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*Directorate-General for Research*

WORKING PAPER

# **ADJUSTMENT TO ASYMMETRIC SHOCKS**

*Economic Affairs Series*

ECON-104

This publication will be available in:

EN (Original), FR and DE.

A summary will be available in all the Community languages

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L-2929 Luxembourg

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Manuscript completed in September 1998.

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09-98

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## Summary/Conclusions

### ◆ *Will EMU make the EU more or less vulnerable to external shocks?*

The fact of monetary union means that over 60% of Member States' external trade will automatically become domestic transactions. By comparison with the individual countries making it up, therefore, the euro area will be an autarkic economy, with external trade accounting for only between 10%-15% of GDP, (depending largely upon whether all 15 Member States eventually participate). This means that

- ⇒ the euro area's vulnerability to external shocks will be low compared to the past vulnerability of the separate EU countries. It will be on a par with that of the United States;
- ⇒ the relative unimportance of external trade will make possible a policy of "benign neglect" with regard to the euro's external value, similar to that practised by the US in recent years with regard to the dollar.

### ◆ *Will the shocks likely to be faced by the EMU area be symmetric or asymmetric?*

Most research finds that only a minority of the shocks actually experienced by EU countries have been *country-specific*; and that even country-specific asymmetric shocks have often had similar outcomes. Some of the shocks have been *sector-specific*, having no special consequences for exchange rate or monetary policy.

However, a high proportion of shocks have been *regionally asymmetric*, a situation which has continued over time, and is likely to continue within the euro area. The conclusions are that:

- ⇒ the ability to alter national exchange rates, or to conduct a country-specific monetary policy, can be of little value in meeting such asymmetric shocks; but that
- ⇒ mechanisms will still be needed within the euro area to deal with the consequences of asymmetric shocks for relative regional incomes, employment and growth.

### ◆ *What have been the main causes of asymmetry?*

Both at a national and regional level, a variety of structural differences have accounted for the asymmetric effects of shocks. To these may be added cyclical factors at national level, though the relative importance of these is not agreed. A high proportion of the asymmetries, however, can be attributed to factors under the direct influence or control of governments and political systems: legal differences, the "political cycle", public purchasing, fiscal policies, etc.; and to lack of international coordination between them. The conclusions are that:

- ⇒ many of the asymmetries might be removed by the coordination within EMU of economic policies, the alignment of legislation (e.g. in the area of financial services or labour law) and by

the fact of monetary union itself; and

⇒ other asymmetries may be removed because private economic agents will change their behaviour in the light of the new economic circumstances (e.g. the expectation of low inflation rates).

◆ ***Will differences in financial structure mean that monetary policy has asymmetric effects?***

Existing research tends to show that the effects upon output of interest rate changes does vary between countries, both in timing and magnitude. It also indicates that these asymmetries are due to differences in financial systems: the role of banks, the extent of consumer debt, whether borrowing is at fixed or variable interest rates, etc.

Both deregulation at national level and the removal of barriers at EU level, however, are already beginning to produce a convergence of systems. Continuing low inflation, and the fact of monetary union itself, should speed up the process of change. The conclusions are that

⇒ whether the ECB will be able to conduct a single monetary policy for the whole euro area will depend to a considerable extent on these changes: for example, the extent to which the corporate bond market and equity finance develop as an alternative to bank lending;

⇒ certain legal and tax changes could speed up this process.

◆ ***How flexible are real wage and price levels in the EU?***

Evidence suggests that real wages and prices have been relatively inflexible in the short and medium terms, both between EU countries and between regions within them. This has been particularly true in a downward direction.

Flexibility between regions has been less than between countries, in part because the ability to devalue has disguised real wage reductions, at least while the “money illusion” has lasted; and in part because large economic disparities between different parts of the same country have been politically unacceptable, leading to mechanisms for substantial income transfers (e.g. from the Western to Eastern German *Länder*). The conclusion is that

⇒ after EMU, short and medium-term wage and price flexibility may prove even less significant as a mechanism of adjustment to asymmetric shocks than before, particularly since the existence of a single currency will make direct comparisons between regional price levels and wage rates easier.

◆ ***How mobile is labour in the EU?***

Comparisons with the United States show that labour is relatively immobile in Europe. However, this is almost as true between *regions in the same Member State* as between the *Member States themselves*, indicating that linguistic, cultural, legal and other differences play only a modest role.

A more plausible explanation is that the costs of large-scale labour movement in Europe generally outweigh the advantages, both for the regions of net immigration and of net emigration, and for the workers themselves. The consequences are that

- ⇒ labour mobility might be marginally increased by the removal of artificial barriers caused by differences in tax and social security systems, residence restrictions, nationality limitations on recruitment in the public sector, inflexible housing markets, etc.; but that
- ⇒ labour mobility - that is, geographical mobility - is unlikely to form a major mechanism of adjustment to asymmetric shocks within the euro area.

#### ◆ *How mobile is capital in the EU?*

Stages 1 and 2 of EMU, together with the Single Market programme, have resulted in a high degree of capital mobility within the EU, though obstacles still remain. Capital flows have both the short-term role of facilitating temporary payments adjustments between countries and regions, and the longer-term role of providing investment in less prosperous areas. The integration of capital markets throughout a currency area is also required for the uniform transmission of monetary policy measures.

Whether such positive effects will outweigh possible negative consequences - the concentration of investment in richer areas to take account of economies of scale, etc. - is the subject of controversy. So is the suggestion that capital mobility and the free movement of goods will increase regional specialisation, leading to an increased vulnerability to asymmetric shocks. Recent empirical evidence suggests that positive factors will prevail, though it is difficult to disentangle the effects of capital mobility from the those of special tax incentives, regional aid, etc.

The consequences are that:

- ⇒ the euro area's vulnerability to asymmetric shocks could be further reduced by removing the remaining obstacles to capital mobility and to markets in financial services. This would both improve inter-regional adjustment, and remove distortions in monetary policy transmission mechanisms; and
- ⇒ efforts should also continue to bring order to national systems of regional and sectoral aid, including those implemented through tax systems, so that any adverse effects of capital mobility within the euro area can be identified and met on an agreed basis (see also final conclusion).

#### ◆ *Is the EU labour market sufficiently flexible?*

Developments such as the growth of information technology have made *the geographical mobility* of labour of decreasing importance compared to *occupational mobility*.

In this context, both approving and disapproving comparisons have been made between Europe's apparently inflexible labour markets and the "hire and fire" culture of the United States. Criticisms



have focused, in particular, on labour market legislation which protects those in employment at the expense of the unemployed; and the effects of tax and social security systems on incentives to offer, and to take up, employment.

However, there is evidence that “labour markets across Europe are significantly more flexible than they were 10 years ago, even though the continent still lags behind the US and the UK”<sup>1</sup>.

High job mobility also has important implications for the education and vocational training systems, a field to which all Member States and the EU itself have paid increasing attention in recent years. The conclusions are that

⇒ the improvements to labour markets and training systems necessary to meet asymmetric shocks may already be under way. But further progress, including the spread between countries of “best practices”, is almost certainly needed.

◆ ***Does the EU have a mechanism for autonomous fiscal adjustments?***

Given that the EU Budget amounts to under 1.5% of GDP, compared to 33% for the US Federal Budget, the answer is clearly: no. In the US the existence of a “fiscal pump” results in 40% of any fall in income in a particular state being automatically offset by lower federal taxes and higher federal payments. On the other hand, national budgets in the EU account for between 43% (the UK) and 66% (Sweden) of GDP, allowing a high degree of fiscal redistribution between regions within each Member State. It can be concluded that

⇒ whether monetary union requires an increased element of “fiscal federalism” is a matter of debate. Given that, in response to shocks, asymmetry between regions within the same Member State is greater than between Member States, adjustment through national fiscal mechanisms may be sufficient. However,

⇒ country-specific shocks may still occur, to meet which an EU-level mechanism may be needed; and

⇒ the provisions of the Stability and Growth Pact may circumscribe the degree of inter-regional insurance through national budgets.

◆ ***Does the EU have mechanisms for discretionary adjustments?***

The EU has at its disposal a considerable number of financial instruments for directing funds to areas affected asymmetrically by shocks. These include budgetary instruments (e.g. the Structural and Cohesion Funds) and loan instruments (e.g. the European Investment Bank and the funds administered by it).

Certain possibilities in both cases remain unexploited: for example, a reformulation of the Treaty

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<sup>1</sup> Münchau, W. “Europe’s fragile recovery” in the *Financial Times*, 29<sup>th</sup> July 1998.

provisions for mutual assistance in the event of balance of payments disequilibria; or the use of the EU's credit rating to raise capital on world markets at advantageous rates of interest (the "Delors bonds" proposal).

The 33 billion ECU available through the Structural and Cohesion Funds, and the 27 billion ECU available through EIB and other loans, are nevertheless modest sums by comparison with the volume of regional and industrial aid available from national budgets, which probably amounts to over 100 billion ECU a year in total direct payments.

A distinction, however, must be made between the need for rapid, short-term stabilisation in the event of asymmetric shocks; income transfers to reduce the social and other costs of shocks; and long-term investment to reduce asymmetry: i.e. to reduce the vulnerability to shocks of particular regions.

It can be concluded that

- ⇒ all existing and potential instruments of adjustment will need to be re-examined in the context of EMU, and in particular in the context of the mechanisms for economic policy coordination established by the Treaty; and
- ⇒ the application of competition policy to state aids has to be fully reconciled with the role of national public expenditure in reducing potential asymmetry.



## Introduction

Ever since Economic and Monetary Union (EMU) became a serious prospect for the European Union, there have been people arguing that it will not happen - or if it does, that it can't work. Such views are held by politicians and journalists on both the left and right, but also by serious academic economists.

Their reasons for scepticism are expressed differently depending upon the source. For some it reflects a fear of sharing the euro with countries that have a past record of monetary laxity, for others the opposite fear of imprisonment in a "deflationary straight-jacket". The economists have maintained that, in the absence of the ability to alter exchange rates, and given that there will be a single monetary policy for the whole euro area, no credible mechanism will exist to combat "asymmetric shocks": that is, events that may have varying economic effects on different parts of the area. They have observed that possible alternative mechanisms - a substantial federal budget, or labour mobility - do not exist in Europe to the extent that they do in, for example, the United States.

All these fears and arguments may perhaps be summed up in a single proposition: that the European Union does not constitute an "optimum currency area". In such circumstances, if it is maintained, the gains from EMU in terms of reduced transaction charges, increased price transparency, etc. will be more than offset by losses in production and employment.

This critique of EMU raises a number of serious questions. What *does* constitute an "optimum currency area"? What kind of shocks have asymmetric effects? Will any misalignment of business cycles within a single currency area automatically and eventually disappear? Is the ability to alter exchange rates any longer a credible adjustment mechanism? Can devolved fiscal policies compensate for the centralisation of monetary policy, or is an element of "fiscal federalism" inevitable? And are the other adjustment mechanisms available within the EU in fact so inferior to those in the United States? If not, what should be done?

The object of this working paper is to examine these questions, and also some of the answers that have been advanced. The move towards EMU has given rise to a large number of relevant studies, both popular and academic - though "definitive conclusions remain elusive" in key areas (Obstfeld and Peri 1998). Much of the tone has been adversarial rather than dispassionate, perhaps inevitably given the past political debate about whether EMU should go ahead and, if so, when and with whom.

But EMU *is* going ahead. Contrary to many predictions, the 1999 start-date is being met, and with the participation of all but four EU Member States. Whether this will prove evidence of courage and clear-sighted vision, or of "cock-eyed optimism"<sup>2</sup>, time will tell.

Meanwhile, the creation of the euro is going to provide a unique test bed for a considerable body of economic theory.

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<sup>2</sup> Editorial in *The Times* of Tuesday June 2, 1998

## I. Optimum Currency Areas

The international monetary system is characterised by a multiplicity of different currencies. For the most part, these are based on sovereign nation states - a situation which John Stuart Mill famously described as “barbarism”; and, as the structure of modern government has developed, the economic segregation between currency areas has often become acute, notably through the imposition of exchange controls and inconvertibility.

Even during the period of “monetary union” provided by the Gold Standard before 1914, some countries maintained the gold link more successfully than others (see Flandreau, Le Cacheux and Zumer 1998). Little attention, however, was paid until relatively recently to the economic, as opposed to the political, basis for separate currencies.

The initial formulation of what should determine the geographical coverage of a currency is widely attributed to a paper published in 1961 by R. Mundell (see Box 1). Since the purpose of money was to be “a convenience”, he argued, the ideal currency area was “the world, regardless of the number of regions of which it is composed”.

Given the practical need for stabilisation policies in existing economies, however, an area needed a separate currency if, given some macroeconomic shock, the economic costs of adjustment through changes in wage and price levels, or through factor mobility (labour and capital), would be higher than those of altering the exchange rate. Mundell’s analysis was shortly afterwards elaborated on by McKinnon (1963), and by Kenen (1969), since when optimum currency area (OCA) theory was developed by a growing number of studies, both theoretical and empirical.

The case for separate currency areas clearly holds good only if the impact of a shock varies between areas: i.e. is asymmetric. If the impact were to be the same on all, the exchange-rate changes needed for adjustment would be the same for all, in which case separate currencies would serve no purpose. OCA theory indeed implies that any two countries generally experiencing *symmetric* shocks, and trading significant proportions of their GDP bilaterally, should fix their exchange rates.

As Milton Friedman (1953) had already observed:

*“A group of politically independent nations all of which firmly adhered to, say, the gold standard would thereby in effect submit themselves to a central monetary authority, albeit an impersonal one. If, in addition, they firmly adhered to the free movement of goods, people and capital without restrictions, and economic conditions rendered such movement easy, they would, in effect, be an economic unit for which a single currency... would be appropriate.”*

## Macroeconomic Shocks

In a short “taxonomy of shocks” contained in a recent Commission Economic Paper (1997a), four distinctions are made:

- ◆ between *temporary and permanent* shocks;
- ◆ between *country-specific and sector specific* shocks;
- ◆ between *real and financial* shocks; and
- ◆ between *exogenous and policy-induced* shocks.

### *Temporary and permanent shocks*

Perhaps the most useful distinction to be made is between shocks likely to have only transitory effect - for example an unanticipated fall in aggregate demand - and shocks which entail a permanent decline in competitive position. Shocks of the first kind can be corrected by counter-cyclical changes in fiscal and/or monetary policy, or by borrowing. Shocks of the second kind, however, can in general only be met by a decline in comparative real incomes and prices; by labour force migration; or by major long-term restructuring.

The distinction is important if only because confusion between them can lead to action which aggravates rather than improves the situation. More particularly, treating shocks with a permanent, structural effect as if they were temporary may only serve to entrench the underlying loss of competitiveness and make necessary reform more difficult. The Commission (1997) observes:

*“If, as the evidence shows, structural change is already too slow in Europe compared to, say, the US, slowing it down further through monetary cushioning may be exactly what policy makers should want to avoid”.*

This, in essence, is also the argument underlying the “no bail out” provisions of the Treaty in relation to sovereign debt; and, more contentiously, resistance to any extension of EU structural and cohesion payments. As in the wider global context, easy access to borrowing or transfer payments may create a “moral hazard”: it will be easier for an economy in trouble to wait for the rescue package than to put its house in order.

