

(I.1)

## THE CONDUCT OF MONETARY POLICY

### I. INTRODUCTION

The full picture of the monetary policy of the European Central Bank (ECB) will only be finalised once the ECB is established and operating. However, the foundation for the future European monetary policy is already laid, and a significant part of the building blocks is also ready and waiting to be put in place. The foundation was laid by the Heads of the Member States in 1992, when the Treaty on European Union (better known as the Maastricht Treaty) was signed. The Treaty established the two central principles for the ECB and its monetary policy. These are the primary objective of price stability and the independence of the central bank.

Price stability as the primary objective means that the overriding goal of the ECB is to provide low and stable inflation. Although the ECB is obliged to support the general economic policies of the EU, such as high economic growth, employment, and social protection, the ECB can only pursue such goals to the extent that they do not interfere with the primary objective of price stability. The exact operational content of price stability is not prescribed in the Treaty, but will be chosen by the ECB itself. The principal economic rationale behind the price stability objective is that price stability contributes to an optimal allocation of production factors, thus promoting a sustainable high rate of economic growth and a high level of employment.

Independence of the ECB refers specifically to independence of the ECB's decision making bodies from governments, parliaments, and all such institutions and bodies at the European or at the national level. Under the Treaty, when carrying out the tasks of monetary policy, decision makers of the ECB are prohibited from seeking or taking instructions from any such body. Correspondingly, the Treaty obliges all such bodies to respect the ECB's independence and to refrain from interfering with the European monetary policy. The principle of independence is to protect the ECB from political pressures and to enable it to carry out its tasks with the appropriate long-term perspective.

This chapter starts by describing what is known of the operational framework for European monetary policy framework (section II): it presents the instruments of monetary policy, ranging from open market operations, standing facilities, and other instruments of monetary control to the functioning of the future European payment system. The major part of the task of setting up the operational framework has been the responsibility of the European Monetary Institute (EMI), the forerunner to the ECB. At the time this was written, the framework was, albeit not yet finalised, nevertheless sufficiently enough to provide a fairly accurate picture of what the ECB's monetary policy will look like at the operational level. It is safe to say that the set of policy instruments available to the ECB will look very much like what is currently in use by most modern central banks. It will bear a reasonable resemblance to all existing monetary frameworks in Europe today, without being an exact copy of any one of them.

From the nuts and bolts of the ECB's monetary operations, the discussion proceeds to broader strategic issues: how will the ECB operationalise the objective of price stability, and what strategy it is going to follow in the pursuit of this objective (section III)? The discussion centres around the two candidates for monetary policy strategy identified by the EMI, namely monetary targeting and inflation targeting. The section concludes that this choice is, to a large extent, about how price stability is communicated to the public; it will have few consequences for the actual conduct of monetary policy.

## **II. OPERATIONAL FEATURES OF MONETARY POLICY IN THE EURO AREA**

### **II.1. Institutional framework**

When the third stage of EMU is launched on 1 January 1999, there will be a single monetary policy for the euro-area Member States. Responsibility for the euro-area monetary policy will inevitably be more centralised, requiring important adjustments in the current institutional framework for monetary policy within the Community.<sup>1</sup> In particular, a European System of Central Banks (ESCB) will come into existence.

#### **Structure of the ESCB**

The ESCB will comprise the new European Central Bank (ECB) and the national central banks (NCBs) of all the Member States including the non-participants in the euro area. The ECB will be the supreme monetary authority in the euro area and will be located in Frankfurt, Germany.<sup>2</sup> To the extent that day-to-day operations in implementing the euro-area monetary policy will remain decentralised, the NCBs will form an integral part of the new institutional framework. However, all the activities of the ESCB will be governed by the decision-making bodies of the ECB.

The ECB will have two principal decision-making bodies:

- The Governing Council will be responsible for the formulation of euro-area monetary policy and for setting the guidelines for policy implementation; its responsibilities will include decisions relating to intermediate monetary objectives, key interest rates and the supply of reserves in the ESCB. The Governing Council will be composed of the members of the Executive Board (see below) and the Governors of the euro-area NCBs. Each member of the Governing Council will

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1 The new institutional framework to apply in the third stage of EMU is described in some detail in the Treaty and, more particularly, in the annexed protocol on the statute of the ESCB and ECB.

2 The capital of the ECB will be held by the NCBs in proportion to the individual countries' demographic and economic weights and the external foreign reserves of the NCBs will be pooled at the ECB within certain limits. The sum of the seigniorage income of the ESCB as a whole will be allocated to the national central banks, while national practices with respect to the distribution of profits will be unchanged.

have one vote and monetary policy decisions will be taken by simple majority.<sup>3</sup> The President of the ECB will chair the Governing Council and will have a casting vote in the event of a tied vote in the Council.

- The Executive Board will be mainly responsible for the implementation of monetary policy and, in this context, will provide all necessary instructions to the euro-area NCBs. The Executive Board will be made up of the President and vice-president of the ECB and four other members. Members of the Executive Board will serve for a fixed term of eight years which will not be renewable.

Reflecting the likelihood that not all member states will participate in the euro area from the outset, a third decision-making body - to be known as the General Council - will be constituted. The General Council will comprise the Governing Council of the ECB and the Governors of the non euro-area NCBs as voting members, and will deal with more general issues — mainly not directly related to monetary policy — affecting the euro and non-euro areas.<sup>4</sup>

### **Objectives and tasks of the ESCB**

The primary objective of the ESCB in formulating and implementing the euro-area monetary policy will be to maintain price stability. Without prejudice to this objective, the ESCB will be required to support the general economic policies in the Community with a view to achieving specified economic and social objectives.<sup>5</sup> The main tasks to be carried out through the ESCB will be:

- to define and implement monetary policy in the Union;
- to conduct foreign exchange operations;
- to hold and manage the official foreign reserves of the Member States; and
- to promote the smooth operation of the payments system.

The ESCB will also have a limited role in relation to prudential supervision of credit institutions and the stability of the financial system.

### **Accountability of the ESCB**

A defining feature of the ESCB will be its absolute independence from political interference. Neither the ECB nor the NCBs will be permitted to seek or take instructions from other Community institutions or from national governments. Meanwhile, the Treaty embodies a commitment from these other bodies to respect the independence of the ESCB. In the interests of accountability, the ECB will publish reports on the activities of the ESCB at least quarterly and a consolidated financial

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3 The limited circumstances in which simple majority voting will not apply relate to institutional issues and are listed in Article 10.3 of the ESCB Statute.

4 These issues are listed in Article 47 of the ESCB Statute.

5 These objectives are listed in Article 2 of the Treaty and are: a harmonious and balanced development of economic activities, sustainable and non-inflationary growth respecting the environment, a high degree of convergence of economic performance, a high level of social protection, the raising of the standard of living and quality of life and economic and social cohesion and solidarity among Member States.

statement will be published each week. An annual report on the activities of the ESCB and on the single monetary policy will be addressed to the European Parliament, the Council, the Commission and to the European Council. In addition, members of the Executive Board of the ECB may be asked to appear before the competent Committee of the European Parliament.

### **Relationship of the ESCB to other Community bodies**

In order to ensure a smooth interaction between monetary policy and other policies in different fields, the ECB will be consulted regarding any proposed legislation relevant to its area of responsibility. The President of the Council (normally Ecofin) and a member of the Commission may participate (without voting rights) in meetings of the Governing Council of the ECB. The President of the Council may submit a motion for deliberation to the Governing Council of the ECB. Correspondingly, the President of the ECB will participate in Ecofin Council meetings when matters of relevance to the ECB are discussed. A more formal relationship between the ECB and other Community bodies will exist in the context of exchange rate policy.<sup>6</sup>

## **II.2 Monetary policy instruments, counterparties and collateral**

### **Monetary policy instruments**

As with any central bank, the ECB will have at its disposal a set of monetary policy instruments in pursuing its primary objective of price stability. As the implementation of monetary policy will be decentralised, access to these instruments will in most cases be available only through the NCBs. However, the same set of instruments will apply throughout the ESCB. The choice of instruments - which can be modified by the ECB Governing Council at any time - reflects different features of current monetary policy frameworks in the Member States. However, it is not an exact reproduction of any one national framework and so adjustments to the new environment will be required in all euro-area Member States. Monetary policy operations within the ESCB will be carried out on uniform terms and conditions in all Member States and the choice of instruments has been made so as to minimise the risk of divergent behaviour among NCBs. The set of instruments chosen implies a predominantly neutral role for the ECB in its dealings with market agents, presumably reflecting a desire to avoid the risk of market discrimination between Member States and to allow a euro-area market to evolve efficiently.

The monetary policy instruments to be used by the ESCB will be:

a) *Instruments used in the conduct of open market operations.*

Open market operations within the ESCB will play an important role in steering interest rates, managing money-market liquidity and signalling the stance of monetary policy. The main instrument used in these open market operations will be *reverse transactions* in which the ESCB buys or sells assets under repurchase agreements or conducts credit operations against eligible assets as collateral. Other instruments used

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6 This relationship is outlined in more detail in Article 109 of the Treaty

- albeit less frequently - in these operations will include outright transactions, forex swaps, the collection of fixed term deposits and the issuance of debt certificates.

Open market operations within the ESCB will take four forms:

- *main refinancing operations* with a weekly frequency and a two-week maturity, which will be executed by the NCBs on the basis of standard tenders and will be used by the ECB to send policy signals to the market; these will be the main vehicle of liquidity management;
- *longer-term refinancing operations* with a monthly frequency and a three-month maturity, which will be executed by the NCBs on the basis of standard tenders but will be less frequent and will not be used by the ECB to send policy signals to the market;
- *fine-tuning operations* on an ad hoc basis which will normally be executed by the NCBs through quick tenders or bilateral procedures; and
- *structural operations* also on an ad hoc basis, which will be executed by the NCBs on the basis of standard tenders whenever the ECB wishes to adjust the structural position of ESCB vis-à-vis the financial sector.

b) *Standing facilities to manage liquidity on a day-to-day basis*

Standing facilities will be used to provide and absorb overnight liquidity. The ESCB will have two standing facilities:

- *the marginal lending facility* which will allow counterparties to obtain overnight liquidity at a pre-specified interest rate against eligible assets. In normal circumstances, this interest rate will provide a ceiling for the overnight market rate.
- *the deposit facility* which will require counterparties to make overnight deposits at a pre-specified interest rate. Under normal circumstances, this interest rate will provide a floor for the overnight market rate.

The interest rates applied to these standing facilities will offer the ECB another means by which to transmit policy signals to the market by providing a corridor for overnight interest rates.

c) *Minimum reserve obligations to impact on structural liquidity conditions.*

The ECB may require credit institutions to hold minimum reserves on accounts with the NCBs subject to standardised terms and conditions. A decision to impose minimum reserve requirements is — within the limits set by the Council of Ministers — the responsibility of the ECB Governing Council. As is the case with all operations of the ECB, any decision to impose minimum reserve requirements should be put into effect in accordance with the principles of an open market economy with free competition and must favour the efficient allocation of resources. The minimum

reserves system would be used to stabilise money market rates, create or enlarge a structural liquidity shortage and to control monetary expansion. However, the system would not operate in a manner which would induce large-scale delocation or disintermediation. The ECB will establish a list of credit institutions subject to minimum reserve obligations. All credit institutions established in the euro area would be subject to minimum reserve obligations, whereas their branches established outside of the euro area would not be subject to these requirements. Minimum reserves holdings will be subject to an averaging procedure and will be held on account at the relevant NCB and the ECB may decide to remunerate reserve holdings. If an institution fails to meet its minimum reserves obligation, the ECB may impose progressive sanctions.

### **Counterparties to monetary policy operations**

The set of monetary policy instruments chosen for the ESCB will ensure the eligibility of a broad range of counterparties and underlying assets. Counterparties to ESCB monetary policy operations will be required to fulfil certain criteria, which will be applied uniformly throughout the euro area. If minimum reserve obligations apply, eligible counterparties will be confined to those credit institutions which are subject to these obligations. With respect to the other monetary policy instruments, all credit institutions in the euro area will in principle be eligible. Counterparties must be financially sound and must fulfil any operational criteria specified in the contractual or regulatory arrangements applied by the relevant NCB. Eligible counterparties will have access to ESCB standing facilities and will participate in ESCB open market operations based on standard tenders. As a reflection of decentralised policy implementation, the access of eligible counterparties to the standing facilities and participation in open market operations will be possible only through the NCB of the Member State in which they are established. Counterparties to forex swaps will be limited to those institutions able to conduct large-volume operations and will again be carried out with the relevant NCB. The NCBs will also have a restricted subset of counterparties for some other operations, e.g. fine-tuning. In exceptional circumstances, the ECB may bypass the NCBs to carry out fine-tuning operations directly with this subset of counterparties.

Several procedures will exist for tenders and bilateral operations in the execution of ESCB open market operations and in the settlement of transactions. Tenders will be either standard or quick, to which identical procedures will apply except for differences in time frame. Standard tenders will be normally executed within 24 hours from their announcement while quick tenders will be executed within one hour. The ESCB will have the option of conducting either fixed rate (concentrating on volume) or variable rate (concentrating on interest rate) tenders. Tenders for the main and longer-term refinancing operations will be executed in accordance with a pre-specified calendar and the results will be publicly announced by means of wire services. Tenders for fine-tuning and structural operations will not have a calendar. Different allotment procedures will apply depending on the type of tender involved. Bilateral operations, involving transactions between the ESCB and counterparties without the use of tenders, may be executed directly or through stock exchanges and market agents. Settlement of transactions in respect of open market operations and the

standing facilities of the ESCB will be effected through the counterparties' accounts at the NCBs or through their accounts at settlement banks in the TARGET system.

### **Collateral in monetary policy operations**

All ESCB credit operations will be based on adequate collateral provided by counterparties either in the form of a transfer of ownership of assets or in the form of a pledge of assets. These underlying assets must fulfil certain criteria to be eligible for ESCB operations. The eligibility criteria will be standardised as far as possible but due account will be taken of differences in financial structures across Member States. For operational reasons, a distinction will be made between

- *tier one assets*: marketable debt instruments fulfilling standard eligibility criteria; and
- *tier two assets*: additional instruments - marketable and non-marketable - of particular importance for national financial markets. The eligibility criteria applying to tier two assets will not be standardised but will be vetted by the ECB.

No distinction will be made between the two tiers in their eligibility for the various types of ESCB operations<sup>7</sup> and both tiers will be subject to specified risk control measures.<sup>8</sup>

### **Foreign exchange intervention**

Movements in the euro exchange rate will indicate how financial markets assess the monetary policy stance in the euro area and, particularly in the early years of EMU, will be a barometer of credibility in the new currency. The credibility of the euro exchange rate will depend primarily on the performance of the euro area economy and on the consistency of the internal macroeconomic policy mix (see section 4.3). However, the ESCB will also wish to have the capacity to influence the euro exchange rate directly via the conduct of foreign exchange intervention.

The foreign reserve holdings of the ESCB will be up to 50 billion euro, which will be contributed by the NCBs of Member States participating in the euro area. The amount to be contributed by each Member State will be fixed in proportion to its share in the subscribed capital of the ECB. Capital subscriptions to the ECB will in turn be determined by a key reflecting the weight of each Member State in the population and gross domestic product of the euro area.<sup>9</sup> If necessary, the ECB may make further calls on the foreign reserve assets of the NCBs beyond the limit of EURO 50 billion. Foreign reserves assets other than those held by the ECB will remain with the NCBs. However, all operations in these remaining foreign reserve assets by the euro-area NCBs and Member States' transactions with their foreign exchange working balances shall - above a specified limit - be subject to approval by the ECB. In this way, the foreign exchange activities by parties other than the ECB will not be inconsistent with

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7 Tier-two assets will not normally be used by the ESCB in outright transactions.

8 These would include initial margins, valuation haircuts, variation margins, exposure limits, additional guarantees and possibly exclusion.

9 Details of capital subscriptions and transfer of foreign assets are laid down in Article 30 of the ESCB Statute.

euro-area monetary and exchange rate policies. It is likely that the foreign reserve assets with the NCBs will diminish over time but any reduction in reserves will be managed within the ESCB to ensure that there are no undesired impacts on financial markets.

The use of foreign exchange intervention in the ESCB can be foreseen in two circumstances.

First, intervention may be required in the context of formal exchange rate arrangements involving non-EU currencies. The Treaty provides for such formal exchange rate arrangements, which may be concluded by the Council but will be based on a recommendation from or in consultation with the ECB. Similarly, the Council may formulate general orientations for the euro exchange rate policy based on a recommendation from or in consultation with the ECB. In either case, any exchange rate arrangement or orientations must be consistent with the ECB's primary objective of price stability.

Second, the ECB may have recourse to foreign exchange intervention in its management of the new exchange rate mechanism (ERM2) which will link currencies of other EU currencies to the euro from 1 January 1999. The new mechanism will derive from the existing ERM and will therefore provide an important strand of continuity between stage 2 and stage 3 of EMU. The euro will be the anchor of the ERM 2, while the other participating EU currencies will be linked directly and bilaterally to the anchor in a "hub-and-spokes" arrangement. Accordingly, central parities will be set for these currencies against the euro with a  $\pm 15\%$  standard fluctuation band. Intervention support will, in principle, be automatic and unlimited at the margin. Central parities will be reviewed on a continuous basis and realignments will take place in a timely manner. The establishment of closer exchange rate links (contingent on the achievement of convergence) within the ERM 2 will be possible subject to maintenance of the price stability objective. The operation of the ERM 2 - by setting appropriate central parities as a focus for macroeconomic management - should help to ensure that nominal exchange rates reflect underlying economic fundamentals. In this way excessive fluctuation of exchange rates and/or sharp changes in exchange rate levels may be avoided, thereby reducing the risk of disruption in the proper functioning of the single market. Moreover, the ERM 2 is an important framework to support convergence among Member States wishing to adopt the euro. The new mechanism, together with the reinforced convergence procedures to be established under the Stability and Growth Pact, will be mutually supportive elements of the Community policy co-ordination framework.

As with the monetary policy framework, the organisation of foreign exchange intervention in the ESCB will reflect, as far as practicable, the principles of subsidiarity. The decision to intervene will be taken at the centre by the ECB but may be implemented either by the ECB itself or on a decentralised basis. The final decision on the distribution of responsibility for forex intervention will be taken by the ECB Governing Council. Counterparties to forex intervention will be chosen on the basis of the current best practices of the NCBs and must fulfil specified criteria, which will include credit-worthiness, supervision, ethical standards, competitive pricing and size. The ESCB will not designate any particular financial centre within the euro area



as the primary location for intervention operations but it is likely that trading may concentrate in a limited number of centres. For reasons of effectiveness, the ESCB will ensure that it has a capacity to intervene not only within the euro area but in any international financial centre.

### **II.3 The distribution of monetary income**

Under Article 23 of the ESCB Statute, the monetary income accruing to the participating NCBs from assets held against notes in circulation and deposit liabilities to credit institutions will be pooled and redistributed to the NCBs according to their paid-up shares of the capital of the ECB. The amount of monetary income involved is expected to be substantial - around two-digit billions of euros. The weighting of each NCB in the capital key is determined by the sum of 50% of the Member State's share in the EU population and 50% of the Member State's share in the nominal GDP of the EU over the five-year period prior to the penultimate year before the establishment of the ECB.

Because of differences among EU countries between the amount of cash in circulation (both within and outside of the country) relative to their GDP and population, the allocation of monetary income according to the capital key could result in significant changes in the amounts of monetary income received by individual countries. Broadly speaking, a country whose share in the banknote circulation of the whole euro area is higher than its share in the capital key would tend to lose income and vice versa. According to a recent report<sup>10</sup>, countries such as Germany, the Netherlands, Spain, Sweden and Austria would lose out in the re-allocation while the UK, if it were to join EMU, and France would gain<sup>11</sup>.

The calculation of monetary income poses complex problems of measurement. It is certain that without smoothing arrangements, the start of monetary union would imply significant income redistribution among the Member States. The ESCB Statute envisages the following definitive method for the calculation of monetary income: (a) identify those assets in each central bank's balance sheet that are the counterparts of banknote issuance and of the financial sector's reserves in the central bank; (b) add together the income earned on these assets (mainly interest received from domestic banks and income earned on foreign exchange reserves). The sum in the latter case is monetary income.

Among the issues under discussion have been the appropriate method for calculating monetary income at the start of stage three and the smoothing of the allocation of the NCB's monetary income. Towards the end of 1996, the EMI Council decided that an indirect method of calculation of monetary income would be used. The direct method for calculating monetary income as described in the previous paragraph was considered to be unfeasible given the lack of harmonisation of the existing asset

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10 in "Central Banking", May 1997

11 Nevertheless these estimations are highly speculative. First, a number of important decisions on monetary policy instruments, which influence the overall amount of monetary income have not yet been taken (imposition and remuneration of minimum reserves). Second, a number of special factors (circulation of DM banknotes in Eastern Europe) which generates particular high seigniorage income in D might lose importance.

portfolio of national central banks. Basically, using an indirect method means that an NCB would calculate its contribution to the monetary income of the ECB by multiplying its liability base (i.e. the liabilities which give rise to seigniorage, such as note issues and minimum reserves) for a given period by a common reference rate of return. Before pooling the monetary incomes, each NCB would be allowed to make deductions for certain items, such as interest paid on certain components of the liability base. In principle, risk sharing does not enter into such a calculation, although it could be accommodated through adjustment of the actual rate of return on the NCB's assets.

Article 51 of the ESCB Statute allows the Governing Council of the ECB to derogate for a period of up to five years from the rules of Article 32 on the distribution of monetary income. If the application of Article 32 leads to significant changes in NCBs relative income positions, the amount of the monetary income which is pooled and redistributed according to the capital key may be reduced by up to 60%. This reduction has to decrease every year by at least 12 percentage points.

#### **II.4 TARGET — a payments and settlement system<sup>12</sup>**

One key element of the supporting framework for the conduct of the single monetary policy involves the development of a cross border payments system in order to help achieve identical short-term interest rates throughout the euro area. This system is known as TARGET — Trans-European Automated Real-time Gross settlement Express Transfer. The aim is to create a system that will process cross-border euro-denominated payments in a smooth, efficient, low-cost, secure and rapid manner. As such, TARGET also has an important role to play in the development of efficient payment mechanisms for the Single Market.

TARGET is composed of one real time gross settlement (RTGS) transfer system in each EU member state and a mechanism (Interlinking) to link these national systems, thus allowing euro-denominated payments to move from one system to another. The RTGS systems of countries outside of the EU may also be connected to TARGET if they are capable of processing euro. The system will be fully operational from 1 January 1999.

To avoid impediments to the efficient conduct of the single monetary policy, some harmonisation of the features of national RTGS systems within the euro area will be required in terms of hours of operation, the provision of intra-day liquidity, and pricing policies. At the end of the day, RTGS participants in the euro area that are eligible counterparties for monetary policy operations of the ESCB may draw on the marginal lending facility in order to balance their position in TARGET. NCBs of EU member states which do not participate in the euro area but which may nevertheless be connected to TARGET will not have the possibility of extending overnight credit in euro to RTGS participants in their countries. The possibility for NCBs outside the euro area to grant intraday credit in euro is still under discussion and mechanisms are

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12 In addition to the TARGET system, there will also be a securities settlement system for settlement of the assets comprising the eligible collateral for the ESCB's monetary policy operations.

being considered for preventing intra-day credit from spilling over into overnight credit.

### **III. MONETARY POLICY STRATEGY**

According to the Maastricht Treaty, the primary objective of the European Central Bank will be to maintain price stability. This objective is based on the — nowadays almost universally shared — view that monetary policy can best support economic growth by providing a stable and predictable monetary environment of low inflation. Both theoretical and empirical research suggests that monetary policy in the long run only affects levels of nominal variables like price level and money aggregates, whereas the average level of real variables, such as the GDP or the level of unemployment, cannot be controlled by monetary policy.

The Treaty does not specify the precise content of the price stability objective further but leaves it to the ECB to operationalise its obligation. In particular, there are two important questions that the ECB will have to resolve, once it is established in 1998:

- How to define and measure price stability?
- What monetary policy strategy should be used to achieve price stability?

This section centres mainly around these two questions. Since the big decisions concerning the operationalisation of the price stability objective have not been made (and will not be made until mid-1998), the focus here is on the presentation of the viable alternatives.

#### **III.1 The content of price stability in EMU**

The objective of price stability could be seen as implying that the central bank should keep the average price level unchanged over time (while, of course, allowing individual prices to move). Generally, central banks interpret the concept less literally; typically, price stability is seen as being fulfilled when inflation is low and stable. There are some good reasons for this less-than-literal interpretation. The first one is that it is widely agreed that price indices generally overstate the true inflation rate. Existing price indices are subject to a number of biases: they do not account to a satisfactory degree for improvements in the quality and technical characteristics of products or the introduction of new products; they understate the effect of sales and discount stores on the prices people pay for their purchases, etc. It is estimated that the usual price indices overstate the annual inflation rate by as much as 1.1–1.5 percentage points.<sup>13</sup> Hence, a steady price level, as measured by the existing indices, would actually only be achieved in the state of actual deflation.

Furthermore, it has been proposed that in an economy where prices do not easily adjust downwards, zero inflation does not leave sufficient room for changes in relative prices. If no price can adjust downwards, then imposing a zero inflation target would effectively lock in the existing pattern of relative prices. It is argued that a modest rate

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13 Recently, a widely publicised report from the “Boskin Committee” put the upward bias in the measurement of the US consumer prices to around 1.1%.

of inflation would enable relative prices to adjust even when prices are sticky downwards.

This argument relies crucially on the assumption of downward stickiness of nominal prices. In Europe, there is no convincing evidence that price stickiness would constitute a significant problem in the product market. In the labour market, on the other hand, wage reductions are relatively rare, and that is where the argument would appear to have some bite. It can be argued that the target inflation should be set so as to allow sufficiently quick changes in relative wages, thereby providing the right incentives for cross sectoral labour mobility. However, this does not seem to be a particularly restrictive requirement. Given that because of rising productivity, wage increases can, on average, exceed price inflation, even a very low inflation target would provide enough room for differences in sectoral wage developments to allow sufficient wage differentiation. Currently, those European central banks that have set a numerical value for a price stability target aim at an inflation rate of 2% per annum or less.

A related, but separate, issue is whether the central bank should define its target in terms of *price level* or *inflation*. The difference between the two has to do with what the central bank does when it misses — say, overshoots — its target. A central bank which defines price stability in terms of price level will try to correct the deviation and bring prices back to the desired level through a period of lower-than-average inflation. On the other hand, for a central bank with its focus on inflation, “bygones are bygones”; past deviations of inflation from the target will have no influence on the desired level of future inflation.

It is likely that the ECB’s interpretation of price stability will be closer to the latter than to the former. The EMI has stated that one of the guiding principles of the ECB’s monetary policy will be *medium term* orientation; the intention is to provide an anchor for inflation expectations while providing some discretion in response to short-term deviations from the target.

### **Measurement of the price level**

Once a satisfactory definition of price stability has been arrived at, the next question is one of measurement; i.e. the choice of a yardstick for price developments for the purpose of measuring whether the objective has indeed been achieved. There is no single obvious measure of price level but, rather, a broad range of indices, each of which is subject to its own particular problems. The central banks, that presently follow an explicitly-stated price stability objective, have typically operationalised their target either in terms of the consumer price index, the retail price index, or in terms of some measure of underlying inflation, from which specific items have been excluded. The need for a proper yardstick of inflation is largely independent of whether the ECB chooses formally to target inflation or not. As the EMI has announced, whatever the monetary policy strategy, the ECB will need a quantified definition for the final objective of price stability. This will enhance the transparency of the strategy and will provide the general public with a yardstick against which the performance of the ECB may be assessed.

In the case of the European monetary policy, the fact that the single currency covers a wide range of countries introduces an additional complication in the measurement of prices. Different countries are likely to experience periods of diverging price developments, first because the countries will occasionally find themselves in different positions in the economic cycles, but also because changes in indirect taxation, subsidies etc. will not necessarily coincide between countries. To judge price developments in the whole euro area, the ECB will have to construct some kind of weighted average of price developments in the participating Member States.

The European single currency area will in all probability have to accept occasions of significant inflation differences between participating Member States. There are several reasons to expect that such differences may be larger than those which have been experienced, for example, in the US. Compared to the states in the US, the European countries will have much more segmented national labour markets, each with its own characteristic wage setting systems. Differences in national tax systems and non-synchronised tax reforms can also contribute to inflation differentials. Moreover, some countries are still involved in a catching-up process, with high productivity growth in the exposed sector bringing about relatively high rates of wage increases. This is likely to show up as high price increases in the services sector, where productivity growth is slower, thus contributing to a relatively high rate of overall inflation. Finally, the lack of a sizeable federal budget in Europe reduces the ability of countries to synchronise their business cycles, and can thereby contribute to inflation rate differentials.

### **III.2 Monetary policy strategy**

The Treaty does not prescribe any particular monetary policy strategy for the ECB in its pursuit of price stability. The final choice of the strategy will be made by the ECB once it is established in 1998. Meanwhile, the EMI has narrowed down the viable options for the European monetary strategy to two, namely, monetary targeting and direct inflation targeting.

## Monetary targeting versus direct inflation targeting

### *Monetary targeting*

Monetary targeting is based on the notion that in the long run, inflation is a monetary phenomenon; doubling the amount of money in the economy will, other things equal, lead to doubling of all prices. If such a stable relationship exists between money supply and inflation, then by controlling the amount of money, one also gains control over inflation. At the operational level, a central bank with a monetary target monitors the growth of a specified monetary aggregate against a regularly preannounced target range, and reacts to deviations by adjusting monetary policy.

With monetary targeting — as with inflation targeting — the ultimate target is price stability. The monetary aggregate serves both as an intermediate target and as a leading indicator of inflation. A high rate of money expansion can be indicative of future inflation, particularly if accompanied by a high rate of domestic credit expansion. As an intermediate target, the money target conveys the objective of monetary policy by providing an anchor for inflation expectations. Through the monetary target, the central bank can influence inflation expectations and indirectly wage and price formation.

The main advantage of monetary targeting (*vis-à-vis* inflation targeting) is usually seen to be controllability: monetary aggregates are more directly controllable by the central bank than actual price behaviour. The success of this strategy depends crucially on the stability (or, more precisely, on the predictability) of the long-run relationship between the chosen money aggregate and prices. Experiences as regards the stability of this relationship are varied. In some countries (such as the UK and the USA), an apparently stable relationship seemed to vanish once the central bank started to exploit it to control the price level.<sup>14</sup> In some other countries, most notably in Germany, monetary targeting has established an admirable track record over several decades.

No consensus exists whether the EMU-wide money/price relation would be sufficiently stable to warrant monetary targeting. At the individual country level, few Member States can boast of a convincingly stable demand for any money aggregate over any long period of time, but preliminary evidence of a more predictable European aggregate money demand has been encouraging.<sup>15</sup>

It is, however, unclear how much weight should be assigned to the relative stability of European money demand as a justification for using monetary targeting approach.

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14 This is, in essence, a demonstration of the famous “Lucas critique”. Empirical relationships between macroeconomic variables, such as money and output, depend on the existing policy environment. Giving an historically stable empirical relationship the status of policy instrument will effectively constitute a major break in the policy environment governing the behaviour of the relationship. As a result, the relationship is likely to disappear, and the attempt to exploit it as a policy tool is will fail.

15 Philippe P. Moutot, *Monetary Policy in a European Monetary Union: Instruments, Strategy and Transmission Mechanism*, in *Monetary Policy in Transition in East and West*, Oesterreichische Nationalbank, Vienna 1997.

First, the stable aggregate money demand conceals substantial and desynchronised instability at the individual country level. Adding together a group of independent money demands will — by the law of large numbers — automatically reduce the *relative* variability of the aggregate money demand. However, the law of large numbers only works for *independent* variables. To the extent that the factors contributing to money demand instability — financial innovation, changes in taxation, monetary policy actions etc.— are synchronised in the monetary union, the aggregate money demand may turn out to be significantly less stable than the one measured before the appearance of the single currency.

Second, EMU will introduce a structural break in the interaction between the central bank and the private banking sector. The harmonisation of monetary instruments will imply changes in virtually every participating country. EMU will also bring about important behavioural adjustments in the private and public sectors, thus transforming the transmission process of monetary policy.

Finally, as the Lucas critique and experiences from the UK and the US have shown, exploiting empirical relations for policy purposes is inherently a risky exercise. No amount of empirical work on existing data is going to reveal much useful information about the behaviour of money demand under the single currency. Even if a stable relationship between a monetary aggregate and inflation were to arise, the policy makers would not be able to verify it for a long time. Thus, only time will tell whether a European monetary aggregate will emerge as a useful tool for monetary control.

### *Inflation targeting*

With inflation targeting, the focus is directly on the future expected inflation rate. A wide range of indicators, including monetary aggregates, is used to predict the inflation outlook for 1-2 years ahead, and monetary policy is adjusted accordingly.

The advantage of inflation targeting is its visibility to the public and its direct focus on the final target of price stability. The main drawback is that inflation itself is not directly or easily controllable by the central bank. Even in the best case scenario, monetary policy affects inflation with a lag, so that the success of monetary policy in hitting its target cannot be immediately verified. It is also important to note that while under monetary targeting, the last measured value of the target aggregate provides an important indicator and a background for evaluating monetary policy actions, the relation between inflation targeting and the last measured value of inflation is quite different. Measured inflation rate is unavoidably a backward looking indicator, and cannot carry much weight in the central bank's policy formulation. Hence, seemingly counterintuitive situations can arise in which, for example, the measured inflation rate is undershooting the target while the central bank, responding to forecasted inflation, is tightening its monetary stance.

As with monetary targeting, predictability is a crucial issue; i.e. whether, on the basis of the available information, the central bank can form a reasonably precise picture of future inflation pressures. At present, several countries (for example, the UK, Spain, Finland, Sweden) exercise a monetary policy geared toward an explicit inflation target. So far, the experiences of inflation targeting have been positive. The problem is

that inflation target is a fairly recent phenomenon, and a generally non-inflationary macroeconomic environment has made the recent success easier to achieve. Hence, the accumulated evidence of the virtues of direct inflation targeting is not yet overwhelming.

### *Other options*

The EMI has also considered a number of additional candidates for the monetary strategy of the ECB, including exchange rate targeting, interest rate pegging and nominal interest rate targeting. These strategies were judged to be non-viable alternatives for the future European monetary policy. In particular, exchange rate targeting would not constitute a firm anchor for price expectations, given the probable large size of the future euro area and its low external exposure.

### **Consequences of the choice of monetary policy strategy**

While the details of the ECB's strategy are not yet known, the EMI has identified a set of key elements which it sees as an "indispensable part of any strategy adopted by the ESCB" (EMI report, 1997). These include:

- the public announcement of a quantified definition of the final objective of price stability in order to enhance the transparency and credibility of the ESCB's strategy;
- the public announcement of a specific target (or targets) against which the performance of the ESCB can be assessed on an ongoing basis by the general public;
- the use of all available information relevant to the final target of monetary policy (i.e. the use of a wide range of indicators);
- within the set of indicators, the assignment of a prominent role to monetary aggregates, provided that money demand is sufficiently stable in the long run;

In addition, according to the EMI, the ESCB should be in the position to make its own forecasts for inflation and other economic variables.

Clearly, the list of key elements identified by the EMI shows that the ECB's monetary policy strategy will not dogmatically follow either monetary targeting or inflation targeting, but will instead include features of both. Whatever the final strategy, the ECB will publish a quantified definition of price stability, which may or may not be called the inflation target. Conversely, provided that a stable relation between a monetary aggregate and the price level arises, the monetary aggregate is going to play a key role in policy formulation, regardless of whether the role is formalised as an explicit monetary target. It is also quite possible that the ECB will choose to target simultaneously both money and inflation; if the relation between price level and monetary aggregate is predictable, then it is possible to formulate mutually consistent targets for both. In any case, the ECB intends to exercise a pragmatic rather than a dogmatic monetary policy, exploiting all indicators which are relevant to future inflation rate — the label assigned to the strategy is of secondary importance.



Perhaps the most tangible difference between inflation targeting and monetary targeting is one of presentation — i.e. the way in which price stability is communicated to the public. With monetary targeting, monetary policy is justified mainly in terms of the behaviour of monetary aggregates, whereas with inflation targeting the ECB's inflation forecast plays the leading role. An important function of the monetary framework is to allow transparent communication of the central bank's policy choices and to enable the general public to assess the central bank's performance. For that to be possible, the target has to be understood by the public. In Germany, monetary targeting has fulfilled this function well, and there, the usefulness of the framework in communicating price stability is not contested. In other Member States without a long tradition of monetary targeting, money demand has remained a much more remote concept to the public.

More important than the label of the European monetary policy strategy will be its actual implementation and, in particular, the ability of the ECB to respond to the changing monetary environment. For example, in a world of liberalised and integrated financial markets, asset prices — bond and stock prices — play an increasing role in determining the behaviour of economic agents, and financial innovation keeps transforming the meaning of money. Much of the success of the European monetary policy will be determined by the ability of the ECB to correctly identify, and appropriately respond to, those changes that are relevant to price stability.

### **Transitional issue; monetary policy in the initial years of the single currency**

In order to exercise successful monetary policy, a central bank has to be able both to accurately monitor and forecast inflation pressures, and to control the inflation pressures through its monetary policy actions. To monitor and forecast inflation pressures, the central bank relies on a predictable relation between its monetary policy indicators and its policy target. To control inflation pressures, the central bank depends on a predictable transmission of monetary policy actions through the economy.

The creation of the single currency will introduce a fundamental break in the monetary environment of the participating Member States. As a result, during the first years of the monetary union, the financial markets are likely to be in a constant state of transformation. This will inevitably pose a major challenge to the future European monetary policy.

As an example, a stable money demand is a result of a stable structure of the monetary system and the structure of banking sector. These structures will almost certainly undergo a fundamental change as a result of EMU. A new monetary policy régime changes the expected opportunity cost of holding non-interest bearing assets such as cash and liquid bank accounts. The single currency will transform the competitive structures within the banking industry. The changeover of national currencies to the euro creates a window of opportunity for innovation in retail payment systems, with possibly significant consequences for the demand for monetary assets. Hence, there is a possibility that monetary aggregates will experience a period of significant

instability in the initial years of the single currency. When, and whether, a stable money demand emerges will only be known after several years of observation.

The inflation process is likely to experience equally drastic changes as a result of the changeover to the single currency, thereby undermining the predictability of inflation for some time after the start of the single currency. At the heart of the inflation process are wage formation mechanisms. In EMU, monetary policy and markets will respond to developments in the whole euro area. Wage developments in an individual country will only affect the euro exchange rate and interest rate through that country's economic weight in the euro area. Hence, EMU has the potential to fundamentally transform wage formation —no one knows quite what the outcome will be. By improving the transparency of price comparisons in different participating countries, EMU is likely to reduce the ability of firms to pursue price discrimination. The effect of this on the average inflation rate may or may not be significant.

Finally, the accumulated experience of the national central banks about the way in which their respective economies respond to monetary policy actions risks becoming rapidly outdated after the start of the single currency. The national monetary transmission mechanisms are a product of financial market structures (for example, whether bank lending is linked to short- or long- term interest rates etc.) and of economic agents' perception about the future consequences of monetary policy actions. These, in turn, are a product of the past monetary policy environment. As monetary authority is transferred from the national central banks to the ECB, economic agents will have to alter their ideas of the monetary authority's likely behaviour, and financial market structures will be shaped accordingly.

As a result, regardless of the choice of monetary strategy, it may take several years before the financial markets have fully completed their adjustment to the new environment and the predictability of indicators can again be assessed with reasonable confidence. During that period, monetary policy may have to be more backward looking, and to rely more on market indicators, than would be the case in a more established operating environment.

### **National monetary policies in 1998**

The Maastricht Treaty offers no special provisions for the monetary policies of the selected countries during the interim period between the decision on the participants in the spring of 1998 and the start of the third stage at the beginning of 1999. As is the case throughout the second stage, the member states will continue to treat their exchange rate policies as a matter of common interest (Article 109m), but the monetary policies of the participating countries will formally remain the responsibility of the national authorities. However, it can be argued that in the central banks' policy formulation, the weight of "common interest" will have to increase, relative to domestic considerations, during the final run-up to EMU.

The need for closer co-ordination arises for several reasons. First, it is likely that once the participants are known, the markets will closely monitor the extent to which the central bankers, who will comprise the future Governing Council of the ECB, are able to cooperate in monetary policy. Serious disagreements about the appropriate direction

of monetary policies could not only destabilise exchange rates during the period up to the end of 1998, but would also be likely to raise suspicions about the ability of the ECB to exercise an efficient monetary policy. Hence, the central banks may wish to co-ordinate their policies in order to enable the ECB to start out with full monetary credibility.

Second, it is important that at the end of 1998 the participating central banks should harmonise their policy interest rates at a level which is appropriate from the European perspective. This is necessary because monetary policy decisions taken in 1998 will, to a large extent, determine whether the ECB inherits a stable and non-inflationary operating environment as it takes over the European monetary policy. Also, from the point of view of public acceptability of the single monetary policy, it might not be wise to force the ECB to start its monetary policy operations with a sharp change in interest rates. In other words, the emphasis should be on the continuity of monetary policy.

Hence, although exchange rates between the in-currencies will in 1998 still be determined in the market, it is likely that as the year approaches its end, the monetary co-operation between the participating central banks will begin to look more and more like a virtual monetary union. The incentive for deeper monetary co-operation in 1998 will have been increased by the Ecofin's decision (Mondorf, 12-14 September 1997) to pre-announce the bilateral conversion rates which will underlie the conversion rates of national currencies into euro.<sup>16</sup> The pre-announcement will coincide with the selection in Spring 1998 of those Member States qualifying to adopt the euro on 1 January 1999. The objective of the pre-announcement of the bilateral conversion rates will be to stabilise market expectations as the EMU launch date approaches. Monetary co-operation will be essential to ensure that the relevant market exchange rates are consistent with the pre-announced conversion rates on 31 December 1998.

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<sup>16</sup> Pre-announcement of the actual euro conversion rates will not be possible because of technical difficulties relating to the composition of the ECU basket.

(I.2)  
**MONETARY POLICY AND LONG-TERM  
INTEREST RATES**

**I. INTRODUCTION**

The transmission of the effects of monetary policy actions through the economy consists of several steps. The first step in this process is the transmission of changes in policy interest rates to market interest rates. Monetary authorities generally have a fairly tight control over short end of the term structure. The degree of control over long-term interest rates is considerably weaker. The effects of policy rate changes on long rates are indirect, depend on the particular situation, and are often difficult to predict.

This paper discusses the nature of this part of the monetary transmission process. It concentrates on the mechanisms through which policy rates affect long rates, reviews some representative empirical work on the area, and tries to assess to what extent this empirical work has yielded usable policy implication. Finally, the paper discusses some institutional changes, which are likely to affect the nature of interaction between policy rates and market rates. The analysis will not touch upon the effects of monetary policy on the real economy or on prices; those questions will be discussed in a separate fiche.

**II. FROM POLICY RATES TO LONG RATES**

In many continental European countries (particularly in Germany) bank lending is overwhelmingly linked to long interest rates, and the impact of monetary policy on the real economy depends crucially on how changes in policy rates are transmitted to the long end of the yield curve. Therefore, in order to predict the effects of a monetary policy action, one needs to be able to form a picture of the likely response of long rates.

The link from monetary policy actions to long rates is, however, not a mechanical one. In unregulated financial markets, long interest rates are driven by the interaction of market expectations concerning future developments in inflation, exchange rate, the real economy, monetary policy strategy, and, as a function of these, the future stance of monetary policy. Hence, the effect of, say, a central bank rate hike on long rates depends how this move is perceived to affect the economy, future inflation, and thereby future monetary policies. Depending on the economic (or political) situation, a change in policy rates may be seen as conveying different information, and can therefore have different effect on long rates.

One way to classify the channels through which policy rates are transmitted to long rates is to divide the effects to portfolio effects and expectation effects.

**a) Portfolio effects.**

This approach stems from the Keynesian economics of the 60s, as represented in the works of James Tobin. It treats assets of different maturities as imperfect substitutes. As the yield on one asset (ie short money market instruments) increase, investors redirect their funds from other assets (bonds) to that asset. Hence, an increase in short rates decrease the demand for bonds, thus forcing bond yields to increase as well. The direction of this effect on long rates is unequivocally positive.

**b) Expectation effects.**

This class of mechanisms rests on two equilibrium conditions (or, in a stronger form, even arbitrage conditions), which in turn rely on a fairly high substitutability between assets of different maturity or country of origin: the expectation theory of term structure and the uncovered interest rate parity. Expectation theory says that long rates should be a function of expected future short interest rates (plus possibly a reasonably constant term/risk premium). According to uncovered interest rate parity, long rate should be equal to the corresponding foreign long rate plus the expected rate of depreciation of the home currency against the foreign currency.

A change in policy rate may affect expectations of future short rates and exchange rate changes in different ways. A rate hike can be seen signalling the determination of the central bank in fighting inflation in which case it can give rise to expectations of an appreciating trend in exchange rate and downward movements in future short rates, and may thereby even decrease long rates. On the other hand, the rate hike can be seen as an indication of the buildup of inflation pressures. In this case, expectations would arise of further increases in short rates and a depreciating exchange rate; hence, the effect on long rates would probably be upwards.

