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ROBERT SCHUMAN CENTRE

A Monetary Union for a Heterogeneous Europe

GIORGIA GIOVANNETTI
and
RAMON MARIMON

orking Paper RSC No. 95/17

University Institute, Florence

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A Monetary Union for a Heterogeneous Europe*

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1 Introduction

The ratification of the Maastricht Treaty on the one hand, and the ERM crises of 1992-93 on the other hand, show that the final steps to achieve -according to Maastricht, by the end of the Century- a united Europe ,with an European Monetary Union (MU), will not be straightforward. In fact, as the "finish line" gets closer most European governments seem to be more centered on domestic problems, than on building up the last stages of the European unification. More or less openly, a *reappraisal* of the European perspective is taking place. This reappraisal has been triggered by two contradictory facts: first, the evidence that the MU can be made a reality, almost at any time, before the end of the century -at least for a subset of countries-, and second that, in a time of economic distress, such as the last business cycle downturn, it has been difficult to achieve unanimity on the policies to follow -in particular, monetary policy. To a certain extent, these two facts are only the expression of three -unwritten- lemmas which characterize the development of the European community in the last part of the XXth Century: *i)* with enough political will (and institutions) stronger forms of economic unification are -immediately- possible; *ii)* there are persistent differences among countries that repeatedly call for preserving a nation's sovereignty and autonomy, and *iii)* even if a country was to seek autonomy from the rest of the community, to have a high degree of autonomy is becoming more and more infeasible. The Maastricht treaty is a compromise on the above three lemmas, which should be accounted for by a reappraisal of the treaty itself.

The aim of this paper is to provide a reassessment of the MU perspective from the point of view of an heterogeneous Europe.

If convergence had been achieved in all fronts, then there would not be much room to discuss monetary union; it would probably be in existence.

Furthermore, heterogeneity is also the norm across regions within European countries and within states in other currency areas. We focus, therefore, on what this heterogeneity implies for the choice of an exchange rate mechanism –MU, in particular– in the context of capital market liberalization. Once the international flows of capital -in particular, portfolio investment- take a wide lead on trade flows, and the stocks involved are several dimensions higher than a country's foreign reserves, there are not many sensible choices for an exchange rate policy. In particular, and as the recent experience with the ERM has confirmed, *fixed-but-adjustable* exchange mechanisms

are unstable[1].

The discontinuity of the choice -free floating *vs.* currency union- makes the decision and implementation of an exchange rate policy more difficult. For some "core" countries, exchange rate stability has been preserved in the new -post 1993- floating rates regime. This may suggest that the choice is not actually a dilemma, and therefore it may be easier to simply preserve floating rates. Past experience, however, suggests that real exchange rates are more volatile in periods of flexible exchange rates. Furthermore, the experience of speculative attacks also to some of the core currencies -such for instance the french franc and the Danish Krone- and the 1995 aftermath of the Mexico devaluation crisis, with the March devaluations vis a vis the DM followed by partial revaluations in April, suggest that a decisive move towards the MU is called for to have a the smooth functioning of the Single European Market. The question is then if the Maastricht treaty is the way to MU.

In spite of all the open debate and criticism, the ratification of the treaty is an important step towards MU; the problem is that the closer we are to the treaty's deadlines the more the current design becomes an obstacle to building an operating currency union. This appears similar to what has happened with the ERM. It helped first as a commitment device, but the closer it has been to achieving its goal of exchange stability, the more its obtrusive nature has dominated.

Most of the attention has concentrated on whether countries were satisfying the convergence criteria, since the design of Maastricht is based on achieving a relatively homogeneous Europe before MU. We think that now that the "reputational effects" of the process of European integration have been, to a large extent, exhausted, the focus should be on having an appropriate MU design[2]. Ideally one would start the design with a clean piece of paper. This, however, would be politically irresponsible. One must take the treaty as a blueprint for the European Monetary Union, the European System of Central Banks (ESCB), European Central Bank (ECB),etc. The 1996 conference, and all the work in preparation for Stage Three, provide a forum in which the treaty *must* be appropriately revised.

In this paper, after a brief review of the "convergence record" in Section 2 (with a more detailed account in the Appendix) and a discussion of the

[1] We discuss in Section 3 the ERM crisis.