It is probably a mistake, however, to make the distinction between the temporary and the permanent too rigid. Most real-life shocks are likely to have elements of both, implying that both short-term policy adjustments and long-term structural reforms are required. Moreover, inter-regional financial transfers can be useful, not merely to iron out cyclical problems, but also to promote structural change. The problem is to ensure that the funding is used in the correct way.<sup>3</sup>

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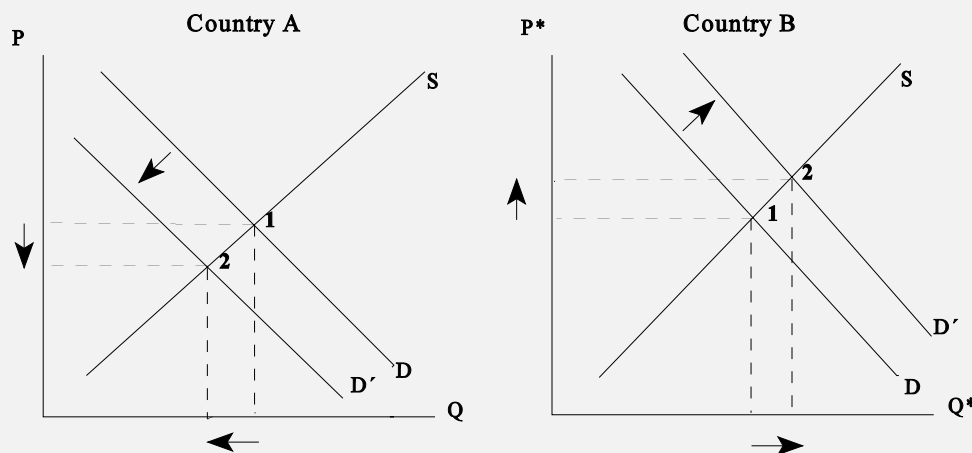
<sup>3</sup> This problem often expresses itself in the context of EU funding as the “additionality” issue. If funding from the EU budget is merely used to substitute for national expenditure which would have taken place anyway, the effect will be more cyclical than structural.

### Box 1: Mundell's Theory of Optimum Currency Areas

The 1961 paper by Mundell examined possible mechanisms of adjustment when countries or regions face exogenous country-specific shocks, with particular reference to the US and Canada. He concluded that exchange-rate changes between the US and Canadian Dollars did not provide either country with a satisfactory means of adjustment, since the main asymmetry was not between the countries themselves, but between the eastern and western parts of both. Mechanisms were therefore required to adjust relative prices between east and west rather than between north and south.

A simple version of the theory assumes two regions - A and B - each producing a good. A demand shift caused by a change in preferences from the goods produced by A to the goods produced by B (i.e. an asymmetric shock), will lower demand in A, raising unemployment and causing a trade imbalance; while inflation will increase in B (see Figure 1). In such a situation, a common monetary policy cannot solve the problems of both economies at the same time. A restrictive monetary policy (S up) might reduce inflation in B, but worsen the unemployment problem in A. An expansionary monetary policy (S down) would reduce unemployment in A, but worsen inflation in B.

Figure 1



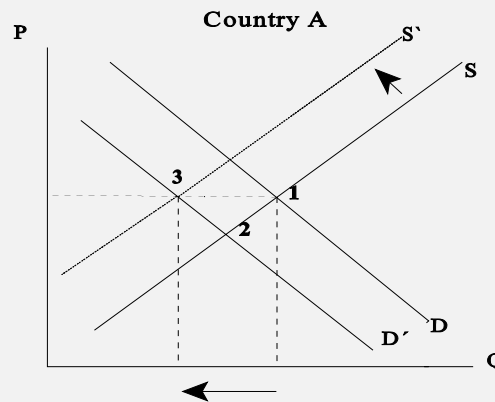
Graph 1: Demand shift originated by a change in the preferences from the good produced in A to the good produced in B. (Asymmetric shock).  
A lower demand in A reduces quantity (Q) and prices (P) while unemployment will raise  
In B will happen the contrary.

The disequilibrium caused by a shock will therefore require a change in relative prices to restore the previous equilibrium. If the two regions have separate currencies, this can be achieved by altering the exchange rates: i.e. by a devaluation of currency A *vis à vis* currency B. Country A would then recover its competitive position through lower real wages and prices (though nominal wages and prices would remain constant). Demand would rise (D upshift) and unemployment fall.

If, however, the two regions have a common currency - or maintain a fixed exchange rate - production and employment in A must be restored through other means: for example

- ◆ a fall in *nominal* wages and prices;
- ◆ an upward shift in the supply curve (S up) of the home-produced good through, for example, labour migration out of the country. (see Graph 2)
- ◆ an expansionary fiscal policy.

**Figure 2**



**Graph 2: To restore equilibrium without altering the price level, migration is taking place from A to B**

Mundell's analysis therefore suggested that:

- ◆ if the impact of shocks on particular areas was similar (i.e. symmetric), fixed exchange rates, or a monetary union, was appropriate;
- ◆ if the impact of shocks was asymmetric, however, *high labour mobility* and/or *wage flexibility* (more particularly in a downward direction) were the main prerequisites.

Further refinements by Kenen (1969) pointed towards a *high degree of product diversification* - the more a group of countries or regions specialized in the production of particular goods, the more likely it would be that external shocks would have asymmetric effects. The different parts of a currency area should therefore produce a similar mix of goods.

McKinnon's (1963) main criterion was the *degree of openness* in an economy, linked to the relative importance of traded to non-traded goods. A high degree of openness reduced the effectiveness of an autonomous monetary policy, and limited the usefulness of exchange-rate changes as a means of restoring competitiveness, since devaluation rapidly fed through into domestic prices.



### ***Country specific and sector specific shocks***

The Commission observes that changes in monetary policy or in the exchange rate - which will have a general effect on the whole of an economy - are the wrong instruments to meet a shock which affects only one sector or region of that economy. This may seem obvious. Yet the point is of considerable significance in the light of the empirical evidence which has been collected in relation to the creation of EMU.

Briefly, this shows that only a small proportion of the shocks hitherto experienced by the EU have been country-specific: i.e. specific to an existing currency area. A “significant proportion” have been *industry-specific*; while, measured in terms of differential employment effects, some 80% have been either non-specific (that is, have been common to the whole EU area); or *region-specific*. The implication is that the loss by EU Member States of the ability to alter exchange and interest rates is likely to have only minimal consequences for the handling of the actual shocks that are experienced.

In the context of OCA theory, a purely sectoral shock can only be of any real relevance if a particular area is overwhelmingly dependent on the industry in question. In these circumstances it becomes identical to a regional shock, and opens up the question of whether the region should create its own currency; or, alternatively whether it should reduce its degree of specialisation.

### ***Real and financial shocks***

Even when shocks are country-specific, the Commission argues, variations in exchange rates are only an appropriate remedy if the effect is on real aggregate demand. If, on the other hand, the shock is purely financial - an example quoted by the Commission is a shock to the domestic money supply process - the correct answer is fixed exchange rates, or a single currency, which minimises the impediments to money flows across national borders.

Studies into the effect of shocks upon employment have reached similar conclusions.

*“Financial shocks can occur as a result of currency-specific portfolio adjustments. In response to financial shocks the exchange rate should be kept constant and the shift in the portfolio composition should be satisfied by varying the supply of assets denominated in specific currencies. Asymmetrical financial shocks can be better dealt with in a monetary union than in a system with adjustable exchange rates and are thus not an additional source of unemployment”.* (Ochel 1997)

### ***Exogenous and policy-induced shocks***

The Commission’s final distinction is between shocks which are caused by outside events over which the authorities in a particular economy have no direct control (i.e. which are *exogenous*) and shocks arising from *internal policies*. The Commission emphasises the dangers of confusion: whereas many shocks appear at first sight to be “exogenous phenomena with which policy authorities are suddenly faced”, they can turn out, on more careful examination, to be the

consequences of their own political activities.

Examples quoted are a rise in wages as a result of unions' and employers' expectations that the rise will be "accommodated" by monetary or fiscal expansion; and shocks caused by the political cycle itself: i.e. artificial stimulation of an economy before an election. Both of these have, in the past, been seen as important elements in the idiosyncratic behaviour of the UK economy.

Bayoumi and Eichengreen (1994) have expressed the useful additional insight that a shock which has exogenous origins can become policy-induced.

*"Even if countries experience large, asymmetric disturbances, it need not follow that policy autonomy is useful for facilitating adjustment. ...Policy makers may systematically misuse policy rather than employ it to facilitate adjustment... One interpretation of asymmetrically distributed aggregate demand shocks is that the countries concerned are poor candidates for monetary union, because policy makers can use demand-management instruments to offset demand shocks emanating from other sources. But, if domestic policy itself is the source of the disturbances, monetary unification with a group of countries less susceptible to such pressures may imply a welfare improvement".*

"Where do macroeconomic shocks come from?" ask Belke and Gros (1997). "It is likely that *policy itself* is a source of shocks".

The significance of this factor was illustrated during the hearing into asymmetric shocks held by the European Parliament's Monetary Sub-Committee on 2nd. September 1998. A member of the Sub-Committee, Professor Katiforis, posed the question: given that Member States within EMU will no longer have an independent monetary policy, and will be limited by the Stability and Growth Pact in their ability to use fiscal policy, would the ability to alter exchange rates be a more significant mechanism of adjustment than at present, were it still to exist?

The reply from Professor Dr. von Hagen was that it would (although other consequences of EMU, notably the creation of area-wide financial markets, would improve adjustment). That of Dr. Ansgar Belke was that exchange-rate flexibility would become *less* significant, since it would no longer be needed to adjust for the consequences of national monetary and fiscal decisions.

## **Asymmetry**

The way in which different economic areas respond to macroeconomic shocks may be analysed in a number of ways. A distinction might be made, for example, between shocks which, by their very nature, will have asymmetric effects; and those which in principle should affect all similar economies in similar ways.

In *One Market, One Money* (1990) the Commission makes the obvious point that country-specific shocks are by definition asymmetric in the European context. Major natural disasters are likely to fall into this category, as will the immediate effects of political events like German reunification or Portuguese de-colonisation. Yet where such events are, in effect, Acts of God, there can be few significant implications for OCA theory. Since they are by definition

unpredictable, it would not be logical to establish separate currency areas in order to deal with them. More arguable is the case for a separate currency in an area particularly prone, for example, to earthquakes - though it is no means obvious that adjustment *via* repeated devaluations would be less costly in such cases than other adjustments within a larger currency area.

*One Money, One Market* also makes the point that common shocks - for example, a rise in world commodity prices or a technological innovation - can have either symmetric or asymmetric effects on different economies, depending on their structure. As Caporale (1993) observes, the Commission's finding that

*“sectors producing homogeneous goods with few trade barriers mainly experience symmetric shocks” while “in other sectors there appears to be an inverse correlation between the existence of trade barriers and the degree of symmetry of the shocks”*

has the “obvious implication” that completing the Single Market should decrease asymmetry. This may or may not be true (see later, “Convergence, Divergence and Diversification”).

### ***Cyclical and structural asymmetry***

A more useful distinction can perhaps be made, as in the case of shocks, between short-term and long-term causes. A rise in short-term interest rates may, for example, have differing effects in different areas because they are at different stages in an economic cycle. But they may also be due to long-term differences in financial structure: the relative importance of banking finance, for example, or of fixed-rate mortgages; and to differences in monetary transmission mechanisms.

The relative importance of cyclical and structural factors in causing asymmetric responses to monetary policy plays a large part in the current debate on possible EMU membership in the UK. The Government, for example, has cited the fact that the UK economy is currently completing an economic upswing, while most of the EU core economies are just emerging from a trough, as the main reason for non-participation in Stage 3 of EMU in 1999. It has nevertheless indicated that membership is likely in the early years of the next century.

It can be argued, however, that the cyclical misalignment of the UK economy is not accidental, but reflects more long-term structural differences. Eltis (1998) emphasises in particular the ties between the UK economy and that of the US, partly through financial links, partly because “the UK, like the US but unlike any other EU country, is a significant oil producer”, and partly because “the UK also resembles the US in the extent of its high-tech industries such as biochemicals, aircraft, scientific instruments and telecommunications”. If these turn out to be decisive, full cyclical alignment of the UK economy with that of the euro area may *never* take place.<sup>4</sup>

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<sup>4</sup> Except, perhaps, in the paradoxical sense of the analogue watch that has stopped, and which is absolutely accurate twice every 24 hours. The same could be true of the UK and euro area economies as their upswings and downswings momentarily cross.

However, research by the IMF in 1987 found that asymmetric responses to monetary policy were not confined to the UK. Interest-rate sensitivity varied considerably between EU countries. In Germany, the Benelux, Austria, Finland and the UK, a 1% increase in interest rates led to a decline in production of between 0.7 and 0.9%, which flattened out after nearly three years. In other countries the decline was only between 0.4 and 0.6%, and lasted only one and a half years.

Such findings seem to augur badly, not just for possible UK membership, but for the EMU itself.

### *The “Lucas critique”*

This conclusion, however, ignores the possibility that what appear to be long-term structural differences may rapidly disappear when circumstances change. The “Lucas critique”<sup>5</sup> of much existing research into asymmetries within the euro area is precisely that shocks will have a far smaller asymmetric effect than hitherto because EMU will in itself change behaviour. As the editor’s introduction to *EMU: Prospects and Challenges for the Euro* (1998) puts it:

*“Institutions that evolved in response to history (for example, a history of variable and uncertain inflation) may adapt quickly to a new environment if it is believed to be here to stay”.*

Eltis (1998), for example, makes much of the differences between prevalence of mortgages and other variable interest rate liabilities in the UK compared to other EU countries.

*“..aggregate mortgage debt is 60% of GDP in the UK but only 40% in Germany, 25% in France and less than 10% in Italy.... The variable interest rate liabilities of the UK personal sector total 64% of GDP. They are only 16% in France, 3% in Germany and 2% in Italy.”*

Yet variable-rate mortgages are the legacy of a past “inflation culture”, which should no longer exist within EMU. There are indeed already signs, observed by Eltis himself, that the low level of UK inflation in recent years has encouraged a switch to fixed-rate borrowing. Currently observed cyclical and structural asymmetries may also both be subject to the “Lucas critique”. Christodoulakis, Dimelis and Kollintzas (1995) observed that:

*“..a widespread belief in the EC goes as follows: if shocks are asymmetric, common institutional arrangements and policies will tend to exacerbate business cycles, because national governments will lose parts of their stabilization toolboxes.”*

In their own paper, however, they provide

*"support for the opposite conclusion. In fact, our findings suggest that observed differences in shocks and business cycles will tend to melt down as common institutions and policies*

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<sup>5</sup> Formulated by R.E.Lucas in 1976: if something new happens, there may be little to be learned from past experience.

*start to emerge....”*

### ***Measuring asymmetry***

When it is stated that a shock has "asymmetric effect", it is useful to know exactly what is being measured. One approach is simply to measure exchange-rate changes: if some event is followed by the realignment of parities between any two currencies, the effect of the event may be said to have been asymmetric, and the realignment to have been the mechanism of adjustment to it.

There are at least two problems with this approach. First, in the real world, exchange rates change for a variety of reasons (see "Exchange rates" later in this study), making it difficult to isolate the effects of a particular event. Secondly, only asymmetric effects between currency areas can be measured, not those within them. Where a currency union is being created from separate areas, as in the case of EMU, it cannot be presumed that the effect of shocks will be as before, for the reasons outlined above.

The effects of a particular shock can also be measured in terms of differential inflation rates, in the case of separate currency areas; or differential movements of consumer prices, unit labour costs or asset prices both between and within currency areas. Changes in GDP can also be measured both in relation to separate currency areas and to some extent within them, where comparable national or regional statistics are available.