To the extent the response of long rates depends on the effects of the policy action on expectations, the direction of the response varies from one situation to the another. One immediate implication is that apart from the actual monetary policy action, the way this action is presented to the public and put into the larger perspective of monetary policy strategy, also affects the way the action is interpreted by the market and how it is transmitted to long interest rates.

### **III. EMPIRICAL STUDIES; CO-MOVEMENTS AND CAUSALITY**

Some recent studies (by Cohen and Wenniger, 1994, and Lee and Prasad, 1994, amongst others) have indicated that in the US, correlation between long interest rates and policy rates has increased. They interpret this as an increase in the sensitivity of long term interest rates to monetary policy. In a similar study on European data Fell (1996) came into a quite different conclusion. His study suggests that in most countries the dependence of long interest rates on foreign rates has increased significantly whereas the effect of changes in short rates has decreased.

In interpreting the empirical results, it is important to make a distinction between a causal effect from policy rates to long rates, and the degree of comovement

(correlation) between the two. Comovements can arise from a causal link, but they do not necessarily imply causality. Tendency of short and long rates to move together may as well be a result of monetary authorities and markets reacting in a similar manner to the same information.

There has been a fairly general tendency in the empirical work to interpret comovements between short and long interest rates as an indication of a causal element of monetary policy transmission, and hence changes in the degree of comovement as a change in the effectiveness of monetary policy. A perceived increase in the correlation between policy rates and long rates does not necessarily imply an improvement in the control of monetary authorities over long interest rates.<sup>1</sup> Such an observation can stem from a variety of institutional changes which affect the way monetary policy responds to market conditions, such as financial liberalisation, or a change in monetary policy regime from, say, exchange rate targeting to inflation targeting. For example, an inflation-targeting central bank, viewing long interest rates as an indicator of inflation expectations (and its own anti-inflation credibility), is probably reluctant to reduce policy rates as long as long interest rates (and inflation expectations) stay at a high level. In such circumstances, short and long rates move hand in hand even though no causal effect from policy rates to long rates exists.

This kind of situation has recently been evident in several European countries. In Italy and Sweden, for example, both policy rates and long rates have been reduced considerably over the course of 1996. It is fairly obvious that the reduction in long interest rates has *not* been due to easing of monetary policy. Instead, improving government finances has resulted in a “crowding in” process and, together with a significant slowdown of inflation, has brought down long interest rates, thus creating room for downward movement in policy rates. However, if one, *ex post*, runs a simple regression of long rates on short rates, a strong link between the two will emerge, and the risk of drawing incorrect conclusions is obvious.

As another example, in the US, bond market weights incoming news in the light how they are likely to affect the Fed’s decisions about the funds rate and adjust bond prices accordingly. It can be argued that this is a manifestation of Fed’s control over the bond rates. In some cases, Fed’s actions do convey new information about how it perceives the economy is developing and what type of monetary policy strategy it is likely to pursue in the future. In such cases, the effects on bond rates may be considerable, as developments in 1994 show. In that respect, the Fed does indeed affect, if not control, bond rates.

#### **IV. INSTITUTIONAL CHANGES SHAPE THE INTERACTION BETWEEN SHORT AND LONG RATES**

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<sup>1</sup> On the contrary, it can be argued that a tight monetary control should imply a *negative* rather than positive correlation between policy rates and long interest rates. If a central bank has a good credibility, then monetary tightening should reduce inflation expectations and bring down long interest rates.

At least three trends are likely to have contributed to changes in the comovements of short and long rates: financial liberalisation, the shift in the 80s in the monetary policy paradigm of many countries, and the prospect of European Monetary Union.

Financial liberalisation affects the link between policy rates and long rates in several fashions. First, abandoning interest rate ceilings obviously affects the behaviour of long interest rates. In regulated financial markets, long interest rates cannot necessarily adjust to its equilibrium value, and domestic arbitrage conditions such as the expectation theory are generally violated. Secondly, once both domestic financial regulation and exchange controls are removed, uncovered interest rate parity links domestic long rates to foreign long rates and exchange rate expectations. Overall, financial liberalisation has not removed the effect monetary policy has on long interest rates, but it has very likely made these effects less direct and thereby decreased the degree of control monetary authorities have on long interest rates.

A second major trend that has shaped the relationship between short rates and long rates in many countries has been a shift in the monetary policy paradigm: expansive Keynesian-style strategy, trying to utilise the Phillips relation, has given way to policies oriented towards price stability. This regime shift has, in many countries, taken place hand in hand with financial liberalisation, thus making it difficult to separately identify the consequences of the two. Without attempting to describe the effects of this process on the monetary transmission mechanism in any detail, it is safe to say that it has had profound effects on the manner central banks react to economic developments and, once the regime changes gained credibility, also on the way markets interpret central banks' actions.

Finally, in Europe, an essential ingredient in the causal chain from policy rates to long rates is the expectation concerning a country's EMU participation. In EMU, long interest rates will be equalised across countries (up to a default risk factor). Presently, long interest rate differentials in Europe seem, to a considerable extent, to reflect the views of the financial markets about the prospects of each country joining the single currency. The more secure the participation is perceived to be, the closer the country's interest rates are to the German rates, and the more closely changes in the country's long interest rates mirror those in the German long interest rates. On the other hand, countries whose participation is perceived as less likely seem to be more sensitive to changes in the US interest rates. In these circumstances, policy actions are viewed in the light of whether they increase or decrease the likelihood of a country's EMU participation.

## **V. POLICY RATES AND LONG RATES IN EMU**

EMU will have fundamental effects on the institutional setting in which monetary policy is exercised in Europe, but the mechanisms through which monetary policy affects market interest rates change less. Once the ECB and the single currency are established, then by definition, speculation on a country's EMU participation ceases to be a consideration that affects long rates. Otherwise, the mechanisms that govern the effects of national monetary policies on long rates apply to the ECB as well. The effect of ECB's monetary policy actions on long rates will depend on things such as

ECB's anti-inflation credibility, the extent to which the action fits into market expectations, the transparency of ECB's actions, and of course the overall economic framework in which the ECB exercises its monetary policy.

One possible change is that the sheer size of the euro area may provide the ECB with a limited degree of "monopoly power" as a supplier of money; the set of feasible alternatives to euro as a means of transaction or investment is more limited than is the case with today's national currencies. Still, in today's financial markets, the scope of utilising such monopoly power is narrow indeed. As today with national monetary policies, the degree of ECB's control over long interest rates will be limited, and depend on particular circumstances.

## VI. CONCLUSIONS

The link from central bank rate to long interest rates is not straightforward. Long rates are driven by long-term expectations concerning inflation, exchange rate and the economy, and expectations about how these will feed back to future monetary policy. Depending on the particular circumstances (including the perceived credibility of the policy action) a central bank rate hike may, in principle, result to either an increase or decrease in long rates. Empirical observations about the strength of the link from policy rates to long rates vary, and are generally wide open to different interpretations. Perhaps the most plausible conclusion is that presented by Estrella and Mishkin (1995, p.2) who state that "*...the central bank can influence the term structure, but cannot control it in any meaningful sense*".



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(I.3)  
**THE IMPACT OF MONETARY POLICY  
ON THE REAL ECONOMY**

**I. FACTORS INFLUENCING THE IMPACT OF MONETARY POLICY**

The effectiveness of monetary policy depends on a set of parameters which in most cases are not under control of the central banks. The reaction of economic agents to policy impulses through the money market is the result of complex behavioural and institutional factors, which are often deep-rooted in the economic system and are, therefore, “structural”. As these factors can vary substantially across countries, the impact of monetary policy can also be different, in terms of timing, magnitude and distributional effects.

Without aiming to be exhaustive, the following are some of the more important factors which have been considered in the literature<sup>1</sup>:

**a) Differences in the exchange rate regime or in the regulation of capital flows.**

In a context of fully liberalised capital movements, the effectiveness of monetary policy strongly depends on the exchange rate regime. A fixed exchange rate regime will substantially limit the effectiveness of monetary policy, as risk-adjusted national interest rates cannot significantly deviate from the world level. In a floating exchange rate regime, changes in interest rates will give rise to capital flows and to exchange rate movements; hence the exchange rate channel will usually add to the interest rate channel and magnify the impact of monetary policy. Regulations or other barriers to capital flows may modify the above relationships. They may virtually restore the interest rate channel of monetary policy in fixed exchange rate regime and, on the other hand, may attenuate its effectiveness in a floating exchange rate regime. Nevertheless, such barriers to capital flows would have other negative repercussions for the economy.

**b) Differences in the financial structure**

Financial systems can differ substantially between member states because of differences in levels of development and for historical and institutional reasons. Among the most important characteristics which can influence the impact of monetary policy are: the degree of competition within the banking system and between banks and other financial institutions; the share of bank credit in total financing (bank intermediation); the development of securitization the credit maturity; the credit maturity (including the share of indexed loans); the relationship between the banking system and the corporate sector; the ownership in the banking system; the degree of internationalization of the banking system

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<sup>1</sup> The following summary presentation of possible sources of diversities in the response to monetary impulses across countries is mainly based on the literature on the channels of transmission of monetary policy. For more detailed references to this literature see Mishkin (1995), Taylor (1995), Bernanke and Gertler (1995), and Meltzer (1995).

and, in particular, foreign currency holdings; households' access to the credit market; the existence of credit access constraints for certain agents; the balance-sheet configurations of financial and non-financial agents, the financing of the public sector, the maturity structure of public debt.

**c) Differences in labour market structures**

Differences in labour market structure can imply different degrees of real wage "stickiness". The effectiveness of monetary policy is higher the quicker a given final target (typically price stability) is achieved and the less it costs in terms of output losses. In other words, the effectiveness of monetary policy can be measured in terms of the "sacrifice-ratio" of output to inflation. Given that real wage stickiness is likely to increase the sacrifice-ratio, different degrees of flexibility in labour market can account for a different impact of monetary policy across countries.

**d) Differences in the sectoral composition of output**

The interest-rate elasticity of various components of domestic demand is different. For example, residential investment typically responds with different lags and different intensity to monetary tightening. Investment in inventories usually follow a pattern of response different from that of total investment. Hence, compositional differences in domestic economy may account for a significant part of the measured differential effects of monetary policy across countries.

## **II. RELEVANCE OF THESE FACTORS FOR EMU: A PREMISE**

Many questions can be raised in order to assess the quantitative relevance of these factors for a smooth functioning of EMU. How large are these structural differences across Member States? Will the transition to a single currency cause significant losses of effectiveness of monetary policy? What kind of costs will this imply? How will these costs be distributed across countries?

The existing literature does not provide sufficient elements for an exhaustive response to these questions. A good deal of econometric research has been carried out in order to estimate the impact of monetary impulses on nominal and real variables in various countries. Part of this research has focused on European countries, with the aim of assessing differences and similarities. For example, evidence has been found that the asymmetric working of positive and negative money supply shocks is a common feature to all European economies (Karras, 1996). However, there is no systematic attempt to link differences in the final impact to structural features of the economy. There are only partial results which will be summarized below. Before examining these results, however, some general remarks can be made.

First, for the countries which have participated in the ERM and have strictly respected the exchange rate commitment the loss of monetary autonomy would not involve significant additional costs, as the real adjustments implied in the abandoning of the exchange rate instrument have largely been accomplished. Hence, the comparison should be made not between a hypothetical situation of perfect monetary sovereignty (as assumed in many econometric models) and one of complete loss of monetary

sovereignty; the comparison should rather be made between a situation in that many countries have de facto subordinated their national monetary policy by linking their currencies to an anchor currency and another in that a single monetary policy is formulated and made operational for all EMU participants.

Second, there is some evidence that the financial structure is affected by the course of monetary policy itself. An important example is that of the anti-inflationary reputation of a central bank, based on historical experience. The inflation record of a country is likely to influence the maturity structure of the contracts and in particular the mix between fixed and floating rates. There are, however, many other examples which could illustrate the complex interaction between monetary policy and financial structure. Therefore, the transition to a single monetary policy should eliminate an important factor behind differences in the European financial systems.

More generally, EMU will represent a fundamental regime change which will inevitably modify the structural parameters of national economic systems and, hence, the differences across countries. However, while some of these differences are bound to disappear as soon as a single currency becomes a reality, others will only vanish in the long run, while others will be permanent. Some of the factors underlying observed asymmetries in the response to monetary policy impulses are endogenous with respect to the exchange rate regime, and should therefore disappear. On the other hand, differences in the output composition are likely to remain and could even become more important with monetary unification. Differences in the financial structure will probably persist for some time before disappearing as a result of intensified competition within the single currency area.

While a complete analysis should consider all the factors which can account for divergences in the impact of monetary policy, we will focus here on differences in the financial systems of Member States.

### III. FROM POLICY RATES TO LENDING RATES: DIFFERENCES IN THE SPEED OF MONETARY POLICY TRANSMISSION

In the first instance, the intensity of transmission is linked to the speed and degree to which the “policy rate” affects the cost of borrowing money. Empirical research has shown that lending rates present different degrees of “stickiness” with respect to changes in money market rates. In other words, there are significant differences in the speed with which credit rates adjust to changes in policy rates. Table 1 contains some estimates of the impact and lagged multiplier for most European countries.

<b>Table 1:</b> Effects on the lending rate of changes in 3-month money market rates				
	Impact (1 Month)	3 Months	6 Months	Long run
Germany	0.38	0.67	0.83	1.04
Belgium	0.21	0.61	0.81	1.03

Netherlands	0.52	0.97	1.03	1.04
France(*)	0.43	0.45	0.51	0.74
Italy	0.11	0.40	0.61	1.22
Spain	0.35	0.80	0.98	1.12
Portugal	0.28	0.77	0.97	1.03
Ireland	0.32	0.80	0.96	1.03
United Kingdom	0.82	1.02	1.04	1.04
Denmark	0.07	0.25	0.38	0.71
Finland	0.13	0.20	0.27	0.60
Greece	0.00	0.40	0.74	1.05

(\*) The multipliers for France are not comparable with the others' (see data source).

**Data Source:** All the estimates are from Cottarelli and Kourelis (1995) except for France, which is not included in this study. Estimates for France come from Borio and Fritz (1995). The multipliers are computed on the basis of long series of monthly data, with the sample period varying across countries, but ending in general in 1993.

According to the above estimates, the adjustment is very rapid in the UK, where around 80% of the adjustment of lending rate to money market rates occurs within one month. The bulk of the countries are situated in a middle position, as the impact effect ranges from one half to one third of the total and the response is complete within six months. In the Scandinavian countries the adjustment is slow, and does not sum to unity even in the long-run. Also in Italy and Greece the impact effect is low; however, in both cases some 40% of the adjustment is achieved within a quarter.

There are many factors which may explain these differences in the responsiveness of lending rates to changes in policy rates. Cottarelli and Kourelis (1995) have documented the role of some structural features of the financial system. Their results indicate that the transmission of monetary policy impulses to lending rates is smoother when there are no constraints on bank competition (in particular, barriers to entry), when the banking system is privately owned, when capital flows are perfectly liberalized, when there is an efficient market for negotiable short-term instruments, and when random fluctuations in the money market rates are contained. The UK financial system, which is characterized by all of these features and hence, is the system in which the adjustment of banking rates, and hence the transmission of monetary impulses, seems to be more rapid. On the other hand, in countries where competition in the banking system is less developed or public ownership of commercial banks is still prevailing, lending rates show a higher degree of stickiness.

The most important implication of different lag structures in the transmission from policy rates to lending rates is that the response of the real economy to monetary impulses will also have different timing and intensity. This means that in EMU, as long as differences in the financial structures persist, monetary impulses from the ECB could impact asynchronously on the economies of the participating countries, thus increasing the risk of policy-induced economic divergence.

#### IV. DIFFERENCES IN THE IMPACT OF MONETARY POLICY ON THE REAL ECONOMY: PRELIMINARY RESULTS

A first line of quantitative research aiming at identifying cross-country differences in the real impact of monetary policy has developed using the vector autoregressive systems (VAR) methodology.<sup>2</sup> However, contrary to expectation, a common finding of recent studies using VAR systems seems to be that the real impact of a monetary policy change is fairly similar in scale and in time across western countries.

Barran Codert and Mojon (1996) have analysed the response to a monetary shock in nine EU countries (Austria, Germany, France, the UK, Denmark, Finland, Italy and Spain) using a VAR model including real GDP, the consumer price index, the exchange rate and the money market interest rate. The main result is that a monetary (restrictive) shock induces an output decline in all countries, ranging from 0.2% to 0.7%<sup>3</sup>. The magnitude is highest in Germany and lowest in the Scandinavian countries, while the other countries are somewhere in between. Delays are longer in the countries where the effect is more pronounced. Overall, however, the effects on the output level are transitory and the trough is reached between four and ten quarters.

Gerlach and Smets (1995) compare the effects of monetary policy on output and prices in the G-7 countries using a parsimonious VAR model comprising output, prices and the short-term interest rate. They present a set of simulations of the effect of a “standardised” monetary shock<sup>4</sup>. The results of this exercise for the European countries participating in the G-7 (France, Germany, Italy and the UK) show that there are no large differences in the transmission mechanism between countries. In all cases, the effect of a monetary tightening on output is quite rapid, while consumer prices start to react with a delay of around one year. However, the point estimates of the effect of a monetary shock on output and prices are larger in Germany than in Italy and France. The estimates for the United Kingdom fall somewhere in between. The authors explain these differences by a stronger impact through the exchange rate channel in Germany.

The results from the VAR modeling, although pointing to some minor differences across countries, seem to be in contrast to what we would expect on the basis of common knowledge about the structure of money and financial markets of the European countries. For example, we would expect the impact of monetary policy to be stronger and more rapid in the UK, where the financial structure seems to be more responsive to policy signals, and slower and weaker in many continental countries.

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2 The appeal of the econometrics of VARs is that the number of restrictions required in the modeling strategy is very limited. This is a big advantage when many countries are involved and the introduction of important common restrictions could considerably distort the results.

3 A direct comparison of the impulse responses across countries is made difficult by the fact that a typical monetary policy shock varies in size and duration across countries (for example, in Germany the typical shock is small in terms of basis points but quite persistent, in Italy is larger but transitory). The authors have analysed the response to a “typical” shock, which has been identified within the VAR framework. This means that the absolute magnitude of the shock can differ across countries. This is the approach most used to identify monetary shocks. However, it becomes problematic if the focus is on differences in the response *to a same shock*, as it would be in case of a single monetary policy.

4 A standardised shock is here defined as a rise in short-term rates by 100 basis points maintained for eight quarters, after which the interest rate is returned to the baseline.

The problem with VAR econometrics is that the results are very sensitive to the ways in which the models are identified. Therefore, the finding that differences in monetary policy effectiveness between countries are limited could simply reflect the inadequacy of the VAR techniques in documenting such differences. Actually, simulations with structural models lead to quite different results, apparently more plausible.

<b>Table 2: Simulation with central bank models: impact of a temporary 1 percentage point increase in short-term interest rates on prices, output, investment, and consumption in 8 EU countries(*)</b>					
	1994	1995	1996	1997	1998
<b>Consumer prices</b>					
Germany	-0.03	-0.14	-0.31	-0.45	-0.55
France	-0.05	-0.15	-0.25	-0.32	-0.32
Italy	-0.48	-0.64	-0.53	-0.17	0.10
United Kingdom	0.89	1.89	-0.46	-2.36	-3.48
Netherlands	-0.13	-0.35	-0.35	-0.23	-0.27
Belgium	-0.14	-0.48	-0.79	-0.81	-0.55
Spain	-0.26	-0.54	-0.66	-0.95	-1.28
Austria	-0.02	0.18	0.05	-0.25	-0.31
<b>Real GDP</b>					
Germany	-0.15	-0.37	-0.30	-0.07	0.09
France	-0.18	-0.36	-0.20	0.01	0.07
Italy	-0.32	-0.53	-0.22	-0.08	-0.13
United Kingdom	-0.35	-0.89	-0.59	0.01	0.24
Netherlands	-0.10	-0.18	-0.15	-0.09	-0.01
Belgium	-0.03	-0.12	-0.23	-0.15	0.02
Spain	-0.05	-0.02	0.03	-0.17	-0.17
Austria	-0.08	-0.14	-0.02	0.04	0.01
<b>Private investment</b>					
Germany	-0.43	-1.21	-0.80	0.30	0.63
France	-	-	-	-	-
Italy (excl. inventories)	-1.10	-2.29	-1.95	-1.72	-2.28
United Kingdom	-1.54	-4.20	-3.30	-1.80	-2.70
Netherlands	-	-	-	-	-
Belgium	-0.34	-1.67	-2.72	1.68	-0.25
Spain	-0.43	-0.88	-1.01	-0.92	-0.49
Austria	-	-	-	-	-
<b>Private consumption</b>					
Germany	-0.14	-0.26	-0.13	0.02	0.13
France	0.07	0.01	-0.05	0.04	0.08
Italy	-0.13	-0.30	0.00	0.38	0.44
United Kingdom	-0.36	-0.88	-0.67	-0.22	0.05
Netherlands	-0.05	-0.16	-0.22	-0.18	-0.04
Belgium	0.01	0.02	-0.07	-0.10	0.00
Spain	-0.04	0.19	0.16	-0.14	0.05
Austria	-0.12	-0.15	-0.08	-0.12	-0.12

(\*) In this simulation, short-term rates increase by 100 basis points at the beginning of 1994 and remain at that level for eight quarters, after which they return to the baseline.

Source: Smets, 1995, pp. 244-247.

The most comprehensive attempt to shed light on differences in the transmission mechanism and the impact of monetary policy using structural models has been conducted at the BIS (Smets, 1995), as a part of a wider project not yet concluded. The exercise has compared the responses of real and nominal variables to a 100-basis-point increase in policy rates maintained for two years. The simulations have been made using national central bank models for their own economies, which have quite different structures. The exercise has concerned twelve countries, including eight EU countries: Germany, France, Italy, the UK, Belgium, Spain, Austria, and the Netherlands. The results show the impact of an interest rate hike on a large set of nominal and real variables. Table 2, above, reports some results relative to the European countries.

Unlike the VAR results, the estimates from the central bank models show quite important differences in the real impact of monetary policy across countries. Moreover, these results are broadly consistent with common *a priori* beliefs. The impact of a monetary tightening is stronger in the UK than in some continental European countries. Germany and France show a very similar pattern of response. Italy is in a middle position, probably because the share of the variable rate credit is close to 75%, as it is in the UK.

A likely explanation for these results is that central bank models tend to reflect differences in financial structures across countries. For example, while VAR models only include short-term interest rates, central bank models generally include short-term *and* long term interest rates (the only exception being the Bank of England model), and often identify the spending components which depend on long-term rates. Hence, they not only account for differences in the response of long-term rates to a change in policy rates but also reflect the fact that the importance of short-term and long-term rates varies across countries and spending components. This specification is sufficient to capture at least part of the effects of different financial structures.

However, the use of different central bank models to compare simulation results across countries is subject to the risk that differences in modelling methodologies may influence the simulation results. On the other hand, even comprehensive structural models such those of the central banks are far from accounting for the complexity of the financial systems<sup>5</sup>. For these reasons the above point estimates should not be given excessive confidence.

## V. CONCLUSIONS

Empirical research on cross-country differences in the impact of monetary policy on the real economy has not yet achieved conclusive results. Nonetheless, there are indications that differences exist at various levels of the transmission mechanism and are potentially important. Differences seem to emerge already in the transmission from policy rate to lending rates, as well as in the reaction of long-term interest rates to monetary impulses. Simulations with central bank models also point to a broad pattern of response of aggregate demand and its components. In this context, the impact on inflation varies in time and magnitude depending on national features of the transmission mechanism.

While part of these differences are likely to depend on the characteristic of the financial structure of individual countries, the current state of research only permits the formulation of few hypotheses consistent with the empirical research. For example, it seems that the efficiency and the deepness of the money market are important for the smooth transmission of monetary policy impulses to lending rates. The degree of competitiveness in the banking system also seems to be relevant for the efficient operation of monetary policy. Economic systems where the share of adjustable debt is higher tend to show a more rapid and intense response to monetary policy changes.

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<sup>5</sup> On these points, see the caveats expressed by the co-ordinator of the exercise (Smets, 1995).



It is difficult, on this basis, to draw sensible policy conclusions. Clearly, any reform aiming at increasing the efficiency of money and credit market goes in the right direction, but further research is needed to single out more specific interventions. Nonetheless, also the simple mapping of the way the transmission mechanism works in different Member States could become an important instrument for the design and the implementation of a single monetary policy in EMU.

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(I.4)  
**THE EXTERNAL DIMENSION**

**I. INTRODUCTION**

While EMU implies an economic policy regime change primarily for the participating countries, it will also have important external implications. Given the economic importance of the euro area, the introduction of the euro will have significant effects on Member States outside of the area as well as on countries outside of the European Union. These so-called external aspects will be investigated in this chapter.

However, exact quantification of the external effects of EMU will not be possible. Firstly, many of these effects will be felt only gradually and will depend upon private sector expectations, while other effects will already be felt before the euro is introduced. Secondly, some of the effects will work in opposite directions, for example, there might be an increased demand for euro assets but also an increased supply of such assets so that the effects of portfolio movements on the exchange rate of the euro are difficult to appreciate. Thirdly, by definition, the external effects of the euro will depend not only upon the economic policies and performance in the euro area but also on those of partner countries.

This paper is organised as follows. Section II describes the structural changes to the international economy likely to result from EMU. For simplicity, we will assume in the remainder of the analysis that the euro area comprises the entire European Union so as to avoid any presumptions concerning the size of initial participation. Section III discusses the implications of the changed policy framework of the euro area. Section IV attempts to draw some conclusions on the likely behaviour of the euro given the structural changes due to EMU and the different environment in which monetary and fiscal policy will be operating. Sections III and IV examine only long-term aspects, without discussing transitional issues<sup>1</sup>. Section V analyses the consequences of EMU for international economic co-ordination and section VI concludes.

**II. THE STRUCTURAL CHANGES BROUGHT ABOUT BY EMU**

EMU will have the effect of creating a very large currency area with an economic weight similar to that of the United States and with a single, deep and large financial market. These characteristics will promote the development of the euro as an international currency. These structural changes are likely to have an effect on the exchange rate of the euro.

**Principal characteristics of the euro area**

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<sup>1</sup> On issues of the transition period (such as dollar overhang, portfolio adjustments or monetary stance in the early stages of the ECB), see Bénassy-Quéré et al. (1997a), European Commission (1997) and Masson and Turtelboom (1997).

An EMU of 15 Member States will have the following main characteristics (see table 1):

- Its economic and commercial weight will be comparable to that of the United States and larger than that of Japan. In 1996 the European Union's share of the GDP in the OECD amounted to 38.3%, as against 32.5% for the United States and 20.5% for Japan. If intra-Community trade is excluded, the European Union accounts for 20.9% of world trade, as compared with 19.6% for the United States and 10.5% for Japan.
- The average degree of openness of the Member States of the European Union (as measured by the share of exports in GDP) is currently 29.8%, compared with 8.2% for the United States and 9% for Japan. The degree of openness of some Member States is higher, rising to more than 60% in the case of Belgium and Ireland. If intra-Community trade is excluded, the degree of openness of the euro area is 10.2%, similar to that of the United States and Japan.
- Due largely to a convergence of economic policy objectives, the economic cycles in the different Member States have over the last ten years become more synchronised. This trend will be reinforced in EMU owing to the implementation of a single monetary and exchange rate policy, the increase in economic interdependence and the likely intensification of economic policy co-ordination. This greater cyclical synchronisation, combined with the size of EMU, will make economic developments in the euro area more important to the world.
- The economic performance of euro area will be less sensitive to exchange rate fluctuations. This reduced vulnerability will result from the disappearance of strains between European currencies that can stem from fluctuations in the currencies of third countries or shocks outside the European Union. The implied exchange rate variability within the single market which reduced consumer and investor confidence, will disappear with the euro's arrival. But this lower sensitivity of the euro area to exchange rate fluctuations does not imply that the euro area will adopt an attitude of "benign neglect" towards the euro exchange rate (see section IV).

**TABLE 1**  
**ECONOMIC INDICATORS: US - JAPAN - EUROPEAN UNION**

	Population (Mio) 1995	Share of OECDGDP (%) 1996	Share of world trade (%) 1996	Export GDP ratio (%) 1996	Foreign exchange reserves in BN \$ end 1995**
USA	263	32.5	19.6	8.2	49.1
Japan	125	20.5	10.5	9	172.4
EU15	370	38.3	20.9*	10.2	349.8

\* Excluding intra-EU trade

\*\* Source : IMF

## **Euro financial market**

The major structural changes resulting from EMU will occur in financial markets. The present segmentation will be overcome in many respects and the European financial market will become truly integrated, providing opportunities in the form of broader funding and investment possibilities. EMU will create one of the largest government bond markets in the world. This market can be expected to develop rapidly. From the beginning of EMU, all new issues of government bonds will be in euro. However, European financial markets and therefore government bond markets can be expected to retain a number of country-specific characteristics (due to different tax treatments and a wide range of financial and monetary rules and instruments) for an interim period at least. EMU will diminish a number of these elements

There will also be no single sovereign borrower on the euro markets as in the case of the Treasury in the United States. The yield on corresponding government bonds in Member States participating in the euro area may not converge completely. But yield differences which will reflect the market's assessment of default risk, are likely to be small given nominal convergence required on entry and the commitment to avoid excessive public sector deficits thereafter.

## **Internationalisation of the euro**

Various factors, such as the size of EMU, the stability oriented policy-mix and the wide financial market underpinning it, should facilitate the *development of the international use of the euro*<sup>2</sup>. The behaviour of private operators, however, will be the most important factor. The development of the euro's international role should first show itself in the countries which have close economic, trade and financial links with the European Union, such as the countries of Central and Eastern Europe and some Mediterranean and African countries. At the world level, these developments will be more gradual given the inertia effects that have prolonged the international role of the dollar since the end of the Bretton Woods system (see Bénassy-Quéré et al. (1997a) and Ilzkovitz (1996)).

The use of the euro in an area whose economic and commercial weight will be equivalent to that of the United States should reduce the information and transaction costs associated with its use. Companies which trade principally with the European Union will be prompted to invoice and pay in euros. With the euro being widely used in international trade transactions, European exporters and importers will no longer have to carry exchange rate risks or cover themselves against such risks. The euro could also be used as a vehicular currency in commercial transactions not involving member countries of EMU. For example, if use of the euro were equivalent simply to that of the German mark today<sup>3</sup> (see box, Table 2), 30% of world exports would be invoiced in euros following the changeover to EMU.

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<sup>2</sup> A currency develops at international level when its use extends beyond the frontiers of the issuing country and when it is used by private and official operators as a means of payment, a unit of account and a store of value (see Icard (1996)).

<sup>3</sup> It is assumed here that the euro's internationalisation ratio will be equivalent to that of the German mark, that ratio being defined as the ratio of world exports denominated in marks to

The impact of the euro's introduction on the allocation of private portfolios is difficult to assess since it is hard to forecast the reaction of economic agents to a new currency. Furthermore, there are transitional and steady state effects. However, in the long term, the factors already identified will tend to increase the attractiveness of the euro. The simple conversion of assets currently held in European currencies into euros will mean that more than a third of the world portfolio will be denominated in euros, a percentage equivalent to that of the dollar. Exchange rate effects of such portfolios movements should remain limited because movements will occur gradually, they are part of a diversification trend which has been in progress since the 1980s (see box, Table 4(a) and (b)) and the increased demand for euro assets is likely to be accompanied by an increased supply of such assets.

The use of the euro as a reserve currency should also develop. The diversification of foreign-exchange reserves in favour of the euro will be linked to its increased use as an instrument of intervention on foreign-exchange markets and as an invoicing currency in world trade. It will mainly depend on the euro intrinsic qualities and its use in the denomination of international financial transactions. This diversification of reserves in favour of the euro would continue a trend that is already evident (see box, Table 1(a)).

### **III. THE POLICY-MIX IN THE EURO AREA AND ITS IMPACT ON THE EURO'S EXCHANGE RATE**

The long-term trend of the euro will depend on both domestic and foreign economic developments and policies. These policies will take place within the framework set out by the Maastricht Treaty that is designed to ensure that the Community is an area of economic growth and stability.

#### **The institutional framework**

As from 1 January 1999, a single monetary policy will be formulated by the European Central Bank. The Bank will be independent and its priority objective will be to safeguard price stability in the euro area. Fiscal policies will be the responsibility of Member States but budgetary discipline will be guaranteed by Treaty obligations to avoid excessive deficits and to submit stability and growth programmes designed to maintain a budgetary situation close to balance or in surplus in the medium term.

The Treaty (article 109) organises the exchange rate policy in three levels:

- The conclusion of formal agreements on an exchange rate system which will be the responsibility of the Council. However, this requires a recommendation from

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Germany's world exports. This internationalisation ratio is 1.4 in the case of the mark, compared with 3.6 for the dollar.

either the ECB or the Commission, the ECB having to be consulted in an endeavour to reach a consensus consistent with the objective of price stability.

- General orientations for exchange rate policy which may, in the absence of an exchange rate system, be formulated by the Council but have to be without prejudice to the primary objective of the ESCB to maintain price stability. The ECB would have to organise its operations in a way consistent with these orientations, which however must not contravene the primary objective of price stability, the ECB being entrusted with the task of conducting monetary and exchange rate policies with the view to respecting this objective.
- Conduct of foreign exchange operations for which the ECB will have sole responsibility.

### **The impact of the policy-mix on the euro exchange rate**

In the longer term, exchange rates are determined principally by fundamental economic factors such as growth, inflationary strains, productivity, budget balances,....These fundamental factors in turn depend on the economic policy pursued, the policy mix. Structural policies, such as those designed to improve the competitiveness of European firms or to increase the flexibility of product and labour markets, may also influence the euro's exchange rate.

The economic policy factors which will influence the euro's exchange rate fall into two categories: internal and external. At the European level, the conditions for a stability-oriented monetary policy are set out in the Treaty. The independence of the ECB and a fiscal policy avoiding excessive deficits are the basis upon which monetary policy will maintain stability and hence sustainable growth. A balanced policy mix should lead to sustainable low long-term interest rates enabling easy monetary conditions at an exchange rate which is appropriate in view of economic conditions.

Considering the economic prospects for the European economy compared to that of the United States, different cyclical positions will impact on the stance of relative economic policies and thus on the exchange rate. Given the Union's objectives to achieve both fiscal consolidation and full employment, this creates conditions for a relatively easy monetary stance in the euro area. Given that fiscal policy is committed to reducing the deficit towards close to balance or surplus, monetary policy would be able to conduct a fairly accommodative policy without jeopardising its primary objective of price stability.

In summary, the euro could evolve into an international currency in an environment of internal stability. In addition to these factors, which are influenced primarily by domestic economic policies, the euro exchange rate would also be influenced by external economic developments.

## **IV. EXCHANGE RATE POLICY IN THE EURO AREA**

This section discusses two issues that are closely interrelated. First, the issue of the euro variability and second, the issue of the exchange rate regime.

### **The euro variability**

It is difficult to determine whether the exchange rate variability of the euro against other major currencies such as the dollar and the yen will be greater than that of the mark, as arguments working in opposite directions can be given.

Martin (1994 and 1997) argues that the euro-dollar exchange rate could be more stable than the DM-dollar exchange rate. His argument is that the euro area will have a lower incentive to use strategically the exchange rate to stabilise the economy because of the large size of the euro area and because output depends less on the exchange rate in a large country than in a small one.

However, other authors (Artus (1996 and 1997), Bénassy-Quéré et al. (1997b), Bergsten (1997) and Cohen (1997)) argue that EMU should lead to higher exchange rate variability. They consider that EMU, being a more closed economy, will be less concerned with trade imbalances and the inflation consequences of exchange rate changes. Furthermore, one motivation of the European Union to take an interest in external monetary developments has been the EMS strains caused by a weakening dollar. Hence, according to these authors, the creation of the euro will eliminate one of the EU's main interest in managing exchange rates. This suggests that the euro area could adopt an attitude of "benign neglect" towards the euro's exchange rate.

But such an attitude would be at odds with Europe's experience of co-ordination. It would expose it to the danger of excessive fluctuations or even prolonged misalignments, in the euro's exchange rate which could undermine the viability of the global trading system. Periods of misalignments are frequently accompanied by protectionist temptations. Furthermore, it is likely that there will be pressure to include exchange rate considerations in the conduct of economic policy. This pressure could stem from sectors or regions which are more dependent on the extra-Community market for their sales. The ECB, national governments and Community bodies will continue to take account of the euro's exchange rate, the former primarily because it may affect the price-stability objective and the latter because it will influence cost-competitiveness and the growth outlook for the European economy.

The EU's increased influence on the international monetary scene will also provide an opportunity for increased economic dialogue with its partners. The adoption of the euro should therefore be seen as an opportunity to put an end to the erratic fluctuations and prolonged misalignments of the type that occurred between 1980 and 1985 and to contribute to achieving more stable international monetary relations. This could contribute to creating greater exchange rate stability in the international monetary system..

### **The future exchange regime of the euro area**



A more difficult question is whether a more structured exchange rate regime should be envisaged to manage the steady-state relationship that will eventually emerge between the euro and the dollar and the yen. A priori, there is no reason to expect that the euro area would require any change from the current system which seeks to correct marked misalignments and excessive exchange rate fluctuations through a combination of economic policy dialogue, the occasional use of interventions and verbal exchange rate management.

However, some authors consider that the risk of increased volatility and prolonged misalignments are good arguments in favour of new currency management arrangements. An option which is discussed is that of target zones (see Bergsten (1997) and Artis and Salmon (1997)). This system implies the adoption of an exchange rate objective but with relatively large fluctuation margins. However, there are a number of technical difficulties associated with the implementation of such a system<sup>4</sup> and its advantages over a softer system of managed floating are not clearly demonstrated. This option is also unrealistic before the euro reaches its eventual steady state as there would be no sound basis on which to base the target. Other options to improve the current system exist. For example, the surveillance of economic policies and the transparency of the co-ordination may be increased.

## **V. IMPLICATIONS OF EMU FOR THE INTERNATIONAL MONETARY SYSTEM**

The completion of EMU has the potential to lead to an important evolution in the international monetary system. But the establishment of European Monetary Union is a natural continuation of the on-going process of European integration and the single currency is being introduced at a time when the international monetary system is already in a period of transition, with the dominant position of the dollar giving way to a more multi-polar system. Such a system is not inherently less stable than a unipolar system but, by definition, appropriate arrangements for co-operation between poles will be crucial to the stability of the system.

The implementation of EMU will also tend to make the international monetary system more symmetrical with the potential gains to be obtained from co-ordination tending to be more uniformly distributed among the various partners. European economic policies are likely to have bigger spill-over effects on the economies of Europe's partners. Monetary policy in EMU, particularly under the assumption of a synchronised European business cycle, would certainly have an impact on global interest rate constellations. European monetary unification and financial integration, which will increase the attractiveness of euro-denominated assets, will also give the ECB's actions an international dimension beyond that of the national central banks today. On the other hand, the removal of the possibility of intra-EU tensions triggered by international exchange rate movements removes one source of EU vulnerability towards the outside world (see Bergsten (1997), Henning (1996a and b)). The development of a more balanced international monetary system might result in greater

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<sup>4</sup> Such as the choice of the central rate to be targeted, the width of the bands, the instruments to keep the exchange rate commitment...(see European Commission (1994)).

difficulty in managing exchange rate internationally (see Alogoskoufis and Portes (1997)) but it could also create an opportunity to strengthen the effectiveness of economic policy co-ordination

The direct implication of EMU is that the EU will have a single exchange rate and a single monetary policy, and that it will be the policy mix at European level that is relevant for the rest of the world and for any international macro-economic policy co-ordination. Although part of this policy mix is the result of policies set at the national level, the obligation of the member States to closely co-ordinate their economic policies (Article 3a) and the different procedures set out in the Treaty to accomplish this should enable the euro area to pursue consistent policies and provide a valid reference point for international economic affairs, both bilaterally and in international bodies.

This reality is reflected in the Maastricht Treaty, and in particular in Article 109( §3, 4 and 5) of the EC Treaty. This Article not only sets out internal procedures for the Community to establish an exchange rate policy, as discussed earlier, but also offers a framework which will allow the EU to be an effective actor on the international stage on macro-economic and monetary issues. Although the Article is complex, there are several principal points:

- it is clear that the EU, or the euro area, must establish, where relevant, a common position for international discussion of “agreements concerning monetary or foreign-exchange regime matters” and on “issues of particular relevance to economic and monetary union”;
- responsibility for these matters lies with the Council, although both the ECB and the Commission have roles to play. The underlying intention of these provisions is to make clear that the Council and the ECB co-operate in this area in a way that recognises ECB responsibility for monetary policy and the primary objective of price stability;
- the representation of the Community at international level is for decision by unanimity, although it must respect the allocation of competences in the economic and monetary union.

These issues will need serious discussion both within the Community, and with the Community’s partners in the relevant international organisations, since the advent of EMU will also have implications for how some of these institutions operate. A straightforward case concerns the IMF whose balance of payment assistance and economic surveillance will be affected by EMU.

## VI. CONCLUSION

The main messages of this analysis are, firstly, that the establishment of EMU will have important implications not only for Member states but also for countries outside the European Union. Secondly, that these changes will only take place gradually and that there is no reason to expect more instability in the long term in the international monetary system..

The major changes induced by EMU are that much of the present segmentation of European financial markets will be overcome, that the euro will play a progressively more important role as an international currency and consequently that the ECB's actions will have an international dimension beyond that of national central banks today. More generally, by creating a currency area whose economic and commercial weight will be comparable to that of the United States, EMU will increase the spill-over effects of European economic policies on the economies of its partners.

A priori, the policy-mix prevailing in the euro area is likely to be of the right kind, with the monetary policy aimed at price stability and budgetary discipline guaranteed by the Stability and Growth Pact. The euro should therefore be a stable currency. The future exchange rate policy of the euro area is likely to be similar to the current one, in which a floating system is complemented by international co-ordination. By increasing symmetry in the international monetary system, EMU should ensure that the benefits to be gained from international co-ordination are more equally distributed. The establishment of EMU is thus an opportunity to strengthen the effectiveness of international economic co-ordination, contributing to greater stability of international economic relations.

There is therefore no reason to expect that the euro-dollar exchange rate will be less stable than the DM-dollar exchange rate. The Maastricht Treaty and in particular Article 109 offers a framework which will allow the European Union to be an effective actor in international discussions of macro-economic and monetary issues. But EMU will also have implications for the operation of international institutions, such as the economic surveillance carried out by the IMF. These issues need to be clarified to permit effective co-ordination at the world level.

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**Box****INTERNATIONAL ROLE OF THE MAIN CURRENCIES****1. Official role**

A. Share of total official currency holdings (%)			
	end 1973	end 1983	end 1995
US dollar	76.1	71.1	61.5
European currencies <sup>1</sup>	14.3	15.8	20.1
of which: German mark	7.1	11.7	14.2
Yen	0.1	4.9	7.4

1 Pound sterling, German mark, French franc, Dutch guilder

Source: IMF annual reports.

B. Number of currencies linked to:	1983	1994	1994 (% of world GNP)
the dollar	34	25	1.53
European currencies (including the ecu)	18	19	0.25

Source: IMF annual reports.

**2. Currency use in international trade**

Share of the main currencies as regards use in international trade				
	1980		1992	
	% of world exports in	Internationalisation ra	% of world exports in	Internationalisation ra
US dollar	56.4	4.5	47.6	3.6
German mark	13.6	1.4	15.5	1.4
Yen	2.1	0.3	4.8	0.6

1 For the definition, see footnote 1 of text.

Source: European Commission

**3. Transactions on foreign-exchange markets**

Breakdown of transactions by currency <sup>1</sup>			
	April 1989	April 1992	April 1995
US dollar	90	82	83
German mark	27	40	37
Yen	27	23	24
Other	56	55	56
Total as % <sup>2</sup>	200	200	200

1 Gross turnover. Daily averages.

2 Since any transaction on the foreign-exchange market involves two currencies, the total of the proportions of transactions involving a given currency is 200%.

Source: BIS, surveys of activities on foreign-exchange markets

**4. Currency in which financial assets and liabilities are denominated**

A. Share of outstanding international bonds			
	end 1981	end 1992	end 1995
Dollar	52.6	40.3	34.2
European currencies	20.2	33.0	37.1
of which: German mark	n.a.	10.0	12.3
Yen	6.9	12.4	15.7

Source: BIS, international banking and financial activity

B. Share of world private portfolio			
	end 1981	end 1992	end 1995
Dollar	67.3	46.0	39.8
European currencies	13.2	35.2	36.9
of which: German mark	n.a.	14.7	15.6
Yen	2.2	6.9	11.5

Source: BIS, international banking and financial activity, and own calculations.

(II.5)  
**ACHIEVING BUDGETARY DISCIPLINE**  
**The Maastricht Consolidation Process**

## **I. INTRODUCTION**

There is currently a growing awareness in the literature and among governments that strong political biases lie at the root of the tendency of governments to run excessive deficits and accumulate debt. There is compelling evidence that governments do not smooth taxes, as deficits during periods of economic hardship are not counterbalanced by budgetary improvements on a sufficient scale in periods of strong economic growth.

To restrain their bias towards spending and deficit, governments in most industrialised countries are at present considering, or have already adopted, measures to force themselves into a straitjacket of budgetary discipline. They are attempting to limit their fiscal misbehaviour by “tying their own hands”.

There is increasing support for the view that budgetary institutions are important determinants of fiscal performance. Even though inadequate institutions *per se* may not create deficits, they tend to delay the necessary budgetary adjustments following adverse shocks. Measures that change institutional budgetary processes have a direct impact on the rules and practices according to which budgets are drawn up, adopted and implemented.