[2] We discuss the Maastricht's MU design in Section 4.

choice of the exchange rate mechanism in Section 3, we concentrate our attention on the political economy aspects of the design of the ESCB in Section 4. Our critical assessment leaves us to consider alternative proposals (revisions of the Treaty), mainly concerning the allocation of resources and voting mechanisms within the ECB and the rules for joining the MU (the Maastricht criteria) in Section 5 and in the Conclusions (Section 6).

2 A Heterogeneous Europe at the end of the XXth century

European unification has been viewed as a process of economic integration. In particular, the Maastricht treaty assessed that few convergence criteria had to be met for a successful monetary unification. From the point of view of economic integration, however, a much larger set of criteria has to be accounted for. Considering a broad set of economic indicators to assess the degree of "European convergence"[3] in the last thirty years, we do observe a process of convergence , which is, however, neither uniform nor linear. In particular, after a growing convergence in the levels of per capita income from 1950 to 1975, there has not been further convergence afterwards (cf. Graph 1 and Graph 2). This stability of the distribution of per capita income is verified across countries, as well as regions of Europe (cf Table 1). This also reflects the fact that, after the productivity slowdown that followed the first oil crisis, internal European migrations ceased to be an important equalization mechanism. As a result, only the countries that were close to the European average in 1975 are close to it in 1994. Nevertheless, behind this lack of GDP convergence, the productive structure of countries tends to converge. The countries that, in terms of income per capita, have been close to (or above) the average in this period also show a fairly stable distribution of employment and production across main sectors (with an increase in services and more substantial changes when finer levels of aggregation are considered, cf.the Appendix). In contrast, those countries, such as Spain, that have been constantly below the European average, have experienced important changes in their productive structures, and, as a result, are now much closer to the rest of European countries.

[3]We provide a detailed description of the indicators considered in the Appendix.

The main convergence has been experienced in the role of the public sector in the economy (cf. Graph 3). Even if the European welfare state has been increasingly questioned, there has been a remarkable convergence in terms of the share of the public sector in the economy, and other social welfare indicators, such as social protection. Nevertheless, the "public sector picture" also shows its heterogeneous face: "social insurance" provided by the state still differs across countries, government revenues have fairly different composition (in spite of the efforts to homogenize fiscal policies) and public debts also differ. Furthermore, the relative importance of government revenues and of the state as a "social insurance" mechanism imply that even if productivity shocks do not have an important national component, small business cycles differences across countries are magnified when government revenues and payments are accounted for.

At a first glance, the macroeconomic indicators show convergence, too. With the exception of Greece, price stability has been achieved to a large extent, although the more recent experience of countries that have experienced large devaluations –for example, Italy– shows that inflationary episodes may recur. In spite of the ERM crises, interest rates do not show much dispersion (cf. Table 2 and Graph 5). The widening of the exchange rate bands within the ERM furthermore has not translated into more exchange rate uncertainty, although weaker currencies, such as the peseta, have seen their position deteriorate in front of a persistently strong mark (not to mention the lira with the cost of Italy's political-transitional problems).

Regarding Maastricht's convergence criteria, the difficulties rely mainly in debt management (cf. Table 3). This is not a serious problem for the implementation of Stage Three since the treaty itself has many escape clauses. It is, however, a problem in that persistent divergence of long term (debt) interest rates can be seen as a sign of insolvency for some countries –Italy, in particular. It is also a problem for those countries that, in spite of an announced policy of fiscal restraint, have seen their primary deficit increase in the last few years (e.g. Spain).

The integration of goods and capital markets is also a salient feature of the convergence process. Across the border capital transactions dominate the "integration picture" and, within this, portfolio and other short term capital movements have the largest share. This has made countries' capital accounts much more volatile than before, while the shares of foreign direct investments remain relatively low, in spite of their growth. Notwithstanding the process

of financial integration and liberalization, heterogeneity remains regarding: *i)* the link between the central banks and the financial sector; *ii)* the link between the financial sector and firms (firms' external financing), and *iii)* the maturity structure of private and public debt (cf. Table 4). These three factors contribute to the heterogeneity of the "transmission mechanism" (of monetary policy) across European countries, that is of the final (short and long) real effect of monetary policy, in particular, of changes in the (central bank discount window) interest rate[4]. For example, since in the UK the effect of interest rate changes seems to be important and immediate, a low interest policy has helped the UK recovery in 1992 and has not translated into high inflation.