A more precise statistical base is provided by rates of unemployment, which are available even at the very local level of travel-to-work areas. It is probably for this reason that a number of recent studies have defined asymmetry on the basis of differential employment effects. A fixed relationship has often been assumed between changes in GDP and changes in the rate of unemployment.

One of the most recent studies of this kind is that of Belke and Gros (1997). They conclude that

*"... we have not been able to detect a robust and statistically significant link between unemployment and external shocks..... hence we would argue that EMU is unlikely to lead to the serious unemployment problems that have often been predicted."*

Evaluating the effects of a particular shock is not, therefore, a simple matter. An event may have asymmetric consequences for employment, but not for inflation, or *vice versa*. The effects of, say, a reduction of interest rates may be asymmetric for asset prices, but not for wage rates or consumer prices. The statistical data may not be comparable for different areas - even the best efforts of Eurostat were not able to make the harmonised index of inflation inclusive of all consumer prices in time for the EMU evaluation in March 1998.

Finally, the effects of a particular event must be disentangled from the "background noise" of other events - including, as already observed, the actions of public authorities in response to them.

## II. Mechanisms of Adjustment

Given that exchange and interest rate changes are ruled out, the existence of alternative mechanisms for meeting asymmetric shocks - whether cyclical/temporary or structural - is central to OCA theory. A basic distinction can be made between:

- ◆ *market-based mechanisms*, which can be further subdivided into “flexible price” solutions (e.g. reductions in real incomes) and “flexible quantity/factor” solutions (e.g. labour and capital mobility); and
- ◆ *institutional mechanisms*, notably transfers through a central budget (“fiscal federalism”) or specific action by public authorities.

### Market Mechanisms

In the market-based category, three adjustment mechanisms are generally considered important within a single currency area: *wage and price flexibility*; *mobility of labour*; and *mobility of capital*.

#### *Wage and price flexibility*

Regions within a currency area facing an asymmetric shock might restore competitiveness by reducing nominal incomes and prices, so obtaining equivalent effects to the devaluation of a local currency. The main perceived obstacle to this flexible price solution is “price level inertia”, and in particular the “stickiness” of nominal wages. By comparison with both the US and Japan, for example, EU short-run wage flexibility in response to changing employment conditions is low. The Commission (1990) has calculated that, in the event of a 1% price rise, it would take a similar rise in EU unemployment to prevent a rise in wages, but only a tenth of that in the US and Japan.

Even where regional prices and wages have a degree of flexibility, they “as a rule, adjust more slowly than exchange rates” (Ochel 1997), leading to the conclusion that the ability to devalue is the more effective mechanism.

The superior effectiveness of exchange-rate flexibility, however, is itself open to question. The stabilising properties of a floating rate may be minimal

*“for small economies in which imports are so important a component of the cost of living that a reduction in real wages through nominal depreciation is impossible.” (Obstfeld 1985)*

It also “presupposes that workers are subject to the illusion that price increases resulting from devaluation should not trigger demands for higher wages” (Ochel 1997).

Peters (1995) similarly observes that:

*“...the assumption of money illusion on the part of rational economic agents appears unrealistic, especially if devaluations are frequent. It would mean that wage-earners would accept a real wage reduction following devaluation, but refuse a nominal wage reduction with similar effects”.*

It is nevertheless arguable that exchange-rate changes do provide an effective short-term means of adjustment, at least for as long as the “money illusion” lasts. The post-war record of sterling is indeed one of repeated reductions in real incomes through devaluation - though whether this has served to restore long-term competitiveness to the UK economy is very much open to doubt.

Existing research (Vaubel 1976 and 1978; Eichengreen 1991; De Grauwe and Vanhovebeke 1993; von Hagen and Neumann 1994) indicates that real wage and price levels tend to fluctuate less between regions *within* a currency area than *between* currency areas, for which a number of explanations can be advanced.

The simplest is that the existing division into currency areas has “got it right”: adjustments in price and wage levels are unnecessary because the regions experience no asymmetric shocks. In the case of Europe, this conflicts with the evidence (see “Country specific and sector specific shocks” above).

Alternatively, the low responsiveness of prices and wages could reflect high labour mobility. In the case of Europe, this is also contradicted by the evidence (see “Mobility of Labour” below).

The explanation advanced by Obstfeld and Peri (1998) is rather that “large swings in relative regional prices could be politically problematic for integration at the national level”; and they argue that the same consideration is likely to apply within EMU, despite the hopes of the Commission (1990) that “competition and wage discipline will enhance wage and price flexibility”. They add:

*“the low extent of interregional price movement tells us little about the ease with which resources are reallocated in currency unions, or about the need for reallocation”.*

It can also be argued, however, that adjustments in real prices and wages through one mechanism or another are inevitable in the long term. Just as the terms “balance of payments deficit/surplus” disguise the fact that a country’s balance of payments *must by definition* balance, so must payments between regions, localities - or, for that matter between families and individuals - balance. Imbalances can for a time be funded by gifts and loans; but sooner or later

*“solvency constraints rule out using permanently higher fiscal or external deficits to maintain public or private spending (Corden, 1972; Krugman, 1993)”.*

(Obstfeld and Peri 1998)

Moreover, if the necessary reduction in living standards is postponed for too long, the eventual adjustment is likely to be violent: currencies will collapse, firms and individuals will become insolvent and unemployment levels will soar.

### *Mobility of Labour*

One alternative available to workers unable or unwilling to “price themselves into jobs” is moving to where the jobs are. OCA theory, following Mundell, has given especial weight to mobility of labour; and much has been made by critics of EMU of the apparent reluctance of Europeans to move compared to Americans.

Various studies have indeed shown that interregional migration is a significant factor in the United States, contributing more to internal adjustment there than changes in either relative wages or labour-force participation rates (Blanchard and Katz, 1992). By contrast, OECD figures for 1987 showed that French and German workers were only a third as likely to move between *départements* and *Länder* as US citizens between States - let alone between France and Germany themselves!

Similarly, Eichengreen (1993) found that the elasticity of interregional migratory flows with respect to internal wages and employment differentials is smaller in Great Britain and Italy than in the US. Calculations by Pelagidis (1996), based on Eurostat figures, show that since 1992 net migration within the EU has actually been falling, and that migration within the EU as a percentage of total population was in 1995 less than 1% on average. By comparison, some 3% of the US population change their state of residence each year.

A range of explanations exist for this contrast between the economies of the US and of the EU. One methodological conundrum examined by Obstfeld and Peri (1998) is that differences in inter-state and inter-regional migration may reflect, not comparative rigidities in the labour market, but the comparative incidence of asymmetric shocks themselves. Is it the case, perhaps, that people move more frequently in the US because they have to?

After examining the available evidence, Obstfeld and Peri reject the view that “the low degree of observed [European] migration reflects a scarcity of regionally asymmetric shocks”; but they also point out that “an international comparison of their effects still requires some quantitative standardization of the shocks”.

A second explanation is that barriers to migration are higher in the EU than in the US. Clearly, some endemic obstacles to labour mobility exist in Europe which are almost - though not entirely - absent in the US: notably differences of language and culture. Other obstacles are the result of divergent action by public authorities: for example, the non-transferability of pension rights, restrictions on the right to social security, inflexibility in housing markets, nationality restrictions on recruitment in the public sector, non-recognition of qualifications, lack of information about jobs in other Member States, etc. Progress in removing these obstacles - as in implementing the “free movement of persons” principle in general - is proving extremely slow.

The problem with explanations of this kind, however, is that they are only relevant to migration *between* European countries, whereas labour mobility appears equally low *within* those countries. This is despite the findings of De Grauwe and Vanhaverbeke (1993) that variability in employment is also greater within European countries than between them.

In comparing labour mobility in the US and existing EU economies, it is also worth considering



whether the “Lucas critique” might not also be relevant. If the absence of labour mobility in the EU disqualifies it as an OCA, to what extent does the existence of a single currency facilitate labour mobility in the US? Little research appears to have been carried out into the deterrent effects of unfamiliar currencies, and possible exchange risks, on inter-country labour mobility. It will be instructive to see what changes take place once the euro is fully in use.

It is also important to note that a high degree of geographical mobility in the labour market is not cost-less, and can even be undesirable. The cost/benefit balance can be negative both for the regions of net emigration and for those of net immigration, and also for the workers involved.

If a shock is only temporary, a labour market drain can hinder a region's eventual recovery. The emigration of the youngest, most skilled and most enterprising elements of the workforce can in itself condemn a region to permanent decline. At the same time, areas of net labour immigration can face large short-term costs - for example, the need to provide accommodation and the payment of social benefits.

As far as the workers themselves are concerned, costs are inflicted on those who migrate, to the benefit of those who remain employed (Corden 1972).

Finally, to these economic considerations can be added the fact that large-scale labour migrations generally create social tensions which can ultimately make them politically unacceptable.

Possibly the most convincing explanation for low labour mobility in Europe is therefore the simplest: that the overall costs of large-scale migration will in general tend to exceed the benefits. This may not be the case in the United States, where spaces are wider, and roots less deep.

In any case, the limits of labour mobility as a mechanism for adjustment within a system of fixed exchange rates (or currency union) were early on encapsulated by Ishiyama (1975):

*“It is simply doubtful that the movement of working masses can be relied on as a substitute for payments adjustment when it can be assumed that they are reluctant to move even within the same country”.*

### ***Mobility of Capital***

Mobility of capital has both a short-term and a long-term role. In the short term, capital flows can equilibrate payment adjustments between regions - whether within the same currency area or having separate currencies. Such flows can also ease the burden of adjustment to shocks by allowing structural changes to be spread out in time. The mobility of long-term investment capital to finance such structural changes is also considered crucial to an optimum currency area. If workers are unable to move to jobs, then jobs must be able to move to workers.

Any segmentation of financial markets clearly impedes capital mobility. As in the case of labour mobility, such segmentation is for the most part the result of divergent action by public authorities: for example, differing prudential and supervisory rules. Although considerable progress has been made within the existing EU to reduce such segmentation in the fields of

banking, insurance and other financial markets - notably through the “home country control principle” - there is again still some way to go.

In the case of capital mobility, however, the “Lucas critique” has particular force. The existence of separate currencies, with the associated exchange risks, is in itself a major reason for segmentation. It follows that the necessary mobility of capital for a working EMU is likely to come about precisely through the creation of EMU. We are already seeing the emergence of new, integrated securities markets.

Also as in the case of labour mobility, however, it has been argued that capital mobility is not cost-less, and can even exacerbate rather than reduce regional imbalances. Returns to scale in production can lead to a concentration of investment in regions of high activity, rather than its spread to poorer regions with high unemployment. The result, according to Krugman (1993) and others, might be that regional crises could become more severe under EMU than at present (a finding linked to the proposition of Kenen (1969) that free movement within a single currency area will increase regional specialisation, and hence vulnerability to asymmetric shocks - see next section).

The existence of *separate* currency areas might also result in a more even spread of investment between regions as enterprises set up plants in different currency areas to hedge exchange risk (Cushman 1988). Bordes and Driscoll (1990) also observe that:

*“On the debit side, financial market integration may increase credit rationing and reduce the efficiency of the capital allocation mechanism in information-intensive sectors. The reason why credit rationing may worsen is that the opening-up of cross-border trade in financial services may lead to greater concentration in the financial services sector. This... may result in loss of local information about industry and commerce and a cost structure which makes it profitable for financial intermediaries to make increasing use of crude filtering devices to vet loan applications”.*

Until recently, it appeared that these theoretical objections might be confirmed empirically. Pelagidis (1996) pointed to

*“adverse externalities in the EU peripheral member-states (low quality in infrastructure, state administration, production services and labour skills) which ... reduce the investment rate of return and so capital inflows are limited”.*

Taking Eurostat figures for 1993, he found that the “European North” received around three quarters of the total of intra-EU direct investment, while the three poorest economies, Greece, Spain and Portugal, received less than 20%.

The last few years, however, have provided a somewhat different picture. Two “peripheral” economies, Portugal and Ireland, have attracted substantial inward investment and recorded healthy growth rates - the latter to a spectacular extent. Meanwhile it has been in the “core” economy of Germany that fears about investment levels have been strongest.

In sum, it is generally accepted that capital mobility is important to finance short-term payment

disequilibria between regions. Whether it also promotes long-term convergence or divergence between regions is a matter both of controversy and of conflicting evidence (see “Convergence, Divergence and Diversification” below).

### ***Labour market flexibility and the impact of new technologies***

Flexibility of wages and prices and factor mobility are common to the literature of OCA. There is reason to believe, however, that they do not provide a sufficient description of the market mechanisms either available or necessary in a modern economy.

For example, OCA theory from Mundell onwards has been largely concerned with spatial divisions: currency areas covering a particular geographical area or geographical regions within them. Geography has indeed usually been a determining factor in the location of economic activity in the past: river systems, trade routes, mineral deposits, climatic factors, etc. More recently, population geography and sociology have become more significant: the existence or absence of a mass market, a skilled workforce, political stability or a congenial environment. Hence the stress on geographical mobility.

However, it can be argued that the economic significance of physical location is being increasingly called into question - for example, by recent developments in information technology. Firms can out-source accountancy or software development to service providers located thousands of miles away - distance is being abolished on a world scale. In consequence, *geographical mobility* may now be less important as a factor of adjustment than *occupational mobility*. Among the relevant factors which have been identified in the labour market itself are:

- ◆ the effects of the tax and social security systems on incentives to take up employment;
- ◆ the “non-wage costs” of employing labour;
- ◆ the “termination costs” of shedding labour; and
- ◆ the additional regulatory burdens of taking on labour once certain thresholds are reached.

In this latter context, Eltis (1998) observes that

*“France is replete with firms which limit their employment to 9 or 49 in order to escape the additional regulations which apply to firms with more than 10 and more than 50 employees” .*

Possibly more important even than these in the longer term, however, will be the extent to which educational systems provide, not just fixed skills, but the “skill of adaptability”; and whether there is ready access to retraining at all stages of working life. Research by Sneessens (1996) and others has identified skills-mismatch as the most plausible explanation for asymmetric unemployment patterns.

## Institutional Mechanisms

Economists disagree about the extent to which adjustment mechanisms other than those provided by markets are necessary in an optimum currency area. For some an “institutional mechanism for redistributing income across countries and regions” (Pelagides 1996) is essential. For others

*“..the implementation of an EMU transfer mechanism to help regions absorb asymmetric shocks might reduce rather than strengthen the monetary union’s ability to cope with such shocks”.*

(Editor’s introduction to *EMU: Prospects and Challenges for the Euro*, 1998).

As observed earlier under "Temporary and permanent shocks", there is a danger that long-term income transfers will merely postpone necessary structural reforms. There is likewise the danger of "moral hazard": for example, that a regional or local authority will incur large debts in the expectation that it will in the end be "bailed out" with central funds.<sup>6</sup>

In considering such issues, three separate purposes of transfer mechanisms might usefully be distinguished.

- ◆ **Stabilisation.** On the strictest interpretation, any institutional mechanism for meeting asymmetric shocks should confine itself to an "insurance" function. Financial transfers would flow when an event had asymmetric effects on different regions, *whatever the relative starting points in terms of wealth, unemployment, etc.* Such transfers would be essentially rapid, "one-off", and might theoretically flow in any direction between regions within a single currency area. They would essentially supplement the flows of funds taking place through the normal market mechanisms of bank lending, credit, etc.
- ◆ **Redistribution.** The effects of a particular shock, however, may have asymmetric social and political effects, while being statistically symmetric. For example, an external shock may raise unemployment levels by a uniform percentage throughout a currency area; but the practical consequences will be worse for regions where the level of unemployment is already high, and the levels of *per capita* GDP relatively low. Public action to redistribute income, investment or employment can therefore be a legitimate response.
- ◆ **Structural Reform.** Regional asymmetry in response to shocks also raises the fundamental question of why such asymmetry exists; and also whether the underlying causes might not be reduced in the long term by public investment in infrastructure, the raising of skills levels, re-training, etc. This is indeed the logic underlying regional development policies both at European Union and at national level.