The Maastricht budgetary rules - comprising of reference values for deficits and debt to be achieved within a given time-span, a common accounting framework for computing public finance variables and a call to adapt national procedures to the requirements of budgetary discipline - are probably the strongest example so far of a “commitment technology” adopted by governments in the attempt to establish fiscal discipline credibility.

This chapter reviews the Maastricht experience with budgetary consolidation in the light of the current theories and empirical analyses of the behaviour of budgetary authorities.

Section two presents a brief discussion of the tax-smoothing theory of budget deficits as well as of the main theories of politically-induced deficit biases. Current evidence clearly shows that the budgetary behaviour of EU countries over past decades has not conformed with tax-smoothing. The third section reviews the main features and impact of rules imposing fiscal discipline and analyses the Maastricht budgetary framework from a political economy viewpoint. Section four examines the scale and composition of the budgetary adjustments which have taken place in EU member states over recent years and assesses whether this Maastricht-induced shift is consistent with the overall budgetary framework of EMU. The final section draws the main policy conclusions from the analysis.

## II. POLITICAL DEFICIT BIAS

### What drives budgetary behaviour?

Under the inter-temporal budget constraint, the present value of an exogenously given path of government spending has to be equal to the present value of government revenue. The neo-classical theory of optimal tax-smoothing suggests that, in order to minimise the distortionary cost of taxation, tax rates should be kept constant over the business cycle. Thus, instead of increasing taxation when spending is exceptionally and temporarily high during periods of economic slowdown, tax rates should remain unchanged. Therefore, under tax-smoothing, deficits will occur during recessions but should be reversed during phases of expansionary growth.

Deteriorations and improvements in budget balances are thus used as a buffer to accommodate the effects on the government budget of cyclical fluctuations in economic activity (Alesina and Perotti, 1995a and 1996a). These cyclical fluctuations in the budget balance should therefore cancel out over the cycle. A Keynesian view of the world would reach similar qualitative conclusions<sup>1</sup>. If governments pursue active stabilisation policies to supplement the working of budgetary stabilisers, the swings in the budget balance will be even more pronounced but, again, they should cancel out over the cycle<sup>2</sup>.

Even though tax-smoothing does not strictly require that a balanced budget should be maintained over the cycle, it does not provide a justification for running deficits over longer time horizons. Under this theory, there is thus no reason why government debt, as a share of GDP, should show a pronounced upward trend in the long run. However, it is precisely the observation of upwardly-trending debt ratios in most, though not all, industrialised countries since the beginning of the seventies that led to the development in the literature of other interpretations of the behaviour of budgetary authorities besides the tax-smoothing theory. Common to these alternative views is the emphasis on the strong political bias of governments to run excessive deficits and accumulate debt.

According to the “fiscal illusion” theory, voters typically overestimate the benefits of current government spending and underestimate the costs of future taxation. As a result, budgetary policies become asymmetric over the cycle: deficits are increased during recessions but are never reversed to a position of surplus during expansions. In addition, as pointed out by political business cycle theory, government deficits fluctuate with the electoral cycle: governments tend to adopt expansionary policies and increase deficits during election years. These theories, however, fail to explain why voters do not learn from past experience to see through government behaviour.

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<sup>1</sup> In the tax-smoothing model, as output is supply-determined, stabilisation policies do not play any role. Therefore, in a Keynesian perspective, budgetary swings would be even larger.

<sup>2</sup> In addition, budget deficits to finance government investment allow to spread out the burden of the investment on an inter-generational basis and can be expected to be counterbalanced by future revenue generated by the investment.



Another explanation of why governments have a tendency to accumulate debt is that a government in office, especially when it has only a small chance of being re-elected, might choose to limit the budgetary options available to its successor by imposing on it the burden of high debt. The strategic purpose of such a debt build-up is that it imposes severe constraints on the composition of budget spending for future governments. However, such a strategy appears to be mainly of theoretical interest in that it would apply only if a government knows that it will not be re-elected and so far it does not seem to have been common in Europe.

Budgetary behaviour also depends on the underlying features of political institutions. Weak coalition governments and frequent changes in government are often associated with a tendency to debt accumulation. The literature has shown that coalition governments, which are often the outcome of elections under a proportional electoral system, are generally too weak to implement swiftly the necessary budgetary adjustments following a negative shock and therefore tend to have larger deficits over longer periods than strong single-party governments. However, the recent examples of some EU countries (for example, Belgium and Italy) show that a widely-shared commitment to achieve a strategic objective (i.e. joining EMU) could twist the balance in favour of fiscal discipline, even in the case of traditionally profligate coalition governments.

Budgetary misbehaviour tends to occur under budgetary institutions which are inadequate to enforce fiscal discipline. Budget procedures which allow large negotiating margins for spending ministers during the preparation of the draft budget or which leave ample room for parliamentary amendments weaken attempts to redress the budgetary situation in periods in which fiscal adjustments are needed (Alesina and Perotti, 1995a).

### **Absence of tax-smoothing in EU member states**

There is ample evidence that over the past decades EU countries have not behaved in accordance with the policy prescriptions of the tax-smoothing theory. In particular, under tax-smoothing, two interrelated phenomena should be observable:

- a) accumulation of government debt during periods of economic slowdown, offset by movements in the opposite direction in periods of cyclical upturn;
- b) a broadly linear negative relationship between the budget deficit and the output gap, with the structural balance either constant over the cycle or moving together with the cyclical component if the government pursues a discretionary policy<sup>3</sup>.

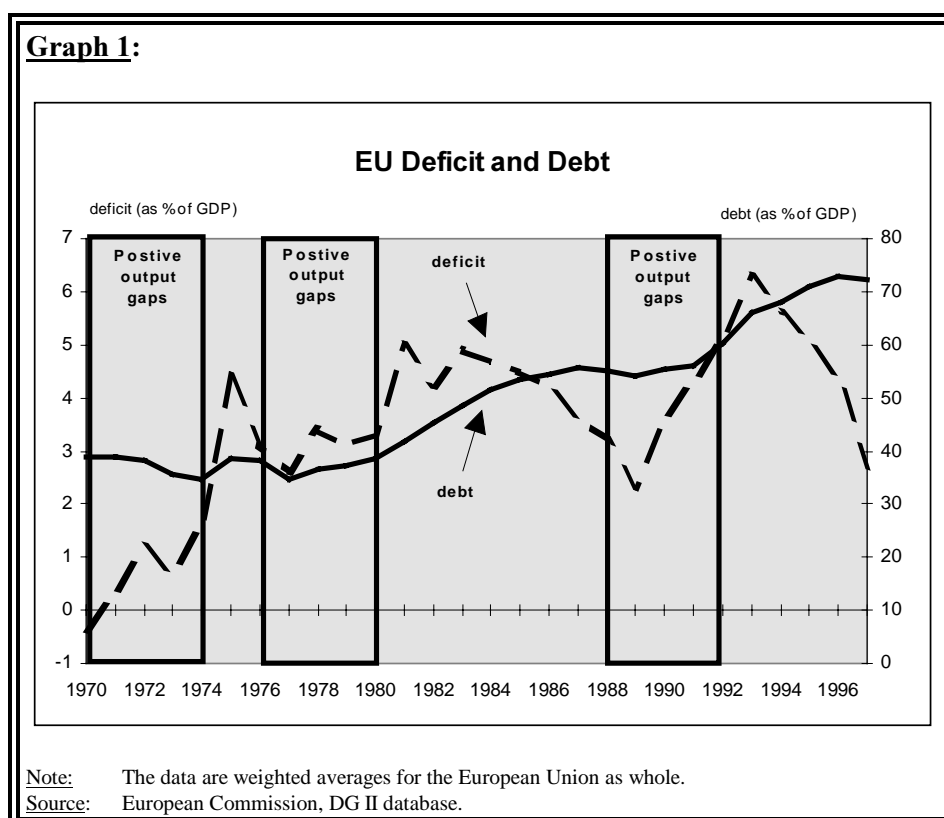
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<sup>3</sup> The overall budget equation can be written as follows:  $d_t = \hat{d} - (\alpha + \beta)G_t$ , where  $\hat{d}$  captures the fixed long-run structural component of the budget balance,  $\alpha$  the sensitivity of the budget balance to the output gap,  $\beta$  the discretionary reaction of the budgetary authorities to the cycle (assumed to be linear for simplicity), and  $G_t$  the output gap in year  $t$ . Under “pure” tax-smoothing,  $\beta$  is equal to zero.

This behaviour could not be observed in the European Union during the past two decades.

First of all, the build-up in debt that has occurred in many EU member states did not take place exclusively during periods of economic slowdown. This can be seen in Graph 1. The graph shows the evolution of the deficit and debt ratios for the European Union as a whole over the past two and a half decades. As shown in the marked parts of the graph, the average deficit and debt ratios continued to increase, albeit at a decelerating rate, during periods of positive output gaps, i.e. when the economy was operating above its trend reference path.

Secondly, there occurred a differentiated behaviour of budget balances over different phases of the cycle. EU member states have, in the past, reacted rather prudently to “harsh” recessions - resulting in large negative output gaps - and on average there has been no systematic tendency to loosen discretionary budgetary policy during these periods (Buti *et al.*, 1997). However, EU member states loosened fiscal policy in “good” periods, thereby reversing the budgetary improvements brought about by the working of the automatic stabilisers.

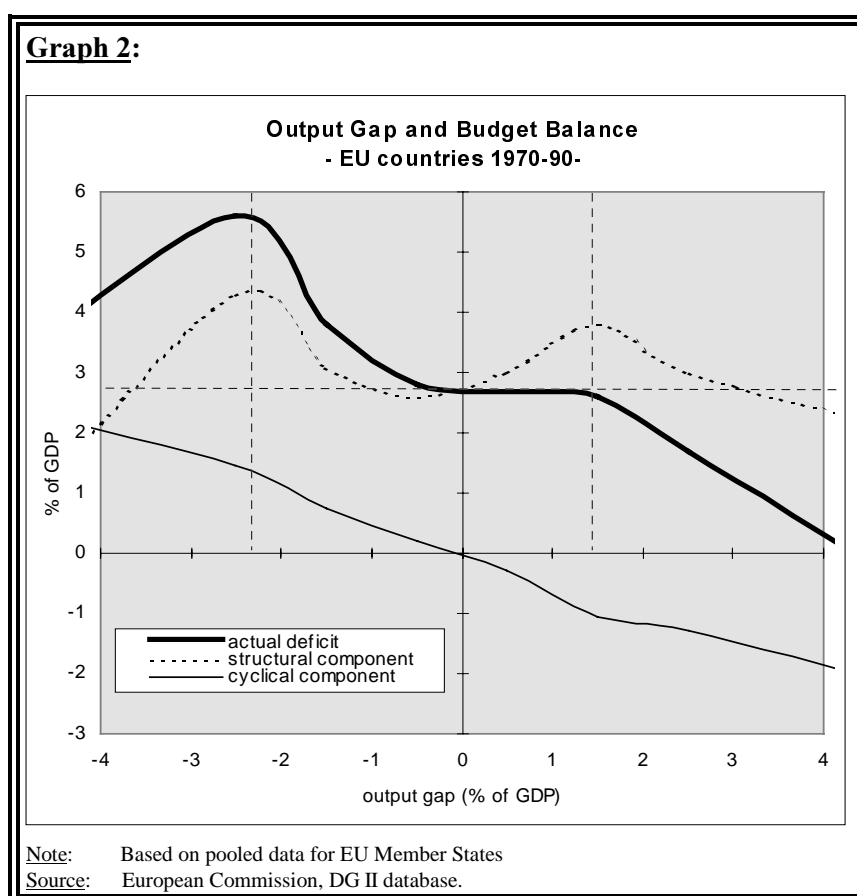


This can be seen in Graph 2, which shows output gaps for EU countries against their actual and cyclically adjusted balances<sup>4</sup> over the period 1970-90. The output gaps were divided into ranges spanning 1% point of trend GDP. For each range, the corresponding average actual budget balance as well as its cyclical and structural

<sup>4</sup> For a description of the Commission services' method to decompose the actual budget balance into a cyclical and structural component, see European Commission (1995).

components were calculated. The data show that when the economy was situated at its trend level, i.e. when there was a zero output gap, EU member states have on average run deficits of around 3% of GDP<sup>5</sup>.

When there is a *moderately negative output gap* from 0% to around -2% of trend GDP, the actual deficit gradually increases as the negative output gap becomes larger: the actual deficit goes from around 3% of GDP with a zero output gap to almost 6% of GDP with an output gap of slightly less than -2.5%. This widening of the actual deficit can be partially explained by the operation of the automatic stabilisers: the cyclical component of the deficit increases in line with the output gap from zero to 1.3% of GDP.



In addition, however, there is a counter-cyclical discretionary fiscal relaxation: thus, the structural component of the deficit also increases from around 3% of GDP to slightly more than 4% of GDP.

When there is a *strongly negative output gap* of more than -2% of trend GDP, the working of the automatic stabilisers is increasingly counterbalanced by pro-cyclical fiscal retrenchment. Presumably to avoid budget deficits getting out of hand, the

<sup>5</sup> Thus, over the period 1970-90, the government budget balance of EU member states was far away from close-to-balance or in surplus during normal economic conditions, as required by the Stability and Growth Pact.

continuing increase in the cyclical component is compensated for by a decrease in the structural deficit. Thus, when the output gap increases from -2% to -4%, the cyclical component of the deficit increases from around 1% of GDP to 2% of GDP, while the structural component decreases from above 4% of GDP to around 2% of GDP. As a result, the actual deficit falls from around 6% to 4% of GDP.

When there is a *moderately positive output gap* between 0% and 2% of trend GDP, the actual deficit remains stable in the initial phase. When the positive output gap rises from 0% to 1.5% of GDP, the structural deficit increases from 3% to slightly below 4% of GDP. Thus, the positive contribution of higher growth to the improvement in the budget balance is fully offset by a pro-cyclical relaxation of fiscal policy.

When there is a *strongly positive output gap* of more than 2% of trend GDP, the actual budget deficit improves gradually and moves towards a balanced budget position. The structural deficit slowly decreases, returns to its initial level, and even falls slightly below it. The positive contribution of strong economic growth to the improvement in the overall budget balance is thus reinforced by a fiscal tightening, which may have been implemented in order to avoid overheating.

To summarise, EU member states' discretionary fiscal policy during the seventies and eighties was counter-cyclical in the case of moderately negative output gaps and strongly positive output gaps. But it was forced to "limit the damage" in the case of strongly negative output gaps, as member states prevented budget deficits from getting out of hand by capping the deficit at a given maximum value. This seems to indicate that member states already implicitly followed deficit ceilings in their past budgetary behaviour (though at a much higher level than that set by the Maastricht Treaty). By contrast, they behaved in a perverse manner when growth was just above potential as they did not seize the opportunity of positive cyclical developments to reduce the deficit.

### **III. RULES FOR ACHIEVING FISCAL DISCIPLINE**

Even coming out of a period of high growth at the end of the eighties, most EU member states were still confronted with serious and persistent fiscal imbalances at the beginning of this decade. Thus, it is often claimed that EU governments opted to "tie their own hands" within a European Union framework to overcome their deeply-rooted bias towards running excessive deficits and so to justify to their public opinion the need to implement unpopular measures.

According to such an interpretation, the budgetary targets set in the Maastricht Treaty served as an external device to trigger budgetary retrenchment, which in any case had become indispensable (McKinnon, 1997). The "virtuous" countries, such as Germany and France, which at that time had their public finances well under control, saw these targets as a "screening device" to ensure that only countries with a sufficiently good track record of fiscal discipline could enter EMU. The Maastricht targets thus aimed to ensure a preference towards fiscal discipline at the start of EMU.

#### **Numerical targets and procedural reforms: substitutes or complements?**

Numerical targets and procedural reforms are often referred to as typical “commitment devices” to achieve and sustain fiscal discipline<sup>6</sup>.

*Numerical targets*, such as the bipartisan agreement in the United States to balance the budget by 2002 or the Maastricht budgetary convergence criteria, impose a permanent constraint on budgetary policy by requiring it to meet a specific target or by imposing an upper ceiling. Their degree of severity depends on which part of the government sector is covered, on the budgetary indicator chosen, and on the threshold being targeted. Rigid balanced-budget rules covering both the current and capital balances of the general government sector are an example of highly binding rules, while contingent rules allowing for tax-smoothing or with escape clauses are less stringent.

*Procedural rules*, on the other hand, do not set specific numerical targets but directly impose changes on the procedures according to which government budgets are presented, adopted and carried out. “Hierarchical” procedures, which attribute strong power to the treasury or finance minister to overrule spending ministers during the intra-governmental preparation of the budget and which limit the ability of the parliament to amend the government’s budget proposals, are more conducive to fiscal discipline than collegial procedures, which give spending ministries more room for manoeuvre to increase their budgets or for the parliament to introduce modifications.

In practice, both types of measure have proven to be effective tools to contain political biases in fiscal policy-making and to achieve and sustain fiscal discipline. Rather than being mutually exclusive, they are often implemented in parallel.

As shown in the next section, the highly visible reference values adopted in the Maastricht Treaty have provided a useful device to jump-start budgetary consolidation and to redress the public finance imbalances which existed at the beginning of this decade in most EU member states. Besides setting specific numerical ceilings for government deficit and debt levels and a time-table for achieving them, the Maastricht Treaty also instructed member states to make their budgetary procedures more conducive to fiscal discipline, while avoiding the setting up of a uniform model for national procedures.

The main features and impacts of both types of measures have been analysed extensively. The literature provides evidence on the effectiveness of numerical targets and procedural rules for both the US states as well as for EU member states. Eichengreen (1993) finds, for example, that the statutory and constitutional deficit restrictions in US states exert a significant restraining influence on the budgetary behaviour of state governments and that the more stringent the restrictions the more conducive they are towards the targeted position of a balanced budget. Von Hagen (1992) and von Hagen and Harden (1994) also provide empirical evidence which suggests that procedural rules leading towards a more hierarchical design of the budget process help to avoid excessive government spending and deficits in some EU member states.

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<sup>6</sup> For a detailed discussion of the main characteristics as well as the advantages and disadvantages of numerical targets and procedural rules, see, for example, Alesina and Perotti (1996a and 1996b), Corsetti and Roubini (1992) and Roubini (1992).

The lower government deficits which follow from the imposition of numerical budget targets in US states are mainly obtained in the short run via lower levels of government spending, and not via increased taxation (Bayoumi and Eichengreen, 1995; Poterba, 1996). Over longer time horizons, however, both taxes and spending tend to adjust. There is evidence that strict numerical rules reduce the responsiveness of government budgets to the cycle and therefore limit the extent to which budgetary policies may contribute to the stabilisation of cyclical fluctuations in economic activity. Under stringent balanced-budget restrictions, budgetary policies may even become pro-cyclical and thus increase the cyclical volatility of the economy. In addition, governments may reduce the cyclical sensitivity of the budget. As to the latter, most of the reduction in the automatic stabilisers associated with numerical balanced-budget targets was found to take place on the expenditure side, i.e. budgetary behaviour following the imposition of strict numerical rules mostly reduces the cyclical sensitivity of government spending and less that of government revenue (Bayoumi and Eichengreen, 1995).

A drawback of numerical targets is the incentives they introduce for one-off or accounting measures in an attempt to satisfy the criteria at any cost. This entails a loss of information about the government's true budgetary situation and as a result negatively affects the credibility of the government's commitment to fiscal discipline. Empirical evidence for US states shows, however, that even though accounting devices make up a non-negligible part of the fiscal adjustment to numerical targets in the short run, they do not appear to be the primary source of deficit reduction in the longer run (Poterba, 1996). To prevent their circumvention and in order to reduce monitoring problems, these targets and, more broadly, the overall accounting framework need to be simple and transparent.

Procedural rules imposing hierarchical, closed and transparent budgetary procedures are equally effective in ensuring fiscal discipline as numerical rules, while at the same time maintaining flexibility. Von Hagen and Harden (1994) find a clear correlation between the size of a country and the nature of its commitment to fiscal discipline: the larger EU member states, such as Germany and France, which were relatively successful in maintaining fiscal discipline during the eighties had adopted procedural rules, while the smaller countries opted for numerical targets<sup>7</sup>.

### **The Maastricht provisions**

The Maastricht Treaty sets specific reference values for government deficit and debt levels - 3% of GDP for the deficit and 60% of GDP for the debt ratio -, on the basis of which the budgetary positions of EU member states are assessed. In addition to setting specific numerical ceilings, the Maastricht Treaty also instructs EU member states to

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<sup>7</sup> According to these authors, in view of their more complex administration and the heterogeneity of interests, the larger countries apparently needed more flexible and discretionary rules, while the smaller countries found it easier to unite behind a single budgetary target. Thus, the main determining factor appears to be more the state organisation and institutional complexity of a country rather than simply its size.

adopt budgetary procedures conducive to fiscal discipline<sup>8</sup>. While their importance is thus recognised in the Treaty, applying effective budgetary procedures is left at the discretion of EU member states. In practice, most member states have tightened budgetary procedures on their own initiative in order to meet the budgetary targets set by the Maastricht Treaty.

As the Maastricht budgetary targets impose a common accounting framework, they increase the transparency and comparability of budget figures among EU member states. As such, they restrain the tendency of policy makers to try to obtain a strategic advantage by creating confusion concerning the government's underlying budgetary situation (Alesina and Perotti, 1996a and 1996b). By imposing increased transparency, the Maastricht targets also increase the feasibility of expenditure control (Tanzi, 1995).

In monitoring member states' compliance with the budgetary targets set in the Treaty, the Commission acts as an external agent and thus adds to the surveillance already exercised via peer pressure (Corsetti and Roubini, 1992). In addition, to comply with the reporting requirements of the Treaty, EU member states have started to harmonise their budgetary accounting practices and are adopting the deficit and debt definitions used in the Treaty as the main indicators for budgetary discussions at the national level.

Can a parallel be drawn between the rules on monetary and fiscal arrangements in the Treaty? In the monetary domain, the mandate, institutional organisation and procedures of the European and national central banks are spelled out in detail. It thus appears as if the authors of the Maastricht Treaty opted to set numerical targets in the fiscal domain, while in the monetary domain they imposed procedural rules (Eichengreen, 1996).

This opposition, however, is unwarranted. During the third phase of EMU, monetary policy will be centralised at the European level and competence transferred from the national central banks to the European central bank. The procedural requirements which are imposed on the national central banks during stage two of EMU have been inserted in the Treaty in order to allow the banks to prepare for the institutional transformation to the European System of Central Banks during stage three. Therefore, these procedural conditions cannot be seen solely as an entry criterion for participation in EMU, but have to be regarded essentially as facilitating the institutional set-up during stage three. As budgetary policy will remain a national policy tool, the drafters of the Treaty saw no need to impose uniform procedural arrangements in this area.

It can be argued that the imposition of just procedural rules as a screening device for entry into EMU would not have been sufficient to kick-start a process of fiscal retrenchment and overcome the political deficit bias in EU member states. Indeed, for such procedural rules to be effective, a "regime-shift" needs to take place during which fiscal discipline becomes a major element in the objective function of

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<sup>8</sup> Article 3 of Protocol n° 5 on the Excessive Deficit Procedure specifies that "Member States shall ensure that national procedures in the budgetary area enable them to meet their obligations in this area deriving from this Treaty".

governments and during which ministries, and especially the treasury, change their incentive structure.

The aim of EU governments to achieve the numerical budget targets set by the Maastricht Treaty and to participate in EMU has triggered precisely such a shift in priorities, which would have been more difficult to realise through the imposition of procedural rules. However, to reinforce fiscal discipline as a permanent feature of stage three of EMU, procedural reforms could be useful. Indeed, in a number of countries, the combination of the imposition of a harmonised accounting framework with the urge to meet the numerical targets has led to significant procedural reforms conducive to budgetary discipline<sup>9</sup>.

In order to impose fiscal discipline as an entry criterion for participation in EMU, numerical targets are in addition more operational and easy to monitor than procedural rules and better show the “distance” – to policy-makers, citizens and markets - which still has to be overcome before a sound public finance equilibrium is reached.

#### **IV. THE MAASTRICHT CONSOLIDATION PROCESS**

The previous section illustrated that international experience shows that both numerical and procedural rules can be effective in curbing governments’ politically-induced bias towards deficits. Furthermore, it was argued that the sharp dichotomy between the two types of rules often found in the literature is somewhat misleading in the case of the Maastricht Treaty.

The bottom line of this debate, however, is the effectiveness of the Maastricht process in achieving and sustaining fiscal rectitude. Has the consolidation path set off by Maastricht allowed EU countries to escape from the trap of unsustainably high deficits and growing debt in which they seemed to be stuck in the past two decades? Does the current budgetary consolidation represent a genuine “regime-shift” in running budgetary policy? What is the likelihood of a reversal in the recent improvements in budget balances, thereby endangering past budgetary retrenchments and having negative effects on the functioning of EMU? These questions are addressed below.

##### **What determines the success of budgetary retrenchments?**

Putting public finances in order is difficult. The threat of economic hardship following deficit cuts militates against “head on” radical approaches to budgetary retrenchments.

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<sup>9</sup> Generally, EU member states are putting more emphasis on a medium-term approach to setting their budgetary strategy. The convergence programmes have, in this respect, acquired considerable importance in domestic budgetary planning. Many member states have also introduced expenditure control mechanisms in their medium-term planning, in the form of limits on annual expenditure growth, and have improved their monitoring and control mechanisms on budgetary execution.



Moreover, even governments that try in earnest to tackle budgetary imbalances often fail<sup>10</sup>.

A growing body of literature has recently examined the features of budgetary retrenchments over the past two to three decades and the possible factors which affect the likelihood of success - “success” being broadly defined as stabilisation of the government debt ratio and then its shift onto a declining path.

As shown by Alesina and Perotti (1995b), budgetary consolidations since the beginning of the seventies have been achieved mainly through tax increases. These results are confirmed by McDermott and Wescott (1996), who analysed episodes of significant fiscal consolidation over the period 1970-95 in industrialised countries. Out of a total of 62 episodes, in 37 the deficit was cut mainly (by at least 60 percent) through revenue increases, in 17 it was reduced mainly through non-investment expenditure cuts, while in 8 cases there was a broadly equal mix of revenue and expenditure measures.

Two features of budgetary retrenchment seem to be particularly important in ensuring a successful outcome: scale and composition.

The larger the magnitude of the budgetary cuts, the more likely their impact on government debt. As argued first by Giavazzi and Pagano (1990), there could be a non-linearity between budgetary adjustment and economic activity: while in the event of small cuts traditional Keynesian effects dominate, confidence and crowding-in effects in response to larger adjustment packages may help in offsetting the direct reduction in demand, thereby sustaining the consolidation efforts. The chances of a positive outcome may be enhanced when bold consolidation efforts, often undertaken as part of a broader reform package, boost the credibility of the government’s commitment to fiscal discipline.

The composition of budgetary consolidation also appears to play an important role in determining its success. There is increasing evidence in the literature that deficit reductions that take place through expenditure cuts, rather than tax increases, have a much higher probability of reducing the stock of debt (Alesina and Perotti, 1996a and 1996b). If taxes are distortionary, focusing on expenditure can have virtuous effects to the extent that it limits disincentives and signals a reduction in expected future taxes. Moreover, the composition of expenditure cuts also has an important impact on the persistence of the budgetary adjustment: more persistent improvements are those that reduce the deficit mainly by cutting social expenditure and the wage component of government consumption, while non-lasting adjustments primarily rely on tax increases and cuts in capital spending. This is explained by Perotti (1996a, p. 106) as follows: “Because cuts in public employment and in transfer programs are politically much more costly than, say, capital-spending cuts, perhaps only governments that are determined to carry out a lasting consolidation undertake them. ... At the same time, as these adjustment are conducive to a better growth performance, they are also associated with a better future fiscal performance”.

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<sup>10</sup> Amongst the 62 episodes of significant budgetary consolidation in industrialised countries over the last 25 years, examined by McDermott and Wescott (1996), only 13 were successful in shifting the debt ratio onto a declining path.

When do governments implement the “right” adjustment measures? An important determinant seems to be the initial public finance conditions. There appears to be a clear interaction between the scale and composition of the adjustment, on the one hand, and the initial budgetary situation, on the other hand: when the adjustment takes place in a situation of high public finance imbalances, it is more likely to be of sufficient scale to stabilise the debt, to have the right composition and thus to be less likely to be reversed in the future (Perotti, 1996b).

### **The Maastricht experience: a virtuous adjustment path?**

How does the Maastricht consolidation process fare in relation to the message that emerges from the empirical literature on budgetary consolidations?

The analysis in this section focuses on episodes of fiscal consolidation since the beginning of the decade when the Maastricht budgetary rules and deadlines were set and started to “bite”. Country-specific consolidation periods were determined by selecting years of consistent, virtually uninterrupted improvement in the cyclically-adjusted primary balance. While for the majority of EU countries the chosen periods correspond to the “kick-off” of large-scale budgetary consolidation, a number of countries (for example, Denmark and Ireland) had carried out the bulk of the budgetary retrenchment during previous years, thereby enjoying the fruit of their efforts - in terms of a declining debt ratio - during the subsequent period. Therefore, in these countries, only relatively minor adjustments were required in the nineties.

Undeniably, the imposition of the Maastricht budgetary targets has set off a genuine consolidation process in all EU member states. The sheer magnitude and speed with which this fiscal retrenchment has taken place is quite exceptional. Furthermore, the scale and composition of the adjustment which has been achieved so far indicate that a major part of it appears to be soundly based and therefore unlikely to be reversed in the future.

#### *Scale of the budgetary adjustment*

As can be seen in Table 1, in practically all member states the budget deficit declined substantially since the beginning of this decade. For the European Union as a whole on average, this marked improvement in government deficits has been of a structural nature. The pattern at the level of individual member states is more varied. In the Nordic countries as well as in the UK, the improvement has been somewhat more of a cyclical nature. However, in other countries and especially those which started from a high deficit position, the budgetary consolidation has been genuinely structural.

**Table 1: Budgetary consolidation in EU member states**

Member States	Consolidation period	Change in actual budget balance (in % points of GDP)	Change in cyclically adjusted budget balance (in % points of GDP)	Change in cyclically adjusted primary balance (in % points of GDP)	Average consolidation per year (in % points of GDP)	Difference between actual and debt-stabilising structural primary balance in final year* (as % of GDP)
<b>B</b>	1992-96	-3.1	-5.6	-4.0	-0.8	+2.5
<b>DK</b>	1996-97	-3.7	-3.1	-2.2	-1.1	+4.9
<b>D</b>	1992-97	-0.3	-2.9	-4.4	-0.7	-0.3
<b>EL</b>	1990-97	-11.9	-11.3	-13.7	-1.7	+5.9
<b>E</b>	1992-97	-1.3	-4.6	-5.8	-1.0	+0.9
<b>F</b>	1995-97	-2.6	-2.7	-2.8	-0.9	-0.7
<b>IRL</b>	1991-93	+0.1	-3.6	-2.3	-0.8	+9.2
<b>I</b>	1991-97	-8.1	-9.8	-10.0	-1.4	+2.8
<b>NL</b>	1991-96	-2.8	-4.8	-4.4	-0.7	+1.3
<b>A</b>	1995-97	-2.0	-2.7	-2.6	-0.9	+0.3
<b>P</b>	1994-96	-2.9	-3.9	-2.5	-0.8	+1.1
<b>FIN</b>	1993-97	-4.5	-0.6	-3.5	-0.7	+0.7
<b>S</b>	1994-97	-10.4	-7.5	-7.9	-2.0	+2.2
<b>UK</b>	1994-97	-5.9	-3.9	-4.3	-1.1	+0.3
<b>EU average</b>		-4.2	-4.8	-5.0	-1.0	+2.2

Note: Data for Luxembourg are not available. A negative sign denotes an improvement in the budget balance (reduction of the deficit), a positive sign a deterioration. The data for 1997 are based on the Commission's Autumn 1997 Economic Forecasts. The figures for the EU average are the unweighted average of the pooled data for the Member States.

\* The data for the actual and debt-stabilising primary balance have been corrected for the influence of the cycle. The structural debt-stabilising primary balance was calculated using the nominal trend growth rate.

Source: European Commission, DG II database.

The improvement is particularly striking when analysing the change in the structural primary balance, a variable that, compared to the overall budget balance, is under closer control of the budgetary authorities. As shown in Table 1, a majority of member states achieved during their consolidation period an improvement in their structural primary balance by at least 4 percentage points of GDP. The scale of the adjustment appears to be positively correlated with the "seriousness" of imbalances at the beginning of the consolidation period: Greece and Italy, which registered a double-digit deficit in the year before the retrenchment started achieved the most impressive performance, with an improvement in the structural primary balance by 13.7 and 10.0 percentage points of GDP respectively. Together with Sweden, these two countries also have the highest average consolidation effort per year.

The government deficit levels achieved so far allow government debt levels to start falling. As can be seen in Table 1, all Member States, except for Germany and France, realised structural primary surpluses at the end of the consolidation period above the structural primary balance needed to stabilise their debt ratio.

*Composition of the adjustment: a strong accent on the expenditure side*

As recalled above, the literature has shown that, in the past, industrialised countries have pursued deficit reductions mainly through tax increases. However, such tax increases, as opposed to expenditure-based cuts, have delivered less satisfactory results in terms of both effectiveness and durability of consolidation.

The picture that emerges from the analysis of the composition of budgetary adjustments in the EU during this decade is complex and cannot be forced into a simple revenue-based versus expenditure-based framework. Table 2 shows the composition of discretionary budgetary adjustment in the EU countries during the nineties. A finer decomposition of spending reductions is also provided. Figures in bold indicate the dominant strategy. Table 2 shows that only half of EU countries have implemented a “composition-consistent” retrenchment strategy throughout the whole consolidation period.

Four countries (Belgium, Ireland, Austria and Portugal) have relied essentially on tax increases. However, as stated above, Ireland had implemented the bulk of its effort during the eighties and had already its government debt firmly on a downward path at the beginning of this decade. As to Austria and Portugal, since the selected consolidation period is recent and relatively short, it is not to be excluded that, as in other countries, a phase of expenditure cuts would follow the initial tax rises.

The Nordic countries and the UK carried out their fiscal consolidation through sizeable cuts in government spending, with either very limited increases in tax revenue or even with reductions in taxation. In Finland and Sweden, the pronounced cut in spending followed an expansionary policy during the period 1991-93, when these countries were hit by a very severe and protracted recession. Therefore, the spending cuts helped to restore “normal” spending levels. In all four countries, reductions in current primary expenditure largely outweighed the cuts in capital spending. Furthermore, a large part of these spending cuts came from reductions in transfers to households and in wages of government employees, measures which, according to the literature reviewed above, contribute to the durability of the fiscal consolidation.

In the rest of the countries, a kind of “switching” strategy prevailed. Their consolidation period can be split in two phases. In the first phase, they all increased taxes substantially, while expenditure was only reduced insignificantly or was even increased. However, in the second phase of the adjustment, substantial expenditure cuts were implemented, while tax revenue grew much less or even declined. Noticeably, in all these countries, by far the largest share of the expenditure adjustment did not come from “politically-easy” cuts in investment expenditure, but from “politically-costly” reductions in current expenditure and, more specifically, from cuts in transfers to households and wages of government employees. The switching point in all but one country is the year 1994, i.e. the beginning of the second stage of EMU. Increasing awareness of the unsustainability of further tax increases and the need to put public spending firmly under control to meet the Maastricht budgetary criteria seem to have played an important role in the switch of government behaviour.

**Table 2: Composition of budgetary consolidation in EU member states**

Member states	Consolidation period	Change in structural revenue	Change in structural primary expenditure	Of which:		Of which:
				Change in capital spending	Change in current primary expenditure	Transfers to households and wages government employees
<b>Revenue-based retrenchment:</b>						
<b>B</b>	1992-96	+3.7	-0.2	-0.3	+0.1	+0.7
<b>IRL</b>	1991-93	+3.2	+1.0	+0.1	+0.9	-0.1
<b>A</b>	1995-97	+3.5	+0.8	-0.5	+1.3	-1.0
<b>P</b>	1994-96	+1.9	-0.6	-0.1	-0.5	+0.9
<b>Expenditure-based retrenchment:</b>						
<b>DK</b>	1996-97	+0.1	-2.1	-0.1	-2.0	-1.7
<b>FIN</b>	1993-97	-3.4	-6.8	-0.7	-6.1	-3.9
<b>S</b>	1994-97	-0.4	-8.2	-0.2	-8.0	-3.8
<b>UK</b>	1994-97	+0.7	-3.7	-1.0	-2.7	-3.5
<b>“Switching” strategy:</b>						
<b>D: -1st phase</b>	1992-93	+3.1	+0.8	+0.2	+0.6	+1.8
<b>-2d phase</b>	1994-97	-0.6	-2.1	-0.8	-1.3	-0.7
<b>EL: -1st phase</b>	1990-93	+6.8	-0.7	+0.3	-1.0	-1.6
<b>-2d phase</b>	1994-97	+2.5	-3.4	0.0	-3.4	+0.6
<b>E: -1st phase</b>	1992-93	+4.6	+2.4	-2.9	+5.3	+1.7
<b>-2d phase</b>	1994-97	-2.0	-5.6	+1.1	-6.7	-2.6
<b>F: -1st phase</b>	1995-96	+2.1	+0.2	-0.1	+0.3	+0.3
<b>-2d phase</b>	1997	+0.2	-1.2	-0.1	-1.1	-0.2
<b>I: -1st phase</b>	1991-93	+6.4	+0.7	-0.6	+1.3	+0.6
<b>-2d phase</b>	1994-97	-0.5	-4.7	-0.5	-4.2	-0.5
<b>NL: -1st phase</b>	1991-93	+4.9	+0.6	-0.2	+0.8	+0.5
<b>-2d phase</b>	1994-96	-4.6	-4.8	+0.1	-4.9	-3.3

Note: Data for Luxembourg are not available. Source: European Commission, DG II database.

*Composition of the adjustment: a clean break with the past*

The overall expenditure reduction which has taken place during the recent consolidation period presents a genuine break with past patterns. During past recessionary periods there has been a substantial increase in expenditure, which has been partially financed by discretionary rises in tax revenue. On the contrary, over the recent consolidation period - a period characterised by negative output gaps in most EU member states - a marked reduction in government spending has taken place, while current revenue increased only slightly.

Table 3 analyses the average change in budgetary behaviour of EU member states during periods of negative output gaps over the past two and a half decades. During the seventies, the government deficit increased by 3.1 percentage points on average, due to a sharp increase in overall expenditure which was only partially offset by an increase in revenue. During both the eighties and the nineties, budget deficits were reduced during recessionary periods.

While in the eighties the 0.6 percentage point of GDP deficit reduction was brought about by tax increases which outweighed the rise in expenditure, during the nineties the sharp fall in expenditure in combination with a moderate increase in revenue brought about a reduction of 0.9 percentage points in the deficit, even larger than during the eighties. This pattern becomes even more clear-cut when Finland and Sweden are excluded -both underwent a severe and protracted recession over the period 1991-93 to which they initially reacted by engaging in expansionary budgetary policy.

**Table 3: Budgetary behaviour during periods with negative output gaps (changes in indicated ratios are given in percentage points of GDP)**

Member States	Average output gap	Budget deficit		Current revenue		Total expenditure	
		Unadjusted	Cyclically adjusted	Unadjusted	Cyclically adjusted	Unadjusted	Cyclically adjusted
1970s	-1.3	3.1	1.0	4.3	5.7	7.5	6.8
1980s	-1.9	-0.6	-2.1	2.9	4.0	2.2	1.8
1990s: -all EU countries	-1.5	-1.0	-2.8	0.8	2.2	-0.2	-0.6
-excluding FIN and S	-1.3	-2.0	-3.4	0.6	1.7	-1.3	-1.6

Note: Change in the budget balance and its components between the year before the period of negative output gaps and the last year of the negative gap period. The data presented are unweighted averages of pooled EU member states data.

Source: European Commission, DG II database.

## V. CONCLUSIONS

EMU will be built on a strong foundation of budgetary discipline. The Maastricht criteria for joining EMU imply that, from the outset, EMU members will have achieved a high degree of public finance discipline. The Stability and Growth Pact, by setting ambitious medium-term targets and providing a strong deterrence against budgetary misbehaviour, ensures that fiscal prudence will be a permanent feature of EMU. This paper has reviewed the budgetary retrenchment process triggered by the Maastricht rules in the light of the recent literature on the determinants and effects of the behaviour of budgetary authorities. The most important policy conclusion is that the on-going budgetary consolidation appears to be consistent, both in terms of scale and composition, with the overall EMU budgetary framework. In other words, the present consolidation strategy provides a good basis to attain a close-to-balance or surplus position, as required by the Stability and Growth Pact.

More specifically, the main results of the analysis can be summarised as follows:

- a) EU countries' fiscal policy in the seventies and eighties did not conform to the prescriptions of the tax-smoothing theory: in periods of favourable economic growth, many countries instead of seizing the opportunity to re-absorb debt and deficits accumulated during recession, have added further to budgetary imbalances. In particular, the accumulation of government debt has been fuelled by a persistent structural deficit of around 3% of GDP on average during the seventies and eighties, and through budgetary loosening in the event of moderately positive output gaps. Conversely, budgetary behaviour has been relatively prudent in the event of both large negative and positive output gaps.
- b) The concrete experience of EU countries shows that the sharp opposition, often found in the literature, between numerical targets and procedural rules is unwarranted. The Maastricht targets have set off a process of budgetary consolidation in the course of which EU member states have started to streamline their institutional and accounting procedures in order to comply with the budgetary criteria as well as with the reporting requirements set by the Treaty. Therefore, the Maastricht budgetary rules, coupled with the "transparency shock" of a common accounting framework and accompanied by bottom-up changes in national budgetary procedures, have been highly effective in triggering a "regime-shift" in budgetary behaviour.
- c) The scale of the adjustment carried out in the past few years will allow a large majority of EU countries to set government debt on a downward path. The scale of the retrenchment was particularly important in those countries which at the beginning of the nineties experienced the most serious public finance pressures.
- d) The budgetary adjustments which have recently taken place in all EU member states have involved large reductions in primary government expenditure (either outright over the whole consolidation period or in a second phase, after initial tax increases). Only in a few member states did the consolidation occur essentially via tax increases. This budgetary adjustment represents a clear break

with past behaviour, as during analogous periods of low growth in the previous decades, EU countries had tended to increase both expenditure and taxation. As the literature on budgetary behaviour has shown, a composition of budgetary retrenchment strongly axed on expenditure tends to lead to a lower likelihood that governments would revert to reckless budgetary behaviour.



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(II.6)  
**BUDGETARY ADJUSTMENT**  
**The role of the Stability and Growth Pact**

**I. INTRODUCTION AND MAIN RESULTS**

Over recent years, the budgetary policies carried out by Western countries during the Post-War period have been analysed extensively in the literature. Several studies have pointed to the interaction of economic and political factors and underlined the importance of institutions and procedures in shaping policies and outcomes<sup>1</sup>. Considerable attention has been devoted to budgetary consolidation processes, with some studies emphasising the role of the composition of budgetary measures in determining the success of these policies<sup>2</sup>.

The purpose of this chapter, which draws on a larger study<sup>3</sup>, is to analyse budgetary policies carried out during and after severe recessions, an issue which the above-mentioned literature has not yet focused upon.

Since the adoption of the “Stability and Growth Pact” by the European Council of Amsterdam in June 1997, interest in this issue and its policy relevance have increased significantly. The Stability and Growth Pact, which sets the rules for budgetary behaviour in stage three of EMU, singles out severe recessions as specifically problematical periods during which a certain budgetary flexibility could be allowed.

This study provides elements to examine the following issues: what type of budgetary policies have been adopted during severe recessions in the past? Were the automatic stabilisers allowed to fully operate? Did governments adopt an expansionary budgetary policy stance and which factors influenced the policies undertaken?

With specific reference to the Stability and Growth Pact, the following issues are addressed: which changes should be envisaged in national budgetary policies during recessions? More specifically, what is the scope for discretionary counter-cyclical policies? Which situations might be particularly problematic? What risks are involved in the transition towards the medium-term targets of close-to-balance or in surplus set by the Pact, and which types of recession can lead Member States into a position of excessive deficit, even when they start from a sound pre-recession budgetary position?

Section 2 of this study describes the basic principles of the Excessive Deficit Procedure and the Stability and Growth Pact and examines the main features of severe economic downturns in the past. Section 3 examines the budgetary policies

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<sup>1</sup> See Alesina and Perotti (1995a), (1995b), (1996a) and (1996b), Bayoumi and Eichengreen (1995), Corsetti and Roubini (1996), Grilli et al. (1991), Hahn et al. (1995), von Hagen (1992) and von Hagen and Harden (1994).

<sup>2</sup> See Perotti (1996a) and (1996b).

<sup>3</sup> See Buti et al. (1997).

carried out during recessions in the 1961-96 period. Section 4 examines past budgetary behaviour in the light of the Excessive Deficit Procedure and the Stability and Growth Pact and analyses under what circumstances deficits would have breached the 3% reference value in severe recessions. Section 5 assesses whether government budgets behave differently in “mild” recessions and during abrupt slowdowns in growth. Section 6 concludes and points to some limitations of the analysis undertaken in this chapter.