In summary, the "convergence record" is relatively mixed. It is possible, however, to group countries which are fairly consistent across different convergence indicators (and, in some cases, policies towards Europe). More specifically, we identify four groups: the *European core,* formed by Belgium (mostly due to its exchange rate record), Denmark, France, Germany, Luxemburg and the Netherlands; the *catching up countries,* namely Greece, Ireland, Portugal and Spain (within this group Ireland and Spain are closer to the core); the *idiosyncratic group,* formed by the ERM defectors: Italy and UK, and the *newcomers,* i.e. Austria, Finland and Sweden. Even within these groups, however, there is not an overall convergence (see the Appendix). In the following we want to assess whether there are elements of European diversity that can make a monetary union infeasible, unstable, or simply

[4]Germany and UK represent polar cases for the working of the monetary transmission mechanism. In Germany the level of home ownership is low, mortgages tend to be at fixed interest rates (cf. Table 4), public debt is at sustainable levels and has a residual fairly long maturity, firms financing does not depend much on external financing. Hence, the main vehicle by which credit conditions affect the economy are long term interest rates. As a consequence, high short term rates are widely used by the Bundesbank to fight inflation or to support the exchange rate, because they do not have major effects on the real side. On the other hand, in the UK and Ireland mortgages are linked to short term interest rates, the level of home ownership is very high, many mortgages borrowers have high levels of indebtness relative to income so that consumer expenditure is very sensitive to short run interest rates. As a consequence, UK and Ireland are potentially more vulnerable than Germany to the persistence of high short term interest rates. Italy is vulnerable too, though for different reasons. The level of public debt is very high and the residual maturity of it is very short (almost 2/3 has a remaining term of less than 2 years), so that the impact of high interest rates on the fiscal position can be destabilizing.

unattractive for a particular country.

2.1 Potential sources of conflict

Regarding the creation of a MU, the standard academic question has been to ask whether the European Community is an *optimal currency area* or not. That is, whether there are country specific shocks, and not enough factor mobility and price flexibility, and therefore an active exchange rate policy has to be used to avoid costly real adjustments, in which case monetary policy should be kept at the national level.

There is a substantial amount of empirical evidence (see, for example, [33], [16] and [59]) showing that productivity shocks are not particularly country specific. Furthermore, as we have mentioned above, in a world of integrated capital markets competitive devaluations can have negative feedback effects. Italy and Spain, for instance, have benefited in the 1992-1993 aftermath of their devaluations, which made their economies more competitive. However, this was with respect to a situation in which these currencies were "ERM hostages" (in the sense of having undergone a substantial real appreciation in the period 1987-92). It is more controversial whether the 1994-1995 slide of their currencies is helping Italy and Spain. The divergence of long-term interest rates seems to indicate that it is not[5].

Using standard arguments Europe may well be an *optimal currency area,* (the evidence is not conclusive), but there are three elements of our list of "national" divergences which are potential sources of conflict.

The first is fiscal disparities. Debts and deficits differ, countries with high debts and difficulties to further raise taxes are likely to create inflationary pressures. Furthermore, tax structures are relatively different. These differences mean that, at the moment of evaluating the possible distortions created by an inflation tax, governments are likely to have different preferences.

The second element is the, so called, identity between fiscal and currency areas. European governments, which guarantee a high degree of social insurance, are very sensitive to business cycle downturn (at the same time that they may be affected by capital outflows) and they may want to pressure -not necessarily at the same time- for more accommodating monetary policies.

[5]Devaluation has certainly helped Italian exports but has also triggered inflation. Furthermore it is having disruptive effects on the "single" European market. The MU was designed with the idea of avoiding such "competitive devaluations."

The third element, which may amplify the other disparities, is the fact that the *transmission mechanism* of monetary policy is not homogeneous across European economies. Avoiding fiscal pressures calls for Central Bank independence -say, with counter-inflationary commitments- along the lines defined in recent years by the Bundesbank. However, the German experience -where long term relationships between banks and firms, and long term debt positions, dominate- may be far from representing other European economies.

These three heterogeneous aspects are likely to persist in the near future; hence they will be present in the MU if the Maastricht calendar is maintained. A good design for the MU must take into account these potential sources of conflicts, which can be key elements in evaluating a country's benefits in joining the union. It should be noted that only the first (fiscal discipline) is considered in the Maastricht treaty.