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<sup>6</sup> The *locus classicus* of this situation was the New York debt crisis of 1975. Despite being unable to print money, being required to have a balanced budget and being subject to supervision by a superior legislative body (New York State), the City was able to circumvent controls and bring itself to the edge of bankruptcy. The mechanism was borrowing at progressively shorter and shorter term, and at higher and higher rates of interest. The fact that the City was in the end rescued financially has been seen both as a proof of the "moral hazard" argument, and a reason to doubt the practical effectiveness of the "no bail out" provisions contained in Treaty Article 104b.

A further element in evaluating the utility of financial transfers is the nature of the shock in question. If the shock is one that primarily affects demand - a fall in export orders leading to a jump in unemployment, for example - a transfer which boosts local domestic demand may be the correct answer. If the shock is one affecting supply, however - for example, a sudden shortage of some basic commodity - boosting demand can make the situation worse.

Finally, though a short-term cyclical shock may require an immediate transfer of funds for the purposes of stabilisation, there is the continual danger that "stabilisation will degenerate into redistribution"<sup>7</sup>. Transfers for the purpose of structural reform are likewise inappropriate instruments for a policy of short-term stabilisation, if only for reasons of speed.<sup>8</sup>

### *Automatic transfers: "fiscal federalism"*

Transfers for the purpose of stabilisation are most effectively carried out through mechanisms which operate rapidly and automatically. Private capital flows provide one such mechanism (see earlier, "Mobility of Capital"). In addition, where a currency area also has a significant central budget, financed out of general taxation, this can act as a "fiscal pump". Funds are automatically transferred from richer areas, which pay more taxation and receive less in social security and other payments, to poorer areas and those affected by a shock, which pay less in tax and receive more in benefits.

In the United States, for example, Sala-i-Martin and Sachs (1992) estimated that a \$1 fall in income in a particular state brought roughly a 34-cent decline in federal taxes by residents of that state, combined with a 6-cent increase in federal fiscal transfers: i.e. 40% of the fall in income was automatically offset through the Federal Budget. A later study by Bayoumi and Masson (1996) put the figure at 30%.

Earlier studies had identified the major role of such transfers in the "New Deal" policies of President Roosevelt, an important element of which, it has been argued, was psychological: the creation of "confidence in a self-adjusting economy" (Cesarano 1992).

The extent to which these automatic fiscal mechanisms in the US provide real "interstate insurance" has, however, been challenged by Fatàs (1998) and others. Von Hagen (1992) found that the US Federal budget absorbed only 10% of state income changes. Sala-i-Martin/Sachs and Bayoumi/Masson were held to have overestimated the true amount by a factor of three because they did not take account of the "aggregate risk in the federation".

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<sup>7</sup> Professor Dr. J. Von Hagen at the European Parliament's Monetary Subcommittee hearing on asymmetric shocks, 2nd. September 1998.

<sup>8</sup> See evidence of Marc Vanheukelen, from the *cabinet* of Commissioner Dr. Monika Wulf-Mathies, at the European Parliament's Monetary Subcommittee hearing on asymmetric shocks, 2nd. September 1998.

*“The fall in tax revenues will create a deficit that will have to be paid through future taxes by all states, including the depressed state.” (Fatàs 1998).*

Von Hagen and others have also pointed out that the fiscal adjustment mechanism is, in effect, only "an accidental by-product of fiscal federation"<sup>9</sup>, the main purposes of which are the raising and spending of federal revenue, and the conduct of macro-economic fiscal policy.

Whatever the true level of mutual insurance provided by the US federal budget, however, it is clear that the EU Budget cannot currently provide any similar adjustment mechanism. Whereas the US federal budget amounts to some 33% of GDP, that of the EU is below 1.5%.

The main fiscal mechanisms of adjustment within the EU are - and will probably continue to be for the foreseeable future - the national budgets, which range from a level of around 42% of GDP in the UK to around 65% of GDP in Sweden (see Chart 4). These collectively provide a high degree of "insurance" between regions within the same Member State - though not, of course, between Member States.

Comparisons between fiscal mechanisms of adjustment in the United States and those in the euro area may therefore be misleading. Whereas the US has a relatively high Federal budget, but relatively small State budgets, the situation in Europe is the reverse.

### ***Discretionary transfers***

The inability of the EU Budget to provide a “fiscal pump” on the US model does not mean, however, that it can have no role in meeting - or at least preparing to meet - asymmetric shocks. On the contrary: it provides one of the instruments available to the EU for specific transfers to regions.

Such interregional transfers within a currency area can take a number of forms. They can be payments of cash based on some key: for example the equalisation payments to German *Länder*, or the UK’s EU Budget rebate. In some cases, the motive may in part be to limit deliberately labour migration from areas of high to low unemployment. According to Obstfeld and Peri (1998):

*“the large and continuing transfers from western to eastern Germany... represent a notably pathological example of this tendency”.*

Alternatively, the transfers can be linked to specific projects, which can be partly or wholly funded from the centre. They can be grants; or loans, sometimes linked to an interest-rate subsidy.

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<sup>9</sup> Professor Dr. J. Von Hagen at the European Parliament’s Monetary Subcommittee hearing on asymmetric shocks, 2nd. September 1998.

The transfers can also be funded directly out of taxation (i.e. through the central budget); or they can be funded by borrowing. Since the credit of a central authority is likely to be rated more highly than that of a depressed local or regional authority, the interest rates paid by the former are likely to be lower than those which the latter would have to pay. The still-stalled proposal for “Delors bonds”, for example, would enable the EU to take advantage of its high credit rating to raise low-interest funding for infrastructure and other projects.

The scope for such discretionary transfers, both at EU and national level, is examined in more detail later in this study (see Section V).

### III. The shortcomings of OCA theory

In a brief survey of OCA theory and European monetary integration” I. Maes (1992) declares it “rather mysterious” that “the literature on monetary integration has been so dominated by Mundell’s optimum currency area theory”. His own explanations are “the importance of Mundell and Chicago”, and of the “fixed versus flexible exchange rate controversy”, in the field of international economics in the 1960s; and also that “the word ‘optimum’ has always had a special attraction on (*sic*) economists”.

Ronald I. McKinnon of Stanford University, whose own 1963 paper had further developed OCA theory, later (1994) wrote that

*“in the early 1960s, OCA theory was still dominated by the Keynesian idea of macroeconomic activism. National monetary autonomy was viewed positively in its own right, and as part of a package for offsetting ‘shocks’ emanating from the private sector.”*

The result had been to *overestimate* the stabilising effect of floating exchange rates, and to *underestimate* the advantages of fixed rates or currency union. Subsequent theoretical developments (to which one might add subsequent experience) had “demolished the belief that there is any trade-off between inflation and unemployment in the long run”.

*“This decline in confidence in the benefits of national or regional discretion in macroeconomic policies has tilted the balance of argumentation towards larger rather than smaller currency areas”.*

Other critics of early OCA theory have made similar observations. Torsten Peters (1995) lists five “serious concerns” about “the theory and its empirical application”:

- ◆ it underestimates the advantages of sharing a common currency;
- ◆ it “lacks operational indicators for factor mobility, openness and diversification”;
- ◆ the assumption of the “money illusion” is unrealistic (see “Wage and price flexibility” above);
- ◆ it is “static, in that it does not consider possible changes in the behaviour of economic agents consequent upon the formation of a common currency area” (see “The ‘Lucas critique’” above); and
- ◆ it overlooks the fact that “exchange rate developments might be dominated by speculative pressures unrelated to economic fundamentals”.



## Exchange rates

In recent years most economists have not only lost faith in the “macroeconomic activism” theoretically permitted by flexible exchange rates. They have also lost much of their faith in the ability of exchange rate changes to correct the disequilibria caused by asymmetric shocks.

McKinnon (1963) had argued from the start that, for an open economy trading a substantial proportion of GDP externally, exchange rate policy was an inappropriate instrument of adjustment. In particular, smaller open economies could not defend themselves by exchange rate changes.

As Bordes and Driscoll (1990) put it:

*“In an area where countries have relatively large tradeable goods sectors and integration yields something approximating to purchasing power parity, exchange rate changes cannot influence the terms of trade and real wages and, thereby, rectify external deficits.”*

Responses to shocks under fixed or flexible exchange rates have been tested empirically, using various econometric models. Emerson *et al.* (1992) used the Quest model of the EC. This indicated that a 5% shock to French export demand had a substantial effect on French output. Under a fixed parity for the Franc, output fell 1.3% in the first year, and took seven years to recover to baseline. Under a flexible Franc exchange rate, the initial fall in output was only 0.6%; but recovery took longer. Belke and Gros (1997) report a similar study using the IMF’s MultiMod model. The fall in output resulting from a 5% fall in exports was only one half of one percentage point of GDP higher under a fixed than under a flexible exchange rate.

An important related question is whether exchange-rate volatility in itself acts as a deterrent to trade, and hence reduces overall welfare. One important argument used to support EMU has been that “a Single Market needs a Single Currency”, exchange risks being one of the main remaining trade barriers within the EU. To this opponents of EMU have replied that no actual evidence exists that exchange-rate volatility reduces trade; and that exchange risks can be hedged against.

On the first question, the empirical evidence is indeed equivocal (see Box 2). On the second, the actual behaviour of the exchange markets is relevant. Professor Charles Goodhardt (1988) has colourfully described them as “a random walk with a dragging anchor”, and found, in an exploration of “a number of puzzling anomalies”, that “the forward exchange rate contains virtually no information on future spot rates”.

In contrast, recent research has identified further advantages in exchange rate stability. Aizenman (1993) found that

*“...a fixed exchange rate regime is more conducive to domestic investment and FDI (Foreign Direct Investment) relative to a flexible exchange rate; this conclusion applies for both real and monetary shocks”.*

Aizenman also indicated that

*“the cost of exchange rate volatility may be harder to trace than was presumed by the previous literature. Some of these costs are in the form of an excessive diversification of capacity by means of foreign direct investment, and not necessarily by a drop in the volume of international trade”.*

Finally, widespread and persistent doubts exist as to whether flexible exchange rates are compatible with barrier-free markets. These doubts have been most explicitly expressed in connection with the creation of the EU’s Single Market, notably the fear that countries inside the market, but outside the euro area, might engage in “competitive devaluation” (see de Boissieu and Coville 1996). Similar fears exist of “competitive revaluation”. Bordes and Driscoll (1990), for example, describe how

*“... given a European-wide supply shock, individual countries could try to mitigate the inflationary effects in their own countries by raising interest rates and, thereby, the exchange rate (the foreign currency price of a unit of domestic currency). ..The use of the exchange rate to squeeze out inflation may lead to retaliation from trading partners and to a deflationary spiral caused by competitive exchange rate appreciations”.*

All exchange-rate changes, observe Belke and Gross (1997) shift demand from one country to another, and thus always have some “beggar-thy-neighbour” effect.

### **Alternative exchange rate regimes: recent lessons**

The world of the 1960s was very far from being one of free capital movement. Exchange controls were the rule, providing governments with a supplementary defence against external shocks and permitting them to maintain under- or over-valued exchange rates for considerable periods.

This is no longer the case. As Viñals (1996) has observed,

*“.. recent experience suggests that the usefulness of the nominal exchange rate as a tool for macroeconomic adjustment within the European Union is very questionable in a world of free capital movements, where foreign exchange markets are often subject to self-fulfilling speculative crises which take the exchange rate away for prolonged periods from where fundamentals suggest it should be.”*

The context of Mundell’s 1961 paper was the debate as to whether exchange rates should be fixed or floating. However, not only the Bretton Woods system then applying, but subsequent arrangements like the European Monetary System have been something in between: exchange rates have been “pegged”, but alterable.

As the one-time economic advisor to UK PM Mrs. Thatcher, Professor Alan Walters, memorably remarked of the EMS Exchange Rate Mechanism, such systems can turn out to be “half-baked”. When combined with a guarantee of Central Bank intervention in support of a particular rate, they can provide currency speculators with a “one way bet”.

## Box 2: Does exchange-rate volatility reduce trade?

Numerous papers in the past have studied the effects on international trade of alternative exchange-rate regimes. These have attempted, in particular, to estimate any relationship between the volume of trade and fluctuations in exchange rates over time: i.e. their volatility.

Certain methodological problems exist. A recent study by the Commission (1995) observes that following the collapse of the Bretton Woods system in the early 1970s, exchange rate volatility (defined as day-to-day or month-to-month fluctuations) had increased significantly. Attempts to determine the effect on trade, however, had been hampered by "measurement problems" as well as changes in financial markets: i.e. the development of hedging instruments. The Commission's own attempts to analyze the situation within the EU over recent years had been "plagued by a major statistical problem": i.e. the break in the trade series as of 1 January 1993.

The Commission makes a distinction between *volatility*, defined as frequent and short-term fluctuations; and *misalignment*, defined as fluctuations which are less frequent but more persistent. Some studies (e.g. Hooper and Kohlagen, 1978) have focused on *nominal* exchange rates; others (e.g. Cushman, 1983 ) on *real* exchange rates.

Early studies in most cases used trade data aggregated across product groups. More recent research has used data disaggregated both by industry and country. Detailed analysis has revealed the possible effects of exporters' currency-of-invoicing decisions (Baron, 1973), with volatility variously effecting exchange risks, and hence prices and volumes. An exporter may set prices in the currency of the buyer, reducing product demand uncertainty; or in his own currency, reducing profit margin uncertainty.

\*

Theoretically, increased exchange rate volatility should adversely affect trade volumes by increasing risk, and the costs of hedging against it. International transactions generally involve a time lag before exporters receive payment, and the resulting exchange risk can only be avoided through the forward markets. Volatility feeds through as increased uncertainty about the relationship between production costs and sales returns, when both variables are expressed in the same currency. This can also produce a tendency to favour the production of non-tradable goods.

Empirical studies, however, have reached varying conclusions. Hooper and Kohlagen found nominal exchange-rate volatility affecting prices rather than trade volumes. Cushman, using the volatility of real rates, found the opposite. Akhar and Hilton (1984), assessing trade between the US and Germany, found that volatility affected trade volumes both directly, and through price changes. Kenen (1986) also found volatility negatively affecting trade volumes.

However, studies by Gotur (1985), Bailey (1986) and the IMF (1984) failed to identify any such effect. The latter study focused in particular on the fact that transactions can be financed in many

different ways, giving rise to varying uncertainties. Cross-country investment also complicated the picture. The study concluded that volatility of exchange rates was in large measure determined by changes in the demand and supply function for foreign exchange, itself the result of fluctuating trade patterns. Exchange-rate volatility therefore had to be considered an effect, not a cause.

A study by Paul de Grauwe (1988) even revealed that an increase in exchange risk could actually induce an exporter to increase his activities, depending on his degree of risk aversion. However, another de Grauwe study (1997) into the effects of the European Monetary System indicated that trade in Europe grew more rapidly when exchange-rate variability was low.