The main results of this study can be summarised as follows:

#### **Budgetary policies in recessions during the period 1961-96:**

- There has been no systematic tendency to loosen budgetary policy during recessions in the past three and a half decades. EU Member States have reacted in general rather prudently to negative economic shocks, regardless of their underlying nature. While the Nordic countries pursued active counter-cyclical budgetary policies during their multi-year recession episodes, most other EU Member States often carried out a fiscal retrenchment policy during periods of economic slowdown.
- The initial public finance conditions influence the way budgetary policies react to cyclical downturns: countries with low deficit and debt levels were able to exploit the available room for manoeuvre by carrying out counter-cyclical budgetary policies; on the contrary, Member States with higher budgetary imbalances were less able to smooth out the cycle through fiscal policies and even had to implement pro-cyclical retrenchment policies during recessions in order to prevent their budget deficits from getting out of hand.

#### **Breaching of the 3% reference value during recessions:**

- Over the past 36 years, an initially balanced budget, and *a fortiori* a country-specific surplus, would have prevented all one-year recessions from leading to a budget position which remains into excessive deficit in the year following the recession (hence the excessive deficit would have been, at most, “transient”). However, the early years of EMU, when some countries might still have a deficit of about 2% of GDP, are likely to prove highly problematic in the event of a severe recession.
- The risk of incurring an excessive deficit is high in case of protracted recessions, even if the starting point is a sound budgetary position. The same conclusions can be drawn for exceptionally severe recessions with negative growth of 2% or more. However, there are no economic downturns other than severe recessions which would produce serious budgetary effects if the budget is initially in balance. Mild recessions and abrupt slowdowns in growth are not likely to create excessive deficits once the medium-term target of close-to-balance or in surplus is met. As such, the 0.75% recession threshold therefore appears appropriate once the medium-term target is reached.
- The simultaneous application of the “exceptionality”, “temporariness” and “closeness” conditions in the case of severe recessions “over-determines” the decision on whether or not an excessive deficit exists: the relaxation of one of these

conditions does not produce significantly different results as long as the other two conditions are sufficiently strict.

### **Major policy implications:**

The results of this study suggest that there is no need for EU Member States to substantially change budgetary policies carried out during recessions. Indeed, over the past decades, these policies were generally rather prudent.

More specifically, the analysis allows the following policy conclusions to be drawn:

- 1) A medium-term balanced budget is highly recommendable for most Member States in order to meet the Stability and Growth Pact requirements. It would allow them to overcome single-year severe recessions without incurring excessive deficits.
- 2) In case of recessions, the margins for implementing large-scale discretionary counter-cyclical policies are rather limited, unless budgets move into surplus.

Two major risks can be identified:

- a) In the event of a severe recession during the early years of EMU, since several countries will still have deficits in the 2% to 3% of GDP range, they risk moving into excessive deficit, unless they take a pro-cyclical budgetary stance.
- b) Long recessions may pose serious threats even to countries with sound pre-recession budgetary positions.

## **II. INSTITUTIONAL FRAMEWORK**

Solid budgetary discipline is considered to be an essential condition for the success of EMU. The requirement of achieving a sound budgetary position in order to join the single currency and maintaining budgetary prudence once in EMU are at the core of the Maastricht Treaty. The general principles and procedures of the Treaty have been spelled out in detail in secondary legislation, which forms the so-called “Stability and Growth Pact”.

### **The Treaty**

Article 104c of the Treaty on European Union states at the outset that, in the third and final stage of EMU, “Member States shall avoid excessive government deficits”<sup>4</sup>. The compliance of a Member State with the budgetary discipline requirement will be assessed *inter alia* on the basis of the behaviour of the government deficit as a share

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<sup>4</sup> As to the second stage, the Treaty stipulates that “Member States shall endeavour to avoid excessive government deficits”. Currently, five Member States (namely Denmark, Ireland, Luxembourg, the Netherlands and Finland) are not in excessive deficit. Germany, which in the 1995 exercise was also among the “virtuous countries”, dropped out in 1996 because its budget deficit attained 3.5% of GDP in 1995 and was forecast to remain above the reference value in 1996.

of GDP in relation to a reference value set by the “Protocol on the Excessive Deficit Procedure” (Protocol 5 of the Treaty) at 3% of GDP.

When an excessive deficit occurs, a procedure aimed at reducing the deficit is initiated. This includes several steps involving an increasing “pressure” on the Member State through recommendations and notice to take effective measures to correct the excessive deficit position. If such a correction does not take place, the Treaty foresees that sanctions may be applied to the Member States participating in EMU.

The 3% threshold can be exceeded without causing an excessive deficit, but only under a restrictive set of conditions. In particular, three conditions must be met:

- (a) exceptionality: the origin of the excess has to be outside of the normal range of situations;
- (b) temporariness: the deficit is allowed to remain above 3% of GDP only for a limited period of time;
- (c) closeness: the deficit must remain close to the reference value.

In practice, the Treaty prescribes that the original cause of the rise of the deficit above the 3% ceiling must be exceptional, that the deficit must not, in any case, exceed this threshold by too much, and must return promptly below it once the initial driving force is over. These three conditions need to apply simultaneously. The extent of the common subset of events not giving rise to an excessive deficit depends on the degree of restriction with which these conditions are interpreted. The Treaty, however, does not specify the exact content of the three constraints. The Stability and Growth Pact gives a more precise interpretation of conditions (a) and (b).

### **The Stability and Growth Pact**

The European Council adopted the Stability and Growth Pact in Amsterdam in June 1997<sup>5</sup>. The core elements of the Pact include:

- setting time limits to the various steps of the Excessive Deficit Procedure so as to speed it up and, where appropriate, impose sanctions within the calendar year in which the decision on the existence of the excessive deficit is taken;
- defining the meaning of the exceptionality and temporariness conditions;
- specifying the conditions in which sanctions will be applied and their scale.

The starting point of the Pact is that the EMU Members should set medium-term budgetary targets which are “close-to-balance or in surplus”, thus allowing them to respect the 3% ceiling even during economic downturns.

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<sup>5</sup> A first proposal for a Pact to ensure fiscal discipline in stage three of EMU was put forward by the German Finance Minister Theo Waigel in November 1995. The European Council reached an agreement on the principles and the main features of the Pact in Dublin in December 1996. The Pact was adopted in Amsterdam in June 1997.

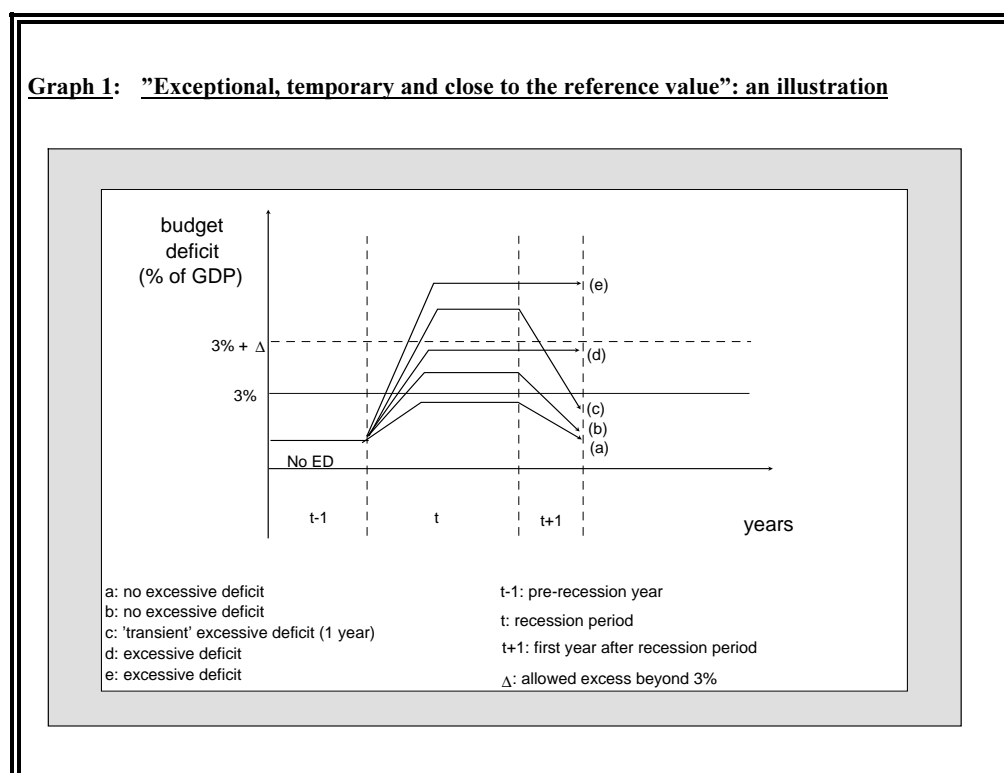
The exceptionality clause (condition (a)) can be called upon when the excess of the deficit over the reference value results from an unusual event outside the control of the Member State in question and which has a major impact on the financial position of the general government. Alternatively, it can apply if the deficit overshooting takes place in the presence of a severe economic downturn. The latter is considered “exceptional” if there is an annual fall of real GDP of at least 2%.

An annual fall of GDP of less than 2% could nevertheless be considered exceptional in the light of further supporting evidence, such as the abruptness of the downturn or the accumulated loss of output relative to past trends. In any event, in evaluating whether the economic downturn is severe, the Member States will, as a rule, take an annual fall in real GDP of at least 0.75% as a reference point. This condition recognises that, in the event of a harsh and persistent recession, the budgetary room for manoeuvre between close to balance and a deficit of 3% of GDP may not be sufficient to cushion the negative effects of the shock on economic activity.

As to the temporary nature of the excess of the deficit over 3% of GDP (condition (b)), the Pact allows it only insofar as the “exceptional” conditions mentioned above persist. If the Commission’s budgetary forecasts indicate that the deficit would not fall below the reference value in the year following the recession, the country would also be put into a position of excessive deficit in the year of the recession because it had violated the “temporariness” clause.

The Pact does not deal with the closeness condition (condition (c)).

Graph 1 illustrates the five relevant paths for the deficit during and after an exceptionally severe recession, by indicating for each of them the occurrence or not of an excessive deficit position.



In order of “seriousness”:

- a) the no-problem case, in which, in spite of the recession, the deficit remains below the 3% threshold;
- b) the limited-problem case, in which the deficit exceeds 3% of GDP during the recession, but remains close to it and returns below it immediately after the recession: the three conditions mentioned above apply, hence no excessive deficit occurs;
- c) the violation of the closeness condition, in which the deficit is pushed up well above the reference value, but moves promptly below it as soon as the recession is over: the country is in excessive deficit during the year of the recession, but no sanctions are imposed on it and thus its excessive deficit is only “transient”;
- d) the violation of the temporariness clause, in which the deficit remains fairly close to the 3% ceiling during the recession year, but as it does not move below it in the year after the recession, the country is in excessive deficit during the year of the recession and there is a presumption that sanctions might be applied;
- e) the double-violation case, in which both the temporariness and closeness conditions are not respected: there is an excessive deficit which, as in the previous case, could eventually lead to sanctions.

The decision on whether or not an excessive deficit existed during the year of the recession is taken on the basis of figures for the recession year which are reported one year later. In order to avoid the imposition of sanctions, the Member State which has been put into excessive deficit needs to take immediate action in the year in which the decision on the existence of an excessive deficit is taken. The correction of the deficit should be completed in the year following the identification of the excessive deficit, i.e. in order to avoid sanctions, the Member State concerned should bring back its deficit below the reference value two years after the occurrence of an excessive deficit and one year after its identification, unless special circumstances are given.

### **Severe economic downturns**

This study considers two concepts of “economic downturn”: a decline in real GDP and a worsening of the output gap. As already pointed out above, the Pact refers to negative real GDP growth rates. This is the main yardstick used here. This measure is supplemented with the output gap concept, which, though not uncontroversial, allows a broader assessment of the budgetary impact of economic downturns. More specifically, the output gap allows to analyse the budgetary implications of protracted periods of low positive growth, as well as those in which the rate of growth declines abruptly but still remains positive. The output gap is also implicitly referred to in the Pact when the exceptionality of cases with negative growth of less than 2% but of at least 0.75% is qualified<sup>6</sup>.

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<sup>6</sup> The Resolution of the European Council on the Stability and Growth Pact, which was adopted in Amsterdam in June 1997, states that “... in evaluating whether the economic downturn is severe, the Member States will, as a rule, take as a reference point an annual fall in real GDP of at least 0.75%”.



For this analysis, an “exceptionally severe recession” is defined as involving a negative annual real GDP growth rate of 2% or more. A “severe recession” involves a fall in GDP of 0.75% or more. Negative growth of less than 0.75% is defined as a “mild downturn.”<sup>7</sup> This classification allows examination of a substantial number of recession cases, which ensures the robustness of the results.

**Table 1: Number of recession years per European Union Member State over the period 1961-96**

<b>Negative growth: Negative annual real GDP growth</b>		<b>Severe recessions: Negative growth of 0.75% or more</b>		<b>Exceptionally severe recessions: Negative growth of 2% or more</b>	
Member States	Number of years	Member States	Number of years	Member States	Number of years
UK	6	S, UK	4	FIN	2
DK, D, P, FIN, S	4	B, D, P, FIN	3	EL, I, L, P, S	1
B, EL	3	DK, EL, I,	2		
E, F, I, L, NL, A	2	E, F, L, NL	1		
IRL	1				
<b>Total EU</b>	<b>45</b>	<b>Total EU</b>	<b>30</b>	<b>Total EU</b>	<b>7</b>

Source: European Commission, DG II database.

As can be seen in Table 1, the total number of cases with a negative annual real GDP growth rate is 45 for the fifteen EU Member States together over the period 1961-96, which corresponds to an average of three cases per country or a frequency of 8.3%. Most of these negative growth years are concentrated around the three major recession periods of 1974-75, 1980-82 and 1991-93.

For all fifteen Member States over the last 36 years, there were 30 cases when negative growth was 0.75% or worse, i.e. an average of two cases per country or a frequency of 5.6%. The number of years of negative growth of 0.75% or more is distributed unevenly among Member States. The Nordic countries as well as Belgium, Germany, Portugal and the United Kingdom have registered a larger number of severe recession years compared to the average of two cases per country, while Spain, France, Luxembourg and the Netherlands recorded a smaller number of cases. Ireland and Austria did not have a severe recession over the past 36 years. There were only 7 cases where real GDP fell by 2% or more in one year.

The periods of two or more consecutive years of negative growth, in which GDP declines by 0.75% or more in at least one year, are treated as single severe “recession episodes” in this study. Over the period 1961-96, there have been 9 cases where real GDP declined during two or three consecutive years and for which in at least one of these recession years there was negative growth of 0.75% or more<sup>8</sup>. As a result of this approach, the 30 years where there was negative growth of 0.75% or more collapse into 25 severe recession episodes. As no budgetary data are available for the 1974

<sup>7</sup> It goes without saying that the analysis hereafter does not prejudice in any way the application of the “exceptionality clause” of art. 104c of the Treaty, as spelled out in the Amsterdam decision.

<sup>8</sup> 7 cases occurred in the Nordic countries and the United Kingdom, the other 2 in the Netherlands and Portugal.

recession in Greece, only 24 cases have been taken into account for the calculations in this study. Amongst them, 5 episodes involve a negative growth of GDP of 2% or more.

It is clear that the appropriate policy response to recessions differs depending on the nature of the underlying economic disturbance. In particular, the needed stabilisation policy-mix will differ depending on whether the shock originates from the demand side and thereby is usually temporary, or from the supply side and therefore has long-lasting consequences.

It also depends on whether the shock is symmetric or country-specific. If the shock is temporary, macro-economic policy may be used to stabilise the level of activity, whereas if the shock is permanent structural adjustment would be imperative. Symmetric shocks may call for a co-ordinated policy response, while asymmetric shocks are to be dealt with via decentralised policy instruments. Policies during past recessions have obviously been affected by these differing needs and by the existing institutional set-up.

Governments attempting to engage in stabilisation policy face the problem of identifying the nature of the underlying economic disturbances. It is obvious that “shocks do not come labelled as temporary or permanent”<sup>9</sup>, and neither are they designated as symmetric or asymmetric. During past recessions, governments have been confronted more than once with this “identification” problem.

Political pressures to intervene may push governments to resort to inappropriate policy responses as a “quick fix”, even when the nature of the initial shock clearly called for politically difficult measures, the effects of which only show up in the medium term. This may have been the case in the past in the event of supply shocks calling, in principle, for major structural reforms. Inappropriate policies could therefore have exacerbated further the effect of existing shocks or even be at the origin of these.

The procedures and sanctions to be applied under the Stability and Growth Pact do not distinguish between different types of recessions. The Pact does not provide more leeway for recessions which would require the predominant use of budgetary stabilisation policies. If governments want to pursue active budgetary policies during recessions once in EMU, they will have to create the necessary room for manoeuvre by setting their medium-term budgetary targets accordingly.

### **III. SEVERE RECESSIONS AND BUDGETARY OUTCOMES**

#### **Budgetary reactions during severe recessions**

The effect of severe recession episodes on the budgetary situation can be analysed by setting out the changes in the actual budget balances and the cyclically adjusted<sup>10</sup>

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<sup>9</sup> See Mélitz (1996).

<sup>10</sup> The decomposition of the actual budget balance into a cyclical and a structural or cyclically adjusted component is based on the European Commission services’ cyclical adjustment method.

primary balances between the year preceding the recession and that in which the recession takes place or reaches its final year against the variation in the output gap over the same period.

The difference between the actual and the trend growth rate determines the variation of the output gap. When the actual growth rate falls below the trend growth rate during a recession, there is a worsening of the output gap, i.e. positive output gaps turn negative and existing negative output gaps widen further.

In Graph 2, the change in the actual budget deficit between the year preceding the recession (t-1) and that in which the recession takes place or reaches its final year (t) is set out against the change in the output gap over the same period.

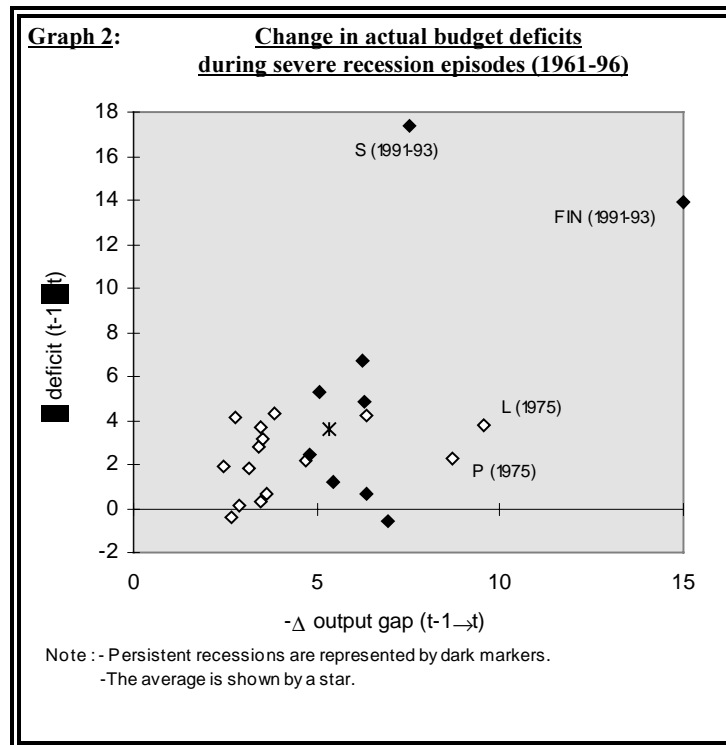
Graph 2 shows that the 24 severe recession episodes with negative growth of 0.75% or more over the period 1961-96 produced extremely different changes in the output gap: the output gap deteriorated by between 2.5 to around 15% points of trend GDP. On average, output gaps deteriorated by 5.5% points.

The cumulative widening of the output gap between the year before the recession and the last year of the recession is obviously much larger during multi-year recession episodes (shown by the dark markers) than for single-year recessions. While in most one-year recession episodes (12 out of 15) the gap increased by around 2.5 to 4.5% points, in most multi-year episodes (8 out of 9) it increased by around 4.5 to 7.5% points.

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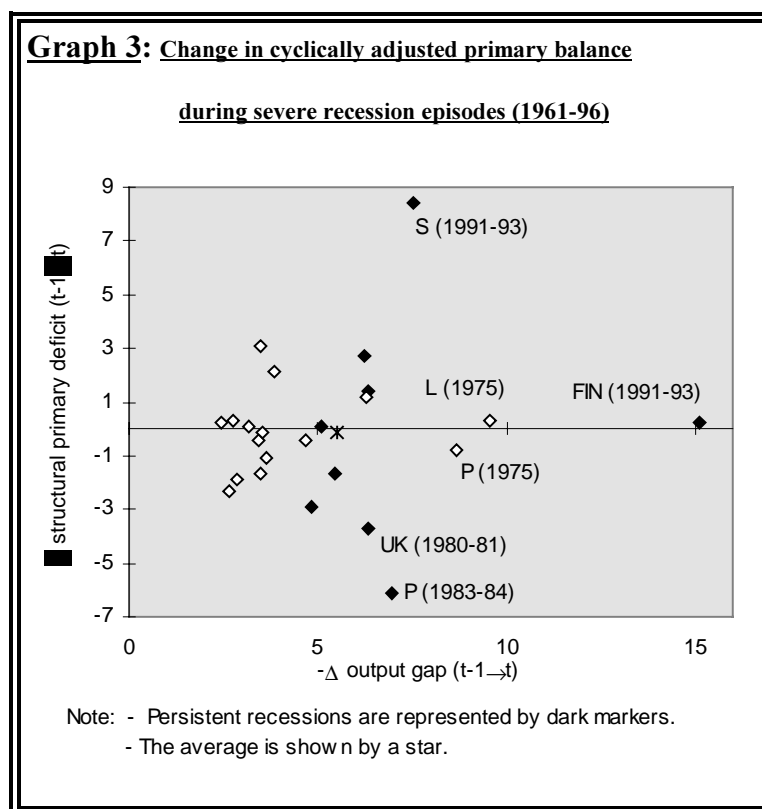
In this method, the influence of cyclical fluctuations on government budget balances is calculated by multiplying the output gap by the cyclical sensitivity of budgetary receipts and expenditure. The output gap is defined as the difference between the actual level of GDP and that of trend GDP, expressed as a percentage of trend GDP. The trend output benchmark is estimated via the Hodrick-Prescott filter. The structural primary balance, i.e. the cyclically adjusted balance minus interest payments, is often used as a rough indicator of the underlying budgetary policy stance. See Commission of the European Communities (1995).

The actual budget balance will tend to worsen during a recession if the automatic stabilisers are not offset completely. As can be seen in Graph 2, most Member States' actual budget deficits increased by between zero and 7% points of GDP during the severe recession episodes which occurred over the period 1961-96. On average, actual budget deficits increased by around 3.5% points. Graph 2 also shows that the cumulative increase of the actual deficit is not necessarily larger for multi-year recessions than for single-year recessions.



Graph 3 provides some indications about the discretionary budgetary policy stance - defined as the change in the structural primary balance -adopted during the severe recession episodes of the period 1961-96.

There is an almost even distribution of changes in the structural primary balances above and below the zero-line, i.e. in about half of the cases a counter-cyclical budgetary stance which increased the structural primary deficit was adopted, while in the other half, a pro-cyclical policy was undertaken which reduced the structural primary deficit. Taking the average of all recessions episodes, the structural primary balance remained virtually unchanged. There was thus no systematic tendency on average to loosen budgetary policy during severe recessions over the past decades.



There was no systematic tendency either to adopt more frequently a looser budgetary policy during multi-year recession episodes than during one-year recessions. Portugal and the United Kingdom carried out a budgetary retrenchment policy at the beginning of the 1980s in order to avoid that their budget deficits got out of hand, in spite of a severe and persistent recession with a strong widening of the output gap by between 6 to 7% points of trend GDP. When its output gap worsened by 7.5% points during the recession of 1991-93, Sweden, however, judged the recession to be severe enough and its budgetary room for manoeuvre to be large enough to undertake a substantial budgetary relaxation. Finland, which registered a worsening by 15% points of its output gap during the 1991-93 recession, loosened its budgetary policy during the first two recession years but significantly tightened its budgetary stance during the third year, so that over the full recession episode its structural primary deficit remained unchanged.

The average budgetary stance over all recession episodes hides substantial differences in budgetary behaviour over different recession periods and depends on the pre-recession budgetary position of Member States.

## Major recession periods

Did the budgetary reaction of Member States, when confronted with a severe recession, change over time?

Over the years 1961-96 taken into consideration, most recessions were concentrated in three periods: 1974-75, 1980-82 and 1991-93. The first and second recession periods were triggered by the two oil price shocks; the third by the effects of the banking crisis and the collapse of the Soviet-Union in the Nordic countries as well as the tight monetary policy in the aftermath of the German unification<sup>11</sup>. With hindsight, the first two recessions could be characterised as supply shocks of a permanent nature, whereas the third recession could be classified as a demand shock. It could be argued that while there should have been less need for an active budgetary stabilisation policy during the first two recessions, such a policy could have been undertaken during the third recession.

As can be seen in Table 2, real GDP on average declined by 2.8% during both the first and third recession periods. The recession of 1980-82 was less severe, with an average drop in real GDP of 1.7%. The output gap worsened more during the 1974-75 recession than during the 1991-93 recession, even though the negative growth rates were the same. This can be explained by the fact that trend growth was significantly higher in the mid-1970s than at the beginning of the 1990s.

During the 1974-75 period, five Member States registered a recession with a negative growth of 0.75% or more in 1975, while Denmark and the United Kingdom recorded negative growth in both 1974 and 1975.

As can be seen in Table 2, these countries increased their structural primary deficit by 0.5% points of GDP on average. Four Member States (Denmark, Germany, Luxembourg and Italy) carried out an expansionary budgetary policy to offset the shock, with the structural primary deficit increasing by between 0.3 to 2.7% points. Belgium and Portugal adopted a weak pro-cyclical budgetary stance, which reduced their structural primary deficit by 0.4 to 0.8% points, while the UK took an even more restrictive stance.

During the 1980-82 period, there was a predominance of multi-year recession episodes. Belgium and Germany registered a negative annual real GDP growth rate of more than 0.75% in 1981 and 1982 respectively, while Denmark and the United Kingdom recorded negative growth in both 1980 and 1981 and the Netherlands in both 1981 and 1982.

Most of the Member States hit by this recession undertook a budgetary consolidation policy, with the extent of the fiscal retrenchment undertaken being relatively important. Structural primary deficits were reduced by 1.7% points of GDP on average. As budget deficits had remained high after the first oil shock, less room for manoeuvre was available to combat the second oil shock via budgetary policy.

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<sup>11</sup> Budgetary policies in Western countries over the period 1970-94 are examined in de Haan et al. (1992), Leibfritz et al. (1994) and Tanzi and Fanizza (1995).

Moreover, the need for counter-cyclical policies was more limited as this recession was less severe.

During the last major recession, seven Member States (Belgium, Germany, Greece, Spain, France, Italy and Portugal) registered negative growth of more than 0.75% in 1993, while Finland and Sweden recorded negative growth in the three consecutive years of the period 1991-93 and the United Kingdom in both 1991 and 1992.

Over the 1991-93 recession episode, structural primary deficits increased by 0.8% of GDP on average. This increase can be entirely attributed to the worsening that took place in the Nordic countries: 4.3% points of GDP on average. The other countries adopted a slightly tighter fiscal stance and on average decreased their structural primary deficit by 0.7% of GDP.

Highly-indebted Member States, such as Belgium and Italy, implemented a significant budgetary tightening during this recession and decreased their structural primary deficit by more than 1.5% point of GDP, while Germany also undertook some budgetary consolidation. Most other Member States adopted a slightly expansionary stance and let their structural primary deficits increase by between 0.2 to 1.2% points of GDP. Sweden conducted a substantial fiscal relaxation policy in order to combat its major multi-year recession and increased its structural primary deficit over this recession episode by 8.2% points of GDP. Finland's structural primary deficit increased by 0.2% of GDP.

On the whole, budgetary reactions to recessions seem to have become more prudent since the early 1980s. This may be related to the worsening of the pre-recession deficit and debt levels. In most countries, the debt to GDP ratio was higher at the beginning

**Table 2 Comparison of budgetary reactions during major recession periods (1961-96)**

Major recession periods	Cumulative change between year before recession and last year of the recession (average over episodes)					
	real GDP	output gap	actual deficit	of which: primary deficit	structural deficit	of which: structural primary deficit
<b>1974-75 recession</b>	-2.8	-6.7	3.5	3.3	0.6	0.5
<b>1980-82 recession</b>	-1.7	-4.3	2.4	1.2	-0.4	-1.7
<b>1991-93 recession:</b>	-2.7	-5.1	4.8	4.0	1.4	0.8
-Finland and Sweden	-8.1	-11.0	15.7	12.8	6.7	4.3
-Other countries	-1.5	-4.0	1.8	1.3	-0.4	-0.7
<b>Average over all episodes</b>	-2.5	-5.5	3.6	2.8	0.5	-0.1

Source: European Commission, DG II database.

of the second and third recession periods than in the early 1970s. Moreover, the debt ratio was set on an upward trend in several countries. These changes increased the risks involved in supplementing the automatic stabilisers with active counter-cyclical policies. The constraint to the implementation of these policies is also evident in the fact that in the two most recent recession periods the share of interest payments to GDP increased much more than in the first.

## Budgetary margin of manoeuvre

Were budgetary reactions influenced by pre-recession budgetary positions?

Countries with high debt ratios and with a high deficit in the year before the recession can be expected to judge their budgetary room for manoeuvre to be insufficient to conduct a significant fiscal relaxation and therefore to adopt a cautious policy stance, while countries with low pre-recession deficit and debt ratios may be more likely to undertake fiscal relaxation.

It should be stressed that pre-recession budgetary positions may be affected by expectations about the need for active counter-cyclical policies: countries experiencing relatively big output swings may aim at maintaining low deficit and debt levels in order to have more room for manoeuvre in the event of a recession. The same argument applies to countries where the effects of automatic stabilisers are reduced by greater exposure to international trade and may therefore require supplementary discretionary action to cushion negative shocks.

**Table 3:** Comparison of budgetary reactions to severe recessions starting from different pre-recession budgetary situations (1961-96)

Pre-recession budgetary situation*	Cumulative change between year before recession and last year of the recession (average over episodes)					
	real GDP	output gap	actual deficit	of which: primary deficit	structural deficit	of which: structural primary deficit
-Member States with deficit and debt ratios above the EU average	-1.7	-4.4	1.9	1.1	-0.4	-1.2
-Member States with deficit and debt ratios below the EU average	-3.1	-6.1	5.1	4.4	1.4	0.8
Average over all episodes	-2.5	-5.5	3.6	2.8	0.5	-0.1

\* Not including the 1983-84 and 1993 recession episodes for Portugal because the deficit and debt criteria led to a different classification.

Source: European Commission, DG II database.

Table 3 provides some preliminary indications on the possible relation between initial public finance imbalances and budgetary behaviour during severe recessions. A Member State is classified as being in a relatively difficult pre-recession budgetary situation if both its deficit and debt ratio in the year before the recession are higher than the EU average, while Member States with pre-recession deficit and debt ratios below the EU average are considered to be in a relatively easier budgetary position.

Table 3 confirms that Member States with deficit and debt ratios above the EU average in the year before the recession conducted a less accommodating budgetary policy: these Member States tightened their fiscal stance and reduced their structural primary deficit by 1.2% points of GDP on average during severe recession episodes<sup>12</sup>.

<sup>12</sup> These results are consistent with the comments on this issue by Leibfritz et al. (1994).



Fiscal retrenchment policies aimed at preventing a worsening of the budgetary situation were adopted especially during protracted recession periods.

On the contrary, Member States with low deficit and debt ratios compared to the EU average undertook budgetary relaxation policies during recessions: these Member States increased their structural primary deficits with 0.8% points<sup>13</sup>. Member States undergoing a protracted recession also substantially loosened their budgetary policy.

An analysis<sup>14</sup> of the composition of budgetary measures during recessions shows that the main discretionary instrument to smooth out the effects of cyclical downturns is government expenditure. This analysis also found that, contrary to widespread perception, discretionary tax revenue has risen during recessions, thereby partly or totally offsetting the rise in expenditure.

#### **IV. EXCESSIVE DEFICITS DURING SEVERE RECESSIONS**

In this section, the budgetary behaviour of EU Member States during severe recessions over the period 1961-96 is examined in the light of the Excessive Deficit Procedure and the Stability and Growth Pact. This exercise aims at providing answers to the following questions: how many recessions would have led to excessive deficits, and, more specifically, to breaches of the 3% reference value and to violations of the “temporary nature of the deficit” clause? Which were the features of these specific recessions? Which level of pre-recession budget balance could have avoided situations that would now be considered as excessive deficits?

##### **Methodology and assumptions**

The Excessive Deficit Procedure did not exist for most of the period considered; therefore, the 3% reference value for the government deficit did not have any policy relevance.

Table 4 shows that in about three quarters of the years in the period 1961-96, deficits in the fifteen EU Member States have actually been above the 3% level. This means that the difference between actual deficit levels and the 3% threshold during past recessions does not provide any indication which could be relevant for understanding the potential working of this procedure in the past. For this purpose, it is more appropriate to focus on the changes in deficit during and after recessions.

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13 These results still hold when Finland and Sweden, which had a severe multi-year recession at the beginning of the 1990s during which they undertook a fiscal relaxation, are taken out.

14 See Buti et al. (1997).

**Table 4:** **Budget deficit indicators for the European Union Member States (1961-96)**

Member States	Average government budget deficit (% of GDP)	Standard deviation government budget deficits (% points of GDP)	Frequency of budget deficits above 3% of GDP	
			number of years*	%
<b>B</b>	5.5	3.1	26	72%
<b>DK</b>	0.5	3.3	7	19%
<b>D</b>	1.5	1.8	8	22%
<b>EL</b>	9.7	3.8	16	89%
<b>E</b>	3.1	2.5	15	56%
<b>F</b>	1.4	1.9	6	16%
<b>IRL</b>	5.9	3.8	27	75%
<b>I</b>	7.3	3.7	29	81%
<b>L</b>	-2.0	2.0	1	3%
<b>NL</b>	2.7	2.0	15	42%
<b>A</b>	1.6	2.2	9	25%
<b>P</b>	3.2	3.3	20	57%
<b>FIN</b>	-2.1	3.6	5	14%
<b>S</b>	1.1	5.3	10	37%
<b>UK</b>	2.6	2.3	16	44%
<b>EU</b>	<b>3.6</b>	<b>1.6</b>	<b>20</b>	<b>74%</b>

\*On a total of 36 years (1961-96), except for the following cases: 18 years (1979-96) for Greece, 27 years for Spain, Sweden and EU (1970-96), 34 years for Luxembourg (excl. 1988 and 1989) and 35 years for Portugal (excl. 1980).

Source: European Commission, DG II database.

More precisely, the actual deficit changes are superimposed on an arbitrary “pre-recession deficit”. Starting from any value of the deficit, the deterioration of the deficit during the recession (in terms of percentage points of GDP) and its bouncing back once the recession is over are examined.

Two common starting points are considered: a balanced budget (0% deficit), which is obviously consistent with the close-to-balance requirement and may represent a benchmark for long-term budgetary targets within EMU and a 2% deficit, the likely deficit level in several Member States during the early years of EMU. Furthermore, a country-specific pre-recession budget surplus corresponding to the size of the cyclical budget component is also considered as an additional exercise<sup>15</sup>.

The analysis has been carried out as follows:

- 1) Recession periods involving a decline in GDP in real terms of 0.75% or more have been selected. The results with negative GDP growth rates of 2% or more

<sup>15</sup> The rationale for the latter exercise is that the available budgetary room for manoeuvre to confront a recession depends on the cyclical position of the country in the period before the recession. In this exercise, it is assumed that the country chooses a structural balanced budget position and that the actual budget position corresponds to the cyclical component in the pre-recession year. Therefore, if the output gap is zero in the pre-recession period, this case is equivalent to the balanced budget exercise, while if the output gap is positive, as it turns out to have been the case for past recessions, the starting point will be an actual budget surplus.

have also been identified separately in the analysis. As pointed out in Section 2, when GDP declines for more than one year, the different years are grouped in a single recession episode.

- 2) The analysis examines whether, during the recession period, the deficit exceeds the 3% reference value and whether the deficit returns below 3% in the first year following the recession.

For instance, if a Member State is assumed to have a deficit of 2% of GDP in the year before a severe recession, it will be put into a position of excessive deficit during the recession if its deficit increases by more than 1% points of GDP in the year of the recession but returns below the 3% threshold as soon as the recession is over. In this case, the excessive deficit will only be “transient”. If, however, its deficit increases by more than 1% points of GDP in the year of the recession and does not return below the 3% threshold as soon as the recession is over, there will be a “persistent” excessive deficit and there is a presumption that sanctions might be applied if sufficient action to correct this excessive deficit is not taken.

### **Main results**

Tables 5, 6 and 7 report the results of the exercise for the three starting points taken into consideration for the pre-recession deficit. On the vertical dimension, each table shows the change in deficit in the recession period with respect to the year before the recession; on the horizontal dimension, it considers the change in deficit in the first year after the recession period with respect to the year before the recession. Three areas can be identified:

- a) the no-problem area (white area - no excessive deficit);
- b) the area showing a violation of the 3% reference value during the recession (light grey area - “transient” excessive deficit);
- c) the area showing a violation of the 3% threshold both in the year of the recession and in the year following the recession (dark grey area - “persistent” excessive deficit).

As can be seen in Table 5, starting from a pre-recession balanced budget, the deficit exceeds the 3% level in 11 recession episodes. In 6 cases (B 1981, D 1975, E 1993, I 1975, L 1975, P 1993), the deficit exceeds the 3% level in the year of the recession but returns below it in the following year. In 5 events (DK 1974-75 and 1980-81, FIN 1991-93, S 1991-93, UK 1991-92), the deficit exceeds the 3% level in the year of the recession and remains above it also in the year following the recession.

In two cases (P 1975 and S 1977), the deficit stays below the 3% reference value during the recession but moves above it in the year following the recession. These countries would not be put into an excessive deficit position for the year of the recession, which is the angle taken for the analysis in Table 5, but would be put in excessive deficit in the year after the recession.


Table 6 shows that a pre-recession 2% deficit leads to 18 cases in which the deficit exceeds the 3% level. In one case, the deficit returns below the 3% threshold in the year following the recession (EL 1993). In 17 recessions involving 12 countries, the deficit breaches the 3% level in the year of the recession and stays above it in the following year (B 1975 and 1981, D 1975, DK 1974-75 and 1980-81, E 1993, F 1993, FIN 1991-93, I 1975, L 1975, NL 1981-82, P 1975 and 1993, S 1977 and 1991-93, UK 1974-75 and 1991-92).


**Table 5: Excessive deficits during severe recessions (GDP decrease of at least 0.75%): deficit before recession  $d_{t-1}=0\%$**

$d_{t-1} = 0\%$		Deterioration in (t+1) in comparison with the base year (t-1)			
Deterioration in recession period (t)	number of cases	less equal 1%	more than 1% less equal 2%	more than 2% less equal 3%	more than 3%
no worsening	2	D, P			
less equal 1%	4	B, D, I, UK			
from 1% to 2%	3	EL	F, UK		
from 2% to 3%	4		NL	B	P*, S
from 3% to 4%	3			E, L*, P	
greater than 4%	8		I*	B, D	DK(2x), FIN*, S*, UK
total	24	7	4	6	7

\* : GDP decrease of at least 2.0% (of at least 0.75% otherwise)

Explanation of shaded areas :

light grey  "transient" excessive deficit (E, L,P,I, B, D).

dark grey  "persistent" excessive deficit (DK, FIN, S, UK).



Source : European Commission, DG II database

**Table 6: Excessive deficits during severe recessions (GDP decrease of at least 0.75%): deficit before recession  $d_{t-1}=2\%$**

$d_{t-1} = 2\%$		Deterioration in (t+1) in comparison with the base year (t-1)			
Deterioration in recession period	number of cases	less equal 1%	more than 1% less equal 2%	more than 2% less equal 3%	more than 3%
no worsening	2	D, P			
less equal 1%	4	B, D, I, UK			
from 1% to 2%	3	EL	F, UK		
from 2% to 3%	4		NL	B	P*, S
from 3% to 4%	3			E, L*, P	
greater than 4%	8		I*	B, D	DK(2x), FIN*, S*, UK
total	24	7	4	6	7

\*: GDP decrease of at least 2.0% (of at least 0.75% otherwise)

Explanation of shaded areas :

light grey  "transient" excessive deficit (EL).  
 dark grey  "persistent" excessive deficit (17 cases).

Source : European Commission, DG II database



Table 7 shows that a pre-recession country-specific budget surplus, which corresponds to the cyclical budget component, would lead to 6 cases of excessive deficit. There is a breach of the 3% threshold in only the recession year in 2 cases (D 1975 and I 1975) and in both the recession year and the following one in 4 cases (DK 1974-75 and 1980-81 as well as both FIN and S in 1991-93). Therefore, even when starting from a structural balanced budget and with an actual country-specific pre-recession surplus, the conclusions of the balanced budget exercise remain valid.

**Table 7: Excessive deficits during severe recessions (GDP decrease of at least 0.75%): country-specific surplus before recession  $d_{t-1}$  corresponding to cyclical budget component**

Budget in recession period (t)	number of cases	Budget in post-recession period t+1				
		Surplus	from balance to 1%	more than 1% less equal 2%	more than 2% less equal 3%	more than 3%
Surplus	7	UK(2x), L*, D(2x), P, B				
from balance to 1%	3	I	B, F			
from 1% to 2%	6	EL	NL	E, P	P*	S
from 2% to 3%	2		B			UK
from 3% to 4%	2		I*	D		
greater than 4%	4					DK(2x), FIN*, S*
total	24	9	5	3	1	6

\*: GDP decrease of at least 2.0% (of at least 0.75% otherwise)

Explanation of shaded areas :

light grey  "transient" excessive deficit (D, I)  
 dark grey  "persistent" excessive deficit (DK, FIN, S)

Source : European Commission, DG II database

The exercises presented above are summarised in Table 8. The following conclusions can be drawn:

- a) As expected, the lower the pre-recession deficit, the lower the probability of breaching the 3% threshold both in the recession year and in the year following the recession. For instance, moving from the 2% pre-recession deficit exercise to the balanced budget exercise makes the breaches of the 3% threshold decline from 18 to 11; a similar pattern is found for the violations of the temporariness clause (these decline from 17 to 5). Moving from a balanced budget to a country-specific pre-recession surplus as a starting position further reduces the violations of the 3% reference value and the temporariness condition: the breaches of the 3% threshold are reduced from 11 to 6 and the violations of the temporariness clause from 5 to 4.
- b) The early years of EMU, where several countries are likely to record deficits close to 2%, are likely to be problematic in the event of a severe recession. Over the period 1961-96, with this pre-recession deficit, more than two thirds of the recessions would have resulted in a breach of the 3% level in the year of the recession as well as in the year following the recession.
- c) A pre-recession balanced budget, and *a fortiori* a country-specific surplus, would have prevented all one-year recessions from leading to a deficit which is “excessive” in the year of the recession and which remains so in the year following the recession.
- d) The risk of incurring an excessive deficit is relatively high for countries involved in lengthy recessions which result in significant negative output gaps and make it extremely difficult to re-absorb the deficit within the first year of recovery. As already pointed out, in 9 out of the 24 recession episodes considered, GDP declines for two or three years. In 5 of these 9 events, even starting with a balanced budget, and in 4 cases when starting from a pre-recession surplus, the deficit exceeds the 3% reference value in the recession period and remains above the 3% threshold during the following year.

**Table 8: Excessive deficits during severe recessions (GDP decrease of at least 0.75%): Summing-up**

Assumed deficit before recession (% of GDP)	Number of recession episodes	Number of recessions with deficit above 3% threshold		
		Excessive Deficits (a)=(b)+(c)	of which:	
			“Transient” excessive deficit (b)	“Persistent” excessive deficit (c)
0%	24	11	6	5
2%	24	18	1	17
Country-specific surplus	24	6	2	4

Source: European Commission, DG II database.

- e) The risk of incurring an excessive deficit is very high in cases where the fall in GDP exceeds 2%. Even in the 0% exercise, there is a breach of the 3% reference

value in 4 out of the 5 cases, in 2 of which the deficit stays above the 3% threshold in the year following the recession. In the 2% deficit exercise, there is a “persistent” deficit in all the 5 recession episodes involving a fall of 2% or more in real GDP. In the exercise with a country-specific surplus, there is a “persistent” excessive deficit in 2 out of the 5 cases of negative growth of 2% or more and in one case there is a “transient” excessive deficit.

- f) For the calculations carried out in this section, the closeness condition has not been applied. However, had this condition been taken into account, this would have introduced a number of limited-problem cases as defined in Graph 1 in Section 2 and it would have decreased the number of “transient” excessive deficit cases. However, for the purpose of imposing sanctions on persistent offenders, nothing would have changed.

All in all, the analysis in this section calls for a fast move to a balanced budget and for some attention for the problems that will be encountered during the early years of EMU in the event of a severe downturn. An analysis of the length of the adjustment period needed to redress budgetary imbalances after recessions<sup>16</sup> shows that, if Member States start off with a balanced budget, then even in the event of breaching the 3% ceiling during the recession year, a fast budgetary adjustment to fend off the thread of sanctions is feasible. However, the situation becomes more problematic the further away government budgets move from a balanced position.

