolution of the British and European economies over the next decade will affect the conduct of British monetary policy, particularly with regard to the stability of the sterling-euro exchange rate, if the UK stays out of the euro-zone.

The empirical framework of Bayoumi and Eichengreen (1997) can be used to forecast the stability of the sterling-euro rate. Bayoumi and Eichengreen use the theory of optimum currency areas to specify a baseline model in which bilateral exchange rate variability depends on four variables: the standard deviation of the change in the log of relative output in the two countries, the dissimilarity in the sectoral composition of exports, bilateral trade scaled by the GDPs of the two countries concerned, and the arithmetic average of the log of real GDP in the two countries.

The theory of optimum currency areas suggests that small countries and countries that trade more heavily with one another have a stronger preference for stable exchange rates and, in the limit, a common currency (DeGrauwe 1994).<sup>49</sup> The standard deviation of relative output is a measure of business cycle asymmetries, which are highlighted both in the theory of optimum currency areas and in the Chancellor's tests as determinants of the desirability of stable exchange rates and monetary unification. The dissimilarity of the sectoral composition of exports is another measure of asymmetric shocks (Kenen, 1969). This variable may also contain information about whether those shocks are likely to grow more or less symmetric in the future. Krugman (1993) has argued that if the sectoral composition of exports between two countries is similar - in other words, if trade between them is primarily of the intra-industry trade type - then intra-industry trade will grow further in the future, rendering future shocks more symmetric. If, on the other hand, the sectoral composition of the two countries' exports to one another is very different, then any further expansion of trade is more likely to be of the inter-industry variety; the two countries will specialize further along lines of sectoral comparative advantage, and shocks will grow less symmetric with time.<sup>50</sup>

Bayoumi and Eichengreen find that all four of these variables help to explain the variability of bilateral exchange rates among the OECD countries, especially in relatively recent years, and that the effects are both statistically significant and economically important. (Results for a sub-sample of European countries yield very similar results.) Smaller countries, countries that engage in more bilateral trade, and countries whose business cycles are more symmetric have more stable bilateral rates. Countries for which the sectoral composition of exports is more similar also have more stable bilateral rates, as if intra-industry trade dominates among the high-income countries. Bayoumi and Eichengreen interpret these correlations both as the market response to the properties of the independent variables and in terms of the policy reaction of the authorities.<sup>51</sup>

How will these independent variables develop in the future? Even if EMU itself causes trade diversion (and in Chapter 2 we concluded that it would not), other forces driving European integration - cheaper transport costs, better information technology, cultural interchange, regulatory convergence - will continue to operate and are likely to be stronger. Hence, UK trade links with the euro-zone are likely to increase sharply if it joins the euro-zone, but are still likely to increase, albeit more slowly, if it remains an Out.

In turn, closer trade will be associated empirically with a closer correlation of relative output movements. Both factors will further heighten the preference for a relatively stable exchange rate between sterling and the euro *even if the UK remains an Out*. Moreover, if European integration works to make the composition of British and euro-zone exports more similar, by stimulating intra-industry trade, this will further increase business cycle conformance and further reinforce the preference for a stable exchange rate. The stronger these processes the less advantage the UK will enjoy from its monetary autonomy.

Economic size works in the other direction. As one of the 12 largest economies in the world, the UK has some predisposition for a floating exchange rate. Relative size is unlikely to change dramatically within the next decade, so this consideration is unlikely to alter.

The behaviour of the dollar-euro rate may also affect the variability of the sterling-euro rate. The US is the UK's largest partner outside the euro-zone. If the dollar is relatively stable against the euro, UK links to the US pose no dilemma for UK exchange rate policy. But if the dollar fluctuates significantly against the euro, then the Bank of England will have to decide how to trade off volatility against the euro versus volatility against the dollar. Bayoumi and Eichengreen find that countries with more variable bilateral rates against the dollar tend to stabilize against one another: their policies recognise the inevitable tradeoff.<sup>52</sup>

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49 It is the preference for relatively stable exchange rates that is relevant to the present discussion.