\*

How are these varying empirical results to be reconciled with the theoretical analysis? Gagnon (1989) has given one explanation: the effects of exchange-rate volatility are small in relation to other macro-economic determinants. Following the collapse of the Bretton Woods system there was an increase in exchange-rate volatility; but also a deceleration of trade integration processes and a general decline in the growth rate of output. The volatility effect accounted directly for only 1% - 5% of the impact on trade volumes.

The Commission also detected strong effects on other economic variables: for example, business and consumer confidence and short-term interest rates. There appeared to be "a rather strong and diverging impact on growth in appreciating versus depreciating countries".

Economists seem agreed, however, that *misalignment* has significant negative effects on trade volumes. Evidence from two sub-periods (1960-69 and 1973-84) showed that the long-run variability of real exchange rates contributed to the slowdown of trade growth - about 20% of the slowdown in the case of industrialized countries (Sapir and Sekkat, 1995).

\*

The fact that a statistically significant relationship cannot be established between two economic variables does not, of course, mean that no such relationship exists. The problem may be methodological: the lack of adequate data or the difficulty of isolating the variables.

Moreover, even if favourable effects on trade cannot be identified, exchange rate stability can have other positive effects, notably on long-term investment planning and on the conduct of macro-economic policy in general. This was emphasized in evidence to the European Parliament's Sub-committee on Monetary Affairs at a hearing on the subject (European Parliament 1994).

Theoretically, unlimited intervention will beat the speculators. In practice, large and prolonged interventions can themselves have a destabilising effect, notably by expanding the money-supply of the countries whose currencies are being used for intervention. In the somewhat acrimonious inquest into the events of “Black Wednesday” in September 1992 it became clear that the *Bundesbank* had not been willing to risk internal purchasing-power of the D-Mark in order to support apparently over-valued lira and Pound Sterling parities.<sup>10</sup>

It is, of course, traditional to blame “speculators” for currency crises, just as it is traditional for those who operate in the foreign exchange markets to claim, with Milton Friedman (1953), that “in general, speculation is stabilising rather than the reverse”. The managers of pension funds, or the foreign exchange department of international companies, can with some justice point out that they are merely doing their job of protecting their clients and shareholders from risk. Disentangling the activities of “speculators” from those of normal traders is indeed virtually impossible: the total world-wide turnover in the foreign exchange markets is well over \$1000 billion *a day*.

The mechanisms leading to currency crises have now been further illustrated by recent events in South-East Asia.

*“When governments implement pegged exchange rates over a reasonably lengthy period, some investors will start trusting them, while others will not. Believers are likely to look at interest rates abroad and compare them favourably with often much higher interest rates at home, and decide to borrow in foreign currency and lend at home.”*<sup>11</sup>

If the peg then fails, the results are devastating. Domestic assets no longer match the borrowers’ foreign exchange liabilities. The currency falls, exacerbating speculation against it, and spreading insolvency throughout the private sector.

The conclusion being drawn from the Asia crisis is, therefore, that the choice of exchange rate regime in the modern world is limited.

*Freely floating rates* are still feasible. So, at the other end of the spectrum, are *currency boards*, under which a country’s money supply is backed by foreign exchange, but an autonomous monetary policy is made impossible.

*“Adjustable peg” exchange-rate systems*, however, are only feasible under one of two conditions: there must be *controls on the movement of capital*; or there must be *an international lender of last resort*.

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<sup>10</sup> For an analysis of these events, see the Report for 1992 of the Committee of Central Bank Governors (*April 1993*), the pre-cursor of the European Monetary Institute and of the European Central Bank. Also the report from the European Parliament’s Committee on Economic and Monetary Affairs and Industrial Policy (*PE 205.217, 1993*).

<sup>11</sup> Wolf, M. in the *Financial Times* of August 19<sup>th</sup> 1998.



## External vulnerability

One further major consideration not fully taken into account by the traditional OCA theory is the advantage to be gained from being part of a relatively autarkic economy. As Tavlas (1997) has put it:

*“A large, relatively closed and diversified economy is able to absorb external shocks more easily than smaller, more open, and less diversified economies”.*

One example was provided by the varying effects of the 1970s oil price shock.

*“The oil price increase of 1978-79 is estimated to have lowered national income (in per cent of GDP) by 1.0 per cent in the United States, 2.1 per cent in Germany and 4.5% in Japan. The oil price decrease of 1985-86 is estimated to have increased national income (in per cent of GDP) by 0.3 per cent in the United States, 2.4 per cent in Germany and 2.5 per cent in Japan.”*

Tavlas concludes that

*“If all fifteen EU countries were eventually to form a single currency area, then over 60 per cent of their current foreign trade would be reclassified as domestic so that the EMU would be a much more closed economy than those of any of its individual members”*

Assuming that all fifteen EU Member States eventually *do* join EMU, the proportion of GDP traded will fall from roughly 30% of GDP to around 10%. At the same time, the EU economy will be highly diversified, and therefore less vulnerable to shocks in particular sectors. It will be the world's largest single economy, accounting for about 30% of world output.

## Fixed exchange rates or a single currency?

Maes (1992) has further observed that Mundell's 1961 paper on OCA did not always make an absolutely clear distinction between a single currency and fixed exchange rates. His definition of an optimum currency area, for example, was “a domain within which exchange rates are fixed”. The explanation was probably his concern primarily with “traditional macroeconomic objectives: full employment, stable prices and external balance”, as well as the 1960s' floating/fixed exchange-rate controversy.

Maes, however, identifies a number of advantages which are obtained from a single currency, but not from fixed exchange rates.

- ◆ *“transaction costs: a single currency eliminates costs from currency conversion and hedging. These savings...could amount to 0.3% to 0.4% of the GDP of the European Community (cf Commission of the European Community (1990)) ....;*
- ◆ *transparency of prices: as goods and services would be priced in the same currency, this would further strengthen the integration of goods and factor markets;*

- ◆ **credibility**: *a single currency gives from the outset maximum credibility to a monetary union as it makes exit from the union very difficult, something of crucial importance for long term investment decisions.....;*
- ◆ **external benefits**: *only with a single currency can a monetary union lead to a recasting of the role of currencies on the international scene”.*

Maes also makes the crucial observation that “monetary integration is part of a more general integration process”, a point also emphasised by Pelagides (1996):

*“Europe’s efforts to establish a single currency can not be understood by reference to economics alone”.*

### **Convergence, Divergence and Diversification.**

P.B. Kenen’s paper of 1969 stressed the importance of product diversification as a criterion for delineating an optimum currency area. He believed that

*“diversity in a nation’s product mix...may be more relevant than labour mobility”.*

The more a particular region specialised, the more vulnerable it became to asymmetric shocks. Hence an area within which there was a high degree of regional specialisation was unsuitable to be a single currency area. Contrariwise, an area with a wide diversity of production - and which might consequently also enjoy a high degree of autarky - *was* so suitable.

On the face of it there is no conflict with Mundell’s and McKinnon’s emphasis on factor mobility and open trading. But this is under the assumption that free movement - particularly of goods and capital - will not result in increased regional specialisation. If free movement, however, *does* increase specialisation there is a paradox: the factor mobility which is one condition for an optimum currency area will erode one of the other conditions, diversity. In the context of the EU, the Single Market may need a Single Currency; but could destroy the conditions that make EMU possible.

Pelagidis (1996) appears convinced that this is indeed what will occur.

*“Although the official view of Europe ... insists on the ability of the EMU to converge structures of production around Europe, economic theory leaves no doubt that the deeper the market integration, the higher the product specialisation”.*

He cites as evidence the varying proportions of total employment provided by agriculture, industry and services in the different Member States; and also the sharp differences in shocks affecting the countries of so-called “core” Europe and the “peripheral States” observed by Bayoumi and Eichengreen (1992) - see next section.

In examining the possible effects of EMU on labour markets, Peters (1995) also goes into this issue. He observes, however, that



*“Economic geography is usually divided into two schools of thought...The ‘Convergence School’ predicts a gradual reduction of spatial disparities, while the ‘Divergence School’ expects them to grow”.*

The prediction of *convergence* is based on the normal mechanisms of classical economics. If wage rates or returns on investment differ between two regions, they will eventually be equalised by trade and/or by labour migration and capital movements.

The prediction of *divergence* modifies the classical model by introducing factors such as economies of scale. For example, positive external economies might occur as a result of agglomeration: the concentration of specialised suppliers, a highly skilled labour force, know-how spill-overs from neighbouring enterprises proximity to customers. Moreover

*“agglomerations or growth poles will tend to become self-reinforcing and thus lead to greater regional disparities” (Peters, 1995).*

Empirical evidence indicates that this mechanism is especially significant in the case of high-tech industries - for example, “silicon valley” in California and its mini-equivalents like Cambridge in the UK - which would tend to support the argument that regional specialisation will increase. More generally, the emergence of a European “golden triangle” between the Po valley and London was at one time cited as a confirmation of the divergence thesis.

However, both theory and practical experience suggest that agglomeration also brings with it negative externalities: congestion, skill shortages, rising labour costs, high transportation costs, pollution and a generally deteriorating environment. These will at least slow down the growth of agglomerations. Less developed regions, by contrast, also have positive attractions - for high-tech as well as for other industries: low land prices, green-field sites, competitive labour costs and a pleasant working and living environment. An obvious modern example is the once purely rural West coast of Ireland, where the recent establishment of a computer industry argues against any theory of permanent regional specialisation.

Whether convergent or divergent factors predominate would indeed appear to be a matter of fine balance (see Box 3: “Convergence or Divergence? Krugman’s analysis”). Inclusion of a region in a single market may have a negative, positive or neutral effect. Peters points to a “threshold effect”, which

*“assumes that a minimum level ... of economic activity has to exist to enable a lagging region to catch up economically. If economic activity never reaches or falls under this threshold, e.g. after the closure of a huge steel plant, the region may not be able to recover...”*

On the other hand, he observes that the arrival of the Single Market does not so far appear to have had the effect predicted by theory:

*“in terms of GDP per capita, most lagging EU countries have been able to catch up to a substantial degree”.*

Finally, the analysis of regional unemployment by Obstfeld and Peri (1998) indicates that regions of high unemployment *within* EU Member States have tended to remain the same over time.

Peters concludes that

*“... international trade theory and economic geography provide arguments to explain both convergence and divergence between regions. Empirical observations, too, give ambiguous results...”*

The concentration or dispersal of economic activity in general between regions is not, of course, identical to the degree of regional specialisation. The principles of division of labour and comparative advantage, indeed, could be taken to imply that specialisation will provide the best way for “lagging” regions to catch up.

The example of the high-tech industries, however, indicates that the same ambiguity applying to concentration also applies to specialisation, and that particular industries and firms are obliged to make the same choices at the margin as industry in general.

In the real world, moreover, such choices are rarely taken on grounds of pure economic theory. Institutional factors - and in particular the fiscal environment - can often prove decisive. One indication of this is the recent initiative by the Commission to limit “unfair tax competition” within the Single Market, and the consequent discussion about the role of tax regimes in industrial location decisions.

The statistics for employment by sector, when taken over time, also show the opposite of what is asserted by Pelagidis (1996). Market integration - which was taking place over the whole period of the Single Market programme, from its initial publication in 1985 until its practical completion in the mid-1990s - appears to be *reducing*, rather than increasing specialisation.

*Table 1*, for example, gives the figures for employment in agriculture over the decade 1986-1996. It shows not only a steady fall in the percentage of the labour force employed in EU agriculture, but also steady convergence between the percentages in different Member States, as measured by the falling standard deviation (STD).

*Table 2* gives equivalent figures for employment in industry. In this case there has been a marked similarity of structure throughout the EU, as measured by the low standard deviation; but also little change in deviation over the period.

*Table 3* covers employment in the services sector. Here the pattern is the same as in the case of agriculture (though employment has been rising rather than falling): that is, a steady convergence in percentages in different Member States.

Taken together, these figures all show the same pattern of employment movements: a shift from agriculture to industry, accompanied by a shift from industry to services. Allowing for the large and relatively sudden switch by Luxembourg from industry to services in the early 1990s, the picture is once again of convergence rather than divergence, with the switch to services if anything more marked in those countries - like Germany, Greece, Spain and Portugal - where the

sector was relatively of less importance at the beginning of the period.

This analysis, of course, is only based on the three broad categories of agriculture, industry and services used by Pelagidis. A more detailed break-down by sector might reveal certain counter-trends towards specialisation. The broad finding is nevertheless useful in indicating that the Single Market is so far creating no overwhelming obstacle to EMU on the lines predicted by Kenen.

**Table 1: Employment in agriculture as a % of total (EU 12)**

	B	DK	D	Gr	E	F	Irl	I	L	NL	P	UK	STD
1986	3.2	6.0	5.0	28.5	16.2	7.6	16.1	10.5	3.8	5.1	21.5	2.2	<b>8.3</b>
1991	2.6	5.4	3.2	20.7	10.4	5.6	13.7	8.3	3.2	4.5	17.3	2.2	<b>6.2</b>
1996	2.7	3.9	2.9	20.3	8.6	4.8	11.2	6.7	2.6	3.8	12.2	2.0	<b>5.5</b>

**Table 2: Employment in industry as a % of total (EU 12)**

	B	DK	D	Gr	E	F	Irl	I	L	NL	P	UK	STD
1986	32.0	28.7	40.3	26.2	31.8	31.3	29.7	33.2	30.0	26.8	33.9	34.0	<b>3.8</b>
1991	27.9	26.0	38.6	27.2	32.3	28.8	28.6	31.5	30.1	25.2	33.2	27.9	<b>3.7</b>
1996	27.6	26.4	35.3	22.9	29.4	26.5	27.3	32.2	22.9	23.2	31.3	27.4	<b>3.8</b>

**Table 3: Employment in services as a % of total (EU 12)**

	B	DK	D	Gr	E	F	Irl	I	L	NL	P	UK	STD
1986	64.8	65.3	54.7	45.3	52.0	61.1	54.2	56.4	66.2	68.1	44.5	63.8	<b>8.1</b>
1991	69.5	68.6	58.2	52.2	57.3	65.6	57.3	60.1	66.7	70.2	49.4	69.9	<b>7.3</b>
1996	69.6	69.7	61.8	56.8	62.0	68.6	61.4	61.1	74.4	73.1	56.5	70.6	<b>6.2</b>

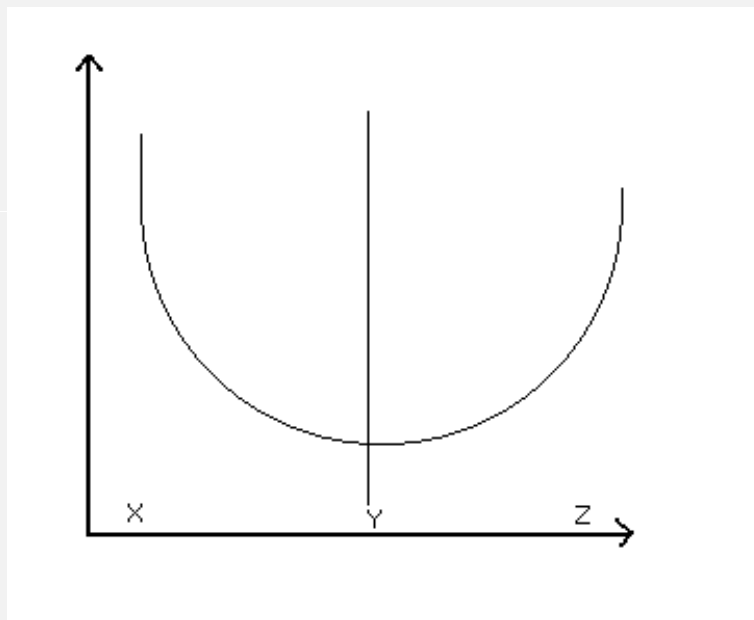
### Box 3: Convergence or Divergence? Krugman's analysis

P. Krugman (1991) examined theoretically what happens if two initially isolated economies integrate, focusing on transaction and transport costs.