## V. “MILD” RECESSIONS AND ABRUPT SLOWDOWNS: ARE THERE HIDDEN PROBLEMS?

This section examines budgetary outcomes during two additional types of economic slowdown: mild recessions, in which GDP declines by less than 0.75%, and periods of economic slowdown, in which the rate of growth declines abruptly but still remains positive. The analysis provides indications about the risk that these events, which do not qualify as severe economic slowdowns, produce excessive deficits.

Over the period 1961-96 there were 9 cases of negative GDP growth in the 0 to 0.75% range. The output gap widened by around 3% points of trend GDP on average in these episodes, as against over 5% points in the 24 episodes considered in Section 4. The increase in the deficit was relatively limited, 0.7% points, as against 3.6% points in the 24 episodes. This is due to the different stance of discretionary policies, which reduced the structural primary deficit by 1.1% points of GDP, while in the 24 episodes it decreased by 0.1% points.

An abrupt decline in economic growth is defined as corresponding to a fall in the GDP growth rate which still remains positive but produces a worsening of the output gap by at least 2.5% points<sup>17</sup>. Over the period 1961-96 there were 17 such episodes (7 of

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<sup>16</sup> See Buti et al. (1997).

<sup>17</sup> The 2.5% threshold has been selected taking into consideration that 2.5% is the minimum output gap deterioration in the single-year recessions involving a decline of GDP by at least 0.75%. This means that the 2.5% threshold allows to select downturns which produced effects

which in Ireland and Portugal). Most took place during the 1960s and 1970s, when growth rates were relatively high. The increase in the deficit was very limited during periods of abrupt slowdown in growth: 0.3% points, as against 3.6% points in the 24 severe recession episodes and 0.7% points during mild recessions. This is due to the discretionary policy undertaken, which reduced the structural primary deficit by 0.9% points of GDP.

As can be seen in Table 9, assuming a pre-recession balanced budget, there is only one case of excessive deficit. More specifically, this is a case in which the deficit breaches the 3% threshold in the recession period and does not return below it in the following year (A 1975). This was due to a substantial expansionary budgetary policy in the year of the recession (an increase in the structural primary deficit by about 1.7% points of GDP), followed by a failure to exploit the high growth rate recorded in the following year<sup>18</sup>.

**Table 9: Excessive deficits during mild recessions and abrupt slowdowns in growth: deficit before recession  $d_{t-1}=0\%$**

$d_{t-1} = 0\%$		Deterioration in (t+1) in comparison with the base year (t-1)			
Deterioration in recession period (t)	number of cases	less equal 1%	more than 1% less equal 2%	more than 2% less equal 3%	more than 3%
no worsening	12	DK, IRL(5x), L, P(2x), FIN	EL	I	
less equal 1%	3	E, A	A		
from 1% to 2%	4	D		E	I, FIN
from 2% to 3%	6	F, L		NL	D, L, P
from 3% to 4%	1				A
greater than 4%	-				
total	26	15	2	3	6

Note : Selection of periods of mild recessions (max. GDP decrease=0.75%) and periods of slow growth going along with a worsening of the output gap by at least 2.5%

Explanation of shaded areas :

light grey "transient" excessive deficit.  
dark grey "persistent" excessive deficit (A).

Source : European Commission, DG II database

As shown in Table 10, a pre-recession deficit of 2% of GDP leads to 11 cases in which the deficit exceeds the 3% threshold. More specifically, there are 3 cases where the deficit breaches the 3% reference value during the recession year only (D 1967, F 1975 and L 1981), and 8 cases of a “persistent” excessive deficit (D 1974, E 1981, I 1971, L 1967, NL 1975, A 1975, P 1974 and FIN 1977). Most of these cases were characterised by expansionary policies.

potentially as large as those produced in the recessions labelled as severe under the 0.75 % condition.

18 See OECD (1977) and (1978).



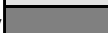
**Table 10: Excessive deficits during mild recessions and abrupt slowdowns in growth: deficit before recession  $d_{t-1}=2\%$**

$d_{t-1} = 2\%$		Deterioration in (t+1) in comparison with the base year (t-1)			
Deterioration in recession period	number of cases	less equal 1%	more than 1% less equal 2%	more than 2% less equal 3%	more than 3%
	12	DK, IRL(5x), L, P(2x), FIN	EL	I	
less equal 1%	3	E, A	A		
from 1% to 2%	4	D		E	I, FIN
from 2% to 3%	6	F, L		NL	D, L, P
from 3% to 4%	1				A
greater than 4%	-				
total	26	15	2	3	6

Note : Selection of periods of mild recessions (max. GDP decrease=0.75%) and periods of slow growth going along with a worsening of the output gap by at least 2.5%

Explanation of shaded areas :

light grey  "transient" excessive deficit (D, F, L).

dark grey  "persistent" excessive deficit (D, E, I, L, NL, A, P, FIN).

Source : European Commission, DG II database

These results seem to imply that, if budgets are balanced before recession episodes, mild recessions and abrupt slowdowns in growth will not lead to excessive deficits unless strong expansionary policies are implemented and not reversed after the recession. In other words, experience from the 1961-96 period points to the fact that there are no downturns other than "severe recessions" which produce serious


**Table 11: Excessive deficits during mild recessions and abrupt slowdowns in growth: country-specific surplus before recession  $d_{t-1}$  corresponding to cyclical budget component**

Budget in recession period (t)		Budget in post-recession period t+1				
Budget in recession period (t)	number of cases	Surplus	from balance to 1%	more than 1% less equal 2%	more than 2% less equal 3%	more than 3%
Surplus	14	DK, E, IRL(4x), L, A, P, FIN	A, P	EL, I		
from balance to 1%	6	IRL	D, NL		I, P	D
from 1% to 2%	2		F			E
from 2% to 3%	4		L			L, A, FIN
from 3% to 4%	-					
greater than 4%	-					
total	26	11	6	2	2	5

Note : Selection of periods of mild recessions (max. GDP decrease=0.75%) and periods of slow growth going along with a worsening of the output gap by at least 2.5%

Explanation of shaded areas :

light grey  "transient" excessive deficit.

dark grey  "persistent" excessive deficit.

Source : European Commission, DG II database

budgetary effects.

If budgets are balanced, mild recessions or major drops in the growth rate do not produce excessive deficits. On the other hand, if deficits are in the 2% range, as might occur in the early years of EMU, abrupt declines in growth might also lead some countries into excessive deficits.

Table 11 shows that a pre-recession country-specific budget surplus would not lead to a case in which the deficit would exceed the 3% reference value during the recession year. When starting from a structural balanced budget and with an actual pre-recession surplus corresponding to the size of the cyclical budget component in each country, the conclusions of the balanced budget exercise therefore remain valid also for periods of mild recessions and slowdowns in growth.

## **VI. CONCLUDING REMARKS**

The aim of this study was to examine whether EU Member States will have to change their budgetary policy behaviour once the Excessive Deficit Procedure and the Stability and Growth Pact become fully operational during the third stage of EMU. Indeed, these procedures will introduce a major “regime-shift” as Member States will be bound to apply prudent budgetary policies in order to avoid an excessive deficit position.

Member States’ budgetary performances during phases of economic slowdown were examined over the period 1961-96. These performances were analysed in the light of the provisions of the Excessive Deficit Procedure and the Stability and Growth Pact. More specifically, this study analysed whether, during and immediately after these recession periods, Member States would have moved in a situation of excessive deficit had past budgetary policies been pursued.

The use of the provisions of the Excessive Deficit Procedure and the Stability and Growth Pact to examine the past is obviously a highly speculative exercise. Its results do not address the following questions: to what extent is past budgetary behaviour a reliable guide to assess the likely behaviour of national budgetary policies in EMU during recessions? More specifically, would Member States need larger or smaller changes in their budgetary positions to provide the degree of stabilisation which occurred in the past?

A number of factors will play an important role:

### **New policy regime under EMU**

During the third phase of EMU, the conduct of monetary policy will be centralised at the European level and will therefore no longer be available as a policy tool at the national level. Budgetary policy will thus be the main macro-economic policy instrument still available for individual Member States to combat recessions,

especially when shocks are country-specific. The impossibility of lowering interest rates and resorting to currency devaluations might require larger deficit changes.

On the other hand, according to the Mundell-Fleming framework, budgetary policy will in principle become more effective in dampening the amplitude of cyclical fluctuations in the new policy environment of EMU with centralised monetary policy and irrevocably fixed exchange rates between Member States.

If, however, EMU enhances the process of economic integration, trade leakages of budgetary policies will gradually increase, thereby reducing the “domestic” effectiveness of budgetary policies. Unless national policies are co-ordinated, this factor raises the changes in the budget deficit required in order to attain the same degree of stabilisation as that achieved in the past.

### **“Pre-recession” deficit level**

Actual deficit changes observed during past recessions were applied in this chapter “pre-recession” deficit levels chosen specifically for the exercise. However, the deficit changes which took place during past severe recessions usually started from markedly higher pre-recession deficit levels. The impact on the economy of budgetary policy changes during recessions also varies depending on the deficit and debt levels. For instance, the markets’ perception of an increase in the deficit from a low level during a severe recession will be different from that of a rise in the deficit from a much higher level, the latter more likely being interpreted as shifting the deficit to an unsustainable path. This may lead to an increase in the risk premium on interest rates which reduces the effectiveness of the fiscal expansion.

High budgetary imbalances may inhibit policy makers from using the budgetary instrument for stabilisation purposes. Indeed, the higher risk premia which would raise the interest burden may represent a powerful disincentive to expanding fiscal policy in spite of the recession. As was pointed out in Section 3, budgetary reactions to economic downturns differ depending on the initial public finance conditions before the recession: countries with high deficit and debt levels tend to conduct tighter fiscal policies during recessions than those with lower deficit and debt levels. In the future, when medium-term targets have been achieved, Member States would have more room for manoeuvre to undertake accommodating policies.

These factors point in different directions. As a consequence, the net effect on the requirement for budgetary stabilisation is ambiguous. If it proved necessary to reinforce the working of the automatic stabilisers during recessions in EMU, larger swings in budget deficits compared to the past would have to be allowed for. Under the provisions of the Stability and Growth Pact, this would imply, however, that during the third phase of EMU, Member States, and especially those with large automatic stabilisers, would have to run budgetary surpluses when in medium-term equilibrium.

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(II.7)  
**AUTOMATIC BUDGETARY STABILISERS**

**I. INTRODUCTION**

Since the recession of 1993, the average general government budget deficit for the European Union as a whole has been reduced from its record level of 6.1% of GDP in 1993 to 4.2% of GDP in 1996, and the Commission's Autumn 1997 Forecasts indicate that the average EU deficit might decrease further to 2.6% of GDP in 1997.

This marked reduction in government deficits in EU Member States can be attributed both to the budgetary consolidation policies pursued by the Member State governments over recent years and to the favourable effects of the economic recovery on government budgets.

Indeed, cyclical fluctuations in economic activity exert a significant influence on government budget balances: tax receipts weaken and social transfers increase during recessions and show reversed movements during expansions.

Such changes in the budget balance which are induced by cyclical fluctuations, in turn have a stabilising influence on economic activity, i.e. they fulfil the role of budgetary automatic stabilisers. These budgetary automatic stabilisers contribute to a stimulation of the economy in a period of recession and exert a dampening effect in periods of overheating, and should therefore be automatically self-correcting.

Governments have the option to either let these automatic stabilisers work or to reinforce or restrain their effect via discretionary budgetary policy. During a recession, for example, governments might prefer not to let the budget deficit deteriorate due to the operation of the automatic stabilisers and will therefore decide to conduct a pro-cyclical budgetary policy, or they might choose to actively undertake a counter-cyclical budgetary policy which will further increase the deficit.

To examine the operation of the budgetary automatic stabilisers, a cyclical adjustment method to identify the cyclical component of government budget balances is needed. Such a method allows to examine the effects of variations in economic growth on the government's budgetary position and to decompose the actual budget balance into a cyclical and a structural or cyclically adjusted component. The former shows the effect on the government budget of cyclical fluctuations around the trend level, while the latter reflects what the budget balance would be if economic activity was at its trend level.

An example of such a method is the simple cyclical adjustment method used by the Commission services (European Commission, 1995). The influence of cyclical fluctuations on government budget balances is calculated by multiplying the output gap by the cyclical sensitivity of budgetary receipts and expenditures. The trend output benchmark is estimated via the Hodrick-Prescott filter. The output gap is defined as

the difference between the actual level of GDP and that of trend GDP, expressed as a percentage of trend GDP.

## II. SIZE AND VARIABILITY

Calculations based on the method used by the Commission services show that the magnitude of the budgetary automatic stabilisers, as measured by the cyclical component of budget balances, is quite important for most of the EU Member States and varies substantially across Member States and over time.

As can be seen in Table 1, the cyclical impact on government budgets is relatively higher and shows a relatively higher degree of variability in the smaller Member States and in the Nordic countries than in the larger Member States. The size and volatility of the cyclical component for the European Union as a whole is dampened because the different positions with respect to the cycle of the Member States at a given moment are averaged out.

Table 1 shows that, in most Member States, the cyclical component on average varies with around 1 percentage point of GDP in either direction around its mean.

As can be seen from the lowest negative and highest positive values of the cyclical components over the period 1960-1996 presented in Table 1, the cyclical component for the EU Member States rarely surpassed the 3% of GDP value on either side and even remained below the 2% value in five Member States. Cyclical components of above 4% were only registered in Finland and Sweden during the exceptionally severe recession at the beginning of the 1990s as well as in the UK.

The magnitude of the cyclical fluctuations of the government's budget is influenced by the extent and volatility of the economic cycles, the importance of the government sector in the economy, the progressivity of the tax system, the generosity of the unemployment compensation schemes and the sensitivity of unemployment to fluctuations in output. These factors vary considerably from one country to another and also change significantly over time.

In the Commission services' cyclical adjustment method, the influence of cyclical fluctuations on the government budget balance is captured by taking the product of two parameters: the marginal sensitivity of budgetary receipts and expenditures to GDP and the size of the output gap<sup>19</sup>.

**Table 1:**

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<sup>19</sup> The Hodrick-Prescott trend estimation method used in the Commission services' cyclical adjustment method produces output gaps which are symmetric over the series, and therefore sum to zero on average over the period 1960-1996. The negative output gaps produced by this method are relatively small compared to those produced by other methods, such as, for example, the production function approach. In addition, the method smoothes over structural breaks, such as those which occurred in Finland and Sweden at the beginning of the 1990s (European Commission, 1995)

**Size and volatility of the cyclical component of budget balances for the European Union Member States (1960-1996)**

Member States	Volatility Standard deviation (% points of GDP)	Lowest negative component		Highest positive component	
		Value (as % of GDP)	Year	Value (as % of GDP)	Year
<b>B</b>	1.0	-1.7	1986	2.0	1974
<b>DK</b>	1.3	-2.4	1981	2.6	1986
<b>D</b>	1.0	-1.8	1967	2.4	1991
<b>EL</b>	0.7	-1.0	1987	1.6	1973
<b>E</b>	1.5	-2.1	1984,1985	2.7	1990
<b>F</b>	0.8	-1.1	1985	1.6	1990
<b>IRL</b>	1.2	-2.6	1993	2.0	1978
<b>I</b>	0.7	-1.2	1975	1.1	1980
<b>L</b>	2.0	-3.3	1983	4.2	1974
<b>NL</b>	1.3	-2.9	1983	1.8	1974
<b>A</b>	0.7	-1.2	1987	1.4	1991
<b>P</b>	1.1	-2.4	1984,1985	2.4	1973
<b>FIN</b>	2.2	-5.6	1993	5.3	1989
<b>S</b>	1.8	-4.1	1993	3.2	1990
<b>UK</b>	1.4	-2.7	1982	3.1	1989
<b>EU</b>	<b>0.8</b>	<b>-1.3</b>	1983	<b>1.6</b>	1990

Source: Own calculations based on the Commission's Autumn 1997 Forecasts (European Commission, 1997).

**Table 2:**  
**Size and variability of the output gaps for the European Union Member States (1960-1996)**

Member States	Volatility Standard deviation (% points of GDP)	Lowest negative output gap		Highest positive output gap	
		Value (as % of GDP)	Year	Value (as % of GDP)	Year
<b>B</b>	1.7	-2.7	1968	3.8	1974
<b>DK</b>	1.8	-3.6	1981	3.8	1986
<b>D</b>	2.0	-3.8	1967	4.3	1991
<b>EL</b>	2.1	-3.4	1962	5.8	1973
<b>E</b>	2.5	-4.5	1960	5.3	1974
<b>F</b>	1.4	-2.1	1985	3.2	1990
<b>IRL</b>	2.1	-4.5	1993	4.2	1978
<b>I</b>	1.8	-3.4	1975	3.1	1980
<b>L</b>	3.1	-4.8	1983	8.9	1974
<b>NL</b>	1.6	-3.4	1983	2.4	1974
<b>A</b>	1.6	-2.8	1968	3.2	1973,1974
<b>P</b>	2.8	-5.4	1984,1985	8.2	1973
<b>FIN</b>	3.6	-8.0	1993	9.2	1989
<b>S</b>	1.9	-4.6	1993	3.7	1990
<b>UK</b>	2.2	-4.0	1982	5.1	1988
<b>EU</b>	<b>1.4</b>	<b>-2.2</b>	1983	<b>3.2</b>	1973

Source: Own calculations based on the Commission's Autumn 1997 Forecasts (European Commission, 1997).

- *Output gaps*



Differences in the size of the output gaps are the main element to explain divergences in the importance of the cyclical components across EU Member States.

With the recession of 1993, the output gap for the European Union as a whole turned negative and reached a trough of -1.7% of trend GDP. In 1993, output gaps were particularly large in Finland (-8.0%) and Sweden (-4.6%). The negative output gap for the European Union as a whole narrowed to -1.0% in 1994 and to -0.7% in 1995 with the start of the recovery, but widened again with the slowdown of 1996 to around -1.2% of trend GDP.

For 1997, the Commission's Autumn 1997 Forecasts project that the output gap will narrow slightly to -1.0% of trend GDP. Negative output gaps in 1997 are expected to continue to be relatively large in Spain and France (-1.3%), while Denmark, Ireland, and the United Kingdom are expected to have positive output gaps.

As can be seen in Table 2, the size and the volatility of the output gaps is relatively high in the "catching-up" countries such as Greece, Portugal and Spain, and in some of the smaller Member States as well as in the Nordic countries.

#### - *Cyclical sensitivity of budget receipts and expenditure*

Budgetary receipts are much more sensitive to cyclical fluctuations than expenditure, owing to the importance of the tax share in the economy and to the progressivity of the tax system.

The sensitivity of budget receipts to cyclical fluctuations differs depending on the revenue category: corporate taxes paid by the business sector vary most with the cycle due to the sensitivity of profits to cyclical fluctuations, while social contributions vary less with the cycle due to the regressive nature of this tax. The cyclical sensitivity of personal income taxes and of indirect taxes is situated between these two extremes.

The overall weighted average revenue elasticity with respect to GDP is close to 1.0 for the European Union as a whole, and ranges from 1.38 for the United Kingdom to 0.77 for Italy. These divergences are due to differences in Member State tax rates and tax structures. The marginal sensitivity of budgetary receipts to GDP is obtained by multiplying the overall revenue elasticity by the tax to GDP ratio.

**Table 3:**  
**Marginal sensitivity of budget revenue and expenditure to GDP for the European Union Member States -1995**

Member States	Sensitivity of budgetary receipts to GDP* (1)	Sensitivity of budget expenditure to GDP * (2)	Sensitivity of budget balances to GDP* (3)=(1)-(2)
<b>B</b>	0.5	-0.1	0.6
<b>DK</b>	0.5	-0.3	0.7
<b>D</b>	0.4	-0.1	0.5
<b>EL</b>	0.3	-0.1	0.4
<b>E</b>	0.5	-0.2	0.6
<b>F</b>	0.5	-0.1	0.5
<b>IRL</b>	0.4	-0.2	0.5
<b>I</b>	0.3	-0.1	0.5
<b>L</b>	0.4	-0.2	0.6
<b>NL</b>	0.5	-0.2	0.8
<b>A</b>	0.4	-0.1	0.5
<b>P</b>	0.4	-0.1	0.5
<b>FIN</b>	0.5	-0.2	0.6
<b>S</b>	0.6	-0.2	0.9
<b>UK</b>	0.5	-0.2	0.6
<b>EU</b>	<b>0.4</b>	<b>-0.1</b>	<b>0.5</b>

\* Figures are rounded-off.

Source: European Commission (1995).

As can be seen in the first column of Table 3, the marginal sensitivity of budget revenues to GDP for the European Union as a whole was 0.4 for 1995. This means that each widening of a negative output gap by 1 percentage point reduces government budget revenues by 0.4 percentage points of GDP. The revenue sensitivity varies from 0.3 for Greece and Italy to 0.6 for Sweden.

Government transfers to households to cover costs related to unemployment are the main spending category which is deemed to react automatically to cyclical variations. Most other categories of government spending are considered to remain unaffected. As there is only one category of government spending which is responsive to cyclical fluctuations in economic activity, the marginal sensitivity of government spending to GDP is significantly lower than that of budget revenue, where almost all revenue categories are affected by the cycle.

As can be seen in the second column of Table 3, the estimated sensitivity of budget expenditures to GDP for the European Union as a whole is -0.1 for 1995, which means that each widening of a negative output gap by 1 percentage point of trend GDP increases government spending by 0.1 percentage points of GDP. The cyclical sensitivity of expenditure does not vary widely among Member States: it ranges from -0.05 for France to -0.26 for Denmark.

The difference of the marginal revenue sensitivity to GDP and the marginal expenditure sensitivity gives the marginal rate of change of the budget balance with respect to GDP. The third column of Table 3 shows that the sensitivity of the budget

balance to the cycle lies around 0.5 for the European Union as a whole<sup>20</sup>. This means that each deterioration of a negative output gap by 1 percentage point of trend GDP increases the average government deficit by 0.5 percentage points. The sensitivity of the budget balance to the cycle ranges from 0.4 for Greece to 0.85 for Sweden.

The importance for the budgetary automatic stabilisers of fluctuations in revenue is clearly much larger than that of expenditure: as can be seen from the figures presented in Table 3, the decrease in government revenue during a recession accounts for four fifths of the deterioration of the government deficit, while the increase in expenditure only accounts for one fifth.

It can also be noted that those Member States such as Finland, Sweden and Denmark, for which the cyclical sensitivity of the budget balance is relatively high due to the extensive role of the government sector in the economy, have also registered large swings in their output gaps in recent years. The combination of these two factors explains why these countries have registered such extreme values for the cyclical component of the budget balance over recent years.

### **III. DEGREE OF STABILISATION PROVIDED BY THE AUTOMATIC STABILISERS**

The dampening effect of the automatic stabilisers on output fluctuations differs significantly across countries. It mainly depends on the degree of openness of the economy and on the structure of tax and expenditure systems.

In the open economies of the smaller EU Member States, the impact of the automatic stabilisers on output fluctuations can be expected to be relatively modest because of the importance of the trade leakages which reduce the domestic effectiveness of fiscal policy. In the more closed economies of the larger EU Member States, the dampening effect of the operation of the automatic stabilisers should be more significant. The more open countries therefore need, *ceteris paribus*, comparatively larger budgetary fluctuations in order to achieve the same degree of output smoothing as obtained in the more closed economies which have automatic stabilisers of a smaller size.

Depending on the estimation method used, estimates given in the literature on the dampening impact of the budgetary automatic stabilisers tend to differ considerably. Comparable and up-to-date estimates for each of the EU Member States have up to now not yet been produced.

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<sup>20</sup> The estimates of the size of the automatic stabilisers used in the Commission services' cyclical adjustment method are very close to those used by the OECD and the IMF in their respective cyclical adjustment methods (Giorno et al., 1995 and IMF, 1993). Both the Commission services and the OECD use an estimate for the cyclical sensitivity of the budget balance of 0.5 for the European Union as a whole, whereas the IMF uses an estimate of approximately 0.6. Each of these international organisations largely bases its estimates of the budgetary revenue and expenditure elasticities on a seminal OECD Working Paper by Chouraqui et al. (1990), which presented, among several other fiscal indicators, a method to cyclically adjust budget balances.

Recent estimates given in the literature of the reduction in output fluctuations provided by the budgetary automatic stabilisers following a given shock range, as pointed out by Italianer and Vanheukelen (1993), between 20% and 50% for the EU Member States as well as for most other industrialised countries.

The OECD (1993), for example, did a simulation exercise whereby the effects of a shock in private consumption on output were calculated under a scenario whereby the automatic stabilisers were allowed to fully operate. The output changes obtained under this scenario were then compared to a situation where governments blocked the workings of the automatic stabilisers via a compensatory change in taxation and thus prevented changes in the government deficit from taking place. The dampening impact on output of the automatic stabilisers was then calculated by taking the difference in the output changes between both scenarios.

The results obtained by the OECD showed that, for the major EU Member States, the operation of the budgetary automatic stabilisers reduces the amplitude of cyclical fluctuations by one quarter, i.e. output fluctuations following a given shock in an individual country are dampened by around 25% via the working of the automatic stabilisers.

The OECD also found that the automatic stabilisers were less effective in dampening output fluctuations in the smaller European countries due to the higher trade leakages in these countries and that the Nordic countries achieved a degree of output stabilisation comparable to that of the larger countries owing to the particularly large size of their budgetary stabilisers<sup>21</sup>.

In a similar simulation exercise, Pisani-Ferry et al. (1993) estimated the degree of shock absorption automatically provided by the budget following a fall in the demand for exports and found an overall stabilisation effect of around 37% for France and between 34% to 42% for Germany, depending on whether or not inter-regional transfers between the Länder were taken into account.

To obtain comparable estimates of the smoothing impact of the budgetary automatic stabilisers for each of the EU Member States in the current institutional environment, a simulation exercise was set up with the Commission services' QUEST model (European Commission, 1996).

The exercise with the QUEST model was carried out in a similar way as the OECD simulation exercise discussed above. The first year effects on output of a 1% increase in private consumption in a specific country were calculated under a scenario whereby the automatic stabilisers were allowed to fully operate. Output changes were then calculated under an alternative scenario in which the government prevented the working of the automatic stabilisers and kept tax revenues unchanged via counterbalancing measures. An estimate for the dampening effect of the automatic

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<sup>21</sup> The OECD also underlined that the automatic stabilisers in the United States and Japan had a significant stabilising impact on the economy because of the below-average openness of these two economies, even though the size of their automatic stabilisers is smaller than those in the EU Member States (OECD, 1993).

stabilisers was then obtained by taking the difference in output changes between the two scenarios.

As can be seen in Table 4, the results obtained with the QUEST model broadly correspond to the OECD estimates discussed above<sup>22</sup>. The exercise with the QUEST model found that the stabilising impact of the budgetary automatic stabilisers lies around 30% for the major EU Member States except France (Germany, Italy and the United Kingdom), i.e. output fluctuations in these countries are reduced by around 30% when the automatic stabilisers are allowed to work compared to a situation where they do not operate.

For example, as is shown in Table 4, a 1% increase in private consumption led to a real GDP increase of 1.38% in Germany when the automatic stabilisers were prevented from operating and to an increase in real GDP of only 0.96% when they were allowed to fully operate. The results of the exercise with the QUEST model show that, for Germany, the operation of the automatic stabilisers thus reduced the real GDP growth rate by 0.42 percentage points after a 1% positive shock in private consumption, which corresponds to a dampening impact of 30%.

The QUEST exercise also confirms that the Nordic countries, with their relatively large budgetary automatic stabilisers, obtain a similar or even higher degree of output stabilisation compared to the large EU Member States with their lower automatic stabilisers.

For example, the QUEST estimates show that the high automatic stabilisers in Denmark produce the same stabilising impact of output as the relatively lower stabilisers of Germany. Denmark obtains the same stabilising impact of 30% as Germany, with a cyclical sensitivity of the budget balance of 0.7 as compared to 0.5 in Germany. In Finland and Sweden, with automatic stabilisers of 0.65 and 0.85 respectively, the degree of stabilisation provided by the automatic stabilisers is even higher than in Germany and lies around 40%<sup>23</sup>.

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<sup>22</sup> Even though the results obtained with the QUEST simulations are very close to those of the OECD, they must nevertheless be considered with care. In order to have a fully accurate measure of the degree of stabilisation provided by the automatic stabilisers, the budget deficit should be kept constant during the simulation without stabilisers on both the expenditure and the revenue side, and not on tax revenues only as in the current simulation exercise.

<sup>23</sup> The Nordic countries in general adopt an active counter-cyclical budgetary policy stance over the cycle, and especially during recessions. In view of the results obtained with the QUEST model, this cannot be explained by the low degree of output stabilisation provided by their automatic stabilisers. Indeed, the automatic stabilisers in the Nordic countries already by themselves provide a relatively high degree of output stabilisation. The workings of the automatic stabilisers is then further reinforced via the active counter-cyclical budgetary policies undertaken by the Nordic governments.

The degree of stabilisation is, however, significantly lower in the southern countries (Greece, Spain and Portugal). The stabilising impact of the automatic stabilisers even lies below 20% in these countries.

**Table 4:**

**Degree of stabilisation provided by budgetary automatic stabilisers Results of the QUEST simulation exercise**

Member States	% change after 1% positive consumption shock:			Stabilising impact of the automatic stabilisers (in %) (4)=(3)/(1)
	Output change when automatic stabilisers are prevented from operating (1)	Output change under full operation of the automatic stabilisers (2)	Difference in output change (3)=(1)-(2)	
<b>B</b>	1.02	0.76	0.26	26%
<b>DK</b>	1.09	0.75	0.34	31%
<b>D</b>	1.38	0.96	0.42	30%
<b>EL</b>	1.09	0.93	0.16	15%
<b>E</b>	0.99	0.81	0.18	18%
<b>F</b>	1.21	0.93	0.28	23%
<b>IRL</b>	1.51	1.04	0.47	31%
<b>I</b>	1.18	0.87	0.31	26%
<b>L</b>	-	-	-	-
<b>NL</b>	1.08	0.76	0.32	30%
<b>A</b>	0.96	0.71	0.25	26%
<b>P</b>	0.94	0.77	0.17	18%
<b>FIN</b>	1.33	0.79	0.54	41%
<b>S</b>	1.39	0.86	0.53	38%
<b>UK</b>	1.18	0.77	0.41	35%
<b>EU</b>	1.21	0.87	0.34	28%

Source: Calculations with the Commission services' QUEST model.

#### **IV. CONCLUSIONS**

For most EU Member States, both the size and the stabilising effect of the budgetary automatic stabilisers are quite important. The larger countries obtain a relatively high degree of output smoothing with average-sized automatic stabilisers because of the relative closedness of their economies, while the Nordic countries realise a similar or even higher degree of stabilisation with larger automatic stabilisers in spite of the trade leakages in these more open economies. In the southern countries, the size of the budgetary automatic stabilisers is relatively small because of the lower weight of the government sector in the economy and their stabilising effect is as a result less significant.

As the operation of the automatic stabilisers already provides by itself a sufficient degree of output smoothing in the larger EU Member States, the governments of these countries often do not consider it necessary to adopt an active counter-cyclical budgetary policy to further stabilise the economy. As a result, the governments of the larger EU Member States will often just let the automatic stabilisers operate without actively adopting a discretionary policy stance or might even be inclined to undertake a pro-cyclical discretionary policy in order to offset their effect on the budget balance.

The Nordic countries, on the other hand, often undertake active counter-cyclical budgetary policies to further smoothen out cyclical fluctuations, even though the degree of output stabilisation provided by their relatively large automatic stabilisers is similar to that of the larger countries.

In setting their medium-term budgetary targets over the cycle, the Nordic countries would therefore have to aim for sound budgetary positions in normal circumstances, characterised by budgetary surpluses and very low government debt ratios. This would not only allow their relatively large automatic stabilisers to fully operate over the cycle, but would also give them additional room for manoeuvre to conduct expansionary budgetary policies during recessions.

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(II.8)  
**BUDGETARY POLICY COORDINATION**

**1. INTRODUCTION**

In the literature on EMU, co-ordination of budgetary policies is advocated to achieve three objectives: (i) to maintain budgetary discipline; (ii) to provide an adequate degree of budgetary stabilisation and ensure an appropriate monetary-budgetary policy mix; and (iii) to promote economic efficiency by avoiding unfair tax competition and taking into account the public goods nature of some types of public expenditure.

The Treaty on European Union has set up a framework for budgetary policies in EMU which is aimed to provide for the required degree of co-ordination while respecting the equally important need for national budgetary autonomy. This paper focuses on the stabilisation and policy-mix aspect of budgetary co-ordination. The issue of budgetary discipline is dealt with in another contribution in this volume. The efficiency aspect (avoiding unfair tax competition etc.) is perhaps more closely related to the operation of the Single Market and the free movement of capital than to the single currency *per se* and is not considered in this paper.

The term “policy coordination” is used here in a broad sense in conformity with normal usage in international and Community debates, including in the Treaty on European Union. It thus encompasses information exchange, surveillance, policy discussions and recommendations, as well as jointly agreed policy actions. Co-ordination may also include “approximation” of certain policies with a view to achieve greater similarity in economic structure across countries<sup>1</sup>.

Any justification of the need for budgetary co-ordination must rest on a demonstration that there are considerable spill-overs on EMU partners which need to be properly taken into account in national policy formulation. Section 2 examines the economic spill-overs of budgetary policies in EMU. Section 3 briefly reviews the pros and cons of attempting to use discretionary budgetary policies for stabilisation purposes. Against this background, the two following sections deal with the extent to which budgetary co-ordination may be required and the form it should best take. Section 4 describes the case of Community-wide economic disturbances and the problem of achieving an appropriate overall monetary-budgetary policy-mix while section 5 deals with the case of country-specific disturbances. Section 6 sums up the main conclusions.

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<sup>1</sup> Some writers prefer to reserve the term “coordination” for the most binding form of cooperation which “involves mutually agreed modifications in the participants’ national policies” (Kenen, 1988, p. 74). In the terminology adopted here, such instances are termed “coordinated policy actions” or “joint policy actions”.

## II. THE SPILL-OVERS OF NATIONAL BUDGETARY POLICIES IN EMU

The effects of a given budgetary policy action in a country will spill over to its EMU partners through three principal channels: (i) the import channel; (ii) possible effects on the area-wide interest rates, and (iii) possible effects on the common exchange rate.

### **Short-term growth spill-overs are ambiguous and probably small**

A budgetary expansion in one or more EMU countries will tend to raise these countries' imports but increased government borrowing will likely lead to higher area-wide interest rates and an appreciation of the euro exchange rate (the opposite holds for budgetary contraction). The scale of these effects will depend on the size of the budgetary policy action relative to the whole of the euro-zone economy. The cross-border repercussions on output in EMU partner countries will work in opposite directions. On the one hand, partner countries will benefit from increased exports to the country or group of countries undertaking the budgetary expansion. On the other hand, investment and external competitiveness will be depressed by the higher interest rates and the induced appreciation of the euro exchange rate. Although these effects need not off-set each other exactly, they will tend to cancel out.

For this reason, the net short-term spill-over effects on demand and output are likely to be small in EMU and it is not clear whether the net effect will be positive or negative. This conclusion is reached in theoretical analyses (e.g. Frenkel and Razin (1987)) and tends to be confirmed by simulations with large-scale econometric models (Commission (1990), Masson and Taylor (1993))<sup>2</sup>.

Moreover, the short-term repercussions on output in partner countries of budget policy changes will not necessarily be larger in EMU than in the present regime. Already prior to EMU, the economies of EC Member States are highly integrated via the Single Market and their interest rates and exchange rates are strongly interdependent. For instance, in the ERM there would be important interest rate and exchange rate externalities of German economic conditions, and simulation exercises indicate that a German fiscal expansion would tend to lead to *falls* in output in the countries whose currencies are pegged to the DM (cf. Masson and Taylor (1993)). However, simulations with OECD's INTERLINK model give a small positive effect in the short run (cf. Eglander and Egebo (1993)).

While not all cross-border spill-overs will be larger in EMU than before, they will be modified. Externalities on interest rates and exchange rates will become more symmetric. And over time, import leakages will become larger as the economies of participating countries are tied closer together.

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<sup>2</sup> Both small theoretical and large-scale empirical models typically rest on the assumption of linearities in economic behaviour. If there are non-linearities depending on the state of the economic cycle, there may well be occasions where the spill-overs of budgetary policies are larger. During a severe recession a budgetary stimulus in one or more countries might only have a marginal impact on inflation expectations, and on EMU interest and exchange rates. Non-linearities could also be present in cases of overheating where a budgetary contraction might well have positive cross-border repercussions.

## **Impact on growth composition and capital accumulation**

The sentiment that cross-border spillovers of fiscal policy are likely to be small in EMU have led some observers to conclude that the benefits of more extensive budgetary coordination would be slight (e.g. Eichengreen (1997)). However, whether or not the cross-border repercussions are likely to cancel out in terms of their impact on short-term output growth, they will have an impact on the *composition* of growth among EMU partners. Investment and competitiveness on world markets will be depressed by the interest and exchange rate externalities. The lower rate of capital accumulation will negatively influence the medium-term prospects for growth and employment.

These “secondary effects” are likely to be of considerable importance. If one takes the perspective of an individual country, it is clear that the combined budgetary stance of its EMU partners may have a considerable influence on its interest and exchange rates, and thus on its growth composition and the rate of capital accumulation.

The secondary effects introduce a fundamental asymmetry. Budgetary expansions which raise the area-wide interest rate and appreciates the euro exchange rate will be associated with negative spill-overs on partner countries; and vice-versa for sound and prudent budgetary policies<sup>3</sup>.

With integrated global capital markets, risk-adjusted real long-term interest rates in the Community are highly influenced by world conditions. But contrary to what is argued by some commentators, this does not mean that European governments cannot influence real short- and long-term interest rates significantly. In fact, the budgetary policies of EMU governments will have a considerable influence on real interest rates, both related to the monetary-budgetary policy-mix over the short- and medium-term and related to the credible maintenance of fiscal discipline over the long haul.

The interdependence between monetary and budgetary policies is a practical everyday experience of policy-making. Even with global capital markets, short- and long-term real interest rates in EMU may deviate temporarily from the corresponding “world real interest rates”, but these deviations must be balanced by expected real exchange rate changes and this will be reflected in deviations of the euro’s current real exchange rate from its long-term equilibrium (e.g. high real interest rates will, in order to maintain uncovered interest parity, be associated with an “overvalued” real exchange rate and expectations of a depreciation in real terms). The US expansion under Reagan in the early 1980s and the German unification boom in the early 1990s are but the best known examples of a sharp rise in budget deficits leading, via its impact on aggregate demand, to a significant rise in real interest rates and the real exchange rate over the short and medium term.

In EMU some Member States are large enough so that a significant budgetary expansion in one or more countries may have a significant impact on the overall

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<sup>3</sup> Whereas low interest rates are generally regarded as preferable to high interest rates, it is not the case that a lower exchange rate is generally preferable to a higher exchange rate (Wyplosz (1991)). Even so, temporary exchange rate appreciation induced by partner countries’ budgetary policies would generally seem unlikely to be welcome among EMU governments.

policy-mix and thus on the common interest and exchange rates<sup>4</sup>. Given that all countries have a joint interest in avoiding an unbalanced policy-mix of this kind, there is a strong *prima facie* case for co-ordination of budgetary policies to avoid large and sudden budgetary expansions in circumstances where this may have an undesirable impact on the policy-mix.

With respect to the benefits of budgetary discipline over the long haul, which are covered in more detail in other papers in this volume, the EMU regime will also have a positive influence on real interest rates. The Community represents a large player on world financial markets and its actions, either alone or in conjunction with other major economies, will influence the world risk-free rate. Moreover, the emphasis on budgetary discipline and a credible monetary regime in EMU (independent central bank, prohibition on debt monetization as well as, by definition, the elimination of internal currency risks) imply that financial risk premia in the euro area will be among the lowest in the world. There is evidence that the prospective reduction in financial instability and budget deficits helps reduce long-term interest rates throughout Europe and even in the Member States (notably Germany) which have hitherto enjoyed the highest credibility of sound and stable macroeconomic policies (on German long interest rates, see Zettelmeyer (1996)).

#### **Co-ordination is required to ensure spill-overs are taken into account**

Closer co-ordination of budgetary policies in EMU is required to ensure that the spill-overs on EMU partners are properly taken into account in national policy formulation. Without co-ordination, "[n]o government...can be expected to pay much attention to the effects of its own fiscal policy on the fiscal stance of the EC as a whole, although it will have important effects on each and every EC country...because of its effect on interest rates and [euro] exchange rates" (Kenen (1995)). This implies that there could be a general tendency among EMU participants not to take negative interest rate and exchange effects adequately into account. At the same time, there could be a tendency for governments not to give enough consideration to the potential spill-overs through trade leakages. Co-ordination is intended to internalise these externalities.

Before turning to these issues, however, the merits of using budgetary policies for stabilisation purposes and the implications for the required degree and form of co-ordination of budgetary policies in EMU are briefly discussed in the next section.

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<sup>4</sup> Within existing monetary unions and federal countries, there have already been examples of excessive budgetary expansion in one state negatively affecting area-wide interest and exchange rates (e.g. the budgetary expansion of the province of Ontario in Canada in the late 1980s, cf. Courchene (1993)). In general the budgetary room for manoeuvre of lower-tier governments in federal states is limited by strict rules.

### III. THE STABILISATION FUNCTION OF BUDGETARY POLICIES

The stabilisation function of budgetary policies may be performed through the operation of automatic budgetary stabilisers and/or through counter-cyclical discretionary measures. While there is generally broad agreement on the usefulness of allowing automatic stabilisers to operate over the cycle, there is a large literature dealing with the pros and cons of attempting stabilisation through discretionary measures. A number of obstacles to the successful use of discretionary fiscal policy have been identified:

- (i) the “inside lag”, consisting of the recognition lag and the decision lag, may be very long (depending on the decision-making procedures and traditions in each country, ranging often between half and one-and-a-half years);
- (ii) fiscal instruments have behavioural and structural consequences and their use for stabilisation purposes may conflict with tax-smoothing and efficiency objectives;
- (iii) efforts at fine-tuning may reduce wage flexibility by protecting the employed “insiders”;
- (iv) the democratic and political process often implies that it is easier to mobilise support to raise budget deficits than to cut them back or create surpluses; and
- (v) in EU countries, efforts to support the economy during downturns have often been made through expenditure commitments which have subsequently proven *de facto* irreversible; this has resulted in an upward “ratchet” effect of the size of the public sector in the economy, on both the tax and the expenditure side.

Against this background, most EU Member States have become highly sceptical about the potential benefits of “fine-tuning”. This also appears to be the consensus view in the economic literature on the subject.

Co-ordination of discretionary policies for stabilisation purposes in EMU would further be complicated by the fact that the length of parliamentary procedures, the traditions for adjusting fiscal policy between budgets, and thus the scope for rapid action differs widely between countries. Furthermore, negotiations to reach agreement on co-ordinated action could add to the decision lag. For co-ordinated discretionary budgetary action among EU countries, the “inside lag” would therefore become even larger (Goodhart and Smith (1993)).

This suggests that budgetary co-ordination should not least be aimed at creating the conditions for the proper working of automatic budgetary stabilisers. Jointly co-ordinated and announced budgetary actions would be desirable only in special cases of severe disturbances and in cases where Member States have clear common interests which may facilitate rapid agreement.

In the following two sections, the requirements for co-ordination of budgetary policies are analysed first with respect to the problem of achieving an appropriate macroeconomic policy-mix for the euro-zone as a whole, in the face of common circumstances or symmetric shocks, and secondly with respect to the problem of achieving an appropriate mix at the level of the individual country between the single

monetary policy and national budgetary policy with respect to its specific circumstances.

#### **IV. AN APPROPRIATE POLICY MIX FOR THE EURO-ZONE AS A WHOLE**

The EU budget is too small to play any role in cyclical stabilisation and in any case it is directed towards specific purposes. At least for the foreseeable future, the prospect of an EU budget large enough to play any role in cyclical stabilisation would seem neither realistic nor, in view of the importance of subsidiarity and the significant stabilisation potential of national budgetary policies, desirable.

Thus, the EMU framework combines a centralised monetary policy (under the responsibility of the European Central Bank) with decentralised budgetary policies (under the responsibility of national governments, subject to Community rules on budgetary discipline) and decentralised structural policies and wage setting.

In the first instance, this provides for a simple and clear assignment of policies: the single monetary policy would, within the framework of preserving price stability, be able to provide a common response to aggregate economic developments<sup>5</sup>, whereas decentralised budgetary policies and other national economic policy instruments would be available for responding to country-specific circumstances. Naturally, however, the proper conduct of budgetary policies and the operation of automatic budgetary stabilisers will be important also in the face of area-wide economic disturbances in supporting and complementing the stabilisation efforts of monetary policy.

##### **IV.1. Creating room for automatic stabilisers to operate**

In the literature on EMU, two general concerns have been raised that budgetary stabilisers might not operate fully in EMU: (i) the Treaty rules which restrict the acceptable budget deficit to close to 3 per cent of GDP except in exceptional circumstances could put limits on automatic stabilisation during economic downturns (e.g. Eichengreen (1997)); and (ii) if countries dislike fluctuating deficits and fiscal stabilisation, partly due to the trade leakages of individual budgetary action, then there may be a tendency for governments to free-ride on the stabilisation provided by others-- if widespread, this would lead to "understabilisation" for the EMU area as a whole against common shocks (Allsop and Vines (1996)<sup>6</sup>). Another concern is that Member States might be tempted during economic upswings to spend the bonus of higher tax revenues and reduced unemployment outlays, thereby off-setting the (positive) operation of automatic stabilisers with a deterioration in the underlying budgetary position.