50 Some interpreters of the theory of optimum currency areas suggest that openness (the overall export/GNP ratio) is more important than the extent of bilateral trade (scaled by the GNPs of the two countries) or the composition of exports. Bayoumi and Eichengreen's empirical results do not suggest, however, that the openness of the partner countries has a significant effect on bilateral exchange rate variability. This is consistent with the findings of Honkapohja and Pikkarainen (1992) for a larger sample of countries.

51 Should we focus on the real or the nominal exchange rate? The real rate is more relevant for resource allocation, but the nominal rate is more directly affected by monetary policy. Fortunately, Bayoumi and Eichengreen obtain the same results for both the real and nominal exchange rate.

52 This result does not hold for the Bretton Woods period when, with many currencies were pegged to the dollar, no such tradeoff prevailed. But this is no longer the case.

Is the dollar-euro rate likely to become significantly more stable in coming years, making a stable sterling-euro exchange rate even more attractive? Or will the dollar-euro rate grow even more volatile, making a stable sterling-euro exchange rate more problematic? We see no obvious reason to expect significant changes in either direction, but those inclined toward different forecasts of the future of the international monetary system will draw very different implications for the sterling-euro rate.<sup>53</sup>

## 9.2 The evolution of public opinion

We can address political implications more directly by analysing public opinion polls and their correlates. Doing so can help to establish whether changes in economic characteristics have the political consequences that economists usually assume.

Two types of studies connect economic characteristics to polling data: international comparisons of national aggregates, and individual-level analyses.<sup>54</sup> The latter provide many interesting insights, but offer little guidance as to how British public opinion would be affected by a decision in 2003 to defer adoption of the euro, or how the balance of opinion might evolve subsequently.

Some studies reveal that views of the desirability of the euro vary with demographic characteristics. Gabel (2001), using data for a cross section of countries, shows that individuals with more education and higher incomes are more likely to support the adoption of the euro. Individuals in the professions similarly tend to view the euro more favourably. Since demographic variables move slowly, these results, although interesting, provide little guidance about trends in the next decade.

Some empirical findings, for example that professionals and those with higher incomes both tend to favour the euro, may reflect perceived exposure to the risk of unemployment.<sup>55</sup> Changes in unemployment may influence attitudes toward the euro. Gabel and Whitten (1997) find that positive responses to EU integration are more likely when individuals live in regions of high unemployment, which may lead voters to doubt the competence of their own national government. However, many of these experiments correspond to asking people in high unemployment regions whether they would prefer the EU average. Since UK unemployment is currently well below the euro-zone average, similar reasoning may help explain why a majority of UK voters are currently hostile to EMU entry. What this suggests is that the relative evolution of unemployment in the UK and the euro-zone is likely to affect how public opinion would evolve in the UK if it remained outside the euro.

Cross-country studies of national aggregates can shed further light on some of these questions.<sup>56</sup> Kaltenthaler and Anderson (2001), pooling Eurobarometer surveys of national opinion during 1994-97, examine how the percentage of respondents supportive of EMU varies with characteristics of the national economy and polity.<sup>57</sup> Public support for the euro was greater in countries that engage in high levels of intra-EU trade, but lower in countries with independent central banks and good inflation performance. The public recognizes that the euro can repair problems of poor national monetary policy credibility.<sup>58</sup>

This helps explain the anxiety of Greece and Italy to join the euro-zone. On the other hand, in the UK, where monetary policy has an excellent reputation and trade links are lower, the public is correspondingly less enthusiastic. Finally, Kaltenthaler and Anderson find that public support for the single currency rises with the number of years for which a country has been an EU member but falls with the age of the nation state. Long-standing EU members have more invested in the larger European project of which monetary unification is a part; long-established nation states are more jealous of their sovereignty, of which the national currency is a potent symbol.<sup>59</sup>

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53 If one thinks, in contrast, that a system of G-3 target zones is in the offing, then one is led to very different conclusions. There is also a closely related literature analysing the determinants of national support for the EU using cross-country comparisons; see for example Gabel and Whitten (1997) and Gabel (1998a,b).

55 Middle and upper class individuals, and those in the professions, generally suffer less unemployment risk than working class individuals. The role of unemployment as a factor shaping individual attitudes toward the euro is highlighted by Cameron (1998).

56 There are a variety of such studies: an early example is Gartner (1997).

57 An alternative set of regressions takes as its dependent variable the percentage of respondents supportive of the creation of an EU monetary policy authority, and obtains basically the same results.