The first of the two economies - a large "central" country, C - was characterized by high production costs in a certain sector, but low distribution costs, since most markets were domestic. The second economy - a small "peripheral" country, P - was characterized by low production costs in the same sector; but would incur transport and transaction costs in supplying customers in C.

Following integration through the reduction of tariffs and other barriers to trade between them, it was assumed that the totality of production in the sector in question would tend to locate in the country of lowest total costs. The relative locational advantages would be determined by changes in the relation of trade costs (tariffs, transport and transaction costs) to production costs. The situation of country P is illustrated in Figure 3. If the trade costs remained high (Z), C and P would each continue to produce for their own markets. If the trade costs fell significantly (X), production for markets in C would move to country P. But if the costs only fell modestly, all production would move to C.

**Figure 3: Locational advantage of country P**



The result was a U-shaped curve: country P would lose from economic integration unless the ratio of trade costs remained the same, or fell substantially.

## Optimality and Viability

Although Maes' remark about the fascination for economists of the word "optimum" may have been ironic, it makes an important point. As Cesarano (1985 and 1992) observes:

*"a currency area, though not optimal, may yet be viable.. ."*

Mundell's 1961 paper, indeed, was not so much concerned with whether particular currency areas (in this case the United States and Canada) were *optimal* so much as whether an alternative arrangement might have been preferable. Accepting Mundell's premise that the ideal currency area was the world, Obstfeld (1985) believed that OCA theory might best be thought of as a "second-best" policy regime.

*"In a world without macroeconomic stabilization problems or adjustment costs, the informational convenience of fixed exchange rates... would be a decisive argument against floating".*

The experiences of the United States economy in the early 1980s had also illustrated "an important drawback in applying the optimal currency area idea to actual currency areas". The rise in the international value of the Dollar had "distributed demand unevenly among sectors of the US economy, hurting agriculture and some manufacturing industries". The shocks had fallen differentially on sectors between which productive factors were, at least temporarily, immobile. Did this mean that the US did not qualify as an optimum currency area?

Other studies have come to similarly uncertain conclusions in relation to EMU. Although some (for example, Currie, Levine and Pearlman 1996) have found that the euro area is likely to perform badly in relation to asymmetric shocks compared to alternative non-participating monetary regimes, others (for example, Melitz 1995) have concluded that the whole question of asymmetric shocks has played an "exaggerated prominence".

In a comparative study of supply shocks in Germany and in Europe, Funke (1996) notes "the problem of identifying the actual shocks that were experienced", and observes in relation to Melitz's paper that "the hypothesis of symmetric versus asymmetric shocks is not very operational and cannot easily be tested" (Funke, footnote no.2.)

Taking up Cesarano's terminology, therefore, the central question which concerns this study is not so much whether the EU is an *optimum* currency area, as whether it is a *viable* one.

#### IV. Is EMU viable?

The years leading up to the Maastricht Treaty and detailed programme for EMU saw the publication of many studies with practically identical titles: “Is Europe an optimum currency area?” (Bordes and Driscoll (1990), Eichengreen (1991), De Grauwe and Vanhaverbeke (1993), Caporale (1993)). These broadly assessed the available data in the light of OCA theory.

The debate was further advanced by the results of research by Bayoumi and Eichengreen (1992 and 1994), which found that a “Northern European bloc (Austria, Belgium, Denmark, France, Germany, the Netherlands, and possibly Switzerland)” in general faced similar (i.e. symmetric) shocks. This led them to support the creation a “two-speed” EMU. Von Hagen and Neumann (1992) similarly found differences in real exchange rates across the European Community, which they attributed to asymmetries in real shocks rather than imperfect monetary coordination, and took to favour a “two-speed” EMU. As late as 1996, Funke rashly predicted that

*“one has to assume that, when EMU comes into being, it will not be able to embrace all member states. The resulting multi-speed Europe may be controversial for political reasons, but there is no alternative if the realization of monetary union is not to be postponed indefinitely”.*

Counter-findings by - among others - Viñals (1996), however, found “no clear-cut distinction between ‘core’ and ‘periphery’ countries” (see “The ‘two-speed’ controversy” below).

The various methodologies used to determine the symmetry or asymmetry of shocks in Europe have illustrated the problems of reaching definitive conclusions. Studies based on the variability of real exchange rates, of consumer price indices, of unit labour costs and of real share prices gave varying results (see Caporale (1990)). Cohen and Wyplosz (1989), linked asymmetries to transitory shocks and symmetries to permanent shocks (finding that symmetry predominated in the case of France/Germany). Weber (1990) found real wage and unemployment rates dominated by asymmetric shocks, but symmetric shocks mainly determining inflation. Caporale’s own analysis used GDP fluctuations. The results showed that “asymmetric shocks accounted for a sizeable percentage of GDP fluctuations in the EC”, although the correlations appeared somewhat random.<sup>12</sup>

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<sup>12</sup> “The size of the correlation coefficients varies across countries, with Germany exhibiting some of the biggest coefficients. In most cases the correlation is positive, but the shocks to Belgium appear to be negatively correlated to fluctuations in the Southern countries, and, surprisingly, to shocks to the German economy. It is also to be noted that the shocks to Italy move in the opposite direction of these to France, and are not significantly correlated to shocks to the German or UK economy. Conversely, the shocks affecting the UK and French economies are highly correlated to the German ones. Disturbances in the Netherlands do not appear to mirror closely the shocks to the German economy, perhaps reflecting the role of energy in Dutch output. On the whole, fluctuations in the remaining countries, especially the Mediterranean ones, are less closely related to those in the three ‘core’ countries, although the correlation between Germany and Denmark, France and Spain, and the UK and Belgium are quite high.”

Unlike Bayoumi and Eichengreen, Caporale found “no conclusive evidence of a ‘core’ and a ‘periphery’”. The findings did “not imply that EMU is not feasible”, though operating it might be “rather difficult”.

Bayoumi and Prasad (1995) disaggregated the shocks to output growth in the EU and the US into EU/US-wide, national/state-wide and sectoral components. They found that the relative importance of the different components was roughly the same in both areas. Similarly, Viñals and Jimeno (1995) disaggregated EU unemployment rates into European, national and regional components, finding that

*“just 30% of the variation in national unemployment rates and merely 20% of the variation in regional unemployment rates are explained over the shorter term (2 years) by the national component”.*

### **Business cycles and transmission mechanisms**

Christodoulakis, Dimelis and Kollintzas (1994) examined the critical question of economic cycles: “whether the economies involved in the integration process appear to have similar and synchronous response to shocks, or whether their cycles differ with regards to their intensity, duration and timing”. They found that the different economies of the EU in most respects responded similarly, “even if the shocks impinging upon their economies are different”.

*“We find that the behaviour of GDP, consumption, investment, prices and, to a smaller degree, net exports are quite similar, while the behaviour of government purchases, money and terms of trade vary substantially across countries. These results can be interpreted as implying that only variables under the direct control of governments behave differently.”*

They therefore reached the conclusion that

*“the process of European integration under a set of uniform institutions and policies should not be a problem as far as the business cycle is concerned.”*

A further question, examined by Dornbusch, Favero and Giavazzi (1998), is the extent to which asymmetry might arise as a result of differences in the way monetary policy decisions are transmitted to the markets. They draw attention to a number of previous surveys, based on different models: for example, a project organised by the Bank for International Settlements (BIS) in 1995, the object of which was to detect cross-country differences in the effectiveness of monetary policy, and to ask whether they could be related to cross-country differences in financial structure. The results of these were contradictory.

Their own research, however, indicated that differences in the effects of similar monetary policies between countries did exist. The differences were both in time-lags, and in the effect on output.

*“The empirical evidence ... suggested the following ordering in the impact of an EU-wide change in interest rates on real activity. The impact is largest in Italy and Sweden, smaller in France and the UK, and smallest in Germany and Spain”.*

They also found that these asymmetries could be attributed to differences in financial structure:

*“effects of monetary tightening in countries such as France and Germany, characterised by a bank-centred financial system, are systematically weaker than in the UK, where the capital markets play a central role in the financing of industry”.*

Differences in the role of banks, and in the degree of competition between them, also led to “significant differences in the magnitude, and especially in the timing, of the response of bank lending rates to a change in the interest rate controlled by the central bank”. The adjustment was “instantaneous and complete” in the UK.

Their own findings had confirmed research by the IMF (1996) which estimated that “a 100 basis point increase in the policy rate raises bank lending rates by 45 basis points in Germany, 51 in France and 73 in Italy”.

Differences in the structure of debt were also significant.

*“In northern countries, especially in the UK and Sweden, consumer borrowing is widespread, and households have substantial financial liabilities. In southern Europe, consumer credit is underdeveloped. .. In the high-debt states, Belgium, the Netherlands and Italy, ... the need to finance large budget deficits has impeded growth of the consumer-debt industry.”*

In addition,

*“ ... the share of bank lending at short, or adjustable, rates is very different across Europe, partly reflecting the inflation history of the various countries”.*

The implications of these findings were that “a monetary tightening by the ECB will produce an uneven distribution of output losses across the monetary union”. In particular, Germany would be “partially sheltered from the effects of monetary tightening”.

Dornbusch, Favero and Giavazzi, however, then ask a critical question: will these asymmetries persist “once monetary union takes off”? Their own predictions is that

*“in addition to pervasive deregulation already under way and innovation, the introduction of the euro will revolutionize the financial structure of Europe”.*

Banks which had hitherto relied on “captive customers” would

*“face more competition than they have ever imagined ... Mergers on a vast scale will be inevitable”.*

Much would depend upon the speed with which EU-wide liquid markets in, for example, corporate bonds, developed. Certain policy and tax changes would also help to shift mortgage and other debt from variable interest rates to fixed rates, and to encourage companies to shift from debt to equity financing.



## Interest rates, asset prices and inflation

One immediate effect of EMU is the substitution of a single structure of short-term interest rates, set by the European System of Central Banks (ESCB), for the former rates set separately by the national central banks. Though prior convergence has taken place, it has been from national rates which were some distance apart at the beginning of 1998. This has been taken as an indication that euro rates, at least as EMU starts, must be sub-optimal for certain parts of the area.

Either rates will be higher than would otherwise be the case in countries like Germany and France, giving the whole euro-zone a deflationary bias; or they will be too low for countries like Spain and Ireland, leading to overheating and a "boom-bust" cycle. This argument is used, in particular, by opponents of early UK adherence to the euro area (e.g. Eltis 1998).

According to de Grauwe (1998), two factors make the second scenario a strong possibility. The first is the fact that "the amount of funds moving within the euro area will make a quantum jump"; the second that, against this background, "the regulatory and institutional environment will not be adapted. Prudential control will still be done at the national level". On this latter point, however, opinions differ as to whether centralised supervision would be an improvement (see, for example, Lannoo 1998).

Others, however, believe that such fears of a "boom-bust" cycle have been exaggerated. Barbieri (1998) draws attention to simulations carried out by the Bank of Italy, which show that the risks of overheating as a result of interest-rate cuts are only moderate, and are outweighed by compensating benefits. Under EMU

*"for each 100 basis-point decline in interest rates (for two years), real GDP rises by 0.31 per cent in the second year and 0.24 per cent in the third. Private consumption rises only modestly (0.12 per cent by the third year), while investment responds strongly (1.8 per cent). Inflation rises by only 0.09 per cent."*

This small response of private consumption - as compared to investment - to lower interest rates was partly explained by the large holdings of financial assets by Italian households in the form of short-term instruments and floating-rate notes. Similar consideration applied to Spain.

*"As a result, lower rates will cut income from such deposits, outweighing the positive 'wealth' effects caused by the drop in interest rates."*

Barbieri also observes that a number of other factors will tend to dampen down any overheating in the "peripheral" countries: the intensification of competition, which will put pressure on margins; the continuation of a restrictive fiscal stance; and official policies to limit wage growth.

This analysis, however, will not entirely allay the fears of those like de Grauwe who fear an explosion of asset prices, facilitated by increased capital mobility and the elimination of exchange risk within EMU. In Ireland, steady falls in interest rates, and the prospect of their continuation, have indeed been accompanied by a rapid rise in property prices. A similar fall in UK short-term interest rates from around 7.5% to around 4% would almost certainly create a similar property-price boom, leading to a possible repeat of economic events in the late 1980s

and early 1990s. Where a high proportion of domestic assets is in the form of housing, as is the case in the UK, the wealth effect of interest rate cuts will rapidly feed through into consumption.

The UK problem - like the Irish - can nevertheless be viewed essentially as one of transition. As already observed, both high UK interest rates and the preference for floating-rate mortgages reflect inflationary expectations, based on past experience. Membership of EMU would lock the UK into the general low inflationary outlook for the euro area as a whole, with asset prices stabilising once the effect of initial lower interest rates had worked their way through.

### **The “two-speed” controversy and real convergence**

Whether or not there should be a “two-speed” EMU, based on a “D-Mark bloc” core and a periphery, is now no longer an issue. The decisions of May 1998 have, it is true, produced an EMU of only eleven Member States; but, based on economic analysis alone, two of the “outs” (Denmark and Sweden) would certainly have qualified as “core” countries. The UK’s position is - as usual - equivocal.

The debate which took place following the Bayoumi/Eichengreen studies is nevertheless instructive for wider reasons. In questioning their “two-speed” conclusion, Viñals noted that some of the observed country-specific (i.e. asymmetric) shocks resulted from “imperfectly co-ordinated national monetary policies, currency substitution and exchange rate movements”. However, the so-called “core” countries had over the years maintained close monetary and exchange rate ties. It was therefore unsurprising that historical studies had found smaller asymmetries.

With EMU, however, the imperfect coordination of monetary and exchange rate policy would “disappear instantaneously”. The asymmetries affecting participating non-core countries should then fall into line with those of the former so-called core.

This analysis of course fits well into a familiar framework: the dispute in the 1960s and 1970s between the “economists” and the “monetarists”. Which should come first: the chicken of economic convergence or the egg of monetary union?<sup>13</sup>

The Maastricht Treaty was effectively a balance between the two, conceding prior nominal convergence to the economists and a centralised monetary policy, in the hands of an independent central bank, to the monetarists. But it left much of the battlefield of *real* convergence open for continuing debate, despite the clear formulation of the objective as “*Economic and Monetary Union*”. The fact that “EMU” is quite frequently mis-stated to stand for “*European Monetary Union*” is significant.

The extent to which asymmetry will automatically decline (or not) within the euro area can therefore be seen as another formulation of old questions: will monetary union lead inevitably

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<sup>13</sup> See the Werner Report of 1970: *Report to the Council and Commission on the realization by stages of economic and monetary union in the Community*; and also the Delors Report of 1989: *Report on economic and monetary union in the European Community*.