We have excluded from our list of conflicting interests important "national" divergences, such as the divergence of unemployment rates, income per capita, etc. These differences tend more to affect the trends than the cycles and should not, in principle, call for divergent stabilization policies. However, they can play two roles regarding MU. First, they may determine a country's option not to join the union. If a country considers the seignorage tax an important source of revenues and/or believes that repeated currency devaluations are a rapid way to improve its competitivness, it may opt for staying out of the union[6]

Second, persistent differences also have an important indirect effect in shaping the MU. For example, the "cyclical government insurance" problem could easily be solved by having a European program of social protection, or at least a program of (pool) sharing of country risks. As any insurance program, these programs would be much easier to implement if countries were similar. With persistent differences -say, in unemployment rates- stabilization policies are difficult to isolate from redistributional policies. In spite of the community (FEDER) regional policies (or because of its performance), one doubts that such policies will be implemented.

The fact that social protection is mainly national also shows an indirect form of potential conflict: the main concern of reforming the European wel-

[6]This could have been the argument in the past for countries, such as, Portugal or Greece to stay out, but their recent record –particularly, of Portugal– shows their willingness to participate.

fare state (with similar problems and possible proposals in most European countries) is mainly a 'national' concern. European monetary policy may take a second place and be distorted by 'national agendas' (similarly to the fact that elections to the European parliament are dominated by national politics).

3 Capital flows and exchange rates in Europe: some facts and issues.

A unique currency, within a unique European market, was first envisioned as a form to reduce transactions costs and avoid competitive devaluation wars. The move to a unique currency, however, requires to define first the exchange rates at which currencies are finally fixed. The Exchange Rate Mechanism, with its narrow fluctuation bands (and possible adjustments) was seen as a natural transition mechanism from a system of relatively flexible exchange rates to a system of irrevocable fixed exchange rates. In the early 1990s, the ERM seemed to have achieved its goal of exchange rate stability, and was considered a *de facto* fixed exchange rate system. At the same time, capital controls were removed to form an integrated European capital market. The two ERM crisis of 1992 and 1993 have, however, shown how unstable *fixed-but-adjustable* exchange regimes can be when short-term capital flows dominate international financial markets and currencies can be easy targets of speculative attacks[7]. Capital and exchange rate movements in the last three years have also shown that a major reason to have a currency union is to isolate, as much as possible, trade flows and domestic assets from exchange rate fluctuations due to sudden shifts of capital flows, as in the first months of 1995.

In this Section we first review some of the facts on international capital movements in relation to the recent experience of the ERM, and second we discuss the choice of the exchange rate regime -in particular, the possible transition to the MU- in the current context of integrated capital markets.

[7]For an account of the crises see [34] and [53].

3.1 The dominant role of international portfolio capital flows.

Between 1987 and 1993, cross border capital flows, and their variability, has increased substantially. "Gross capital outflows from the main industrial countries (excluding official and short-term banking transactions) came to about $850 billion in 1993. Such flows averaged around $500 billion during the 1985-93 period as a whole, compared with only about $100 billion a year in the first half of the 1980s." (Bank of International Settlements, Annual Report, 1994.). The value of the underlying transactions, namely all sales and purchases by resident and non residents has increased even more, reaching peaks of for instance 274.6%GDP in Italy (not to mention 1015.8 %GDP for the UK in 1991; see, Table 5). The size reached by these flows has dwarfed transactions on current accounts and as a consequence has dominated international financial markets. The amount of capital flows, however, undervalues their importance. Capital flows -in particular, short-term capital flows- are characterized by their volatility. The recent European experience has been no exception (see Table A7)[8].