58 This is the theme of Gartner (1997), who provides additional statistical evidence in its support.

59 Dalton and Eichenberg (1998) develop the link between public support for European integration and experience with EU institutions acquired through membership. Gabel and Palmer (1995) relate this to differing degrees of attachment to the nation state, while Detlem and Pampel (1996) emphasize the association of attitudes toward the EU with the esteem in which national sovereignty is held.

How might these influences alter by say 2012? Deeper trade links may strengthen public support for adoption of the euro, both by enlarging the constituency in the traded goods sector that benefits from lower transactions costs associated with the adoption of the euro, and by damping the extent of asymmetric business cycle fluctuations.<sup>60</sup> Other influences are less likely to alter. The credibility of Britain's independent monetary policy will continue to limit public support for abandoning sterling. If there were a loss of control of inflation, or some other serious problem with British monetary policy, the tables would turn, but there is no particular reason to expect this.

If the UK retains friendly and productive relations with the EU, this may reinforce UK support for additional European influence and adoption of the euro. Any falling out between the UK and the rest of Europe might work the other way. The next section therefore asks whether a decision not to adopt the euro in 2003 could trigger such an event.

### 9.3 The development of Europe

Another political economy implication of staying out of the euro-zone concerns the UK's ability to influence the political and economic evolution of the European Union. In particular, some observers fear that staying out will make it more difficult for the UK to influence the structure of the ECB, the evolution of mutual surveillance of European fiscal policies, and the organization of financial regulation in the EU.

#### General Considerations

Surely the UK will reap more benefits from adopting the euro if it can reshape the architecture of the euro-zone and its institutions to its liking? And surely it will be better able to influence the structure of those institutions as an In than as an Out?<sup>61</sup> However, things are not quite this simple, as the following analysis illustrates. We draw on previous work on the theory of cartels.

There are three distinct considerations. First, a country staying out of the euro-zone, like an agent staying out of a cartel, faces an externality from the equilibrium behaviour of the coalition. In the literature on cartel formation this externality is typically positive (the Out enjoys higher prices because the cartel restricts output).

However, in the case of the euro the externality may be either positive or negative. Clarifying these linkages was the purpose of the preceding chapters. For example, the externality is positive if trade creation within the euro-zone then induces greater trade with the UK, but is negative if greater competition within the euro-zone places the UK at a disadvantage or if euro-zone institutions unnecessarily hamper euro-zone growth which then becomes a drag on the UK economy. We label this externality channel as channel A.

Second, entering the coalition has a cost and a benefit. Most obviously there are direct, but once-off, changeover costs from adopting the new currency. More importantly, there is the adverse effect of being directly subject to the flawed design of euro-zone institutions, rather than merely suffering their consequences indirectly through channel A. Finally, there is the benefit of incurring greater trade creation as an In than as an Out. We label these direct net costs as channel B.

Finally, entering the coalition enhances the agent's ability to influence the decisions of the coalition.<sup>62</sup> This benefit we label channel C. We discuss its magnitude below.

Thus, entering the coalition is rational if the benefit C exceeds the net cost difference (B-A). In relation to UK costs from the euro-zone, the net cost (B-A) rises with the size of the deficiencies of euro-zone institutional design. Defects in ECB monetary policy or the Stability and Growth Pact have larger effects on the Ins than the Outs. Conversely, (B-A) is lower the greater are the gains from trade creation and other benefits that can be accessed only by being a member of the euro-zone.

As an Out, the UK experiences A anyway. However, the larger the net costs B that the UK would incur as an euro-zone member (for example, the greater the problems from the UK's point of view of the euro-zone's institutional arrangements), the more a UK decision to enter would have to be confident that it could count on benefits C from forcing through desirable institutional reforms.

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60 Direct evidence on the importance of traded-goods sectors is in Gabel (2001), who finds that workers in industries that compete relatively intensely with foreign producers are more inclined to favour the euro.

61 We return to this issue for fuller discussion below.

62 However, while entry may increase influence over the actions of a particular coalition, it may sacrifice influence elsewhere. California has more influence than Canada over US monetary policy but less influence in the G-7, where Canada retains its own seat.