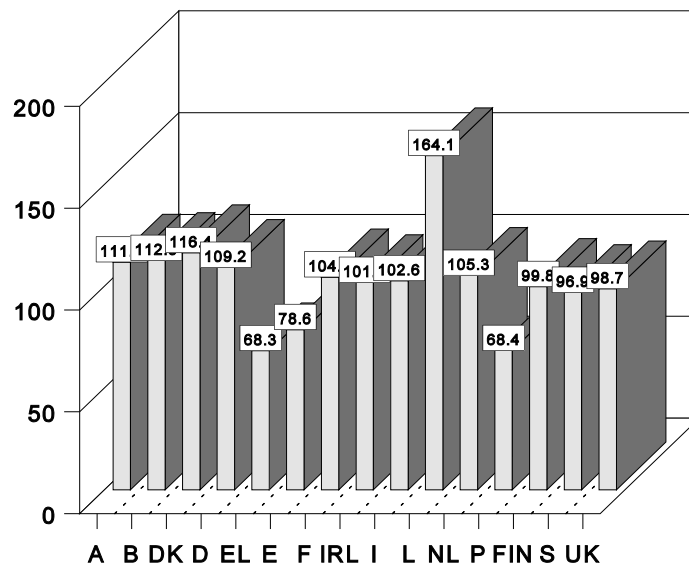
to economic union? Or is further positive action required?

### National and regional disparities

Four Member States - Spain, Portugal, Greece and Ireland - were in 1993 identified as having a level of *per capita* GDP below 90% of the EU average, (thus qualifying for Cohesion funding).

Even before the establishment of the Fund, however, these economies were already improving their relative position. Between 1983 and 1993 their *per capita* GDP rose from two-thirds to three-quarters of the EU average. Since then the trend has continued, though unevenly. Ireland has dramatically improved its position as a result of a very high economic growth rate, reaching 90% of the EU average by 1995, and nearly the average itself by 1998. Greece and Portugal, by contrast, have only now reached only the half-way figure in terms of ECU, and only two-thirds in terms of purchasing power (see Chart 1).

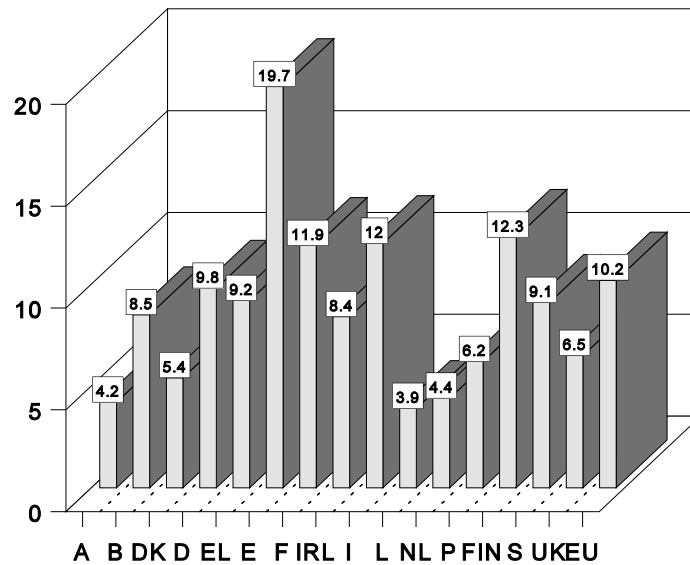
At the other end of the spectrum, four Member States have a *per capita* GDP (measured in terms of equivalent purchasing power) over 10% higher than the EU average: Austria, Belgium, Denmark and Luxembourg. Germany, France, Ireland, Italy and the Netherlands are also above average; the UK and Sweden and Finland are marginally below. The result is a spread of some 95 percentage points about the average between the richest Member State, Luxembourg, and the poorest, Greece. In terms of ECU, Luxembourg's *per capita* is over three times that of Greece.



**Chart 1: Relative *per capita* GDP of EU Member States, 1998. (PPS; EU = 100)**

Source: *European Economy* no. 65 1998

The situation in relation to unemployment is more varied, and does not entirely correlate either with GDP growth or with *per capita* GDP. Thus Ireland, which has enjoyed the fastest economic growth in the EU for a number of years, nevertheless has an unemployment rate above the EU



average. Spain, which has had an economic growth rate second only to that of Ireland, has the highest unemployment rate in the EU, at *double* the average. Portugal, by contrast, has enjoyed economic growth similar to that of Spain, but has an unemployment rate only *half* the average.

**Chart 2: Unemployment rates in EU Member States (%), 1998**

*Source: European Economy no. 65 1998*

Similar disparities can be observed among the richer EU Member States. France and Germany

have rates of unemployment of over 10%, Denmark, the Netherlands and the UK of only 5 - 6%. Whereas cyclical factors can provide some of the explanation (as in the case of the UK), structural differences appear to be more significant (as in the case of Denmark and the Netherlands).

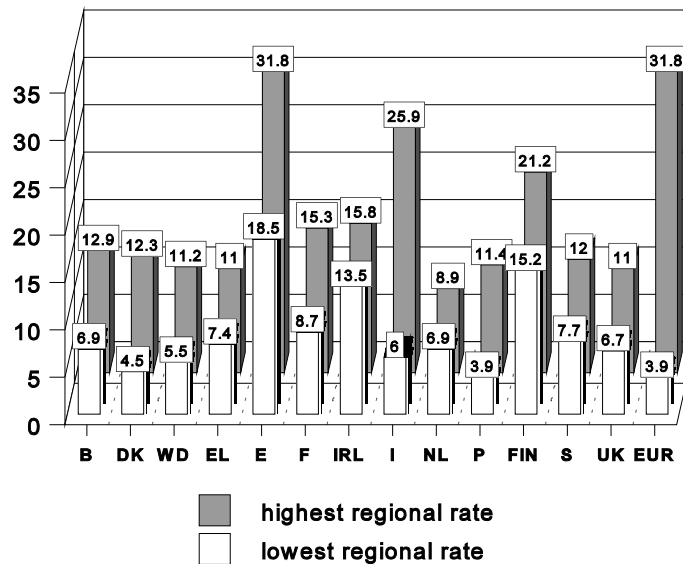
### *Disparities between regions*

National statistics nevertheless give a highly misleading picture of the extent to which standards of living throughout the EU have converged. When the statistics are aggregated at regional rather than Member State level, three facts stand out clearly:

- ◆ The disparities between different regions *within* Member States are substantially greater than the differences between the Member States themselves. For example, the *per capita* GDP in the Northern Italian regions is between 120% and 130% of the EU average, whereas that in the Southern regions is only between 60% and 90%.
- ◆ The differences in standard of living between the poorest and richest regions within *the EU as a whole* are also substantially greater than the differences between Member States. The richest German *Land*, Hamburg, has a *per capita* GDP four times that of the poorest region in Portugal, Alentejo. The ten worst-hit regions have unemployment rates of over 25%, whereas the ten best have rates below 4%.

- ◆ Though the standard of living in all regions has of course risen, it is also apparent that no convergence has taken place. In the decade 1983-93 the 25 richest regions increased their *per capita* GDP by about 140% of the EU average, the poorest regions by only a little above 50% of the average. The unemployment gap, moreover, has been widening: rates in the low-unemployment regions have been falling, those in the high-unemployment regions rising. In sum: *"asymmetric shocks seem to be becoming a regional phenomenon rather than national"*.<sup>14</sup>

**Chart 3: Regional disparities in unemployment in the EU, 1995**



<sup>14</sup> Professor José-Maria Estaban in evidence to the European Parliament's Committee on Economic and Monetary Affairs and Industrial Policy, 17th March 1998.

## V. The measures required

Cesarano (1992) starts his analysis of “Monetary Union: A Theoretical Perspective” by recalling the theory that changes in the real world give rise to theories attempting to explain them. Optimum currency areas, he observes, is still “a concept in search of a theory”; and EMU is so controversial that it is not possible to find “any hard and fast answers to the sundry questions it raises”. He later advocates that future research should be directed to the practical questions of “the relative effectiveness of the different adjustment mechanisms” - though adding that “admittedly, there is little to recommend this suggestion on theoretical grounds”.

It fits in, however, with his focus on viability rather than optimality. Given the analysis in the preceding section, what changes might improve the mechanisms of adjustment within EMU?

### Is fiscal federalism necessary?

Possibly the most controversial issue in this context is the necessity or otherwise of a “federal” fiscal policy, operating through a much enlarged EU Budget, for the success of a monetary union.

Economists are to be found on both sides of the argument. Currie *et al.* (1996), for example, believe that EMU will not be able to function without sufficient financial transfers; and Pelagidis (1996) argues that asymmetric shocks, together with low factor mobility and stickiness of wages and prices, “make indispensable the existence of mechanisms or institutions to take care of balanced growth within the EU.”

Fatás (1998), on the other hand, argues that “the benefits associated with the creation of a European fiscal federation are much smaller than previously thought”. Though the purpose of the system would be “interregional risk sharing”, it might result in permanent transfers “which might go in any direction (for example, from poor to rich regions)...” Such scepticism about the virtues of fiscal federalism is also, in part, based on doubts as to whether the US system has actually provided the claimed degree of automatic insurance against asymmetric shocks.

Even if the lowest estimates of “fiscal insurance” in the US are accepted, however, they clearly exceed anything possible in the EU, given the relative sizes of the central budgets (33% of GDP compared to about 1.25% of GDP). Sachs and Sala-i-Martin (1992) observe that:

*“if a European region or country suffers a one dollar adverse shock, its tax payments to the European Community will be reduced by half a cent. This contrasts with the 34 cents we found for the United States”.*

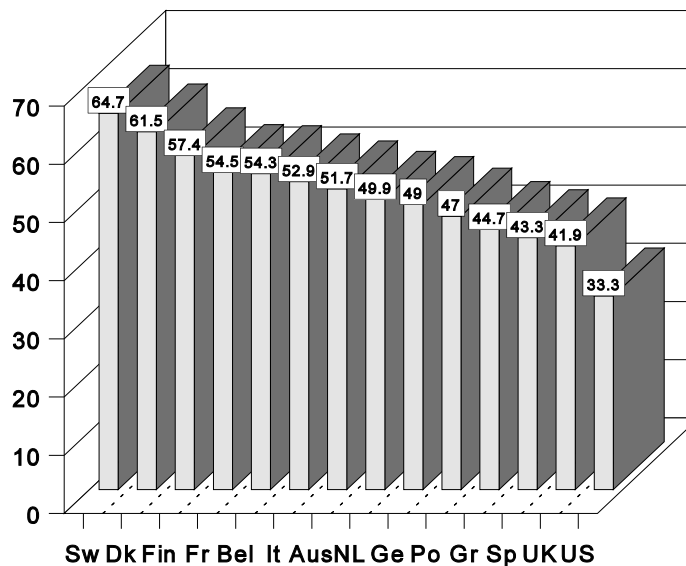
The MacDougall report of 1977 considered that a EU budget of between 5 and 7% of GDP would be sufficient to permit both some counter-cyclical fiscal policy at European level and an element of redistribution to offset regional income differentials.

Even this modest figure by US standards, however, is wildly beyond any politically feasible figure in the foreseeable future. The current intention is to keep the EU budget “capped” at 1.27% of GDP even after the accession of Poland, Hungary, the Czech Republic, Slovenia and Estonia.

## National fiscal policies

The absence of a large “federal” budget does not mean, however, that no mechanisms for automatic fiscal adjustment exist within the EU. Taken together, the budgets of the Member States greatly exceed that of the US, each providing a powerful “fiscal pump” between regions, quite apart from discretionary payments through regional aid programmes and tax allowances.

**Chart 4: General Government Spending as a % of GDP, 1996**



Source: OECD

The critical question is: to what extent will this existing mechanism for meeting asymmetric shocks between regions *within* Member States also deal with asymmetries between the regions of the euro area as a whole?

The evaluation made by Fatás, based on regional employment figures, is that national systems provide over 50% of the inter-regional “fiscal insurance” that would be provided by a US-level federal budget. Over recent years, moreover, he finds regional to European volatility decreasing, while regional to national volatility has remained unchanged: i.e. regional disparities remain, but are becoming more symmetrical throughout the EU.

Nevertheless, Fatás’ figures also reveal that the regions of some countries will do less well than others by relying on national budgets as compared to a large EU budget. For example, “Spain’s national fiscal system insures less than a third of the European insurance”.

Both the UK and Ireland would also do comparatively well out of “fiscal federation”. On the other hand, other countries - for example, France and Austria - would not.



## The Stability and Growth Pact

Reliance on national budgets rather than an enlarged EU Budget also raises another issue: to what extent will the scope for “fiscal insurance” be restricted by the limitations on national budget deficits provided for in the Treaty and in the Stability and Growth Pact?

Fatás’ analysis makes a distinction between the role of national budgets in making “inter-temporal transfers” and their role in “inter-regional insurance”. The “inter-temporal” function is carried out either through the operation of the automatic stabilisers or through deliberate counter-cyclical policies. Within EMU (following Moses’ strategy in the Book of Exodus) it is expected that national budgets will be in surplus during the economic up-swings in order to finance possible deficits in times of recession - provided that these deficits never exceed 3% of GDP. Viñals (1996) believes that the 3% ceiling

*"would seem ... enough to deal with many - although certainly not all - asymmetric shocks. Fiscal austerity in times of plenty would thus be the price to pay to be able to exercise fiscal flexibility in lean times".*

Theoretically, moreover, the inter-regional insurance function of budgets is quite separate from this counter-cyclical function. Commentators on Fatás’ paper, however, observed that the “distinction between stabilization and insurance” might have been overstated (Bean 1998). Insurance was “a contract with others at a moment in time; stabilization is an insurance contract with future generations”. Indeed one reason for Fatás’ own downsizing of US fiscal insurance was the tendency of regional transfers to build up future debt.

It is arguable, therefore, that the strict limitations on budget deficits contained in the Growth and Stability Pact will also limit the degree of inter-regional insurance that they can provide. At the least they potentially add to the differences in the degree of nationally-provided insurance in different Member States.

## Mechanisms of Cohesion

Both Member States and the EU have at their disposal a wide range of discretionary financial and fiscal instruments. Those of the EU include both transfers through the EU budget and loans administered by the European Investment Bank (which can also attract interest subsidies from the Budget). The total budgetary sums in 1998 came to 33,691.1 million ECU in commitments and 28,594.7 million ECU in payments.

### *The Structural Funds*

These funds, originally created for separate purposes, were brought together to form a coherent regional development policy by a series of reforms after 1988 (see Article 130d of the Treaty). The Single European Act of 1987 introduced a new Title V into the Treaty (which has now been renumbered Title XIV): "Economic and Social Cohesion". The Funds consist of

- ◆ the *Social Fund*, created under Article 123 of the Treaty to

*“improve employment opportunities for workers in the internal market”, specifically by increasing “their geographical and occupational mobility within the Community” and by facilitating “their adaptation to industrial change...”*

- ◆ The *Regional Development Fund*, established

*“to help redress the main regional imbalances in the Community through participation in the development and structural adjustment of regions whose development is lagging behind and in the conversion of declining industrial regions”* (Article 130c).

- ◆ The *Guidance* section of the *agricultural fund*, *FEOGA* (*“Fond européen d'orientation et de garantie agricole”*), established in 1962 under the general provisions of Article 43 on the Common Agricultural Policy.

The overall objective was to

*“aim at reducing disparities between the levels of development of the various regions and the backwardness of the least-favoured regions, including rural areas.”* (Article 130a).

The 1988 reforms, revised in 1993, clarified four principles for Structural Fund expenditure:

- ◆ *Concentration of spending on priority areas and sectors.* Objective 1 regions, given the highest priority, are defined as those with a *per capita* GDP below 75% of the EU average, and have covered Greece, Ireland and Portugal as a whole.
- ◆ *Partnership between the EU, the Member States and the regional/local authorities.* This has covered both the identification of projects and financing.
- ◆ *Integrated programming* to maximize the effect of spending from different sources.
- ◆ *Additionality* - that is, funding from the Community Budget must be additional to, rather than replace, expenditure from national or local sources.