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<sup>5</sup> Taking the example of the German Bundesbank, whose primary objective equally is to maintain price stability, research suggests that it responds to inflation and output developments in a similar fashion to e.g. the U.S. Federal Reserve (see Clarida and Gertler (1996)).

<sup>6</sup> However, these authors also point out that if the cost of stabilisation is perceived as arising from taking discretionary anti-cyclical measures, the optimal response would be to allow the automatic budgetary stabilisers to operate and this would provide a considerable degree of stabilisation.

While none of these potential risks should be overplayed, they do highlight two important requirements for budgetary policy co-ordination in EMU: (i) national underlying or “structural” budgetary positions should provide for a sufficient safety margin to allow room for budgetary manoeuvre during economic downturns; and (ii) countries should be willing and able to let their automatic stabilisers operate in both the upward and the downward directions, while avoiding excessive deficits.

The Stability and Growth Pact goes a long way towards satisfying these requirements. It requires Member States to establish sound medium-term budgetary positions close to balance or in surplus, and to present stability programmes (or, in the case of non-participating Member States, convergence programmes) with a specified path towards their medium-term objective. This co-ordination of budgetary policies towards medium-term goals with close year-by-year monitoring of implementation has important and continuous consequences for the conduct of budgetary policies.

The main aim of establishing sounder underlying budgetary positions is to provide room for budgetary manoeuvre -- including notably the operation of automatic stabilisers -- during economic downturns while keeping the government deficit within the reference value of 3 percent of GDP (in exceptional circumstances as defined in the Stability and Growth Pact budget deficits may temporarily exceed 3 per cent of GDP).

Moreover, co-ordination towards sound medium-term objectives discourages large and abrupt changes in the stance of budgetary policies (although this will still be possible and may be appropriate in certain circumstances). This is likely to reduce the risk of overly expansionary policies -- which could put upward pressure on area-wide interest rates and the euro exchange rate and lead to a severely distorted policy-mix for the euro-zone -- also in times when the actual budget balances are clearly below the reference value or even in surplus.

It follows that Member States’ strict adherence to the elements of the Stability and Growth pact which aim for medium-term budgetary positions close to balance or in surplus will go a long way towards securing an appropriate and well-balanced policy-mix in the euro-zone, both in terms of letting automatic stabilisers operate and in terms of avoiding unwarranted policy shocks.

Notwithstanding these prospective benefits, the appropriateness of the collective budgetary stance of EMU countries and the interaction with the single monetary policy should be continuously monitored and assessed at the level of the euro-zone as a whole in the light of the objectives of achieving internal balance (sustained non-inflationary growth and high employment) as well as external balance (sustainable balance of payments).

#### **IV.2. Internal balance: robust non-inflationary growth and high employment levels**

The strong arguments against attempting to co-ordinate discretionary budgetary policies for “fine-tuning the economy” do not rule out that there may be special cases - - namely severe and potentially protracted economic shocks, or cases where recognition lags are short and there are clear common interests -- where joint

budgetary action could and would be desirable. This would have to be assessed and agreed on an *ad hoc* basis. The most important potential examples are:

**Risk of overheating:** if there were a risk of overheating of the Community economy, a tightening of aggregate budgetary policies could be desirable to alleviate the need for higher interest rates. This could well be the case even if budget positions were already close to balance or in surplus. But the desired fiscal tightening might not be forthcoming if each government believed that, by acting on its own, it would not succeed in preventing interest rates from rising. Co-ordinated budgetary restraint could help prevent interest rates from rising and thus make the overall policy mix more conducive to sustained and balanced growth of investment, activity and employment.

**Severe common recessions:** provided price stability is secured, the combined impact of monetary easing and automatic fiscal stabilisers would normally be sufficient to underpin recovery from an economic downturn. But in the advent of a severe and prolonged recession, there might be a need for co-ordinated budgetary action. This would be the case if interest rates were so low that further reductions would have only small effects on demand, or if further monetary easing carried the risk of inappropriate exchange rate weakness. Countries might individually have insufficient incentives to take budgetary action because a large part of the domestic demand impulse would benefit foreign suppliers and jobs. In such instances, co-ordinated budgetary policies could contribute positively to a non-inflationary recovery in demand and activity. This would need to be discussed and co-ordinated with the ECB in order to avoid unwanted effects on interest and exchange rates.

**Supply shocks:** in the case of supply shocks, which tend to propel prices and output in opposite directions, demand policies may have a role to play in facilitating and easing -- to the extent possible -- the necessary adjustment of real wages, productivity and factor mobility. In the case of a significant upward import price shock for the euro-zone, when interest rates may have to go up to maintain or restore price stability, it is important that budgetary policies underpin the efforts of the central bank. Otherwise, interest rates might have to rise further and price and wage adjustment would be delayed.

Intense exchange of information and frank policy discussions, taking into account the differences in individual countries' circumstances and needs, would allow each country to take into account the interaction of its policy stance with that of its partners and with that of the ECB.



### IV.3. External balance: a sound and sustainable current account position

The role of co-ordination in Stage 3 should also be to ensure that the overall policy mix of the Community is adequate in the context of the world economy, particularly with regard to the common exchange rate and current account.

- The *euro exchange rate* relative to other world currencies will depend upon the current and prospective policy mix in the euro area relative to its main international partners. The ECB can influence the euro exchange rate only to the extent that this is consistent with price stability in the euro area. An inappropriate budgetary stance of the euro zone as a whole could lead to exchange rate misalignment.
- A significant imbalance on the *current account* of the euro area as a whole, which might be caused by unjustifiably large imbalances of a subset of countries, could have consequences for the euro exchange rate and direct implications for their partners.
- Co-ordination will be required to ensure that the euro-zone countries speak with one voice on macroeconomic policies, as far as possible, in the various international fora dedicated to global economic and financial co-operation, in particular the G7 and the IMF. International co-ordination notably with the US and Japan could be called for if there were a need to restore (or preserve) an acceptable pattern of external balances and to avoid currency overshooting. Achieving those objectives would require some flexibility in the policy-mix of all the major partners. Without budgetary co-ordination, only the ECB would be able to engage in policy coordination at the world level (Lamfalussy (1989))<sup>7</sup>.

Common interests with respect to the level of the shared exchange rate and the euro-zone's current account would, in relevant cases, create strong incentives to co-operate.

### IV.4. "Top-down" and "bottom-up" approaches to co-ordinated budgetary action

In the literature on budgetary policy coordination in EMU, it has often been stressed that attention would need to be paid to the *aggregate* stance of budgetary policies. In some cases, this has been taken to imply that co-ordinated action should proceed in a "top-down" approach in two steps: first, agreeing on the amount of adjustment required at the euro-zone level, and second, sharing the burden of adjustment among individual participants.

However, for an assessment of the appropriateness of the policy stance, it is not only the aggregate budgetary stance which matters; it is equally important to pay attention to how a given aggregate budgetary stance is distributed among participating countries.

In a "bottom-up" approach, each country's stance is assessed in the light of its own situation and objectives, including the objectives of the Stability and Growth Pact. If well applied, this approach will go a long way towards ensuring an appropriate stance at the aggregate level. If each country maintains a sound underlying budgetary

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<sup>7</sup> Some authors are sceptical about the potential usefulness of international monetary co-ordination, see e.g. Rogoff (1985).

position, allows budgetary stabilisers to work over the cycle and aims at establishing - through budgetary measures as well as other elements of economic policies -- internal balance (sustained non-inflationary growth and high employment) as well as external balance (sustainable current account<sup>8</sup>), then the same objectives will be pursued at the level of the euro-zone as a whole. Only if countries in similar circumstances were to get locked in a situation where each were waiting for the others to take the lead there might be a need to share out a commonly agreed adjustment burden. In such cases, the cyclical situation, the prospects for inflation, the current account balance and the budgetary and debt position of each Member State would need to be taken into account in discussions on the need for policy adjustment in each country.

#### **IV.5 Budgetary and monetary policy co-ordination**

The proper economic rationale for co-ordination between budgetary and monetary policies does not rest upon any need to establish a “counterweight” to the single monetary policy in EMU, nor on imaginary conflicts between price stability and job creation. The credibility of the ECB in delivering price stability is of paramount importance in achieving low long-term interest rates and influencing positively the behaviour of price and wage setters. Through these channels, high ECB credibility is an important asset in delivering higher levels of investment, growth and employment. Therefore, budgetary co-ordination procedures must aim to contribute to a sound and balanced aggregate policy-mix for the euro-area while respecting the objectives and the independence of the ECB

In deciding its monetary policy, the European Central Bank is likely to take into account a wide range of factors, including the prospective budgetary developments and wage trends in participating countries. Correspondingly, in preparing their budgetary and economic policies, participating countries may wish to sound out the ECB’s views on the economic, monetary and financial situation and prospects. Therefore, a well-functioning dialogue between the governments of the participating countries and the ECB is an important element in achieving a balanced and tension-free policy-mix. Such a dialogue will ensure that policy-makers are in a position to assess and take into account the potential interactions between monetary and budgetary policies<sup>9</sup>.

The dialogue provided for in the Treaty’s Article 109b will allow such exchanges of views and information to take place. The Treaty allows for the Council President to be present and make deliberations in meetings of the Governing Council of the ECB, and for the President of the ECB to participate in Council meetings when the Council is discussing matters relating to the objectives and tasks of the ESCB.

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<sup>8</sup> The significance of national current account positions clearly alters in EMU, and statistics may become less accurate, but national current balances will continue to affect the international distribution of wealth and the geographical location of economic activity (Masson and Melitz (1990)).

<sup>9</sup> See e.g. Meade and Weale (1995) for theoretical examples of possible instabilities or inferior outcomes which might result if budgetary and monetary authorities did not take into account each other’s actions.

In addition, the medium-term framework for budgetary policies established in the Stability and Growth Pact and Member States' stability programmes are likely to help solve the informational needs between budgetary and monetary policies by increasing the credibility and predictability of budgetary policies. While practical experience with the functioning of stability programmes still has to be gained, the envisaged improvement in discipline and prudence in budgetary policies will facilitate the conduct of monetary policies.

## V. AN APPROPRIATE POLICY-MIX FOR INDIVIDUAL EMU PARTICIPANTS

To the extent that some countries may, prior to EMU, have been able to control their domestic monetary conditions and exchange rate fluctuations in such a way as to have a generally stabilising influence on the economy, such countries may find that a greater onus will be placed on budgetary policies in EMU for stabilisation purposes<sup>10</sup>.

For all countries, it is important to retain a high degree of national budgetary autonomy and flexibility to be able to respond to country-specific demand developments. This requires, *inter alia*, the establishment of a sound underlying budgetary position to create room for the budget deficit to vary over the economic cycle without breaching the 3 per cent of GDP reference value. In this sense, the co-ordination towards sound medium-term objectives in the Stability and Growth Pact facilitates the stabilisation function of national budgetary policies if and when needed. Furthermore, the leverage of national budgetary policies over the domestic economy is likely in most cases to be higher in EMU than before because adverse financial effects are reduced and because "non-Keynesian" or expectations effects are likely to be less important when the budgetary starting position is sound.

Attempts to take co-ordinated budgetary "action" would be unlikely to be required or desirable in promoting adjustment to country-specific disturbances:

- (i) While only the budgetary policies of the country itself would have any significant leverage over the domestic economy, adjustment of budgetary policies among partner countries would be inefficient because of the costs of adjusting their policies, because of possible off-setting interest and exchange rate effects and because it would risk jeopardising the balance of the overall policy-mix of the euro-zone ;
- (ii) Each government would have an informational advantage on the state of the domestic economy and would be in a position to take rapid action, if appropriate, to deal with its specific circumstances; the same could not necessarily be said for co-ordinated actions;

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<sup>10</sup> Fiscal stabilisation may be an appropriate tool in the face of domestic demand shocks, but not in the case of some other shocks, such as those requiring a change in the real exchange rate (see e.g. Allsop and Vines (1996), Commission (1990), and Berthold (1994)), even though budgetary policies may have a role to play in smoothing adjustment also in such cases.

- (iii) It is in the interest of each country itself to maintain a good balance between the single monetary policy and its national budgetary policy, and each country will have to bear the brunt of the consequences of its actions.

The Community institutions and EMU partners should, however, encourage appropriate national policies and responses to asymmetric shocks (not just in terms of budgetary policies but also in terms of structural policies and wage developments). As before, the justification for such co-ordination would be the potential repercussions on EMU partners of inappropriate policies, as well as the common interest of all EMU participants in a good economic performance in all countries.

## **VI. CONCLUSIONS**

The potential need for a co-ordination of budgetary policies among EMU participants arises from the likely spill-over effects which budgetary policies in one or more Member States may have on their EMU partners, and from the need to avoid countries “free-riding” on other countries’ efforts to provide budgetary discipline or stabilisation.

In general, budgetary policy changes in an individual EMU country are unlikely to have a significant short-term growth impact on EMU partners because the direct demand effects are offset by opposing interest rate and exchange rate effects. But there will be important secondary spill-overs on the composition of demand, the international competitiveness, and the rate capital accumulation, thus affecting medium-term growth prospects. These spill-overs imply an important asymmetry: budgetary expansions which raise the common interest rate and appreciates the exchange rate may be associated with negative spill-overs on partner countries while prudent budgetary policies may be associated with positive spill-overs.

The analysis in this paper suggests that: (i) there is a need for co-ordinating budgetary policies towards sound medium-term objectives; (ii) in case of euro-area wide disturbances (symmetric shocks) the main stabilisation function will be performed by the ECB subject to the paramount goal of price stability, and the main role for budgetary policies would be to allow automatic stabilisers to operate; (iii) in special cases of severe common shocks or imbalances, there may be a role for jointly agreed and announced budgetary policy action; such co-ordination of discretionary budgetary policies should avoid the traditional pitfalls of “fine-tuning”; (iv) cyclical disturbances affecting an individual economy (asymmetric shocks) could and should be dealt with by that country itself; any co-ordinated budgetary action among its partners would at best have small benefits in terms of stabilising the affected economy and these would be unlikely to outweigh the costs of adjusting policies in partner countries; (v) continuous close monitoring of developments and peer pressure would play an important role in promoting appropriate budgetary and other policy responses among EMU countries.

The EMU framework contains the necessary provisions to provide the required degree of co-ordination and monitoring both in terms of budgetary discipline and with respect to the overall monetary-budgetary policy mix (Treaty Articles 104 (prohibition of monetary financing of deficits), 104a (no privileged access to financing), 104b (no bail

out), 104c (avoiding excessive deficits) and the Stability and Growth Pact, Article 103 on the Broad Economic Policy Guidelines and multilateral surveillance, and Article 109b on the dialogue between the ECB and the ECOFIN Council). Following a request from the European Council meeting in Amsterdam in June 1997, the Commission and the Council are studying ways of improving the effectiveness of economic policy co-ordination in stage three of EMU consistently with principles and practices of the Treaty. Enhanced economic policy co-ordination will be a learning process and the process may develop over time as experience is gained.

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(III.9)  
**SHOCKS AND CYCLES**

**I. INTRODUCTION**

Deviations of GDP from its growth trend are formally defined as economic fluctuations or business cycles, a term which Lucas (1977) specifically uses to characterize movements around trend in the gross national product<sup>1</sup>. Comovements of these deviations from the growth path among different time series represent business cycle regularities. Therefore, synchronous or asynchronous international business cycles may be defined as comovements of deviations from a growth or trend path, or the lack thereof, respectively, for a given set of variables in at least two countries.

When deviations of GDP from trend in two or more countries are symmetric and possibly of the same amplitude then the need for stabilization policy is also symmetric. However, when the cycle is not synchronized, the needs for stabilization policies will differ accordingly, with those experiencing excess demand following deflationary policies and those experiencing excess supply following reflationary policies. Furthermore, if economic fluctuations are asynchronous, the Member States will have little incentive to adopt common policies and perhaps to co-operate in the operation of the monetary union. The problem of business cycle synchronization for monetary union is, therefore, very similar to the question of symmetric versus asymmetric shocks. It may thus be argued that when symmetric shocks are experienced across the members forming a monetary union a common monetary policy is necessary and sufficient for stabilization purposes and a monetary union by design makes such symmetric policy responses possible; when idiosyncratic shocks are experienced by the members, then a monetary union would not permit an asymmetric response where in fact it is necessary.

The purpose of the present note is to review both the stylized facts of business cycles in EU Member States, and to examine the possible role of EMU in business cycle behaviour. A key question here is whether EMU will make a difference to the cyclical behaviour of the participating economies, and if so how. This question is addressed in the present note through the following sections: The first issue, reviewed in section II, concerns the nature and causes of business cycles distinguishing between the traditional Keynesian and monetarist theories of business fluctuations and the more recent, equilibrium or real business cycle theories. Knowing what are the causes of business cycles is important before examining the potential effects of EMU on the synchronization of economic fluctuations across the Member States. Some empirical evidence for selected Member States, especially from a growing literature testing the real business cycle model, is presented and discussed in section III; furthermore, some evidence in particular on the role of the exchange rate regime in business cycles is also marshalled which, together the importance of the stylized facts in relation to EMU, is reviewed in section IV; finally, section V concludes.

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<sup>1</sup> See R. Lucas (1977).



## II. SOURCES OF BUSINESS FLUCTUATIONS AND OUTPUT CO-MOVEMENTS IN THE UNION

Deviations of output from its trend path can be caused by either or a combination of two sets of forces: exogenous shocks, and policy shocks, and the associated dynamics of the system<sup>2</sup>. The traditional theory places importance on aggregate demand, monetary, and Keynesian-type of causes. In the real, or equilibrium, business cycle theory deviations of output from trend is associated with the initial quantitative research finding that the role of monetary and financial variables in causing economic fluctuations was difficult to determine and/or to establish. Consequently, the emphasis shifted towards the role of other factors - technology shocks, shocks to the terms of trade, tax policy variables etc. The theory sees business cycles as the maximizing response of economic agents to various shocks and subject to production possibilities and resource constraints. Prominent shocks are those in technology or productivity. One implication of the real business cycle model is that government policies aimed at correcting the business cycle are suboptimal since they interfere with the optimization behaviour of economic agents. It is clear that in this highly simplified framework shocks are exogenous and unpredictable and while they generate temporary deviations from trend government policies, such as fixing the nominal exchange rate, are not only suboptimal but also irrelevant.

The traditional theory notes that business cycles can originate in a two-period, second-order, linear difference equations in which model parameters on the endogenous variables are sufficiently large to induce instability but not to lead to explosive behaviour<sup>3</sup>. In this model cyclical behaviour, which might be thought of as reflecting market failure on a grand scale<sup>4</sup>, is self-sustaining, and when combined with random shocks cyclical behaviour is reinforced. Impulse mechanisms, which affect the amplitude of the cycle, include exogenous shocks as well as endogenous responses (expectations, liquidity, inflation); propagation mechanisms transmit these impulses to the economy and are responsible for oscillatory behaviour, for the duration of the cycle, and its phase<sup>5</sup>. Finally, the role of monetary policy and of other financial variables was explicitly recognized as a contributor to fluctuations especially in macroeconomic models such as the DRI model of the US economy. For example, notwithstanding the uncertainty about whether monetary policy can stabilize the economy, it is generally agreed that bad monetary policy will destabilize the economy. In this framework, government policies can not only cause business fluctuations but they are also necessary to stabilize the economy and to smooth out fluctuations<sup>6</sup>.

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2 A broad but detailed characterization of causes of economic fluctuations in the US is provided by Eckstein and Sinai (1986); no corresponding source discussing in a taxonomic manner causes of European fluctuations is available but, possibly, the sources of business cycles in Europe could not be different from those in the US; see also Kydland and Prescott (1990) on the various hypotheses about the causes of business cycles.

3 For a discussion of this generic cyclical mechanism see Eckstein and Sinai (1986), p. 54-59.

4 This is Mankiw's (1989) term.

5 Eckstein and Sinai (1986) discuss this classification in some detail; see their Table 1.5.

6 An interesting hypothesis, which finds no support for regular business fluctuations but could account for country- and period-specific ones, is the political business cycle model. Here, pre-election expansionary policies, followed by post-election contractionary policies, could

A central feature of EMU involves the adoption of a common currency. One implication of this is that borrowing and lending internationally and, especially, the financing of current account deficits and surpluses of the Member States will be made easier, partly as currency risk premia will be eliminated compared to the present multiple currency world, and partly due to the completion of the Union's financial markets; as a result, the magnitude and the character of economic fluctuations across the Member states will, in principle, be affected. This effect is related to two factors: first, the ability to smooth consumption by resorting to international borrowing and lending, and, secondly, to the willingness of international investors to finance investment in the domestic economy through international capital flows. Both consumption smoothing and international capital flows act as transmission mechanisms through which a given shock is transmitted internationally. International risk sharing would tend to produce large correlations of consumption across countries; but the ability to borrow and lend internationally to finance investment positions would tend to lower the correlation between domestic savings and domestic investment, and strengthen the correlation between domestic investment and international capital flows<sup>7</sup>. Thus, the elimination of currency risk would likely strengthen the process of consumption smoothing and of international portfolio diversification; while the former will tend to promote convergence in the cyclical characteristics across the Member States' economies, the later may not.

**Table 1**  
**Volatility and cross-correlation of real GDP in four Member States**

	Vol.	X <sub>t-5</sub>	X <sub>t-4</sub>	X <sub>t-3</sub>	X <sub>t-2</sub>	X <sub>t-1</sub>	X	X <sub>t+1</sub>	X <sub>t+2</sub>	X <sub>t+3</sub>	X <sub>t+4</sub>	X <sub>t+5</sub>
D	1.6	-0.02	0.23	0.35	0.46	0.67	1.0	0.67	0.46	0.35	0.23	-0.02
F	0.9	-0.06	0.10	0.30	0.54	0.77	1.0	0.77	0.54	0.30	0.10	-0.06
UK	1.5	-0.02	0.07	0.20	0.37	0.55	1.0	0.55	0.37	0.20	0.07	-0.02
I	1.7	-0.21	-0.04	0.22	0.52	0.80	1.0	0.80	0.52	0.22	-0.04	-0.21

Vol = volatility, standard deviation of real GDP

Source: From Fiorito and Kollintzas (1994), Table 1.

However, if the real business cycle model represents reality more accurately than the alternative, then fixing the nominal exchange rate will limit significantly the variability of the real exchange rate and thus prevent agents from optimizing in response to exogenous shocks; a common currency in this framework will represent a new technological constraint on agents' optimization which will not eliminate business

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conceivably account for some output deviations from trend; however, rational agents will ultimately perceive correctly this game and, as a result, the usefulness of such propagation mechanisms in explaining business fluctuations is very limited.

<sup>7</sup> These effects have been substantiated in Backus, Kehoe, and Kydland (1992).

cycles and will not foster greater than heretofore synchronization. If the conventional view is appropriate, then greater policy co-ordination through a common currency could conceivably foster greater synchronization of economic fluctuations. Note finally that in the intermediate case<sup>8</sup>, where both exogenous and Keynesian-type causes are present, greater policy co-ordination, *ceteris paribus*, will also contribute to business cycle convergence.

These views on the business cycle can likely only be resolved empirically. At this stage, it is important to know some key cyclical characteristics in the Union Member States, and for this purpose two tables have been prepared: Table 1, where the cyclical regularities for real output are presented for four Member States (D, F, UK, and I), and Table 2 where evidence on the synchronization of the cyclical fluctuations in the Member States of EC-12 is shown.

The data in Table 1 suggest that deviations of output from its smooth trend are volatile and highly persistent, with the lowest volatility displayed by France while volatility of cyclical fluctuations in the remaining three is broadly similar. The strong positive autocorrelation of the output deviations characterize D, F, and I, but in the UK the autocorrelation is weaker. These data are consistent with the notion that technology shocks are persistent and that the economy adjusts to the emerging new equilibrium in a gradual manner; these are also the predictions of the real business cycle model. All components of expenditure are found to be procyclical except for government expenditure which, while less variable than GDP in the four Member States, it is not uniformly pro- or counter-cyclical; this is, not surprisingly, a reflection of differences in institutions, preferences, and policies.

Turning to the synchronization of business cycles across the Member States, it ought to be stressed at the outset that the evidence points to substantial comovement in business cycles, especially those characterizing the industrial countries, with cyclical movements in real output, consumption, investment, and in the labour input being positively correlated across countries<sup>9</sup>. For the Member States alone Christodoulakis et. al. (1993, 1995) have produced evidence supporting the notion that, broadly speaking, there is a substantial degree of comovement in the cyclical component of output in the Union. Their principal results are presented in Table 2 where the standard deviation and contemporaneous cross-correlations of deviations of real output from its Hodrick-Prescott value are shown, for the period 1960-1990, for the Member States of EC-12. The first thing to note is that the variability of the cyclical

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<sup>8</sup> For example, that there is a multiplicity of shocks impinging upon cycles in US real GDP is confirmed by Fair (1988) from evidence based on his macroeconomic model.

<sup>9</sup> See, for example Baxter (1992), for a discussion of these issues; Baxter attributes these comovements to capital accumulation and to international capital flows.

**Table 2**

**Percentage standard deviations and contemporaneous cross-correlations  
for real output across EC Member States**

(Real output deviations from Hodrick-Prescott filtered logarithms, annual data 1960-90)

	SD	B	DK	F	WD	GR	IRL	I	L	NL	P	E	UK	EC
B	1.71	1.00	0.06	0.83	0.74	0.45	0.42	0.44	0.72	0.65	0.70	0.67	0.38	0.80
DK	1.79		1.00	0.01	0.41	0.38	-0.28	0.02	0.43	0.33	-0.01	0.15	0.54	0.22
F	1.20			1.00	0.78	0.57	0.58	0.51	0.60	0.67	0.79	0.52	0.45	0.91
WD	1.84				1.00	0.71	0.41	0.43	0.66	0.73	0.60	0.43	0.50	0.84
GR	2.20					1.00	0.31	0.21	0.42	0.45	0.44	0.22	0.51	0.62
IRL	2.14						1.00	0.43	0.18	0.40	0.38	0.26	0.06	0.53
I	1.83							1.00	0.27	0.34	0.52	0.29	0.23	0.59
L	2.82								1.00	0.60	0.47	0.64	0.68	0.71
NL	1.76									1.00	0.43	0.42	0.50	0.78
P	2.75										1.00	0.41	0.43	0.73
E	2.44											1.00	0.56	0.62
UK	1.88												1.00	0.68
EC	1.34													1.00

SD = standard deviation; EC = EC-12

Source: From Christodoulakis et. al. (1993, 1995), Table 5

component of real output is higher in the catching-up countries (GR, IRL, P, E) than in the rest of the EU-12, although the variability in Luxembourg's case is also very high.

Secondly, there are remarkably high correlations in cyclical output components across several Member States, most particularly between a core of countries comprising B, L, F, WD, and NL, but also others such as GR (in relation to WD), P (in relation to B), E (in relation to B and L) and the UK (in relation to L). This evidence suggests that a significant degree of comovement, or synchronization of the business cycle, has already existed among the Member States over the past 30 or so years.

Thirdly, adopting arbitrarily and for illustrative purposes a value higher than 0.7 for the correlation coefficient to group the synchronization of business cycles across Member States, the data suggest that such synchronization characterizes the cyclical fluctuations in the group B, F, WD, L, NL, P, and the UK, but the highest frequency of this value is found in the group B, F, WD, and NL, the traditional core of the Union; should a lower value be adopted, there is a corresponding widening of the group where the cycle is synchronized.

Finally, cycles in DK, IRL and I show a lesser degree of synchronization compared to the other Member States, with DK standing out particularly as an isolated example of asynchronous cyclical behaviour relative to the rest of the Union.

Additional evidence on the synchronization of business cycles can be found in Backus, Kehoe, and Kydland (1993) for five Union Member States (D, F, I, A, UK), measured against the corresponding US cycle<sup>10</sup>. And Brandner and Neusser (1992) show that Austrian and German cycles in output (sample 1964:Q1-1989:Q4) are correlated with a contemporaneous coefficient equal to 0.61; this ranks among the highest of those reported in Christodoulakis et. al. (1993, 1995).

The evidence that cyclical output movements in the Union are broadly synchronous may be related to two factors: first, the expansion of international trade and of international capital flows among the Member States throughout the period and the consequent fostering of interdependence; and, secondly, the closer policy convergence in recent years. No evidence is available which compares changes in the degree of synchronization over time<sup>11</sup>. Before one concludes that policy convergence has contributed to convergence in business cycles, it is essential to examine to which extent business fluctuations in the Union are policy-related or whether they are due to exogenous factors, or perhaps due to some combination of both. Some evidence on this matter is reviewed in the following section.

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<sup>10</sup> See Backus, Kehoe, and Kydland (1993); similar evidence is prepared and reviewed in Backus, Kehoe, and Kydland (1992), and in Baxter (1992). It is worth stressing that Backus et. al. (1993) find generally higher correlations than Backues et. al. (1992), owing clearly to the longer data sample used in the latter study.

<sup>11</sup> There is, however, evidence based on samples dating as far back as the late 1800s to the mid-1980s for Germany, Italy, Sweden, and the UK - see Backus and Kehoe (1992), Table 4. This evidence shows that the highest synchronization of business fluctuations were recorded in the period between world war I and II; the lowest values are recorded in the period prior to world war I. Backus and Kehoe attribute this to, first, the same recessionary experience of the interwar period shared by all countries, and, secondly, to the possibility of country-specific measurement errors being larger in the pre- rather than in the post-war period. In the presence of the latter it is possible that the measured low correlations are of little meaning regarding the synchronous movements of cyclical fluctuations. Finally, it is worth noting that the inter-war synchronization of business cycles for the European countries in the sample reported in Backus and Kehoe is generally higher than the post-war II synchronization reported in Christodoulakis et. al. (1993, 1995). One reason for this is, perhaps, the uniform circumstances shared by all in the inter-war period; another could be that the policy environment in the Christodoulakis et. al. (1993, 1995) sample is not comparable to the earlier one; and yet another could be that statistical measurement has become superior in recent years compared to inter-war standards and, thus, measurement errors have diminished.

### **III. A BRIEF REVIEW OF EVIDENCE ON SHOCK (A)SYMMETRY AND ON THEIR IMPLICATIONS FOR BUSINESS FLUCTUATIONS, ESPECIALLY IN THE EUROPEAN UNION**

The evidence briefly surveyed here falls into two groups: in the first, some reference is made to the empirics of symmetric and asymmetric shocks in the EU which, as noted previously, is analytically similar in its implications to the question of synchronization of business cycles; and in the second group the evidence on the nature of economic fluctuations in the EU is reviewed. The review is only selective but not comprehensive, in the sense that only material relevant to the issue at hand are considered.

An early reference on the asymmetry of shocks is due to Cohen and Wyplosz (1989). They found that symmetric were much larger than and dominated asymmetric shocks. A difficulty with the Cohen and Wyplosz (1989) paper is that it does not recognize that movements in the output data can be the result of demand and of supply shocks. Bayoumi and Eichengreen (1992) show that output growth and inflation variability among the Union Member States, excluding the three new ones, can be divided two groups. Using a structural VAR framework, they show that both demand and supply shocks impinge upon an EU of eleven Member States, and that demand shocks are more uniform but less pronounced across the Member States compared to supply shocks which are more idiosyncratic. Supply shocks are more highly correlated and more uniform in the first group of countries - consisting of Belgium, Denmark, France, Germany and the Netherlands - and are of similar magnitude and display greater coherence compared to those in the other groups - Greece, Ireland, Italy, Portugal, Spain and the UK. The authors find no evidence that the shocks affecting these two groups tend to converge in the sense of becoming less pronounced over time, evidence which is unfavourable to an one-speed monetary arrangement in the Union. Furthermore, they find that the speed of adjustment to supply and demand shocks are faster in the first than in the second group, and in the latter slower than the corresponding parameters in US regions.

Bayoumi and Eichengreen conclude that while their evidence supports greater policy autonomy rather than monetary union in the Union as a whole, in a group of Member States (B, DK, F, D, L, and NL) a workable monetary union, along the experience of the US, would be feasible. However, while one would expect that demand shocks could be more highly correlated across these Member States than supply shocks, possibly reflecting policy convergence, they find the opposite. It is difficult to rationalize why supply shocks would be more uniform and show higher correlation across this group, especially since supply shocks have generally been found to be of unpredictable and random nature.

**Table 3**  
**Output variance decompositions**

Fraction of output explained by shock to aggregate demand (AD), technology (TC),  
and non-oil aggregate supply (AS)

Quarters	AD	TC	AS	Quarters	AD	TC	AS	Quarters	AD	TC	AS
France				Germany				United Kingdom			
1	74.66	0.18	25.34	1	75.03	6.21	24.66	1	34.60	54.48	61.68
4	72.90	0.41	26.87	4	63.48	14.10	30.99	4	40.57	46.49	56.49
8	68.40	2.68	27.27	8	26.74	41.92	47.70	8	29.21	43.95	54.98
20	45.31	14.27	32.24	20	6.54	51.24	52.93	20	15.15	50.54	56.55
32	27.00	24.37	39.65	32	3.29	52.04	53.09	32	9.55	53.54	58.04

Source: From Karras (1994), Table 3.

Karras (1994) addresses the question of the contribution of demand and supply shocks to output fluctuations. In Table 3 he shows representative results for France, Germany, and the UK. The objective is to distinguish between the contribution of Keynesian- or demand-type, and classical- or supply-side, shocks in the generation and propagation of business cycles in these countries. The data reported show the percentage of output forecast error due to three structural innovations (aggregate demand (AD), technology (TC), and non-oil aggregate supply (AS)) over a horizon extending from one to 32 quarters. The results show that in France and Germany aggregate demand shocks dominate in the short run, but in the long run their importance diminishes and aggregate supply shocks become important; in the case of Germany, in particular, the medium-term contribution of the latter in explaining output variability is somewhat higher than 50 percent. In France aggregate demand shocks contribute almost 30 percent of the variability in output over the medium term, but the non-oil aggregate supply shock dominates. Mélitz and Weber (1996) obtain corroborating evidence on the dominant role of demand in output (and inflation) fluctuations especially over shorter (less than ten quarters) frequencies; in France they are found to dominate over supply shocks over much longer horizons. Sources of output fluctuation in the UK in the medium term resemble those impinging on Germany's output; in the short run it shares many features common to Germany and France although less pronounced than in the latter. This evidence is inconsistent with the real business cycle model prediction that aggregate demand shocks are unimportant even in the short run for output fluctuations. However, the evidence is consistent with a weak version of the real business cycle model according to which even if aggregate supply shocks are more important than aggregate demand shocks even in the short run, the role of aggregate demand shocks in economic fluctuations continues to be important<sup>12</sup>.

<sup>12</sup> This apparent idiosyncrasy of the business cycle in the UK has been noted by other researchers. Holland and Scott (1996) find that UK business cycles can be accounted for by two forces, productivity shocks and preference, or supply and demand, shocks. They also find that while

The evidence in Karras (1994) supports the notion that the structural shocks have been synchronous in the three Member States, and that their business cycles have been highly and positively correlated. These findings are also confirmed by Bergman (1996) who also finds that transitory or demand shocks are important factors in explaining output fluctuations in Germany and the UK<sup>13</sup>.

Helg et. al. (1995) provide evidence on shock symmetry in Europe from sectoral data. They note that the average industry correlation within a given country is higher than the average correlation of each industrial output variable across countries and that the core countries have higher within-country correlation coefficients than the peripheral. They interpret the contribution of the industry dimension to the explanation of the output variance as reflecting symmetric shocks, and that of the country dimension as reflecting asymmetric shocks. This evidence makes possible the ranking of Member States in terms of synchronised economic behaviour as follows: Belgium, Germany, and the Netherlands; closely followed by Denmark, France, and the UK; then followed by Italy, and Spain; and finally followed by Greece, Ireland, and Portugal.

A final issue concerns the assumed exogeneity of productivity shocks; there is evidence casting doubt on this notion. Evans (1992), using multivariate regression and VAR analysis shows that about one quarter of the variance of the productivity impulse can be attributed to aggregate demand shocks. The implication is that exogenous productivity shocks as the principal cause for business fluctuations, as postulated in real business cycle models, finds no support in the US, and arguably in European, data.

#### IV. BUSINESS CYCLES, THE EXCHANGE RATE, AND EMU

There is a presumption in many theoretical models that the transmission of monetary and real shocks across economies depend on the exchange rate regime. This presumption has a statistical counterpart in that it implies that, holding the sources of shocks constant, the business cycle characteristics of the time series in a given country or between countries would be conditional upon the exchange rate regime<sup>14</sup>.

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productivity shocks are largely unpredictable by other variables, preference shocks are predictable by supply and demand variables (oil prices, the terms of trade, money, and prices). By implication, demand variables can have an effect on economic fluctuation in the UK.

13 See the impulse responses shown in Bergman (1996), Figure 2. Bergman finds that demand shocks have virtually no output effect in the case of Sweden and Japan.

14 A clear case is that of real disturbances under a flexible exchange rates which affect the real exchange rate through the nominal exchange rate while, under a fixed exchange rate regime, they affect principally the level of international reserves, the money supply, and prices, and thus the real exchange rate. For example, under *flexible exchange rates and perfect capital mobility* an output-expanding shock in country A would raise the demand for goods, and the domestic rate of interest, and would appreciate the real exchange rate thus reducing output in country A to the original level and generating a current account deficit; output in the partner economy B would rise through its exchange depreciation; here, the cycles could be asymmetric. Under *fixed exchange rates*, on the other hand, the shock would raise output in country A, raise its interest



Adopting a common currency in EMU would be expected *prima facie* to have an influence on the degree of comovements of macroeconomic variables across the Member States, an important consideration enhancing the efficiency of macroeconomic policies

There is limited evidence on the relationship between the exchange rate regime and business fluctuations. Baxter and Stockman (1989) suggest that, broadly speaking and with the exception of the real exchange rate, the cyclical characteristics of other macroeconomic variables do not appear to depend crucially on the exchange rate regime. Nevertheless, from data of the floating rates period 1973-1985 Baxter and Stockman find that the international correlation of output fluctuations had decreased compared to the Bretton Woods sample<sup>15</sup>. Therefore, fixing the exchange rate, and possibly adopting a common currency, may strengthen the interdependence in cyclical output movements among the Member States, especially through diminishing the variability of the real exchange rate<sup>16</sup>.

As noted previously, the impact of EMU on the synchronization of business cycles would depend on whether the sources of business cycles in the Union are related to, and influenced by, economic policies. When shocks are exogenous exchange rate, monetary, and other arrangements will have no impact on the synchronization of business cycles. It is possible, nevertheless, that EMU could exacerbate economic fluctuations when shocks are asymmetric, as the experience of France in the aftermath of German unification, or that of the UK following the conflict between the exchange rate policy requirements of supply shocks of the 1980s and the shadowing of the ERM, have shown

The presumption in the present context is that EMU, to the extent that it makes a difference, it will at best enhance, or at the minimum leave unchanged, rather than diminish, the prevailing degree of synchronization of economic fluctuations. There are no *a priori* circumstances where the prevailing degree of synchronization of cyclical movements, such as that depicted in Tables 1 and 2, would decline. On the contrary, cross-country output correlations would tend to rise over time, as a consequence of three principal factors: first, due to increasing trade interdependence; secondly, increasing integration of financial markets will likely be strengthened following the adoption of a single currency; this interdependence would tend to amplify the effect of country-specific shocks across national borders; and, thirdly, policy convergence in the European Union, to the extent that it affects the incidence and characteristics of business cycles, would tend to minimize the probability of country-specific policy shocks as a source of demand-induced business cycles. The evidence on the synchronization of business cycles across Member States implies either that shocks have been common or that other factors (such common shocks as

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rate and its capital account surplus to finance the reduction in the trade surplus, and would also raise output in partner country B; here, the cycles would be symmetric.

<sup>15</sup> See also Stockman (1988) for further comments and references on this comparison.

<sup>16</sup> von Hagen and Neumann (1992) show that real exchange rate variability decreased under the ERM, contrasting with the variability of, for example, the real exchange rate of sterling which did not participate in the ERM prior to 1989, and with real exchange rate variability during the earlier non-ERM period.

trade liberalization and removal of exchange restrictions, for example) have had a significant impact in fostering convergence in economic cycles. Under a single currency, a common monetary policy, and fiscal restrictions in the form of the stability pact, the probability of country-specific policy shocks would be minimized, while if there are monetary policy shocks (in the form, for example, of policy errors) these would be symmetric across the Union.

As noted in section II, an important implication of monetary unification is the possibility of fostering consumption smoothing across the Member States and of enhancing the intra-EU mobility of capital. Trade in goods and in financial assets contributes already substantially to the international transmission of business cycles. To the extent that the shocks affect all the Member States, consumption smoothing and investment financing through international borrowing and lending would tend to be further encouraged under EMU, leading to converging cyclical fluctuations. In the case of an asymmetric deflationary shock consumption in the country suffering the shock would decline by less under conditions of smoothing, thus limiting the deflationary effect on its national income and also on the exports of its trading and Union partners. On the other hand, a supply shock raising the rate of return on domestic capital would tend to draw domestic and international savings to finance the new investment, thus making possible the increase in output in the country experiencing the shock and exacerbating the cyclical deviation of this country's output from that of its Union partners. In this case, monetary union would facilitate the asynchronization of business cycles; note, however, that here monetary union is simply inadequate to contain asymmetric shocks rather than contributing to diverging cyclical fluctuations.

## V. CONCLUDING COMMENTS

Would EMU lead to closer, or possibly diminish the, synchronization of business cycles across the Member States, and what are the possible implications of such synchronizations? The proximate sources of business cycles and the model used to interpret them would play an important role in deciding whether a co-ordination mechanism such as the common currency would make a difference to the character of cyclical behaviour. In particular, if cyclical fluctuations are caused by exogenous shocks, and if these shocks are asymmetric across the Member States, EMU would make little difference; economic interdependence through trade and capital flows would tend to transmit shocks across national borders, and in the same direction, and the cycles would be synchronized through the multipliers of the external accounts. If shocks are symmetric across the Member States, deviations of actual from trend output would also tend to be in the same direction in each Member State, and a common currency would make little difference in the degree of synchronization of these fluctuations.

The evidence reviewed suggests that economic fluctuations in the EU can be attributed to both demand and supply shocks and that the assumption of exogenous supply shocks finds no support in the data; on the contrary, supply shocks are also correlated with demand shocks. Strengthening policy co-ordination under EMU will tend to foster policy convergence across the Member States. To the extent that

business fluctuations are caused, and dominated, by policy shocks, such co-ordination would tend to foster synchronization in business cycles.

An important consequence of EMU will be the completion of the Union's financial markets and the elimination of exchange rate-related risk premia. An implication of this is that the process of consumption smoothing and the financing of domestic investment through international capital flows will be enhanced. This has an important consequence for symmetric and asymmetric shocks. Under symmetric shocks consumption smoothing will tend to cushion business fluctuations across the Member States, and enhanced international capital mobility will tend to reduce the dependence of domestic investment on domestic savings; in either case, EMU may limit the amplitude of symmetric cyclical fluctuations. In the case of asymmetric shocks, however, while consumption smoothing may tend to iron out the amplitude of asymmetric cyclical movements, enhanced international capital mobility could well accentuate them.

Trade and financial liberalization as well as the single market have undoubtedly played a fundamental role in strengthening interdependence among the Member States' economies over time. The evidence points to significant contemporaneous correlation between the cyclical component of macroeconomic variables although this varies according to whether a Member State belongs to an inner core or not. It is unlikely that this cyclical synchronization will diminish in EMU, but, if anything, it will likely strengthen further as residual impediments to integration are removed and as policy-induced shocks are synchronized or eliminated altogether.

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(III.10)  
**ADJUSTMENT CHANNELS**

**1. INTRODUCTION**

Although the costs of loss of the exchange rate instrument in EMU may have been over-emphasised, the basic argument in favour of floating exchange rates is that they ease the process of adjustment to external shocks in an open economy. Once a country has joined EMU it will lose the exchange rate as an instrument for the adjustment to shocks hitting its economy. On the basis of the theoretical concept of optimal currency areas (OCA), the economic literature has analysed the existence of alternative instruments for absorbing such shocks once national authorities have lost monetary independence. Two such potential instruments are usually considered: the functioning of markets, and fiscal policy stabilization. This chapter will exclusively refer to the first instrument, and, more specifically, to the channels through which adjustment takes place.

Although there seems to be an almost general agreement regarding the benefits of higher economic integration, there is also a degree of concern about the possibility that nations may experience large adverse shocks, whose effects are magnified by high degree of integration<sup>1</sup>. Krugman (1993), for instance, has argued that regions in the US have been the subject of this kind of shock, since they have no recourse to adjust the exchange rate, nor to apply the well-known instruments of monetary and fiscal policies to adjust to shocks. Leaving apart the discussion of the effectiveness of these instruments as adjustment mechanisms, as well as the fact the Member States within EMU will still have a considerable degree of fiscal autonomy, a more or less pertinent parallelism between US regions and EMU members would suggest that, due to EMU, Member States could be the subject of large asymmetric shocks, which would require enhancing alternative adjustment channels.