With liberalized capital markets, arbitrage conditions determine the link between (nominal) interest rate polices, (expected) inflation rates and (expected) changes in exchange rates. These simple identities determine the basic arithmetic of different policies within and between countries[9]. Expec-

[8]To have a measure of the size and volatility of these flows consider that in Italy net capital inflows grew from lit 3.6 trillion in 1986 to lit 51.5 trillion in 1990. The short term capital inflows show a more pronounced pattern of sudden inflows, mostly reflecting activities of the banking sector, which tripled during 1989-91, reaching lit 36.2 trillion. In 1991 there was a shift from predominantly long term capital inflows to short term flows (together with a change in the italian yield curve). The data for Spain reveal a similar, although less pronounced development. Net capital inflows increased from pts 1.4 trillion in 1987 to pts 3.2 trillion in 1991. As in Italy, most inflows were long term, but in contrast to Italy there was no significant shift toward short term flows in 1991. However, in line with the speculative attacks against the peseta, in 1992 short term capital were directed out of Spain. Finally, it is worth to draw attention on Germany. There were large net capital outflows from 1986 to 1990. This trend changed in 1991 (in the wake of German Unification): capital started fleeing into the Deutsche Mark. In 1992, 106.8 billion of foreign capital flowed into Germany (vs 18 billion in 1991), of which DM 80.5 billion in the month of September (and this also gives a measure of the size of speculative attacks).

[9]If we denote by $i_{j,t}$ the nominal interest rate in country j, $\pi^e_{j,t+1}$ the expected inflation rate, e_t the exchange rate between country A and B at t (i.e., units of A's currency per unit

tations about future inflation and/or exchange rates changes feedback into current prices and exchange rates[10]; this implies that to avoid capital outflows (or to defend a currency from speculative attacks) an active policy must be implemented. But, integrated capital markets, allowing for greater substitutability between domestic and foreign assets can also make less effective the attempts by central banks to alter exchange rates by changing the composition of private portfolio through official market interventions.

3.2 Some lessons from the 1992-95 experience with the European exchange rate regime.

3.2.1 The failure of the ERM.

Between 1987 and 1991, cross-border investments increased substantially, as investors had taken advantage of higher yields on some ERM currencies (namely, lira, peseta and pound) in a context of relatively stable exchange rates. However, in early 1992, as prospects for realignments increased, sizable amount of capital left those countries (e.g Italy, Spain, UK) which seemed more likely to realign their currencies. The outflows were mainly portfolio investment and banking (short term) flows. Against this situation, some countries were unable to maintain their currencies within the ERM bands and the September 1992 crisis resulted in the Lira and the Pound Sterling leaving the ERM and in five realignments in the following months involving, together with the "weak" peseta and escudo, also the Irish pound (despite the noticeable relative improvement of the Irish economy, cf. Table 3). The pressure of capital flows was also felt by stronger currencies, such as the French franc and the Danish krone, even though, according to the Maastricht criteria, their respective economies had "sound fundamentals" (cf. Table 3).

In the summer of 1993, the situation paralleled that of September 1992. The amount of currency traded was so high that no Central Bank could win

of B's currency), and e^e_{t+1} the expected exchange rate for (t+1), then, *if* everyone shares the same expectations, the non-arbitrage conditions imply that: $\frac{1+i_{A,t}}{1+i_{B,t}} = \frac{1+\pi^e_{A,t+1}}{1+\pi^e_{B,t+1}} = \frac{e^e_{t+1}}{e_t}$.

[10] This also implies that if we use a simple measure of expected inflation -say, the last three months average inflation rate- we should not expect the equality of expected real interest rates (see, Graph A5 in the Appendix).

speculation with the use of foreign reserves. If this phenomenon is considered together with the fear of the Bundesbank to increase the German money supply in order to avoid domestic inflationary pressures, the success of the speculative attacks of July 1993 can be explained. The official sales of DM in the EMS in July 1993 totalled DM 107 billion, of which 24.7 compulsory and the rest intramarginal. This, which was not enough to deter speculators, nevertheless had an unwanted expansionary effect on German liquidity (58.6 billion of DM, Bundesbank calculations, Deutsche Bundesbank Annual Report, 1993), which, in turn, explains why the German Bundesbank did not intervene further.

It is interesting to compare the 1992 and 1993 crises with the wave of capital flows following the Mexican devaluation of December 1994 and the March 1995 crisis. With a weakening of the dollar and a flight of capital towards the DM, if the narrow fluctuation bands had been maintained or restored, this would had meant a new generalized ERM crisis. As it is, even the peseta and the escudo (devaluated on March 6th) and the lira have recuperated, at least partially, their value and have not been the target of special speculative attacks.