The leverage of the UK's bargaining position may affect its ability to influence the magnitude of C. However, in this it is hampered by the need to hold a referendum. Since it cannot guarantee the outcome of a referendum, it cannot in advance commit the UK to euro-zone entry in return for specific concessions on institutional reform. And once the referendum result is announced, the UK's entry decision may then be determined, thereby reducing its bargaining position with the euro-zone. In the terminology of cartel theory, negotiations are then "cheap talk."

This bargaining power would of course be enhanced if it were possible to design a conditional referendum; approving UK entry provided satisfactory terms were then obtained. Since the UK has to itself satisfy conditions in order to be accepted by the euro-zone, there would be a certain symmetry in such an arrangement. However, it is desirable that the question posed in any referendum be very transparent. Whether or not a satisfactory conditional referendum could be designed seems to us a finely balanced question. Moreover, part of the logic of the five tests is to clarify *ex ante* whether the relevant conditions have been met, precisely so that the referendum can then be unconditional.

Could the UK in any case exert much political leverage on institutional reform within the EU? What is the likely magnitude of channel C? In principle, the UK can influence euro-zone reform through power of example - as an Out - as well as through power of participation - as an In. Using the famous terminology of Hirschman (1970), this is the distinction between exit (or, in the present context, entry) and voice.

Concretely, the UK can encourage the ECB to adopt inflation targeting by demonstrating the superiority of the Bank of England's operating procedures, as well as by becoming a voting member of the ECB and lobbying for changes in that institution's operating procedures. It can encourage reform of the Stability and Growth Pact by staying outside and demonstrating the superiority of the Code for Fiscal Stability or by entering and insisting on changes in the structure and enforcement of the Pact.

History suggests that Ins have significantly greater leverage than Outs over the initial design of EU institutions but not thereafter. For example, as a full EU member the UK is present at the bargaining table for discussions on reform of the Common Agricultural Policy. Crucially, it was not at the table when the basic CAP parameters were first hammered out between the six founder members of the EEC. Yet those parameters continue to constrain sharply the options for reform. Arguably, as an EU-In, Britain's influence over CAP reform is no larger than that of the United States, an EU-Out.

Similarly, EU competition policy was shaped in the 1960s by French and German practice. As a late EU entrant, the UK has been fighting an uphill battle ever since: only two decades after UK entry was EU competition policy reformed along Anglo-American lines.<sup>63</sup>

A third example is the single market programme. As late as 1986, it was unclear whether the single market would deliver the chill winds of competition to the European economy or provide insulation for the 'European social model' against competitive pressures emanating from outside. Present at this bargaining table from the outset, the UK had additional leverage over the design of the single market, helping shape it as a vehicle of competition rather than a 'Fortress Europe'.

Does this mean that it is already too late for the UK to significantly influence monetary and financial arrangements in the euro-zone? At some point this inference will become true, but it is not yet true. Euro-zone institutions are still in flux. The next few years offer a key window in which this institutional architecture will be refined; thereafter, it is likely to be set for a considerable period of time. And there is a clear date by which this window is likely to be shut again: incumbent member states will want the job done before the new accession countries enter the euro-zone, which might be as early as 2006-7.

With this horizon, it may be critically important for the UK to re-establish its credentials as a forthcoming but irreversible In, thereby ensuring that it is fully represented at the bargaining table. Referring back to our earlier tradeoffs, the size of the potential benefits available through channel C may depend critically on how quickly the UK commits to EMU entry.

We now confront this hypothesis with evidence from the debate over fiscal arrangements, the ECB's operating strategies, and the structure of financial regulation.

### Fiscal architecture

Excessive deficits are a matter of particular concern for the members of the euro-zone. Whether there is in practice any danger that the euro-zone might be forced into an inflationary bailout affecting all euro-zone members is disputable, but the fact that many euro-zone officials are preoccupied with it is not.

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63 Even then, the influence of the US rather than the UK may have provided the main impetus for reform.

Despite being a full and equal member of both ECOFIN and the European Council, the UK's influence has been reduced by its failure to join EMU. Prior to ECOFIN, euro-zone finance ministers meet, together with representatives of the European Commission and the ECB, in what has become known as the Euro Group. Although an informal group unable to pass legally binding resolutions, the Euro Group provides a caucus in which pre-negotiation takes place and logrolling can occur. This creates an opportunity for euro-zone finance ministers, or a significant subset of them, to form a unified front with regard to a problem of excessive deficits or the reform of mutual surveillance. Many decisions in the Council still require unanimity, allowing the UK to veto those to which it is strongly opposed. But, facing a unified front by the EMU members, the cost of exercising that veto power is larger.