Structural differences amongst EMU members would, obviously, be the ultimate cause of shocks having asymmetric effects. Differences in a number of structural features of EMU economies, like production specialisation, institutions or tastes, would explain that movements on the euro's real effective exchange rate, changes in the cyclical position of EMU, or monetary policy mistakes, could affect particular EMU members differently. Analogously, such structural factors would explain that different EMU members recorded different inflation rates or showed different degrees of wage flexibility, and thus different external positions. Whatever the origin and the nature of the shock, due to those structural factors, the result will be transitory or permanent growth differentials across EMU members, unless adjustment channels exist to restore the initial equilibrium.

Since EMU prevents from changes in the nominal exchange rate as a means to modifying the relative prices between EMU members, flexibility must be found elsewhere in the economy. Although the working of the labour market has been

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<sup>1</sup> See, for instance, Torres and Giavazzi (1993).

particularly stressed in the OCA literature, what matters for economic adjustment is, more generally, market flexibility. This chapter is concerned with issues related to flexibility of factor and product markets in general, while the next one is specifically devoted to labor market issues.

The traditional OCA literature regards adjustment through prices and adjustment through quantities symmetrically. In the case of labor, for instance, wage flexibility and labour mobility would be quasi-interchangeable. However, recent theoretical developments have pointed out that these two channels play a very different role according to the degree of persistence of shocks. In this chapter, adjustment through quantities is analyzed separately from adjustment through prices. In general, we can consider that, once an economy has lost control of the money supply and of the exchange rate, and assuming that the adjustment can only be partially provided by national fiscal policies, it will have to adjust to shocks through changes in factor quantities and/or factor and output prices. Adjustment via quantities will take place through changes in investment and/or employment, whilst adjustment via prices will take place through wages, profits (or Marshallian quasi-rents), export prices, and/or production prices.

Although most of the OCA literature treats economic disturbances as purely exogenous phenomena, in reality, policy induced shocks or shocks caused by the behaviour of economic agents may be more likely than usually reflected in the OCA literature. However, we will not discuss here why the country is subject to a shock; we will simply assume that the country concerned has been hit by a shock. Furthermore, for the purposes of the chapter, shocks will be relevant as long as they change the external position of the country. Therefore, by analysing the determinants of the external position of the economy, we can work out how the economy should adjust to it in order to restore the equilibrium. On the other hand, shocks of a structural or permanent nature are also possible. The cure in this case is productivity growth or, in other words, long-run adjustment.

The chapter is organised as follows. Section II considers adjustment through quantities, whilst section III deals with adjustment through prices. Section IV considers long run adjustment via productivity. Finally, the conclusions are presented in section V.

## **II. ADJUSTMENT VIA FACTOR QUANTITIES**

### **Capital**

The fall in the Marshallian quasi-rent of capital will be translated into a fall of the expected return on investment. If capital were highly mobile, as is the case in EMU, *ceteris paribus*, the fall in the relative expected return on investment would lead to an outflow of capital, which would result in lower total investment and lower effective demand, thus reducing imports and to restoring the external equilibrium. Note that the external shock could have a permanent effect (Krugman, 1993). Consider, for instance, that the ultimate origin of the shock is of a structural nature; that net exports are falling because of a wrong production specialisation of the country. Since highly



mobile capital implies the equalisation of the cost of capital across EMU, the relative expected return on investment will not recover and the outflow of capital will continue. In other words, under perfect mobility of capital, the initial adverse shock may have permanent effects, by releasing a self-reinforcing process, which will result in lower relative growth in the long run, unless other adjustment mechanisms are put to work.

It is worth noting that this is not an argument against capital mobility within EMU. It simply highlights the need for alternative adjustment mechanisms to avoid the possibility of permanent capital outflows of adverse significant impact on a country's economy. Furthermore, empirical evidence suggests that, although capital moves freely within the EU, the actual impact and size of foreign direct investment (FDI) might not be large (European Commission, 1996, chapter 4). On the one hand, although the importance of intra-EU FDI is increasing relative to trade, intra-EU trade flows were still 60.7 times intra-EU FDI flows over the period 1990-1992. On the other hand, leaving aside the cases of Belgium and Ireland, where FDI inflows respectively represent 4.7% and 9.4% of GDP, in the other Member States the share does not reach 3% of GDP. For the purposes of this chapter, it is worth noting that FDI only represents 2.64% of GDP in Portugal, 1.75% in Spain, 0.64% in Greece and 0.40% in Italy; other Member States record similar or lower FDI ratios.

## **Labour**

Since the fall in exports will bring about a fall in the degree of utilisation of capacity, in order to restore the return on capital corresponding to the initial situation, firms more directly affected by the slump in the external demand will try to reduce the share of labour costs in value added to increase the Marshallian quasi-rent of capital. Consequently, firms will fire workers to restore the long-run equilibrium, given the new demand conditions<sup>2</sup>.

Concerning adjustment through labour, although this chapter does not directly deal with labour mobility, what has been said regarding capital also applies to workers. If labour is highly mobile, wages might not adjust to shocks even if labour markets were flexible enough. The slump in activity, led by a fall in exports, would decrease expected relative wages, which, by assuming that labour mobility is a phenomenon of an endogenous nature (Krugman, 1991, and Faini, 1994), will result in migration towards countries or regions promising higher wages. As far as private consumption is concerned, migration would have the same effect as a fall in wages or an increase in unemployment. Private consumption would fall, thus depressing the effective demand and restoring the initial external equilibrium. However, although the external equilibrium was restored and the economy was again in full employment, the shock could have a permanent effect, consisting of lower growth rates in the long run, whereas relative wages remain unchanged across countries or regions<sup>3</sup>.

## **Conclusion**

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<sup>2</sup> Note that, under perfectly competitive markets, individual firms will take wages as given. Therefore they will proceed to an adjustment through quantities.

<sup>3</sup> Because of factor price equalisation.

To summarise, as pointed out by Krugman (1993), shocks could have permanent perverse effects if factors were mobile and factor prices were equalised across EMU. An unfortunate country would not have lower factor prices for very long, since factors would move to other countries until factor prices were equalised. This country would therefore have no means to attract new activities, and the initial, seemingly transitory shock would have permanent perverse effects as far as real convergence is concerned<sup>4</sup>. However, this does not seem to be the most foreseeable case within EMU in a reasonable future. Although increasingly important, FDI flows are still relatively low, and, as discussed elsewhere, labour mobility is almost nil in the EU. Consequently, under EMU, countries will have to rely on alternative short-run adjustment mechanisms through prices.

### III. ADJUSTMENT THROUGH PRICES

As we have already said, apart from relative cyclical positions, the external balance of a country depends on the relative real effective exchange rate. Given that the nominal effective exchange rate becomes exogenous to national governments within EMU, and that productivity is a rather long run phenomenon, the REER should adjust through real wages and output prices. A fall in real wages and/or output prices will improve the external position of the country and restore the equilibrium.

#### Wages

Since labour seems to be rather immobile within EMU, wages should adjust to return to full employment<sup>5</sup>. Although a deep discussion on wage flexibility is out of the scope of this chapter, it is clear that, under perfect competition and high capital mobility, flexible labour markets are needed to avoid permanent adverse effects of external shocks on employment, otherwise, the initially transitory slump will be reinforced. If capital mobility is high, to keep the country attractive to investment, the Marshallian quasi-rent of this factor should go back to the level before the shock, which implies reducing the now relatively high labour costs. The only way to do that, while maintaining the initial level of employment, is to reduce wages. If wages cannot adjust, the return on capital will be restored by reducing employment, which, in the absence of the appropriate income policies, will depress even more the effective demand. Therefore, immobile labour and sticky wages could, *ceteris paribus*, lead to increasing unemployment and public spending, or to higher unemployment and lower growth if these income policies are not enough to restore the level of effective demand.

There is therefore a case to ask whether such a theoretical scenario is possible within EMU. As pointed out by de Grauwe (1993), there is a lot of empirical evidence suggesting that changes in real wages have in fact occurred during the 1980's in European countries experiencing large negative shocks. It is also likely that the fall in

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4 Growth would show the statistical properties of a random walk (Blanchard and Katz, 1992, and Krugman, 1993).

5 Unemployment would be equal to the so-called natural rate (Baldwin, 1996).

relative wages particularly affect certain categories of workers. Neven and Wyplosz (1995) suggest that external shocks, consisting of adverse changes in the patterns of trade at sectoral level, could have helped to increase wage dispersion in certain sectors.

## Prices

Furthermore, such a theoretical framework implicitly assumes that markets are perfectly competitive. The consideration of imperfect competition suggests other adjustment channels. Product differentiation, as well as increasing returns, imply that prices are established on the basis of a mark-up on marginal costs, and that such a degree of mark-up depends on competitive pressures (Allen, Gasiorek and Smith, 1996, and European Commission, 1996a, chapters 4 and 5). Under imperfect competition, domestic producers may react to external shocks by reducing profit and export margins. Domestic producers will react to increasing imports by reducing mark-ups at home, which will result in at least a lower fall in their domestic market shares. Analogously, domestic producers may reduce export margins in order to compensate for the fall in domestic market shares by increasing export shares. In both cases, this kind of reaction to external competitive pressures will soften the effects of adverse external shocks on growth and employment. Although the expected return on investment will likely fall as a consequence of the reduction in the mark-ups, such a fall may not jeopardise the attractiveness of the country to investment, since, under product differentiation and increasing returns, the Marshallian quasi-rent of capital is higher than that corresponding to the long-run equilibrium. Furthermore, the fall in prices may foster the effective demand, thus compensating for the reduction in margins.

A recent economic assessment of the Single Market Programme (SMP) provides interesting empirical evidence on pro-competitive effects of market integration (European Commission, 1996). Allen, Gasiorek and Smith (1996) have shown that, in sectors particularly sensitive to the SMP, domestic firms have reacted to increasing competitive pressures of intra and extra-EU importers by reducing price margins in order to maintain domestic market shares. This has resulted in less trade creation and thus in lower substitution of domestic production by competing imports (European Commission, 1996, chapter 4). Analogously, the study carried out by London Economics (1996) on profit margins also reveals that market integration has triggered a relative decline in margins, which has been particularly significant in the sectors most affected by the changes in the competitive conditions led by the SMP (European Commission, 1996a, chapter 5). However, such a fall in profit margins has not reduced the capacity of the EU to attract investments. The share of the EU in the world FDI flows has almost doubled since the launching of the SMP<sup>6</sup> (European Commission, 1996, chapter 4).

Concerning export margins, there is also empirical evidence suggesting that under imperfect competition, exporters first react to external transitory shocks by adjusting export margins. A study on the impact of currency movements within the Single Market shows that the adjustment to an external adverse shock may take place through

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<sup>6</sup> From 28.8% over 1982-87 to 44.4 over 1991-93.

prices rather than through quantities (see European Commission, 1995). Although this study has been carried out in the framework of the impact of changes in nominal exchange rates, as long as an appreciation could have the immediate effect of reducing net exports, its lessons can be applied to the issues of interest of this chapter. The study concludes that exporters, being the subject of this kind of shock, prefer to reduce export margins, in order to maintain exports shares, rather than increase export prices in order to maintain profits.

## **Conclusion**

All in all, highly integrated competitive product markets will help soften the effects of adverse shocks on growth and employment. If markets are imperfect and not easily contestable, the dominant position of domestic firms may prevent quick adjustment to shocks or even be the source of asymmetric shocks. The existence of a significant part of the economy closed to international competition or somewhat protected by government regulation may result in higher relative inflation, which will also affect the open sector of the economy. This will result in less exports and more imports, thus worsening the external position of the country. Lower growth and effective demand will, *ceteris paribus*, increase unemployment. If firms in protected or regulated sectors do not react by lowering their prices, the adjustment in the open sector of the economy will take place through margins and restructuring. Sooner or later, the only effective way to reduce inflation and avoid additional adjustment costs in the open sector will be to increase market contestability through de-regulation.

The SMP has set up the conditions for quicker reaction through prices by making markets more competitive. As long as EMU will improve the functioning of the Internal Market, we can expect that its pro-competitive effects will enhance adjustment channels through prices and reduce adjustment costs of transitory, asymmetric shocks.

## **IV. ADJUSTMENT IN THE LONG RUN PRODUCTIVITY**

Transitory shocks are not the only matter of concern within EMU. Shocks of a structural or permanent nature are also possible. As we have seen, seemingly transitory shocks may become permanent. Moreover, the origin of asymmetric shocks lies in structural differences across EMU. In these cases short run adjustments are only a transitory remedy. The cure in this case is higher productivity and it only takes place in the long-run.

Unfortunately, as stated by Krugman (1994), the problem is that we do not know much about why productivity growth varies. According to Barro and Sala-i-Martin (1995), empirical analyses show that a number of variables are significantly related to the growth rate of real per capita GDP. Growth depends positively on the initial quantity of human capital in the form of educational levels and health, on the ratio of investment to GDP, and on R&D spending. It is, however, negatively related to measures of distortion of markets and political instability. All in all, although correlation does not imply causality, and that we can not establish any ideal policy mix to enhance productivity, it seems that governments have an important role when it comes to explaining divergence in productivity across countries.

The question is to what extent this role will be encouraged within EMU. The answer seems to be that EMU may reinforce the conditions for higher productivity growth. On the one hand, EMU is perfectly compatible with a series of Community structural policies aimed at enhancing productivity. On the other, if empirical findings on the positive relationship between economic integration, measured as trade openness, and productivity growth does not show a spurious correlation, we can say that EMU, as long as it will improve the functioning of the SMP, may set up the adequate framework to higher productivity growth across Europe.

There is a case, however, whether such a higher productivity growth may be different across EMU members and result in agglomeration effects and concentration of economic activity in some of them but not in others. If, as suggested by Faini (1994) and Krugman (1991), labour mobility would be endogenous, and depend on living standard differentials and self-reinforcing expectations, productivity growth differentials could lead to concentration effects, which would result in migration from the periphery to the centre.

Again, the main issue is the likelihood of this kind of shock at macro-economic level. On the one hand, as shown in another chapter, the possibility of huge agglomeration effects is relatively low within a reasonable horizon. On the other hand, the available empirical evidence shows that productivity is not significantly growing faster in countries like Germany, France, the UK, Belgium or the Netherlands, than in Spain, Ireland or Portugal (European Commission, 1996a, chapter 3).

## **V. CONCLUSION**

Country-specific structural factors will be at the origin of asymmetric shocks affecting the external position of an EMU member. We have described in the preceding sections theoretical channels through which adjustment will take place. All in all, as shown in section III, highly integrated and competitive markets seem to be the key to soften the effects of adverse asymmetric shocks. This seems to be particularly relevant regarding labour markets. Adjustment mechanisms in these markets are the subject of a separate chapter.

Concerning product markets, the expected pro-competitive effects of the SMP are already working, and we can expect that EMU will enhance them. However, the above mentioned study on the evaluation of the SMP has shown that a number of obstacles still remain (European Commission, 1996b). On the one hand, a number of existing SMP measures are not fully working. On the other, there are still areas important to the creation of a European-wide market outside the current scope of the SMP.

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## ECONOMIC ADJUSTMENT AND THE LABOUR MARKET

### I. INTRODUCTION

EMU will be a fundamental change for macroeconomic policy-making in the EU, with more limited capacity for autonomous policy-making by each Member country. To change the nominal exchange rate will no longer be an option for modifying intra-EMU real exchange rates. National authorities will lose a macroeconomic tool, traditionally used to accommodate the impact of shocks or to restore the cost competitiveness of production in inflationary economies. In the event of asymmetric shocks, this calls for more flexible product and labour markets. Otherwise, the adjustment to shocks will be more slowly and with heavier costs in terms of production and employment losses.

Labour market flexibility has two facets: labour cost flexibility and flexibility of labour supply (through changes in participation ratios and labour mobility). Because labour supply is expected to play a minor role in adjustment, the bulk of improving labour market flexibility in the EU will primarily depend on how flexibly wages will behave in EMU.

Section II analyses the sort of labour cost flexibility, especially of wages, needed to offset economic shocks in the absence of adjustable nominal exchange rates. The traditional criticism that Europe's wage scales are sluggish and narrowly compressed is somewhat qualified in view of recent evidence. Aggregate labour costs are currently relatively flexible in the long term in many EU countries. However, this does not always reflect the appropriate wage flexibility at the level of sector, region or enterprise. Wages are also too slow to adjust completely, thereby conveying costs in terms of output, employment and unemployment protection. Such short-run costs combine with ongoing structural mutations of labour supply and demand to generate long-term joblessness and hysteresis of unemployment rates in Europe.

EMU is likely to alter wage-setting patterns if combined with structural reforms in labour and product markets. National authorities, employers and trade unions in the EU are expected to adapt to the new policy regime and negotiate wages compatibly with technology, capital stock and business profitability. Although indirectly affected by EMU, differentials of labour costs will follow more closely productivity growth, driven by greater wage flexibility, economic integration and stronger market competition. Fears of 'unrealistic wage convergence' in EMU, recently illustrated in re-unified Germany, are unlikely in the current EU setting.

The complex institutional and regulatory set-up for wage bargaining in the EU is reviewed in sec. II.C. Wage negotiations follow a complex multi-tier contract structure, with intermediate levels (sector, region) often taken as reference for the lower tiers. Empirical literature finds no simple relationship between wage bargaining institutions and macroeconomic performance. Thus, there is no unique institutional set-up as being the best for favouring employment-friendly wage behaviour. Different

national wage-bargaining institutions are likely to coexist in EMU, whereas wage-setting practices and behaviour will adapt accordingly. Nation-wide agreements will most likely set guidelines for wage bargaining while including formal clauses to allow for greater wage differentiation at the level of enterprise or sector.

Section III illustrates how labour mobility and variations in labour supply will contribute to compensate for insufficient wage adjustment. Labour mobility in Europe is low compared with that in the USA. In the short run, wage-driven labour migration bear most of the burden of adjustment in the USA. In the latter, capital inflows, attracted by lower wage levels in depressed areas, do not seem to play a great role. EMU can be expected to foster labour mobility, although to a limited extent, facilitated by economic integration and the Single Market Programme. Migration will concentrate upon particular (often, highly-skilled) labour categories. However, unlike the traditional OCA literature, the low geographical labour mobility should not be much of a problem to the well-functioning of EMU. The role of labour mobility as adjustment mechanism has been reassessed recently, in view of the irreversibility and sunk costs associated with the decision to migrate.

## II. WAGE FLEXIBILITY AND LABOUR COSTS

Given the unemployment problem in the EU, to attain an appropriate degree of wage flexibility is desirable and necessary irrespective of EMU. Wage increases, compatible with productivity gains, are a key element to reduce unemployment while raising the employment ratio in the EU. The moderate behaviour of labour costs will contribute to price stability, thereby easing the burden on monetary policy.<sup>1</sup> It will also help to distribute the total volume of work, as determined by the economy's macroeconomic performance, amongst higher numbers of individuals, hence raising the employment ratio in the EU. All in all, labour cost increases, compatible with productivity trends, will foster job creation and contribute to reabsorb the current mass of labour unemployed in Europe.<sup>2</sup> EMU will make the case for high wage flexibility even stronger.

Despite the fact that EMU will bring more stability, in terms of fewer policy errors and shocks, the loss of the nominal exchange rate will call for more flexibility in labour costs, should any shock occur. The sort of labour cost (wage) flexibility, whether nominal or real, depends on the nature of the shock. Imagine a (negative) demand shock (e.g. a sudden surge in the households' propensity to save) in an EMU country. Aggregate demand will grow sluggish, or even recede, unless falling domestic demand is compensated with rising demand from abroad. This requires that

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<sup>1</sup> Note that wage moderation and flexibility does not forcibly mean outright curtailing of wage levels, either nominal or real. In a context of moderate price inflation, changes in relative wages can be achieved over time through wage increases being closely linked to inflation and/or productivity trends.

<sup>2</sup> Whereas the (negative) *sign* of the relationship between employment and real labour costs is already well established, there is less consensus about the *scale* of the response. Bean (1994) concludes that the price-employment schedule is fairly steep, at least in the short run. There is also ample consensus in that the sensitivity of labour demand to the total cost grows the less skilled labour is. See DG II (1996a) for a survey of recent literature on labour demand.



domestic production becomes cheaper compared to that produced abroad. Since currency devaluations are no longer possible, the worsening of the terms of trade will have to come from falling relative prices between countries. If nominal wages are sticky, the adjustment will come slowly through recession and higher unemployment. Such adjustment costs will be lesser if mechanisms, other than recession forces, help to reduce relative domestic unit production costs through flexible nominal wages or productivity gains.

In case of a (negative) supply shock (e.g. sudden technological obsolescence of productive capital stock), the equilibrium level of real wages may fall below the level prevailing in the market. If real wages are rigid downwards, job destruction and unemployment will soar and inflation will have to progressively erode the real value of wages, down to the new equilibrium level. Such market forces will work slowly and with considerable economic and social costs. These costs will be even heavier if national authorities adopt restrictive macroeconomic policies to return to price stability. Besides, the short-run costs from stabilisation may perpetuate over time. Part of the unemployment may become structural because, say, technological progress, labour market regulations or human capital deterioration, may render the unemployed less 'employable' and price them out from work in the ensuing economic upturn. Flexible real wages are, therefore, necessary to speed up the adjustment of the economy to a supply shock in order to preserve a high level of employment.

#### **A. MACROECONOMIC AND MICROECONOMIC WAGE FLEXIBILITY IN THE EU: THE CURRENT SITUATION**

##### **Macroeconomic wage flexibility**

Macroeconomic wage flexibility describes the behaviour of the total wage bill, conducive to strong economic growth, low inflation and high level of employment. It encompasses both the response of nominal wages to price shocks, commonly named as wage-price inertia, and the sensitivity of real wages to unemployment. Different wage elasticities are estimated to measure this response according to the policy criteria chosen.<sup>3</sup>

Nominal wage flexibility matters for macroeconomic price stability. The complex dynamics between unemployment, wages and prices are commonly measured in terms of the unemployment rate compatible with stable price/wage inflation (named NAIRU/NAWRU, respectively).<sup>4</sup> This is measured in terms of the nominal wage-price elasticity, that is, to what extent nominal wages tend to catch up with price

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<sup>3</sup> Note that flexibility of *nominal* and *real* wages is sometimes confused in the debate. Real wage rigidity is actually the opposite of nominal wage rigidity. That is, nominal wage *rigidity* (i.e. low wage-indexation to prices) is equivalent to real wage *flexibility*, in that inflation outpaces nominal wage growth and erodes its value in real terms.

<sup>4</sup> Wage-unemployment elasticities are estimated, for instance, as the slope coefficient of an (expectations-augmented) Phillips curve. This aggregate specification relates price/wage changes (NAWRU/NAIRU, respectively) to a measure of slack in the labour market (often, unemployment rate). Additional variables are included to capture productivity trends or structural features in the market. OCDE (1996a) is a recent summary of the 'state of the art' concerning NAIRU, from the viewpoint of policy-making.

changes<sup>5</sup> (i.e. the degree of nominal wage inertia). This response depends on both wage contract inertia (wage agreements being negotiated to last for a given time period) and real wage flexibility (how wages respond to unemployment) in the labour market

Wage contract inertia is higher in the USA, where wage bargaining is more unsynchronised and staggered over time and wage contracts typically have longer life (some 3 years) than in the EU, with more synchronised and co-ordinated wage bargaining of shorter-lived wage agreements (1-2 years).<sup>6</sup> There are some indications that the downward convergence of inflation rates has recently led to some move towards longer-lasting wage agreements in the EU. Moreover, regulatory reforms in many EU countries have recently sought to reduce, or remove altogether, built-in clauses of explicit nominal wage indexation to prices (for instance, the most conspicuous case has been the removal of the *scala mobile* in Italy in 1992).

Real wage flexibility refers to the responsiveness of wages to the level of unemployment, reflecting the economy's capacity to bring unemployment back to its natural level.<sup>7</sup> How wages and prices adjust in the economy, arouses controversy since both prices and nominal wages appear to be sticky, most certainly downwards.<sup>8</sup> Estimates of real wage-unemployment elasticity abound in the literature. They tend to show that real wages in most EU countries are more responsive, in the long run, to unemployment conditions than the USA.<sup>9</sup> OECD (1994) estimates that the *long-run* semi-elasticity of real wages to unemployment is markedly smaller in the USA and the UK (1.0%) than in large EU Member countries and Japan (3.0%-5.0%). The contrast is even more striking with those estimates for Austria and Nordic countries (over 6.0%), which are notorious examples of centralised wage-setting (see section V).

In the short run, the picture is the opposite. The pace of adjustment in the EU, on average, is much slower than in the USA and the UK. According to OECD (1994), half of the adjustment only takes some 1 year in the USA and UK whereas it lasts between 1.5 and 4.0 years in other EU Member countries. The faster adjustment in the USA and the UK results from the level of employment being more closely aligned to

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<sup>5</sup> In the long run, nominal wages tend to absorb changes in prices completely as money illusion disappears. Thus, the *long-run* nominal wage-price elasticity tends to unity in most countries. The key question is *how quickly* this catching-up takes place, in other words, the degree of formal or informal indexation of nominal wages to prices.

<sup>6</sup> Wage contract inertia depends on the average life of wage agreements, the degree of synchronisation and co-ordination, or whether there exists built-in clauses of indexation, upwards and downwards, in those wage contracts valid over one year. The literature is surveyed in Bean (1994).

<sup>7</sup> The *natural* rate of unemployment is commonly defined as the unemployment rate compatible with wage-price stability, as determined by structural factors like e.g. labour market regulations, skill mismatch, or product market competition.

<sup>8</sup> Cf. Kempf (1992) for a recent survey of literature on nominal rigidity. Note, as well, that to adjust *real* wages does not necessarily mean to cut *nominal* wages. Freezing the wage growth in some countries/sectors is enough, in case of positive inflation, to modify the relative wages over time, as needed. Adjustment also takes place as real wage growth lags behind productivity gains, so that employers find it more profitable to demand labour for any given level of real wages (i.e. the downward-sloping labour demand curve tends to shift outwards).

<sup>9</sup> Similar results are reported in Coe (1985), Turner *et al.* (1993) and Bean (1994).

the business cycle, that is, more intense job turnover. For instance, Haskel *et al.* (1997) find evidence that establishments have become more flexible over the last years. However, in practically all (92%) UK firms, such flexibility comes from adjusting quantities (employment, hours worked, or capacity), rather than prices, in response to a shock. This tendency is higher among UK firms showing more flexibility, both internally (i.e. easier re-deployment of workforce, or changes to hours worked) and externally (i.e. lower dismissal costs).<sup>10</sup>

Even if real wages in EU appear to be relatively flexible in the long run, the slow pace of adjustment is a problem since the short-run costs in terms of output, job losses and unemployment protection are increased. These negative sequels are likely to persist in time, as well, for the employability of individuals out of work for a long time tend to deteriorate over time, feeding long-term joblessness and the hysteresis of unemployment rates in Europe.

### **Microeconomic wage flexibility**

Changes of aggregate wages do not always reflect an efficient and flexible wage-setting at the level of sector, region or enterprise. Changes in aggregate wages is the outcome of simultaneous changes in labour (wage and non-wage) costs, number of hours worked, or employment level. The pattern of response, in terms of each variable, largely depends on national wage-setting practices, regulations and institutions.<sup>11</sup>

A high level of employment requires that aggregate wage flexibility be coupled with sufficient wage flexibility at microeconomic level. Hence, enterprises, when faced to a business downturn, would be able, if deemed efficient, to adjust the total payroll via lower real labour (wage or non-wage) costs, rather than through quantity adjustment.<sup>12</sup>

Wage dispersion in the EU has been blamed as insufficient and a proof of poor wage flexibility, inappropriate to adapt to ongoing structural mutations in Europe's and world economies (e.g. technological change, globalisation, or the collapse of Bretton-

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<sup>10</sup> 'Flexible' firms in the UK do create more jobs in upturns, but they also destroy them more intensely in downturns; cf. Haskel *et al.* (1997). This explains the fact that aggregate employment and output levels vary more closely together, with more stable labour productivity over the business cycle. Noticeably, Haskel *et al.* (1997) also find that wage adjustment plays no role as a response to business shocks in UK enterprises. One explanation may be that UK employers care for giving incentives for employees to improve their effort at work (efficiency-wage approach). A flexible set-up for wage bargaining is also likely to warrant that wage growth largely follows labour productivity trends.

<sup>11</sup> Short-work schemes are particularly important to enable wage flexibility and to stabilise wage and employment levels. Countries with generous short-work schemes (Italy, Belgium, France, Germany, Sweden) show acceptable levels of aggregate labour flexibility, even in presence of national wage-setting system relatively centralised, compared to the USA or the UK. See Van Audenrod (1994).

<sup>12</sup> Another possibility is to introduce some degree of flexibility of working time. The latter cannot, however, fully substitute for wage flexibility because of technological, regulatory and other technical constraints to re-arranging working time. See Haskel *et al.* (1997) for a survey of the patterns of response to demand shocks among UK establishments.

Woods).<sup>13</sup> The criticism has gathered strength in the light of recent employment and growth trends in the US economy. It has been suggested that there exists a sort of policy trade-off between preserving European-like wage compression and returning to high employment ratios. Moreover, the need to free up the wage scale and let it come closer to productivity differentials is felt to concern, in particular, the low-skilled and the new entrants with no working experience, in order to facilitate their access to work.

How compressed are Europe's wage distribution is a matter for empirical validation and recent data on wage structure offers a good opportunity to do so. Wage differentials are clearly smaller in Europe than in the USA; cf. OECD (1996). However, the picture is less clear when comparing the situation within the EU. Recent evidence shows that the actual degree of wage dispersion in many EU countries is higher than often argued; cf. DG II (1996a). The degree of wage dispersion throughout the earnings scale in all EU Members, except for P and F which show relatively more compression among the lower wages. Wage dispersion is relatively high among high-skilled occupations, larger firms, private-sector employees, males and part-timers, even when corrected for the difference in number of hours worked. Whereas wages are relatively compressed in B, DK, S, I, NL, and FIN, this largely affects the lowest wages in the first three countries. Finally, markedly contrasting labour market institutions and employment performance appear to coincide with noticeably similar degrees of wage differentiation (for example, in E, F, L, A, UK and, especially, IRL and P).

Wage distribution within the EU is, therefore, less compressed than often argued, especially in some countries. Moreover, differences in labour market performance and institutions cannot be readily associated with observed patterns of wage dispersion, at least in terms of labour category, firm size, full-time/part-time work status, or gender. Similar ambiguity appears from evidence in OECD (1996).

## **B. WAGE FLEXIBILITY AND EMU**

### **Effects of EMU on wage-setting behaviour**

EMU will change the behaviour of EU national authorities and make more credible the non-accommodative stance of their macroeconomic policy-making. Individuals in the labour market are likely to be affected, as well.<sup>14</sup> First, lower and more certain inflation will make the outcome from wage bargaining clear for both negotiating parties. Market competition will enhance the relationship between labour costs and job creation. Employers, aware that excessive wage growth will deteriorate the cost competitiveness and profitability of their business, are expected to resist to concede wage increases exceeding productivity growth. Trade unions, aware of the negative impact on employment from excessive wage pressure, are likely to scale down their wage claims and bring them closer to productivity trends, in exchange for less

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<sup>13</sup> The dispersion of *gross* labour costs (wages) matters for job creation and employment, whereas the analysis of labour supply regards the degree of disparities of *net* earnings. For instance, see Bertola-Ichino (1995).

<sup>14</sup> See, for instance, the discussion in Wijkander (1997).

uncertainty on future inflation and an easier attainment of target gains of disposable income.<sup>15</sup>

One specific fear is that the EMU will worsen the problem of Europe's relative wage compression by triggering 'demonstration' or 'fair wage' effects across countries or sectors.<sup>16</sup> In other words, trade unions may struggle for equalising wage levels upwards, irrespective of differences of labour productivity across sectors or countries. As long as this convergence of wages finds no support in narrower differentials of productivity, the wage pressure will eventually damage employment levels in countries with soaring unit labour costs. The experience of the German New Länder stands as an example of both this risk and its consequences for employment.

This scenario of 'unrealistic wage convergence' in EMU may be less likely than apparent. Unique national factors are behind the accelerated wage equalisation in Germany. Historical and political reasons explain the non-market rate applied to converting Ost-marks into DM and the behaviour of Germany's trade unions for accelerating wage equalisation. Excessive regional wage disparities were feared to trigger labour migration flows within re-unified Germany, at a larger scale than desirable from economic, regional and social viewpoints. Massive budgetary transfers towards the less-productive Länder have been necessary to compensate for the employment consequences of accelerated convergence of regional wage levels. None of such factors can be reasonably expected to occur in the EMU and nothing suggests that they will be more plausible in the near future.

On the contrary, both employers and trade unions are likely to bargain wages in EMU more compatibly with technology, capital stock and business profitability. Economic integration and strong competition will also favour that productivity gains are translated into lower prices and product quality competition, so that individuals gain in disposable income and living standards without the need for pushing for excessive wage claims.<sup>17</sup>

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15 The experience of West Germany (prior to unification) and, recently, of the Netherlands, Ireland and Denmark are examples of how such credibility effects alter wage bargaining. See DG II (1997). Such benefits for wage moderation have been somewhat overridden in DK recently, quite likely as a result of some degree of 'overheating' at the peak of the current business cycle.

16 For instance, see Demertzis and Hughes Hallet (1995) or Jackman (1996).

17 The Single Market has reduced the price-cost margins in some sectors. See DG II(1996b).

## Wage Disparities and EMU

In principle, the degree of wage dispersion in Europe is not likely to be affected directly by EMU, understood to be a fundamental change in macroeconomic policy regime.<sup>18</sup> The impact will actually come, in an indirect way, from the actual functioning of EMU and the evolution of growth and unemployment differentials across regions, sectors and countries. Moreover, technological progress, economic integration and the heterogeneity of labour will continue to drive productivity differentials, hence wages, between booming technology-advanced activities and mature or decaying sectors.

Labour cost differentials should follow changes of productivity differentials, so as to increase employment in the EU. This is the case now and will be so in a well-functioning EMU. The scale of labour costs, matching labour productivity differentials, will stimulate job creation while contributing to efficiently reallocate resources and labour across occupations, sectors and regions. It will hereby remove potential skill shortages of labour supply and will avoid triggering inflation strains.<sup>19</sup> In the long run, changes in wage dispersion might contribute to drive human capital accumulation to meet the needs in the labour market, ensuring that wage differentials pay off in those occupations or sectors under heavy demand.

This line of reasoning relates to differences in the total cost of labour. It remains arguable how much of the sought disparities of labour costs will have to be passed on to employees' wages. Wages are the biggest share of the total cost of labour in practically all EU Member countries.<sup>20</sup> Thus, it might be expected that variations in the scale of labour costs may eventually translate, at least to some extent, into wider wage disparities themselves. Such changes are most likely to affect relative wages, rather than the absolute level of wages. As long as barriers to upwards mobility for wage-earners will disappear, individuals with lower relative wages can be expected to 'move up the ladder' and benefit from higher levels of employment and well-being.

It is not surprising that both economic theory and evidence give no solid support for a simple relationship between wage inequality, economic growth and employment. For instance, wage differentials alone appear to have been less determinant than expected in facilitating an even access to work for different types of labour (OECD; 1994). Albeit crucial, wage differentials cannot be expected to work in isolation. Their benefits also require that complementary structural measures and reforms in, for instance, goods and services markets are introduced. Sub-optimal job and labour reallocation, in response to productivity differentials, depends not only on whether the

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18 See Krugman (1994), Nickell and Bell (1996), or OECD (1996b).

19 Wage dispersion, by contributing to high employment, will favour aggregate price stability by reducing the room for insider-outsider wage-setting behaviour to occur, common criticism to many EU countries.

20 Total labour costs comprise both wage and non-wage costs (e.g. days paid not worked, severance payments, social charges). Wages alone average some 50-60 per cent of the total cost, with higher shares in DK, UK, IRL and L (70-80 per cent). Performance- or profit-linked wage premia/bonuses represent some additional 10 per cent in GR, E, A, D, I, NL, and B. Thus, direct wages, also including premia and bonuses, average some 65% of the total labour cost in the EU, compared to 71% in the USA and 82% in Japan. Cf. DG II (1996a).

labour cost hierarchy is more or less compressed but also on factors such as lack of job vacancies, barriers to labour mobility, poorly competitive goods and services markets, inefficient state aids, etc.

All in all, it is reasonable to expect that a degree of labour cost dispersion, in closer correspondence with productivity differentials, has a role to play in promoting employment and economic efficiency in Europe. However, this should not be seen as the *sole* policy tool but to work in close co-ordination with other structural reforms and policies. This is more the case since relative wages are likely to be less variable than often stated. Economic factors like e.g. long-lived wage contracts, heterogeneous quality of labour, the impact of wage levels on individual's effort at work, and the respect of social standards, they all explain the relative rigidity of relative wages, as observed in reality. Other mechanisms are likely to compensate for some efficient degree of relative wage rigidity at company level; for instance, short-run changes of business performance are partly buffered through varying patterns of working time or flexible profit margins, with less negative impact on the level of employment.

Further analysis on patterns and trends of earnings distribution and mobility is necessary, in consequence, to foresee future changes of relative wages, and the benefits generated therefrom, in EMU and the rest of the world. For instance, it is crucial for policy-making to understand why the unemployed cannot underbid wage levels in Europe's labour market, if seemingly negotiated above their equilibrium levels. Different reasons have been alleged in this respect: inappropriate institutions and regulations (e.g. allowing for insider-outsider behaviour) or changes in labour demand (e.g. technological change boosting the skill mismatch, thereby reducing the effective pool of labour supply). An effective policy response will depend on obtaining more clear and conclusive evidence in this respect.

### **Wage flexibility and the burden for adjustment in EMU**

Wages cannot be seen as the sole adjustment mechanism since other elements also play an important role in facilitating the adjustment in EMU. First, labour costs are only one of the production costs and, often, are not the biggest. Second, EMU requires wage flexibility in order to make producer prices responsive to demand and supply conditions in the markets. But this will be so only if firms are real 'price-takers' driven by strong competition in goods, services and factor markets; otherwise, inefficient oligopoly rents will absorb cost reductions and inflate mark-ups, at least in the short run.<sup>21</sup> Third, a strategy based exclusively on curtailing wage growth may jeopardise productivity growth and human capital accumulation by making uncertain the return to investment. Fourth, since wages are the income earned by employees at work, their fairness, as perceived by employees, influences the individuals' effort and productivity at work. Finally, strong market competition stimulates technological progress and productivity-enhancing mechanisms to improve the long-run price competitiveness of the economy, not exclusively based upon curtailing production costs (e.g. intangible investment, quality-based competitiveness).

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<sup>21</sup> Haskel *et al.* (1997) find, based upon the UK Workplace Industrial Relations Survey, that 92% of firms respond to business shocks through changes in employment, capacity or hours and very few of them (only 7%) change prices, even in the long run. Practically no establishment reported to adjust wages as a response to a demand increase or decrease, even in the long run.

It is important that structural reforms and policies effectively strengthen the capacity for job creation in EMU countries. Otherwise, should the fall in real wages not entice net job creation, total disposable income for households might fall in excess in response to a shock. Since the wage share typically represents 60-70% of national income, domestic demand might contract further and aggravate the recession even if exports rise because of lower domestic prices. In the absence of federal budgetary transfers (present within each country), responsive job creation is the main channel to make domestic demand stable.

### C. WAGE BARGAINING INSTITUTIONS AND PRACTICES IN THE EU

It has been argued that different practices and institutions for wage bargaining, as observed in the EU, will no longer be able to persist in EMU and that to attain higher wage flexibility will require finding the best wage-setting arrangements for the labour market.

Even though institutions and regulations for wage-setting could be expected to influence wage flexibility, their actual impact on pay determination is not straightforward.<sup>22</sup> Many features appear to matter as regards how flexible wage-setting institutions and regulations work. Just to mention a few: multiple-tier bargaining, strategic co-ordination among employers/employees, effective coverage and ultra-activity of wage agreements, pace-maker sectoral effects, the public sector's role for 'guiding' wage agreements, or tax-funded short-time work schemes.

The institutional and regulatory set-up for wage bargaining is fairly complex in the EU.<sup>23</sup> Wage bargaining mainly concerns employees in private sector and, often, in state-owned enterprises. Civil servants are subject to wage fixation by statute or law. Wage bargaining follows a complex multi-tier structure, with intermediate levels (sector, region) often serving as the reference for negotiations at lower tiers. Wage agreements in the EU often observe more or less overt guidelines nation-wide, allowing negotiations at company/establishment level to adapt the real wage growth to the company's business conditions (drop-out clause). Most frequently, lower-tier negotiated wage growth comes to 'top-up' generally-agreed wage growth, so that a sort of wage drift emerges.<sup>24</sup>

There is no unique institutional set-up, based on economic theory, as being the *best* for favouring employment-friendly wage behaviour. Centralised and/or co-ordinated wage bargaining make negotiating parties aware, *ex ante*, of overall trends of productivity/unit production costs, thus contributing to price stability and the success

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22 Zweimuller-Barth (1994) find little influence of labour market institutions as they find rather similar wage patterns across industries and countries, irrespective of institutional and labour quality differences.

23 For instance, see European Commission (1990) or, more recently, ETUI (1996).

24 The wage drift from negotiated wage increases also depends on factors like, for instance, union wage premia paid to workers because of job-reclassification, seniority premia, family subsidies, or incentive bonuses. The magnitude of the wage drift varies by country, sector, occupational category or existence of closed-shop arrangements. For instance, OECD (1994) finds that wage drift may vary between 5% and 20% above sector- or branch-negotiated wage increases.



of stability-oriented macroeconomic policies. They risk, in contrast, introducing some rigidity of wage differentials which eventually slow down the efficient re-allocation of labour in response to productivity differentials. Wage bargaining, decentralised to company level, fares better from this efficiency viewpoint. It neglects, however, the externalities implicit to wage bargaining and expects that flexibility in the company's payroll will be attained ex post via market competition, labour/job turnover and output losses from industrial dispute.

Contrary to the views prevailing in the early eighties, there seems to be no simple causal relationship proving that decentralised wage bargaining leads to superior performance in terms of aggregate real wages and unemployment. Similar patterns appear to result from both highly centralised and highly decentralised wage bargaining institutions.<sup>25</sup> Some fears were aroused by the conclusion that intermediate (sectoral/regional) systems (which are the most common in European countries) fared worst, although recent research has greatly dissipated such fears. Proportional income tax or contributions to unemployment protection schemes, thus, appear to create externalities which reduce the problem of insider-outsider behaviour, a traditional criticism against centralised wage bargaining. For instance, tax systems favour that trade unions realise that excessive wage growth will eventually erode the employees' disposable income via higher contributions to unemployment protection. The classical U-shape relationship between wage bargaining and unemployment seems to flatten out and suggests that the degree of wage centralisation or co-ordination is actually less influential than previously assumed.<sup>26</sup>

This ambiguity is not cleared by recent applied research.<sup>27</sup> Similar degree of wage moderation appears in both highly centralised and highly decentralised labour markets. OECD (1997) finds little econometric support for any causal relationship between indexes of wage centralisation/corporatism and aggregate wage trends or, in general, the macroeconomic performance across OECD countries.<sup>28</sup> This is not surprising. Research has focused on the formal structure of wage bargaining, neglecting its behavioural content. Economic and regulatory criteria cannot suffice to take account of the complex array of factors, not always quantifiable, determinant for

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25 See Calmfors and Driffill (1988), Calmfors (1993) and OECD (1994).

26 The sign of the relationship between the degree of wage centralisation and employment depends crucially on the substitutability between competing products in the market. Danthine and Hunt (1992) show that increased competition, via a higher elasticity of substitution of between goods produced in partner countries, tend to flatten the Calmfors-Driffill hump. Moreover, Cahuc and Zylberberg (1997) show that, should the products be poorly substitutable or even complementary, intermediate (sectoral) levels of wage bargaining lead to higher employment levels than fully centralised or decentralised wage setting, so reverting the Calmfors-Driffill's conclusion.

27 See the up-to-date survey in Calmfors (1993), Bean (1994) and OECD (1994).

28 OECD (1997) extends the analysis in Calmfors-Driffill (1988) and Calmfors (1993) to nineteen OECD countries in 1980, 1990 and 1994. It tests the relationship between a number of measures of macroeconomic performance and indexes for union density, collective-bargaining coverage and wage co-ordination. Little significant empirical support for such causality is found, except for a robust inverse link between decentralised bargaining structures and earnings inequality. Some evidence, if any, is found to point to centralised co-ordinated wage bargaining systems as presenting lower unemployment rates and higher employment ratios.

wage bargaining, which are deeply rooted in the historical, social and institutional features of each national labour market.

EMU is likely to affect prevailing wage-setting practices in the EU, rather than institutions. EMU, by increasing trade competition and economic integration, will make domestic production more substitutable with EMU partners' products. The effect will be equivalent to introducing more decentralised wage-setting. Firms will be less able to pass wage increases onto final prices, whereas employees will be aware of the negative impact of wage growth exceeding productivity gains.

Different national wage-bargaining institutions are likely to coexist in EMU. The reason is that, most likely, it is the behaviour of both employers and employees when bargaining wages which will change to better take into account the mutated regime in which European negotiating parties will bargain.<sup>29</sup> Nation-wide collective agreements can set common guidelines for wage setting and fix the framework for wage flexibility at lower negotiating levels. Thus, macroeconomic considerations will be incorporated favouring price stability, high employment and a quicker adjustment to shocks. This will require, however, that nation-wide wage agreements include formal clauses allowing for greater wage differentiation in response to changes in productivity, sectoral shocks and business conditions at the level of the enterprise or sector.