The first programme ran from 1989-1993. In 1993 the decision was taken to double the sums available, and to concentrate the bulk of expenditure on Objective 1 regions during the 1993-1999 period. The rest is targeted at special regional needs: for example, a new category of regions which have a very low population density was created as a result of the EU's 1995 enlargement.

The total amount available to the Structural Funds in the EU's 1998 budget amounted to 30.5 billion ECU (up 6.1% on 1997) in commitment appropriations and 25.6 billion ECU in payment appropriations (up 7.1% on 1997).

**Table 4: EU Structural Funds, 1998 Budget**

	<b>Commitments</b> ( <i>ECU million</i> )	<b>Payments</b> ( <i>ECU million</i> )
EAGGF Guidance Section	4 183.1	3 521.5
FIFG	464.2	390
ERDF (Regional Fund)	14 000.4	12 045.3
European Social Fund	8 628.1	6 807.8
Community Initiatives	2 856.1	2 558.8
Other	350.2	319.8
<b>TOTAL</b>	<b>30 482.0</b>	<b>25 643.2</b>

A major reform of the Structural Funds is now under way, with the objective of concentrating spending on the poorest areas.

- ◆ Instead of the former seven categories of Regional Fund objective, there are to be only three: *Objective 1*, defined as regions with a *per capita* GDP lower than 75% of the average; *Objective 2*, covering industrial, rural, urban and fishing areas in economic decline, and, in particular, with high rates of unemployment; and *Objective 3*, focusing on improvements to the labour market through retraining, etc. and linked to Social Fund spending.
- ◆ *Objective 1* regions are being redefined, so that the coverage falls from 25% of the EU's population to 20%. The whole of Ireland, for example, is to lose Objective 1 status. There is, however, to be a six- to seven-year phase-out period.
- ◆ *Objective 2* spending is more concentrated, with coverage falling from 26% to 18% of the EU population.
- ◆ The net effect is to reduce the overall coverage of regions eligible for support from 51% of the EU population to between 35% and 40%.

### ***The Cohesion Fund***

The reforms of 1993 also established a new financial instrument, the Cohesion Fund,

*"to provide a financial contribution to projects in the fields of environment and trans-European networks in the area of transport infrastructure"* (Article 130d).

Although this is not stated in the Treaty, the establishment of the Fund was directly linked to the Maastricht programme for Economic and Monetary Union. In order to qualify for participation

in the Single Currency, Member States were required to reduce their budget deficits below the 3% reference level, and to reduce the overall level of public debt towards the 60% reference level. At the same time, the cuts in public expenditure required to achieve these objectives could have severely reduced the level of essential public investment in the poorer EU Member States. Cohesion Fund money was intended to offset this reduction, so promoting not only *nominal* convergence (inflation and interest rates, deficits and debt levels) but also *real* convergence (*per capita* GDP, employment, etc.) within EMU.

To qualify for Cohesion funding, Member States:

- ◆ had to have a *per capita* GDP under 90% of the Community average; and
- ◆ were required to put in place - and adhere to - a programme of action designed to meet the EMU convergence requirements.

Four Member States - Spain, Portugal, Greece and Ireland - were in 1993 identified as having a level of *per capita* GDP below 90% of the EU average, and have therefore been in receipt of Cohesion funding. Just over half of the 15,500 billion ECU to date has been spent in Spain, with the rest being divided roughly evenly between the other three.

In 1998, the Cohesion Fund had available 2.65 billion in payments (2.87 billion ECU in commitments), and other smaller sums were available for other regional operations (fishing, transport, etc.).

### ***The impact of enlargement***

The budgetary framework for EU regional and other payments has now been affected, however, by the prospect of the EU's enlargement by a further six Member States early in the next century. The *per capita* GDP of the states currently seeking EU membership is, together, only about 30% of the EU average. That of the largest, Poland, is only just above this level, at 31%.

The Commission published a programme of far-reaching policy reforms in July 1997: "Agenda 2000". This proposed major changes to the structure and financing of regional, social and agricultural funding. The Financial Perspective for 2000-2006 envisaged retaining the 1.27% of GNP ceiling on EU "own resources"; but envisaged major changes within the envelope. Whereas spending on agriculture would rise by 1.9% a year to 51.6 billion ECU in 2006, that on normal structural operations would *fall* by 1.4% a year to 32.47 billion ECU. Expenditure would, however, rise on both agricultural and structural operations related to accession, reaching 17.61 billion ECU in 2006.

These proposals have, however, met with heavy criticism - not least within the European Parliament. For example, Parliament's resolution of 17th. April 1996 on "preparing the associated countries" voiced the growing fear that

*"enlargement will have major budgetary and financial consequences which have not yet been sufficiently evaluated".*

Doubts have been expressed, in particular, as to whether the budgetary resources available will be adequate, given the need both to finance enlargement *and* preserve mechanisms of adjustment within the euro area.

### ***Borrowing and lending instruments***

In addition to the budget, the EU has at its disposal a variety of borrowing and lending instruments. In 1997 nearly 27 billion ECU's worth of loans were made, the bulk of them directly by the European Investment Bank. Details of these operations are contained in the Commission's annual report on the Community's borrowing and lending activities in 1997 (COM(1998)409). Some 12% of lending was outside the EU, the rest spread throughout the Member States.

EIB loans are governed by investment priorities, with especial emphasis being currently given to finance for trans-European networks (TENs) in transport, energy transfers and telecommunications. The Amsterdam special action programme (ASAP) comprised a series of innovations, including "the acceptance of risk by the EIB for innovating SMEs (Small and Medium-Sized Enterprises) with high growth potential."

Separate financial instruments exist through the European Investment Fund (EIF), which has financed both TENs and SMEs; and European Coal and Steel (ECSC) borrowing and lending operations. Finally, there exist two facilities of which no new use was made in 1997. The first is Euratom lending.

The second is the facility for providing medium-term financial assistance for Member States' balances of payments. In the past, Greece and Italy have made use of this latter facility, and 4 billion ECU were outstanding at the end of 1997.

### ***A "federal debt?"***

The proposal has been made on a number of occasions, with the support of the European Parliament, to expand the European Union's financial resources through the creation, in effect, of a "federal debt".

The EU as an organisation has an optimum credit rating, which would enable it to borrow at extremely advantageous terms - notably, at interest rates below that which might have to be paid by some national or regional bodies. It was at one time envisaged that the TENs might be financed directly through the issuing by the EU of so-called "Delors bonds", with the interest being paid out of the EU budget.

Until now, such proposals have been rejected by the Member States. The possibility of such an additional financial instrument nevertheless remains.

**Table 5: The geographical distribution of EIB lending in 1997**

	ECU million	%
Belgium	1 140	4.4
Denmark	737	2.8
Germany	3 518	13.4
Greece	730	2.8
Spain	2 716	10.4
France	2 721	10.4
Ireland	207	0.8
Italy	3 517	13.4
Luxembourg	96	0.4
Netherlands	398	1.5
Austria	555	2.1
Portugal	1 350	5.2
Finland	401	1.5
Sweden	925	3.5
United Kingdom	3 765	14.4
Other (Article 18)	184	0.7
Community Total	20 958	87.6
Non-Community total	3 244	12.4
<b>TOTAL LOANS SIGNED</b>	<b>26 202</b>	<b>100</b>

Source: COM(1998) 409 final

### *National aids*

Even taking budgetary and lending instruments together, the sums spent on regional support by the EU are considerably less than those made by the Member States themselves. Over the period 1992-94 they were estimated by the Commission, on average, at 95 billion ECU a year, without taking account of some Member States' spending in the agricultural sector where data was not available.

Under Article 92 of the Treaty, a variety of state aids are considered compatible with the EU's competition policy, including "aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious underemployment". At present, nearly half the EU's population (46.7%) is eligible for national regional aids under Article 92, though it is planned that this will be reduced to 42.7% for the period 2000-06.

A proportion of national regional aid is also linked to payments from the EU structural funds, since EU grants are usually made on the condition of "matching money". The national component of aid for particular schemes is usually, in fact, significantly higher than the EU component (see "The impact of national public expenditure on regional disparities in Europe", European Parliament 1996).

**Table 6: Overall State aid in Member States, 1994-96**

	in per cent of GDP	in ECU per employed person
Austria	0.6	325
Belgium	1.3	735
Denmark	0.9	481
Germany	1.9	978
Greece	1.1	253
Spain	1.2	392
Finland	0.4	214
France	1.1	574
Ireland	0.8	312
Italy	2	781
Luxembourg*	1	623
Netherlands	0.7	379
Portugal	0.9	162
Sweden	0.7	346
United Kingdom	0.4	142
EUR 15	1.4	573

*Source: Sixth Commission survey on State Aids*

\* *The figures for Luxembourg are more than halved by comparison with the period 1992-1994*

National aids can take many forms: straightforward subsidy; preferential tax treatment; or "soft" loans. As the Commission's Annual Reports on competition policy make clear, it is often extremely difficult to determine whether a state aid has in fact been paid.

A high proportion of state aids are in the form of direct aids to industry, which the Commission estimates came to about 43 billion ECU a year during the period 1992-4. From the EU point of view, such payments must be viewed with mixed feelings. Though they may help to even out the effects of sectoral shocks with asymmetric regional effects (the closure of shipyards, coal mines, steel or textile mills, major manufacturing plants, etc, on which a region is particularly dependant) they can also distort competition within the Single Market, and enable fundamentally uneconomic undertakings to continue trading. Similar criticisms can be made of those state aids designed to encourage firms to move into a particular area.

These issues have been addressed by the EU both at the level of competition policy (in November 1997 new regional aid guidelines and a multi-sectoral framework on regional aid for large investment projects were adopted); and at the level of "tax competition" (the code of conduct, etc., already mentioned above). The efforts of Commission and Court to bring transparency and order to the system will continue.

There is, however, little chance that the volume of funds deployed by national authorities will diminish by much, if at all, in the future. In several Member States overwhelming political pressures exist to maintain large financial flows to particular areas: for example, the Eastern *Länder* of Germany, the Italian *Mezzogiorno* or Northern Ireland.

Taken together with the automatic redistributive effects of national budgets, therefore, there are clearly very large financial instruments available to meet asymmetric shocks within the euro area.

### **The role of monetary policy**

It is generally considered that monetary policy, almost by definition, cannot provide an instrument of adjustment to asymmetric shocks within a single currency area. Although the statistical bases are as yet unclear, the ECB will in principle use only one set of money-supply figures, and set short-term interest rates, for the euro area as a whole. Prices may vary between parts of the area (as they do between regions of individual Member States); but the euro itself will have only a single rate of inflation.

Some recent studies, however, have examined ways in which monetary policy might actively reduce asymmetry. Voss (1998), for example, outlines a scheme of "co-insurance", operating through money finance rather than fiscal policy. He bases this on the observation by Casella (1992) that

*"a centralized monetary authority, as the sole issuer of currency, is capable of transferring real resources between regions of the union. The mechanism is straightforward: by allowing regional disparities in the growth of money supplies, there is an effective transfer of seigniorage revenue between regions".*



The scheme would separate the co-insurance objective from the control of the aggregate money stock, enabling money-finance-generated transfers to improve economic welfare without affecting overall anti-inflation policies. It would operate through rebalancing the composition of the monetary authorities' portfolio of national government liabilities.

*"The nation (or possibly nations) that suffers an adverse shock receives a greater weighting than previously in the monetary authority's portfolio; in effect, the central bank creates credit for the affected nation. If, in order to maintain the aggregate supply of money, this transfer of revenue requires an offsetting transfer from unaffected countries, then the government liabilities of these latter countries are sold from the monetary authority's portfolio to the private sector."*

Though Voss admits that much more work on the feasibility of such systems is required, he concludes that implementation would contradict a basic assumption of OCA theory: that if there are price rigidities and factor immobilities between areas, there is a case for separate currencies.

*"This paper, which abstracts from these market distortions and instead considers imperfect asset markets, provides an alternative conclusion. Economic regions that expect to experience dissimilar real economic disturbances may be better served by monetary integration"*.

A further "non-traditional" possibility for the use of monetary mechanisms to meet asymmetric shocks was outlined at the hearing held by the European Parliament's Monetary Sub-Committee on 2nd. September 1998. Member States would issue bonds linked to the growth rate of their nominal GDP, the sums raised being re-invested in the normal euro-bond market. During an economic upswing, the interest payable would rise, transferring resources to the holders of the GDP-linked bonds in other Member States. When the growth-rate fell, interest payments would also fall, allowing the Member State concerned to gain a net inflow of resources from its portfolio.

## **Improving markets**

Adjustment to asymmetric shocks within the EU through market mechanisms might be improved in a number of ways. Most of these are already very well known. The Single Market White Paper of 1985 listed the most urgent priorities to ensure the free movement of goods, services, capital and labour; and most of these have now been implemented. Subsequent Commission documents - for example the "Strategic Programme" (1993) and the "Action Plan" (1997b) - enumerated further necessary measures.

### ***Mobility of labour and the flexibility of labour markets***

It is unlikely that greater mobility of labour, either within or between Member States, can ever become a major instrument of adjustment within the EU. The reasons have been outlined earlier (see "Mobility of Labour"). Nevertheless, removal of some major institutional and legal obstacles might have an appreciable effect. In 1997 the Commission drew particular attention to

- ◆ rules on the **right of residence**;
- ◆ the coordination of **social security arrangements**;
- ◆ mobility of **supplementary pensions**; and
- ◆ wider use of the **EURES** employment data base.

Problems also continue to exist in the **mutual recognition of qualifications**; and in **recruitment to the public sector**.

The main problems in ensuring greater flexibility in labour markets are also well-known. Some of these have already been listed (see page 20).

There is also a growing awareness that future flexibility may well depend upon Europe's **education and training systems**. The pattern of a formal education at school and college, leading to a "job for life", is already beginning to erode. Instead, technological and economic change may be leading to a pattern of education *throughout* life, and regular retraining between a variety of jobs.

### *Mobility of Capital*

Economic and Monetary Union will in itself provide a major stimulus to EU-wide financial markets. Major restructuring is anticipated in banking; and the battle has already begun to be the main centre for the huge anticipated markets in euro-denominated bonds and equities.

Residual barriers nevertheless exist in certain fields - for example, **insurance**, **collective investment schemes** and **investment by pension funds** - largely as a result of prudential considerations. Some of these will automatically end with EMU: for example, currency matching restrictions. The extent to which others can be eliminated on the "home country control" principle is nevertheless still a matter of controversy, as is the whole issue of **prudential supervision** (see Lannoo 1998).

The role of **taxation** in distorting capital markets has also become a major issue. On the one hand, the preservation of national tax sovereignty is considered essential, both for political reasons and so that Member States can conduct devolved fiscal policies (see Patterson 1996). On the other hand, there is wide agreement that investment decisions and capital flows can be influenced by "unfair tax competition" - though agreement is less wide on what *is* "unfair".

The adoption of a Code of Conduct on corporate taxation, and the creation of mechanisms to enforce it, have been major steps forward. But the long history of the draft Directives on the **taxation of savings** (COM(98)295) and **interest and royalty payments** (COM(1998)67) well illustrate the remaining problems.

Similar problems have also bedevilled the various proposals for a **European Company Statute**, the latest having followed recommendations from the Davignon working group. In this case, the difficulties have been both in the field of taxation and that of worker participation. Certain legal

and taxation obstacles, indeed, still exist in the whole field of **cross-frontier commercial operations**, the abolition of which are the subject of existing and projected Commission proposals.

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