Chapter 8 argued that the failure of the UK to belong to the core group considerably diminishes its ability to shape SGP reform in ways that are simultaneously desirable for the euro-zone and conducive to future UK entry to the euro-zone.

Nor is it only SGP reform that is at stake. Unless sensible SGP reform reconciles medium-run discipline with greater short-run fiscal flexibility at national level, pressure may develop for a larger and more centralised EU budget in order to supply the missing stabilisation function (see von Hagen and Eichengreen, 1996), which is another aspect of EU fiscal architecture that the UK would presumably find unattractive.

Once more, there therefore appear to be multiple political equilibria. The prospect of early UK entry may influence reform in ways that then make its subsequent entry likely. Failure to commit to early entry may tip the balance, propelling the euro-zone along a path that then makes future UK entry much less likely. Wait and see is not a coherent strategy.

### Monetary architecture

Similar concerns arise about the institutions and conduct of monetary policy. The European Central Bank has now been in existence for four years. Both its initial design and subsequent performance have been closely scrutinised (see CEPR, 1999, 2002a, 2002b). There are two reasons to think that there is now a short window in which there is a unique opportunity to amend both its institutional structure and its conduct of monetary policy.

First, while initially it may have been desirable to emphasise continuity with the past, particularly in relation to the Bundesbank, as the ECB has acquired a track record of its own, continuity with its predecessor has become less important. Its initial design could not be immediately amended but nor should it be allowed to continue indefinitely now that its reputational constraints are different. Since continuous amendment is undesirable and ECB independence from political tinkering is critical, in practice there is probably only one opportunity to alter its initial design.

Second, three events suggest that the appropriate time for this reform is in the next 18 months. First, there will be a new ECB President, who will not carry any of the old baggage. Second, the ECB has already indicated that during the first half of 2003 it will review its procedures for conducting monetary policy. Third, EU enlargement, now a done deal, makes reform of the ECB's internal governance inevitable: allowing each member to have a seat on the ECB board would simply be impractical. Long before accession countries become EMU members, the ECB will want to have completed the reform of the euro-zone monetary architecture.

Reform of the ECB's structure and conduct are inevitable and being openly discussed. Watching from the sidelines, the UK's voice is limited to its power of persuasion. This is regrettable. The Bank of England is widely admired and holds many lessons for how the ECB could usefully be improved. If the UK's views are ignored, redesign of the ECB may continue to leave the UK feeling that the Old Lady of Threadneedle Street is a better bet than her young cousin in Frankfurt.

On reform of the governance of the ECB, the UK may already have missed the boat. Proposals for reform included a system of rotation (not dissimilar to that in the US Fed's Open Market Committee), constituencies (similar to those used at the IMF), and replacing national central bank governors with an independent monetary committee (similar to that in the Bank of England).<sup>64</sup>

Presumably the UK had a view on which was more desirable. Baldwin *et al* (2001) argued in favour of an independent monetary policy committee, partly on the grounds that this visibly rejects nationality as the basis of entitlement. In its operational conduct, the ECB is generally thought to have paid most attention to euro-zone aggregates rather than national statistics, and has been congratulated for doing so.

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64 See Eichengreen (2002) for details on these alternative proposals.