### III. LABOUR MOBILITY

Labour mobility and changing activity ratio, by modifying aggregate labour supply, also contribute to adjust the labour market. Imagine a negative shock which depresses demand and production levels. In the presence of mass unemployment, active individuals are likely to feel discouraged because of the grim prospects of receiving a (acceptable) job offer. These are likely to drop out directly into non-activity, not registered as unemployed, or to migrate towards more prosperous countries/regions. As far as this fall in participation is ignored (which is often the case), the fast fall in unemployment rates biased upwards the estimates of real wage flexibility. This statistical bias, caused by direct transitions from work to non-activity and viceversa, will be higher the more concentrated will be the risk of falling unemployed amongst specific labour categories individuals (e.g. prime-age women, first-job young workers, immigrants).

The short-run response of labour supply to rising unemployment after a shock differs markedly between Europe and the USA. In the USA, the scale of this 'discouragement effect' appears to be rather limited and most of the adjustment to region-specific shocks takes place through labour migrating to more prosperous states (see Blanchard

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<sup>29</sup> This conclusion is robust to changes in the size of the non-tradable sector and/or the substitutability among products of different countries. The non-tradable sector makes firm's profit margin (mark-up) more rigid. To correct this bias, trade unions in non-tradable sectors may be called in to contribute to funding the unemployment schemes. Cf. Danthine and Hunt (1992).

and Katz; 1992).<sup>30</sup> In Europe, it is changes in the participation ratio buffer the variations in labour demand and since reallocation of labour operating only within, not between, countries.<sup>31</sup>

In principle, the reduction in labour supply and the downward pressure on relative wages from soaring unemployment increases the relative price of capital and, thereby, entices capital inflows to the depressed area. The US experience is discouraging in this respect for job creation appears to be fairly unresponsive to changes in nominal wages. Blanchard and Katz (1992) find that job creation and/or job immigration (delocalisation) actually account for a small part of the adjustment in the US labour market.

#### A. THE CURRENT SITUATION IN THE EU

Migration in Europe has decreased in recent decades<sup>32</sup> and is low compared with the USA, where some 3 per cent of the population change their state of residence every year (OECD; 1994). Low rates of migration, as long as it means low labour mobility, has been traditionally referred to prove that the EU is not an optimal currency area.<sup>33</sup> The reason is that, in the literature, labour mobility is identified to be the means to compensate for insufficient wage adjustment, in absence of intra-area adjustable nominal exchange rates.

Migration data within and between countries is commonly used as a proxy of the mobility of active individuals. Net migration flows are assumed to represent one-to-one variations into labour supply, hence unemployment, in both the host and migrating economies. This methodological choice, albeit inevitable, is unsatisfactory and qualifies available quantitative evidence on labour mobility.<sup>34</sup> Thus, the decision

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<sup>30</sup> In the first year, 65% of the adverse employment shock is absorbed by migration, only 0.05% in terms of falling participation rate, and the rest of the impact feeds into the unemployment rate. It takes half a decade for inter-state labour migration to make relative unemployment rates return to their pre-shock levels in the USA, whereas the response of wage differentials takes somewhat longer (10 years). Similar results are obtained in Elmeskov and Pichelmann (1993) and Bayoumi and Prasad (1996).

<sup>31</sup> See Elmeskov and Pichelmann (1993), Decressin and Fatás (1994) and Bayoumi and Prasad (1995), who extend to Europe the analysis in Blanchard and Katz (1992) for the US labour market.

<sup>32</sup> Migration flows have declined both within and between European countries since the 1970s, with some traditional flows even reverting their sign. Half of the immigrants into Denmark, Greece, Spain, Ireland and the UK are nationals returning home whereas immigration into Belgium and Luxembourg come mainly from other EU countries. For the whole EU, net immigration flows have been clearly positive in 1985-92, especially in Germany, the Netherlands, Finland and Sweden, largely from Central and Eastern Europe. See EUROSTAT (1995).

<sup>33</sup> See Bayoumi and Prasad (1995). By contrast, Gros (1996) argues that it is not the *level* but the relative *difference* between migration within and between countries that matters for EMU. Otherwise, the traditional Mundellian argument would point to regions being the optimum currency areas in many European countries, because of observed low intra-country mobility. Moreover, he finds that migration between US *regions* appears not to be much higher than that between countries in the EU.

<sup>34</sup> The analysis of 'economic' labour mobility is not easy since data on migration are scarce, poorly comparable, and most often follow non-economic but political or administrative criteria.

to migrate is not always motivated by employment reasons or income differentials alone, although these are likely to explain much of the migration observed. It is also not straightforward that migrating population (even if of working age) means one-to-one variations of labour supply.<sup>35</sup>

The determinants for the decision to migrate are not evident. In principle, migration seem to respond to unemployment differentials, rather than to income differentials, across regions. Such influence decreases the higher the absolute level of unemployment or income. Unemployment risks are also determinant for the prevailing type of migration in the economy.<sup>36</sup> Overall, this applies to both Europe and the USA, although Eichengreen (1993) finds that inter-state migration is more responsive to wage differentials in the USA (five times higher than in the UK or Italy).

The progressive increase of wealth and living standards, the spreading of unemployment, and the development of national welfare states explain much of the low flows of intra-EU migration. However, economic factors alone cannot explain the traditional low level of migration in Europe. This has been attributed to obstacles such as language barriers, administrative constraints, non-recognition of professional diplomas, non-portability of pension rights, transaction costs and restraints in the housing market, limited cross-border transferability of social protection rights, or the inefficient functioning of national public employment services.<sup>37</sup> Such economic and administrative barriers to cross-country migration cannot, however, explain why migration is low within EU Member countries as well. Social, family and cultural factors are likely to be of influence here.

## **B. LABOUR MOBILITY AND EMU**

It is reasonable to expect that labour mobility will increase in EMU, together with increasing economic integration and the Single Market Programme removing many obstacles to labour mobility. However, the magnitude of the expected rise and the share of the labour force susceptible to migrate will most likely be limited. For instance, the US experience advocates not to expect major changes, at least in the short run, since the removal of mobility barriers ‘pays off’ decades after their formal dismantling.<sup>38</sup> Also, the higher propensity to migrate is not likely to affect the whole labour force except for specialised and/or highly-skilled categories of labour.

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35 For instance, much of the ‘legal’ migration into the EU and the USA corresponds to granting residence permits to allow for family regroupment. Often, such immigrants are not entitled to receive work permits, at least in the short run. Another phenomenon to bear in mind are the migration of non-active population, namely, students and retired elderly people. Although both groups are necessarily registered to be migrants, they are, in principle, not expected to increase labour supply.

36 In poorly diversified economies, international migration is the only effective way to diversify unemployment risks, even though it involves higher migration costs. In economies sectorally and regionally diversified, the scope for inter-regional migration is greater. see Daveri and Faini (1996).

37 See Faini (1996) or Razin and Yuen (1996).

38 See Eichengreen (1992) or Danthine and Hunt (1992).

However, it is unclear whether low geographical labour mobility will pose a problem to the well-functioning of the EMU. First, comparably large monetary unions (Canada, Australia) also have low inter-regional mobility. Second, geographical mobility is higher within concrete areas in Europe, fairly homogeneous in historical, social and economic terms (Scandinavia, Ireland and the UK, the Benelux, Spain and Portugal). Third, most important, the role of labour mobility as adjustment mechanism has been recently reassessed. For instance, Mélitz (1996) points out that the appropriate degree of labour mobility depends on the nature of the shock. In presence of permanent shocks, labour mobility helps to adjustment through the necessary reallocation of production factors, whereas high labour mobility may run counter the necessary stabilisation in case that the shock is just transitory. Furthermore, Buiters (1995) rightly points out that taking the degree of labour mobility as an indicator to assess whether a certain area is fit for creating a monetary union is misleading. Indeed, the sort of reversible labour mobility, as stated in economic theory to substitute for the nominal exchange rate, exists nowhere in the world, given the irreversibility and sunk costs associated with the decision to migrate.

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## **REGIONAL SPECIALISATION AND CATCHING-UP**

### **I. INTRODUCTION**

Concentration and specialisation are amongst the most striking features of the geography of economic activity. All over the world, a number of particular economic activities are located in the same place, generally, albeit not always, in some urban areas where the population is concentrated.

These phenomena can be observed within countries. However, when one compares countries, and especially industrialised countries, they do not seem to be particularly specialised in the production of certain activities. Krugman (1991) showed that Member States within the EU are more similar than regions within the USA. He argues that this has happened because in the Europe of the nineteenth century increasing trade barriers compensated for the fall in transportation costs and prevented domestic and foreign firms from fully exploiting economies of scale.

The Single Market Programme (SMP) aims to eliminate all the barriers to trade and factor movements within the EU. The benefits of Economic and Monetary Union (EMU) will improve the functioning of the Single Market and will provide the institutional framework for the EU to become a fully integrated area. There is, therefore, a case to question to what extent EMU may release the forces leading to higher concentration and specialisation in the EU or, in other words, to what extent regional differences may wane or increase.

This note tries to give an answer to these questions. Part A reviews the literature on new economic geography with a particular focus on the impact of the SMP. Part B deals more directly with the possible impact of EMU on Member States in a process of catching-up.

#### **PART A: THE LOCATION OF ECONOMIC ACTIVITY IN AN INTEGRATED AREA**

Several arguments discussed in section II suggest that economic activities tend to concentrate in few central locations. However, additional theoretical arguments and empirical evidence presented in section III give a less clear picture of this tendency.

### **II. GEOGRAPHIC CONCENTRATION OF PRODUCTION**

Increasing returns is the main driving force behind geographic concentration of production. In the framework of what is now known as “new trade” theories, Krugman (1980) showed that in a world characterised by increasing returns and by non-zero

transportation costs, in the absence of trade barriers<sup>1</sup>, there will be an incentive to concentrate production of a commodity near its largest market, even if there is some demand for the commodity elsewhere. The main insight from this model is the ‘home market effect’ or the tendency of countries to produce and export goods for which they have a relatively large domestic market.

The basic story proposed by Krugman (1991) to explain geographic concentration in relatively small regions within countries, like the Manufacturing Belt<sup>2</sup> in the USA, Ontario in Canada or the Ruhr in Germany, strongly relies on this interaction between increasing returns, transportation costs, and demand. Given sufficiently strong economies of scale, each producer would want to serve the national market from a single location and would choose the one with large local demand, which minimises transportation costs. It turns out that local demand will become larger where producers choose to locate, thus leading to a self-reinforcing process of concentration.

History plays a crucial role in the formation of core/periphery patterns. For production to be concentrated in a region, a series of initial conditions must be fulfilled. If transport costs are sufficiently small, and increasing returns sufficiently large, the region with the largest share of population (“home market”) will be the centre of the concentration process. It should be added that if transportation can also exploit economies of scale, then transportation costs may become endogenous. This will mean lower transportation costs in the more concentrated region, which will in turn reinforce the advantage of this region as the location of the bulk of economic activities of the country. All in all, the prospects for formation of a centre-periphery pattern depend negatively on transportation costs, positively on the size of demand and positively on the importance of economies of scale. Under these circumstances, the final result could be the surge of a “centre” of production, which holds a large share of total GDP of the country, and a “periphery”, sharing a relatively small fraction of the country’s GDP.

This model allows for an explanation of why production concentrates in certain geographic areas. However, it has not enough elements to explain why particular industries are located in the same place. Alfred Marshall gave the well known argument of the existence of external economies to explain this phenomenon. Under external economies of scale, a firm’s unit cost will be a decreasing function of the output produced by the industry. Marshall points out three reasons justifying external economies. First, by concentrating a number of firms in an industry in the same place, an industrial centre allows a pooled market for workers with specialised skills, which benefits both workers and firms. Secondly, an industrial centre allows provision of inputs and services specific to an industry in greater variety and at lower cost. Finally, an industrial centre generates technological spillovers, since information flows easily at local level.

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1 As it would be the case of trade within regions within a country, or the case of the Single Market.

2 Within the approximate parallelogram Green Bay-St. Louis-Baltimore-Portland in a relatively small part of the Northeast and the eastern part of the Midwest.

Krugman (1991) has reviewed Marshall's arguments to bring them up to date by stressing again the importance of economies of scale internal to the firm. He has shown that the advantages of a pooled workforce arise from the interaction of increasing returns at the firm level and uncertainty (asymmetric shocks, cyclical factors). Analogously, Krugman argues that for an industry to support specialised local suppliers, production of intermediate inputs and services should take place with some degree of economies of scale. It is also worth noting that localisation will tend to occur unless the costs of transporting intermediates are particularly low compared with those of transporting final goods. Finally, concerning technological spillovers, although he recognises its importance, Krugman suggests that this does not seem to be the main reason for localisation even for high-tech industries.

Of great relevance for current economic activities, these main reasons developed by Marshall for localisation of manufactures equally apply to services as long as they are tradable. Non-tradable services will simply follow the geographical distribution of total production and population. Therefore, they will show a rather low degree of localisation. However, other services, like banking, insurance, entertainment or tourism, are tradable and location trends are apparent everywhere. In fact, as argued by Krugman (1991), the most clear cases of localisation today, big cities in industrialised countries, are based on services rather than on manufacturing. Furthermore, such trends may be enhanced today by technological developments, namely in the field of information transmission, since new technologies are increasing the degree of tradability of many services.

### **III. SMP AND EMU: THEORETICAL CONJECTURES AND EMPIRICAL EVIDENCE**

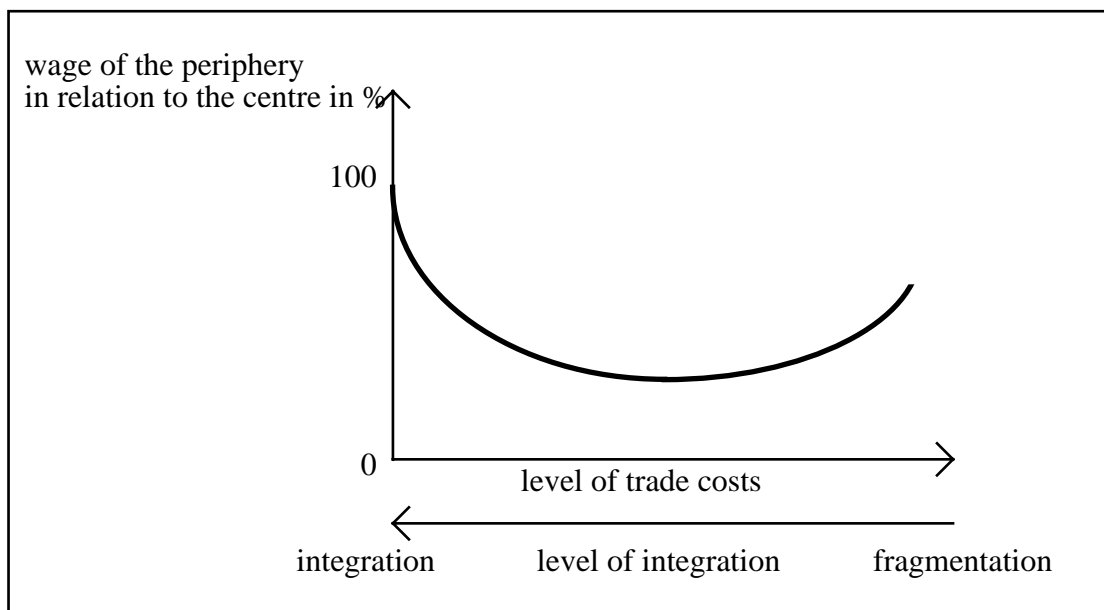
Krugman (1991) notes that the four great regions of the US (the Northeast, the Midwest, the South and the West) are comparable in population and economic size to Europe's "big four countries" (France, Germany, Italy, and the United Kingdom). Therefore, under free trade within Europe the degree of economic specialisation in the USA and Europe should be roughly similar. However, when using sectoral employment statistics at 2-digit, one finds that European countries are more similar than regions in the USA (see also Ergas and Wright, 1994). In other words, localisation has gone further in the USA than in the EU. Krugman (1991) argues that this has happened because in the Europe of the nineteenth century increasing trade barriers compensated for the fall in transportation costs and prevented domestic and foreign firms from fully exploiting economies of scale.

As long as the benefits of EMU (lower transaction costs, greater credibility and stability of monetary policy) improve the functioning of SMP, the EU will become an integrated area comparable to the USA. It is therefore pertinent to ask whether the full implementation of the SMP and the EMU itself may reverse specialisation paths in the EU, generating a "centre", which becomes more and more concentrated, and a "periphery" with less and less relative weight in the EU's economic activity and population.

It is well known that there are strong differences regarding purchasing power and wealth among Member States, and the poorer regions in the EU are in general relatively distant from main markets. Taking the elimination of trade barriers and benefits of EMU as lower transportation costs or, simply, lower trade costs (Krugman, 1993), the question is then where will an industry chose to locate in the EU, in a central region where wages (and production costs) are high, but which has easy access to main markets, or in a peripheral region where wages are low but access to markets is not so good?

Theoretically, one could argue that given low trade costs, a number of economic activities will want to move from the current high-income centre to the low-wage regions in the periphery. However, on the other hand, Krugman and Venables (1990) have argued that medium trade costs could reinforce the centre against the periphery. They have developed a typical intra-industry trade model of the effects of integration on the competitiveness of peripheral industries whose hypothesis is that “while complete elimination of obstacles to trade always raises the competitiveness of the peripheral regions, partial elimination may in principle have a perverse effect” (p.58). With a partial reduction of trade costs, the peripheral industry can hardly compete with the industry of the centre which has advantages by exploiting economies of scale. A further reduction in trade costs and a decline in relative wages allow the peripheral industry to regain competitiveness because of the exploitation of economies of scale due to improved access to the large market of the centre. Consequently, wages in centre and periphery diverge in a range of higher trade costs and converge in a range of lower trade costs. The graphical illustration is a U-shaped curve of the periphery’s relative wage when increasing integration (see figure). Contrary to what is frequently expressed, the centre usually also gains from the catching-up of peripheral regions and loses only in extreme cases of economic modelling (Krugman/Venables 1995).

**Figure: The relation between the level of integration and the relative wage of the periphery**



Source: Hallet, 1997, p. 29, based on Krugman/Venables, 1990, p. 73.

Summarising, we cannot be sure about the final result, since it depends on future possibilities of exploiting economies of scale, the evolution of trade costs and the evolution of wage and productivity differentials between the centre and the periphery. Given this ambiguity of theoretical models of concentration and localisation, a complementary answer has to be found in empirical evidence, which, we have also to recognise, is not conclusive at all.

Krugman (1993) points out that, since World War II, “the forces tending to generate a core-periphery pattern have reached their limit”. He then suggests that “new technologies of transportation and communication make it easier for industries to flee high land costs and take advantage of immobile labour in peripheral regions that prefer to receive low wages at home rather than migrate to take advantage of high wages at the centre”. This could be suggesting that past success is not always self-reinforcing.

In a recent paper, Sapir (1996) has carried out an empirical analysis of the effects of the SMP on the structure of trade and production in the EU. He concludes that “by 1992, the internal market programme has produced only relatively modest inter-sectoral shifts in the pattern of specialisation within EC manufacturing”. He suggests that this can be the result of problems in the implementation of the SMP or of greater intra-industry specialisation. Leaving apart problems in the functioning of the SMP, a recent study by the CEPII (1996) seems to show that although the bulk of intra-EU trade mainly consists of intra-industry trade, countries show quite different degrees of specialisation in terms of quality. Peripheral countries like Spain, Italy, Greece and Portugal seem to show a relatively high degree of specialisation in trade of low price/quality manufacturing products, whilst “core” countries like Germany, France or the UK appear relatively specialised in high price/quality products. Altogether, empirical evidence suggests that the Single Market has contributed to regional convergence within the EU (European Commission 1996, pp. 197 ff.).

Such specialisation trends entail intra-sectoral adjustment costs, which are lower than inter-sectoral adjustment costs associated with increasing inter-industry trade. When looking at the evolution of inter-industry specialisation and agglomeration processes in manufacturing, Brulhart (1996) has concluded that there is still room for increasing inter-industry specialisation in the EU in labour-intensive industries, whereas agglomeration processes seem to have worn out in industries with increasing returns. However, Brulhart and Torstensson (1996) have found a negative relationship between, on the one hand, increasing returns and, on the other hand, both industrial concentration in the “centre” and intra-EU, intra-industry trade. They find empirical evidence that employment in scale intensive industries tends to be concentrated at the centre of the EU, and intra-industry trade is relatively low in these sectors. In other words, in sectors where there is a tendency towards concentration, inter-industry trade is increasing relative to intra-industry trade.

Finally, concerning services, Buigues and Mogensen (1996) suggest that concentration of market services activities tends to follow geography; the further north, the higher the degree of concentration. This trend seems to be apparent in transport,

communications and financial services. Additional evidence can be found in Bayoumi and Prasad (1995), who claim that regional specialisation in the EU is higher for services than in the USA.

## **PART B: EMU AND CATCHING-UP**

The possible participation in EMU of “catching-up” Member States, frequently referred to as cohesion countries (Spain, Greece, Ireland and Portugal), is sometimes seen with the concern that this might stop their process of catching-up and result in a need for permanent fiscal redistribution from more to less advanced economies. This part shows, however, that these concerns are without reason since, on the contrary, EMU will improve conditions to accelerate catching-up.

The most important effect of a single currency is an improved functioning of the Single Market by reducing transaction costs for the free movement of goods, persons, services and capital (section IV). This happens at the expense of a loss of the nominal exchange rate as an instrument of economic policy whose importance is however exaggerated (section V).

## **IV. REDUCTION OF TRANSACTION COSTS**

The most important function of money is to facilitate transactions by avoiding the inconveniences of barter. For transactions between different currency areas, costs occur for at least one of the partners whose transaction is carried out in a foreign currency in order to exchange foreign currency, to compare prices and to manage exchange rate risks. In other words, the mere existence of multiple currencies implies at least additional transaction costs strictly speaking (paid to an intermediary to move from one currency to another), information costs, multi-currency cash management costs (know-how investment and financial costs) and exchange risk hedging costs. To the extent that these various transaction costs between the previously different currency areas cease to exist within a single currency area, economic integration of goods and factor markets increases which tends to raise the quantity of transactions, to decrease price differences and to provide static and dynamic welfare gains. These integration effects are to be expected on goods, capital and labour markets.

### **Goods markets**

The reduction of transaction costs brought about by monetary union and its resulting advantages for trading merchandises and services are higher for a country the more intensive its trade with partners of the monetary union is, the less frequently its currency is used for transactions, and the less developed its foreign exchange market is. These conditions are clearly fulfilled for the small, open Member States Ireland, Portugal and Greece, so that higher than average transaction cost savings can be expected for these countries. A study which estimates that EMU could save between 0.3 and 0.4% of GDP of transaction costs (strictly speaking)<sup>3</sup> stresses "that in relative

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<sup>3</sup> Dumke et al. (1996, p.67) estimate transactions costs reduced by EMU at 0.8% of GDP.

terms transaction costs can be 8 times more important for small open economies than for the largest Member State" (Commission of the EC 1990, p.264).

In spite of some uncertainties on the exact amount of transaction cost savings, it is certain that a single currency, similar to a reduction of tariffs or transport costs, increases the market integration of the previously different currency areas. Economists usually analyse the expected effects of economic integration on the periphery by asking if convergence or divergence of *per capita* income prevails, *i. e.* whether the income in the core or in the periphery will grow at a relatively higher pace due to increased integration.

Income convergence through trade is predicted by traditional approaches of trade theory: trade and specialisation shift factor demand in favour of the relatively more abundant, cheaper factor until relative factor scarcities and prices have been equalised between countries. Income divergence is maintained by approaches of regional and development economics based on models of location theory (Giersch 1949) or circular causation (Myrdal 1957), both referring to agglomeration economies as a crucial argument. The opposite propositions of convergence and divergence theses essentially result from differing assumptions regarding the achieved level of integration: Low transaction costs result in convergence, medium transaction costs result in divergence. Taking the transaction cost level as an exogenous variable allows for a combination of convergence and divergence hypotheses to the model developed by Krugman et al. as presented above: Increasing integration of a peripheral region with a core region will first cause a divergence of per capita income and later its convergence. Thus income convergence through trade can be expected if regional competitive advantages go hand in hand with a significant reduction of transaction costs, such as provided by the combination of the single currency, the Single Market, a stability-oriented economic policy and a good provision of infrastructure.

### **Capital markets**

Participation in a community of stability with binding rules, such as EMU, brings about additional confidence which is "imported" from other participants. A country which pursues such a policy independently of other countries has to prove the reliability of its stability orientation successfully for many years (or even decades) in order to gain similar confidence from financial markets. The effect of enhanced stability on a reduction of interest rates due to reduced risk premia is of considerable importance for the process of catching-up and is only to a limited extent possible without participation in EMU.

Lower transaction costs for capital movements in EMU will have a considerable impact on price and availability of capital which is crucial for a process of catching-up. Interest rates would diminish due to disappearing exchange rate risk premia, lower public sector borrowing requirements, increased efficiency of financial markets and higher international demand for assets in euro. The merging of several national markets and the switch to a real international currency implies deeper, more competitive and more liquid financial markets with better access to capital. Due to the importance of qualitative considerations of financial and hedging instruments, demand for national bonds and equities by domestic and international capital holders will

increase. The rise in the quality of financial supply may come about by the development of new markets, the upgrading of financial technology, an improvement in independence and monitoring of Central Banks as well as the fading risk of future exchange control. Therefore, EMU will benefit both private investment and public finance, in particular for SMEs and small European countries.

In contrast, flexible exchange rates can encourage the appearance of crises caused by short-term capital flows. When freedom of capital movements is perfect and when national saving is insufficient, as is often the case in catching-up countries, higher than average profitability linked to stronger growth may attract massive capital inflows. This can lead to an appreciation of the nominal exchange rate which itself can easily generate speculative dynamics by continuously increasing the proportion of purely financial and short-term inflows related to expectations of capital gains due to appreciation. Then, there would be a high probability that the nominal exchange rate becomes over-valued, in this way threatening the competitiveness of the catching-up economy until expectations invert and the sudden withdrawal of foreign short-term capital would cause a financial crisis.

### **Labour markets**

Transaction cost savings on labour markets are less straightforward to identify. As regards migration between countries, currencies are much less of a barrier to mobility than language or culture because migrants' income and expenditure are usually effected in the same currency. However, links to the home country tend to remain through family or other financial obligations which require transfers between different countries and currencies. Due to emigration mainly in 1960s and 1970s, the volume of these transfers is of macroeconomic significance for some cohesion countries and appears in the balance of payments under the category "unrequited private transfers".<sup>4</sup> Saving costs on foreign currency exchange for these transfers may hence be a particular advantage for cohesion countries.

A widespread concern on the impact of a single currency on labour markets is that the reduction in information costs would allow to easier compare wages between participating countries. While hardly anybody expects an induced increase in migration towards high-wage countries due to this, it is frequently argued that collective wage bargaining in low-wage countries would come under pressure to adjust their wages to levels of high-wage countries. The concern is that - as far as this upward adjustment of wages is not in line with increases in productivity - a loss of competitiveness and jobs would be the consequence with a call for EU transfers. However, it seems extremely unrealistic that catching-up Member States, implicitly assumed to be subject to exchange rate illusion and until now unconscious of wage differentials, would put at risk their main competitive advantage of low labour costs. In general, upward pressure on wages seems hardly to depend on information, but

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<sup>4</sup> These transfers are particularly important for Portugal reaching a maximum of ECU 4 billion at the end of the 1980s which equals to more than 5% of GDP, although declining since then. While transfers to Spain are comparable in volume, given the size of the economy their relative importance is much lower (less than 1% of GDP). Transfers to Greece vary between ECU 1 and 2 billion whereas they are almost negligible for Ireland.



rather on the potential of geographic labour mobility: A low potential of labour mobility as it exists between the EU Member States can therefore be an important contribution to cohesion in a monetary union allowing its participants to converge on the basis of maintained regional competitiveness by wage differentials without causing desertion of low-wage areas (see Matthes and Hallet, 1997). In this respect, the German and the European monetary unions are hardly comparable because of the fundamental difference regarding the potential of geographic labour mobility which gave little room for wage differences between East and West Germany.

## V. CATCHING-UP WITHOUT THE NOMINAL EXCHANGE RATE

The irrevocable fixing of exchange rates in a monetary union implies that the nominal exchange rate is no longer available as an instrument of economic policy within EMU. In this context, the general question is if a change of the nominal exchange rate is an appropriate instrument for economic policy to respond to differences in country-specific long-term development trends. Two arguments suggest that the process of catching-up can require adjustments of the real exchange rate:

- 1) The traditional and best documented one is the so-called Balassa-Samuelson effect: Balassa (1964) and Samuelson (1964) argue that technological progress has historically been faster in the traded goods sector than in the non-traded goods sector and that the productivity bias for traded-goods is more pronounced in high-income countries. As a consequence, consumer price index levels tend to be higher in wealthy countries so that fast-growing countries experience real exchange rate appreciation (cf. Froot and Rogoff, 1995). Consistent with the Balassa-Samuelson effect, Baumol and Bowen (1966) underline that, within a country, there is a broad tendency for the relative prices of service-intensive goods to rise over time.<sup>5</sup>
- 2) Balance of payments constraints affect the real exchange rate in different ways: On the one hand, imports of investment goods which are hardly available in catching-up economies in the early stages and high domestic demand may cause a structural trade and current account deficit, thus giving rise to a tendency for depreciation. On the other hand, this may be a transitory phenomenon of the early stages of catching-up until supply-side effects set in, increasing external competitiveness, and there are capital inflows as outlined above.

Whatever the framework explaining the need for the real exchange rate to change during the catching-up process, many authors argue that the way it will materialise only depends on the exchange rate regime: through inflationary pressure under fixed exchange rates, through changes of the nominal exchange rate under flexible exchange rates. However, these views have to be subject to a critical appraisal.

The empirical evidence in favour of the Balassa-Samuelson effect is mixed (Froot and Rogoff, 1995, or Asea and Mendoza, 1994). Since EMU, through increasing

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<sup>5</sup> There is a heavy overlap between non-tradables and service-intensive goods. However, the presence of a Baumol-Bowen effect is not sufficient to imply a Balassa-Samuelson one.

integration, should enlarge the share of traded goods relative to non-traded goods, the Balassa-Samuelson effect, could be reduced.

Although relative price changes can in general not be avoided in a catching-up process and are necessary in the context of structural change, there is no inherent need for higher inflation rates, the latter depending rather on the stability orientation of economic policy. This is especially the case in the EU, given the small growth differentials and the long term character of catching-up which makes the increase in prices of non-traded goods likely to be slow enough to avoid inflationary pressure. Already within countries, growth is not spatially uniform and rather takes place in growth poles which spread their positive effects to other regions; changes of real exchange rates between regions within a country do take place, although not through a nominal exchange rate but through prices of non-traded goods and immobile factors of production. A monetary union, therefore, allows for adjustments of relative prices with regionally different inflation rates without causing an overall higher inflation rate in the entire currency area as has been evidenced by German unification.

## **VI. CONCLUSIONS**

Recent theoretical literature and empirical results are not conclusive enough as to allow for general predictions on whether centripetal or centrifugal forces prevail in a process of integration. A crucial variable seems to be the level of integration between the centre and the periphery, a high level increasing the periphery's attractiveness as a location for scale-intensive industries producing for an integrated market.

A single European currency has - additionally to the advantages arising from the membership in a community of stability - the advantage of reducing transaction costs on goods and factor markets between participating countries. This effect will turn out higher in the peripheral Member States than in the core Member States and will, if accompanied by sound economic policies, favour the process of income convergence.

Growth differentials implied by a process of catching-up may require some changes in real exchange rates, but do not necessarily have to rely on the nominal exchange rate as an instrument of economic policy since they can also be effected by changing relative prices of non-traded goods and immobile factors of production without implying an overall higher inflation rate.

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## **PRODUCTIVITY AND INFLATION DIFFERENTIALS**

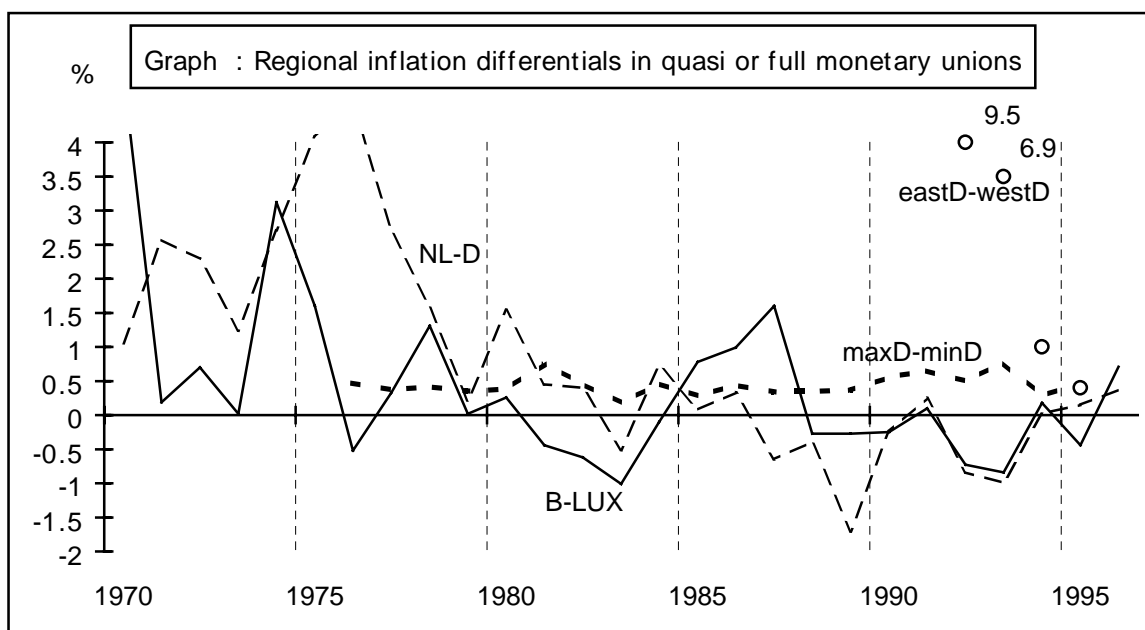
### **I. INTRODUCTION**

In the past, inflation differentials have been quite wide among the European Union countries and the persistence of differentials of such magnitude is clearly impossible in EMU as experience has shown. Too wide inflation differentials created competitiveness problems which had to be corrected by an exchange rate adjustment.

The topic of this note is to try to determine to what extent one should be worried by regional inflation differentials in the future EMU. In the first section, in the light of empirical studies, the level of real exchange rate variability in some selected European countries will be compared with similar indicators in the regions of existing common currency areas. Second, the main reasons that can account for different inflation trends in countries will be analysed and if they are likely to jeopardise overall price stability in the future EMU. It will turn out that inflation differentials caused by different productivity developments, are sustainable. Finally, the focus is on current productivity trends in European countries with an attempt to arrive at an indication of the regional differentials which are compatible with a monetary union.

### **II. INFLATION DIFFERENTIALS IN EXISTING MONETARY UNIONS COMPARED WITH SOME EUROPEAN COUNTRIES**

As the graph shows inflation differentials are compatible with a high degree of monetary integration. In the quasi monetary union ("monetary association") between Belgium and Luxembourg the inflation differentials were between 0.5 and 1.0 % on average. Similar differentials are observed for Germany and the Netherlands, in the eighties when both monetary zones became very integrated (European Commission, 1990). Even in full monetary unions, price differences can be observed. This is illustrated with the inflation differential among four old German Länder (Northrhine-Westphalia, Baden-Württemberg, Bayern, Hesse): the difference between the highest and lowest inflation rate is about 0.5 % (maxD-minD in the graph). Including West-Berlin, De Grauwe (1992) found that the average annual differences in inflation rates were in the range of 0.2% - 1.2% between five German Länder from 1971 to 1990. The inflation differential between East and West Germany, was very wide (almost 10 %) after unification (eastD-westD in the graph) because of structural price adjustment, but narrowed rapidly to 0.5 %.



The analysis of the sustainability of inflation differentials between countries in EMU has often been conducted in terms of the degree of real exchange rate variability compatible with the absence of the exchange rate as an adjustment instrument. Various empirical studies have been made on implied real exchange rate differentials between sub-national regions. Since regions have the same currency, the relative price movements have to occur through inflation differentials. Naturally, if they have different currencies, the relative price movements could occur also through changes in the exchange rates.

De Grauwe and Heens (1991) calculated that the standard deviations of yearly changes of the implied real exchange rate (measured by unit labour costs) were 1.22 for German regions, 3.27 for Dutch regions, 2.48 for British regions during 1975-1985 and 1.62 for Spanish regions during 1980-1985.

In the case of Canada, Poloz (1990) observed that during 1980-87 the average yearly difference in inflation rates (CPI) between major Canadian cities were between 1 and 2%. Significantly more relative price variability was found in GDP deflator data for Canadian provinces as they reflect local production patterns.

For the US, Bayoumi and Thomas (1995) calculated that the average annual differences of inflation rates (GDP deflators) varied from 0.5% to 2% in eight US regions during 1963-1989.

Based on different time periods and measuring techniques (unit labour costs, consumer price index, GDP deflator), an obvious observation of these studies was that there were some regional inflation differentials in existing monetary unions, but that these differentials did not threaten the monetary union as the differentials were small and corresponded to necessary equilibrating mechanisms. Some of these studies compared the level of implied real exchange rate variability in sub-national regions with some selected European countries. Poloz (1990) showed that in Canada inter-

regional relative price variability has exceeded in some cases real exchange rate variability in Europe, which by this criterion, would make a European monetary union no less feasible than the monetary union within Canada. The study suggest that a monetary union was possible among a group of EMS countries : Benelux, Germany and Denmark, while it could be more difficult among all EMS-members as the RER variability remained very high between these countries.

Making from the absence of real exchange rate variability (or exchange rate variability not exceeding the one in existing monetary unions) the yardstick by which to measure sustainable regional inflation differentials in EMU, may be too strict from an economic point of view. Indeed, some real exchange rate movements could be justified in EMU to the extent that economies are faced with different adjustment needs. But, this depends on the origin of the divergent inflation performances, which is the subject of the next section.

### **III FACTORS BEHIND PERSISTENT INFLATION DIFFERENTIALS**

Three main sources of divergent price level trends may be distinguished.

#### **(1) Inflation differentials and monetary policy**

While numerous determinants<sup>1</sup> of the persistence of inflation differentials in a fixed exchange rate system have been indicated, most of them can be reduced in the end to differences in the credibility of monetary authorities (De Grauwe, 1992; Giavazzi and Giovannini, 1989). As long as national monetary authorities with different reputations concerning inflation maintain their autonomy, residual differences in inflation expectations and therefore systematic differences in observed inflation will remain.

With EMU, the ECB will be the monetary authority of the participating Member States and inflationary expectations should be the same in all the participating countries. Thus, the new currency should not be affected by the past inflationary experiences of individual countries and one of the important sources<sup>2</sup> of persisting inflation differentials should disappear.

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<sup>1</sup> For example, Campillo and Miron (1996) suggest that institutional arrangements - central bank independence or exchange rate mechanisms - are relatively unimportant inflation determinants, while economic fundamentals - openness and optimal tax considerations - are relatively important, together with prior inflation experience. It could be argued that the credibility of monetary policy to a large extent shapes the way openness, the potential use of the inflation tax or the past history of inflation affect the actual inflation performance of countries. A similar line of argument can be followed for wages as a determinant of inflation.

<sup>2</sup> Given the same level of credibility and the unification of the money market leading to a single interest rate, the monetary component in the explanation of inflation differentials cannot be large in EMU. A remaining monetary source of inflation differentials is related to different money multipliers allowing banks in a particular region to grant more credit starting from a similar access to the monetary base. However, money multipliers are not likely to be very different among regions of the same monetary zone, assuming that reserve requirements are the same. Differences in the money multiplier stemming from different currency/deposit ratios are expected to be small. A differentiation of this ratio could be produced by a higher preference of households for deposits relative to cash or by the possibility of regional banks, because they are

## **(2) Inflation differentials and asymmetric real demand and supply shocks**

The theory of optimum currency areas stresses the fact that the loss of the exchange rate instrument will reduce the ability of economies to absorb exogenous disturbances. If transitory asymmetric shocks dominate symmetric or permanent asymmetric shocks, a monetary union would demand extensive regional price level variation to facilitate RER changes leading to regionally differentiated inflation rates. The issue of the response to shocks with a common currency and the adjustment costs related to the slower reaction of prices compared to exchange rates, is dealt with elsewhere in the study.

## **(3) Inflation differentials and productivity**

The best known structural factor which can produce systematic differences in inflation rates is rapid productivity growth in the traded good sector. A country which experiences technical progress in the traded goods sector can allow nominal wages in the traded goods sector reflect this without losing competitiveness. This wage increase will be transmitted to the non-tradable goods sector triggering a rise in the country's overall CPI. This high inflation must be considered as an equilibrating mechanism. Without it, the high productivity country would gain competitiveness and accumulate current account surpluses. The observation that price levels in high productivity countries are higher than in low productivity countries is called the Balassa-Samuelson effect. More formally,<sup>3</sup>

**inflation differential corrected for exchange rate change =**

**(share of non-traded goods) x (productivity differential in traded goods at home and abroad)**

It forms a powerful explanation for persistent regional inflation differentials or with other words deviations from purchasing power parity implying real exchange rate adjustments. These real exchange rate adjustments could be exacerbated in catching-up countries, which in the beginning of the process of structural change are faced with a real appreciation, reflecting increased foreign investment, followed later by a downward correction in the real exchange rate to restore competitiveness.

If purchasing parity were to hold the right hand side of the above equation should be zero, meaning that the exchange rate change fully offsets the inflation differential. In monetary union, where the exchange rate change is zero, the equation suggests that regional inflation differentials are proportional to productivity differentials in the traded goods sector corrected for the share of the non-traded goods sector in the economy. Equality would require that all conditions under which the Balassa-Samuelson effect is derived are verified, among which: marginal wage remuneration according to marginal productivity, the same (low) productivity in the non-traded

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more efficient, to offer a higher deposit rate despite the equality across regions of the money market interest rate.

<sup>3</sup> See Burda and Wyplosz (1993) for a formal treatment



goods sector across countries, the same share of traded versus non-traded sector across countries.

#### **IV. EMU AND PRODUCTIVITY TRENDS IN EUROPEAN COUNTRIES**

Productivity has varied considerably in Europe, both across countries and over time. Taking total productivity differentials as a proxy for productivity differentials in the traded goods sector, the average differential between the lowest (Greece) and highest (Ireland) average growth rate of productivity is 2.4 %, calculated between 1974 and 1996. Note that regularly in a single year the productivity differential was as wide as 5 %. Estimating the share of the non-traded goods sector at 70 %, an inflation differential of 1.7 % ( $= 0.70 \times 2.4$ ) would be compatible with observed productivity differentials. This result is in the same orders of magnitude as the one obtained by Canzoneri et al. (1996), who take account of some of the simplifying assumptions made above (productivity in the non-traded sector, relative share of the two sectors). In their study (covering 1970-1990) European countries could be divided into three categories on the basis of their trend inflation determined by productivity differentials. Trend inflation in Belgium, Italy and Spain should be about 2% higher than in Germany; trend inflation in Portugal, Denmark, Austria, France, the UK and Sweden should be 1% higher and trend inflation should be about the same in Finland.

These calculations are also in line with the Maastricht criterion on inflation which states that a maximum spread of 1.5 % above the 3 best price performers should be observed. Furthermore, productivity differentials may overstate the permitted inflation differentials because productivity indicators may be affected by other factors than technical progress; this distorts the measured productivity levels. The productivity differential between the traded and non-traded goods sector could be rather the consequence of low productivity in the non-traded goods sector due to an expansion of the public sector, than the consequence of high productivity gains in the traded goods sector due to technical progress (Canzoneri et al., 1996). Of particular interest is the "labour absorption hypothesis", by which the single market forces the traded good sector in each country to become more competitive leading to labour shedding. The labour surplus is then absorbed by the public sector and by a service sector protected from competition by legislation, distribution networks and tradition. Thus, the observed trends in labour productivity are consequences of "excessive" growth in public sector employment and/or inefficient protection of the home goods sector.

Determining the fundamental microeconomic causes of the trends observed in European labour productivity is particularly important as policy implications depend on them. If the productivity trends reflect technological factors that cannot be affected by government policy, then observed inflation differentials are due to factors that are independent of monetary policy and do not indicate a competitiveness problem. In this case, inflation differentials in EMU are consistent with fixed exchange rates. If sluggish productivity gains in the home goods sector are to be attributed to excessive public sector growth and/or protection of the service sector, then convergence in inflation is needed among EMU countries in order to avoid pressures on monetary policy. One might expect countries with rapid real appreciations to put pressure on

the common central bank for a loose monetary policy either to ease the financing of public deficits or to try to increase employment.

Finally, these considerations suggest that the long-term inflation objective of the ECB should be the average inflation rate in the participating EMU countries. This would be compatible with some differentiation in the inflation rates and the low inflation region should not fear an inflationary spill-over, if the differential is justified by productivity differentials. On the other hand, targeting the best inflation performer would hamper growth in the high-productivity countries and their catching-up process. Furthermore, the difference between union wide inflation and the best inflation performer depends on the size of the union. If a large number of the Member States were included, the difference could be a full percentage point between the EU average and the lowest regional inflation rate.

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