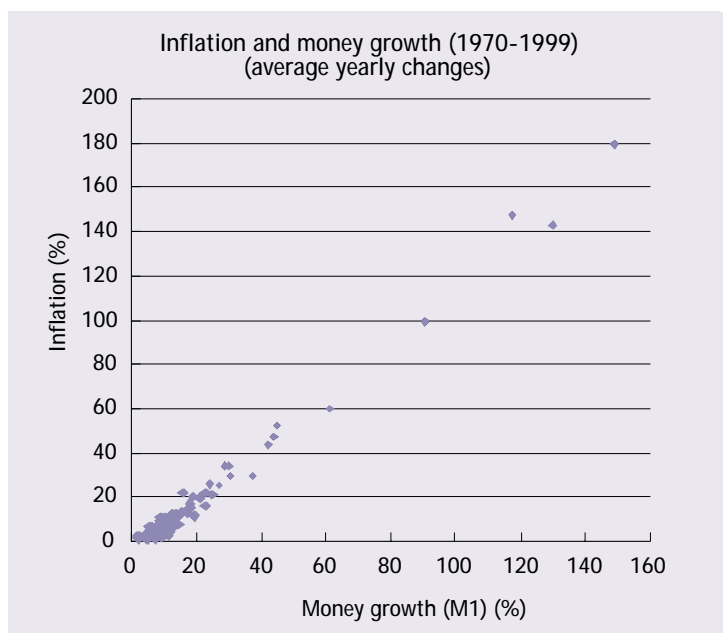
A monetary policy committee simply comprising the best people in the euro-zone would have affirmed this principle. But this opportunity may now have been lost. The ECB itself favours the rotation system in which a subset of member states are represented on the ECB board at any particular time, and where the relative frequency of rotation reflects the relative size of member states. Since euro-zone governments appear content to allow the ECB to organise the amendment of its own institutional structure, the UK has had little influence on this process by remaining outside EMU.

With regard to the conduct of monetary policy, there is still more to play for, which is fortunate since, on this issue, the prospective benefit of a UK voice is even more important. For guidance in deciding when changes in interest rates are appropriate, the ECB has adopted a two-pillar strategy in which it monitors the behaviour of monetary aggregates (the first pillar) and the behaviour of actual and expected inflation (the second pillar). This special role for monetary aggregates clearly differentiates the ECB approach from that, for example, of the Bank of England, which explicitly relies on inflation targeting.

The monetary pillar has been the subject of extensive criticism, as for example in CEPR (1999, 2002a, 2002b). Data on monetary aggregates come out more quickly than data on prices or incomes. When monetary growth is rapid, there is a strong correlation between money growth and inflation (Figure 9.1). However, when money growth and inflation are low, the correlation completely disappears (Figure 9.2). Since the ECB inhabits the latter world, the wisdom of according special status to monetary aggregates is highly dubious.

Figure 9.1 Inflation and money growth, all countries

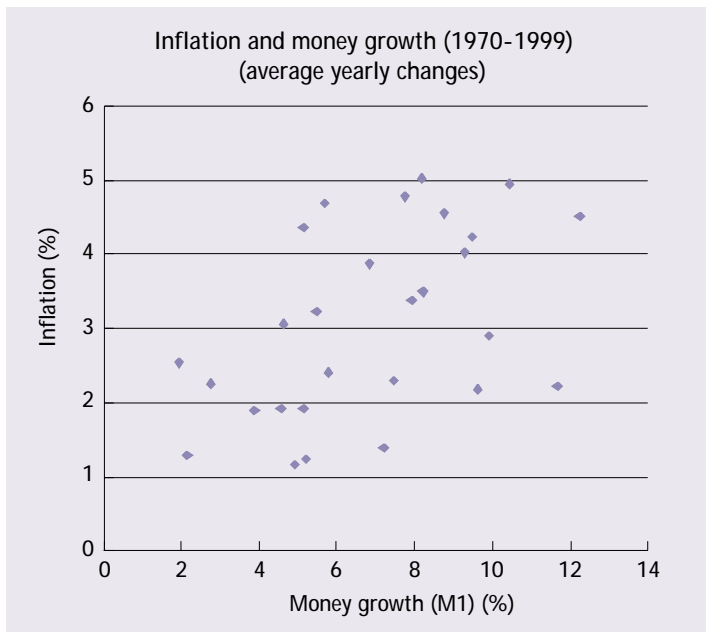
(annual average 1970-99)



Source: De Grauwe and Polan, cited in CEPR (2002)

Figure 9.2 Inflation and money growth in low inflation countries

(annual average, 1970-99)

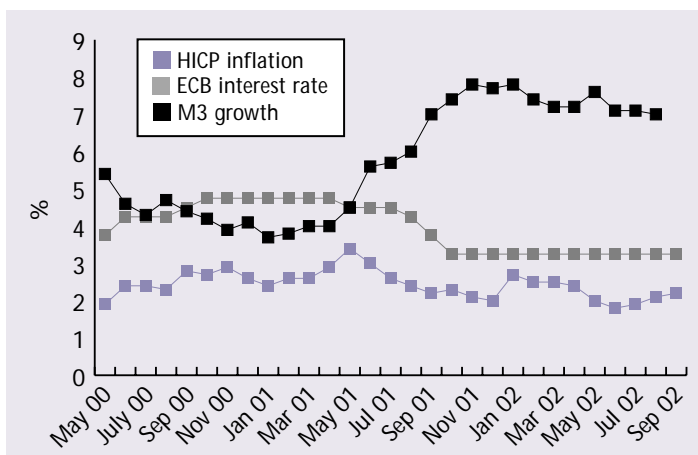


Source: De Grauwe and Polan, cited in CEPR (2002)

Nor does it work in practice. Annual monetary growth persistently exceeds its target or reference value of 4.5%, and the ECB has to devote a significant portion of the executive summary of its monthly bulletin explaining why, yet again, it is ignoring the signal from its monetary indicator.

Moreover, Figure 9.3 shows that information from the monetary dial has usually been perverse. Money growth has risen not when inflation was getting out of control but when the inflation danger was abating. For example, after 9/11 people fled the stock market for bank accounts, but the consequent rise in monetary aggregates signalled weakness, not a danger that economies were overheating.

Figure 9.3 M3 growth, HICP inflation and ECB interest rate decisions



Source: CEPR (2002b)

CEPR (2002a, 2002b) argue that, like the Bundesbank before it, the ECB wisely pays little attention to unreliable monetary indicators. Certainly, Figure 9.3 supports the contention that actual interest rate decisions have much more to do with actual and expected inflation than with misleading monetary aggregates. Now is an opportunity for the ECB to come clean, thereby improving its communications strategy and reputation with markets. At the press conference accompanying its December 2002 monthly bulletin, the ECB finally acknowledged that it might be time to take another look at the monetary pillar.



This window for reform will be of finite duration, and an opportunity missed may be an opportunity that does not recur for a long time. Even if the UK does not enter EMU during that window, the knowledge that its subsequent and speedy EMU entry was now assured would give it much more influence in these discussions. This matters, since inflation targeting has been one of the big successes of the last decade, and the Bank of England is to inflation targeting what Michael Schumacher is to motor-racing.

### The architecture of financial regulation

The Financial Services Action Plan launched in 1999 specified a long list of objectives, most of which require legislation - proposals by the Commission, action by the European Parliament and European Council. The target date for completion is 2005. As we write in early 2003, many of the specified measures have gone through, but they were the apples close to the ground. The contentious, complex, and important issues remain unresolved: revision of the Investment Services Directive, the common prospectus, and the takeover directive are among them.

The alternative frameworks for financial regulation proposed in November 2002 by the Mayhew-Wicks committee and Eurofi 2000 exemplify the difference between the City of London's views and those of Paris-Frankfurt. 'Light' v. 'heavy' regulation, 'market participants' v. 'centrally imposed solutions' and 'maximum harmonisation' - these are characterisations that perhaps verge on caricatures. But there is underlying truth in any good caricature, and there is certainly some in the views that each side has of the other. These were reflected well in an exchange in the *Financial Times* in December between Dame Judith Mayhew and Christa Randzio-Plath MEP, Chair of the EP Committee for Economic and Monetary Affairs.

The scope for purely political logrolling is exemplified by recent reports of a deal under which Britain will support Germany's position on the takeover directive (for one share, one vote) in exchange for German support for the British position on the temporary workers directive (against new obligations for firms using agency workers). Whether or not this leads to corresponding action on both measures, this illustrates what one can expect in the difficult final stages of implementation of the Financial Services Action Plan. Such coalitions are common in EU politics, especially where there is no veto power, as on financial regulation issues. Even a large country like the UK must find allies, at least one other large country or several small ones. But all the other large countries are in the euro-zone.

Financial regulation significantly affects the competitive positions of financial centres, institutions and markets. There are already substantial differences between British views and interests, and those of the main euro-zone players. The latter, operating in the framework of EMU, have evolved towards greater coherence, despite internal euro-zone competition.

The euro-zone, when united, can carry the day on EU-wide financial regulation issues. If the UK chooses in 2003 to remain outside, it then becomes a competing 'offshore' financial centre. It would be very surprising if this were not a signal to the Euro Group to proceed with only minimal regard to UK preferences and interests. The costs could be high. The Financial Services Action Plan timing is such that 2003 would be a particularly bad time to declare long-run Out status.

## 9.4 Conclusion

It is sometimes asserted that the referendum on the euro will be a critical turning point. If British voters decide against coming in, the UK and the euro-zone will go their separate ways. Their economic structures and interests will diverge, and a subsequent reversal of that decision and majority support among the British public for adopting the euro will become progressively less likely with the passage of time.

This judgment is both right and wrong. It is wrong to conclude that rejecting the euro will necessarily weaken Britain's economic connections with the euro-zone. The single market will remain a powerful engine for increased trade whether the UK adopts the euro or not. Increased trade between the UK and the euro-zone will cause business cycles in these two economic areas to conform more closely, especially since there is so much intra-industry trade. These changes are likely to make it attractive to adapt the conduct of British monetary policy so that sterling shadows the euro more closely. Other things equal, these changes are likely to make the adoption of the euro increasingly attractive with the passage of time.

But it is right to worry that changes in the political organization of the euro-zone, taken in the intervening period, may then make participation less attractive for the UK. A decision to target monetary aggregates rather than inflation, or to adopt some other monetary policy operating strategy counter to British traditions, would make adoption of the euro less attractive. Failure to reform the Stability and Growth Pact to facilitate greater national autonomy over fiscal policy in the short run will again make future UK entry more difficult. Future changes in the prudential supervision of banks and other financial institutions will directly affect the City of London, perhaps to its considerable detriment.

The key question is whether it will be significantly harder for Britain to influence these decisions if it stays out of the euro-zone for the time being. The history of the EU, from the CAP to the single market programme, suggests the importance of being at the bargaining table at the time the deal is cut. Subsequent entrants are often forced to take that structure as a *fait accompli*. The issue, therefore, is whether this is the time when the critical decisions will be reached.

There are reasons to think that this is the case. The slowdown in Continental Europe has heightened dissatisfaction with the operation of the euro-zone, setting the political stage for reform. Fears of deflation have made it more probable that there will be formal reconsideration of the ECB's inflation target and perhaps of the bank's two-pillar monetary policy strategy. Continued criticism of the ECB's lack of transparency seems to have created a new willingness to consider publishing an inflation target and perhaps even minutes of Council meetings. Enlargement urgently requires a change in the organization of the ECB Governing Council. If decisions regarding these fundamental reforms are taken in the next few years, there is a strong argument for the UK being fully represented at the bargaining table.

Two cautions are relevant in this connection. First, a number of the key decisions may have already been taken. If it has already been decided that a rotation system for the Governing Council will be adopted, rather than delegating monetary policy decisions to a committee of independent experts - the Bank of England model, which the UK would presumably prefer - then that window of opportunity may have already closed. If the incumbents are not serious about reform - for example, if the French continue to insist that the next president of the ECB has to be a Frenchman, precluding an open search for the best-qualified candidate - then other windows may already be shut. More generally, if the members of the euro-zone signal a real willingness to pursue institutional reform, becoming a full and equal member in order to influence that process becomes correspondingly more attractive.

Early entry has its own dangers as well as benefits. We presume that the Treasury assessment will take these fully into account. What we hope to have demonstrated in this report is that the alternative to entry is not the status quo. The evolution of trade patterns, investment flows, location of financial markets, and even the nature of euro-zone institutions will depend on whether the UK is In or Out. The status quo, like any market judgement, entails a hedging of bets, some average of these two possibilities. As the UK's chosen path becomes clearer, things will change. The alternative to In is not what the UK has today.

Our second conclusion follows from the first. The option to wait a bit and see is not a free glimpse of the future. The more the UK believes that its eventual destiny will be to join the euro-zone, the more sense it may make to grasp that nettle quickly. The interesting window for reform is upon us. This creates advantages for early entry by the UK. However, there are also benefits of delay. It would be easier to join when UK interest rates were not above euro-zone rates, and sterling had depreciated further. However, there is no guarantee that waiting will deliver these outcomes.

## Acknowledgements

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