In summary, the crisis of 1992 showed the instability of a system of narrow bands in a context of free capital movements; the crisis of 1995 has showed that with wide bands there can be no mutual commitment to help countries to remain within the bands (in this case, the peseta) and maintain, at the same time, a national commitment to price stability (for example, the Bundesbank). These crises show the failure of the ERM. Nevertheless, the fact that, as of May 1995, the European countries that have suffered major devaluations –with respect to the DM– are outside the ERM (cf. Table 6) seems to indicate that ERM countries have efficiently pursued a policy of exchange rate targeting, in spite of not having had much help from other ERM central banks.

3.2.2 The role of interest rate policies.

Even though Maastricht criteria point to "price stability", most speculative attacks were linked to expectations of interest rate policy, mainly because of existing significant differences between internal and external requirements for monetary policy -at least in certain EEC countries. For instance, in situations where the private sector has a high debt/income and debt-servicing

positions, a high interest rates to sustain external exchange makes it more difficult to reduce ratios to more manageable levels- without slowing down economic activity. In countries with weak fiscal fundamentals and a large share of short term and floating rate government debt, a high interest rates can feed back quickly to the government fiscal deficit. A high level of the interest rate may actually weaken the attractiveness of the domestic currency (e.g if market participants believe that they increase debt-servicing problems or if interest volatility implies higher risk). Furthermore, the same level of interest rate that serve to squeeze speculators can also squeeze the funding of securities and banking markets (risk of insolvency can therefore increase).

Several of these constraints and concerns were evident during the ERM crises, when different countries reacted in very different ways to the exchange rate developments during the 1992 crisis. The most spectacular case is that of Sweeden (a non ERM pegged, however, to the DM) increasing the overnight rate to 500%. In contrast, the UK defended the pound with minimal use of the interest rate, opting for massive central bank intervention[11].

3.2.3 A possible degree of "successful monetary autonomy"

As soon as the pound was released from the constraints of the ERM, the base interest rate was slashed (down to 6% in January 1993). As with the Lira or the Peseta, the pound devaluation of 1992-93 (see Graph 8) represented an improvement in the competitive position of the UK economy. In contrast with these other currencies, however the pound recovered a stable position in 1993. As we described in Section 2, the transmission mechanism in the UK is characterized by strong and almost immediate effects. The large impact of lowering interest rates in 1992 confirms this feature.

3.2.4 Political news and capital movements.

The experience of the lira and the peseta in 1994 and the asymmetric reaction of the "core" currencies, in particular the franc *vs* the DM, to the post Mexican devaluation turmoil at the beginning of 1995, are examples of

[11]Only when it became clear that intervention was not working, the UK resorted to an increase in the interest rate, which, however, was very short-lived. (from 12% to 15% on September 15th, back to 12% on September 16th and down to 8% only a month after suspension of sterling's membership of the ERM, on October 16th).

important capital flows reacting to "domestic news" (for example, the politically unstable Italian situation when the country has yet to find a credible solution to its debt problem) and to "outside the union news" (the Mexican devaluation and consequent weakness of the dollar). News like this are bound to happen if Europe is a unique currency area; the difference would be that "domestic news" would be reflected, for example, in different risk premia for a country's debt, as they are reflected now if a city in a country is under fiscal strain. "Outside the union news" should have an effect on the union, as they do now for different regions of a country.

3.2.5 The external position of European financial markets.

While most of the debate on MU and ERM has focused on the European market, the process of capital integration is worldwide; in particular it is strictly connected with the relative position of the G3 (US, Japan and Germany) currencies. That is, given the increasing loss of "leadership" of the dollar, the DM -without MU- or the ECU -with MU- are bound to play a major role in the international financial markets. The recent experience is a good example of this. This means that with a MU we will only isolate some of the current exchange rate risks, the community as such will have to deal with worldwide capital fluctuations. As we have said, interest rates are the likely (most suitable) instruments to protect the ECU and the European capital markets of these exchange risks, but then the exchange rate policy and the -community- interest rate policy are necessarily linked and become the central part of the MU monetary policy. This, as we will see, has implications for the design of the European Central Bank operating procedures, as well as, for the possible interest of some countries -say, Germany- in the MU.[12]

3.3 Legal restrictions, currency substitution, and the choice of an exchange rate mechanism.

The recent European experience shows the complexity of the choice of an exchange rate regime when (short-term) capital flows are a dominant player

[12]In the next Section we discuss the inconsistencies and weaknesses of the Maastricht blueprint in this respect.

in international financial markets. One lesson is clear: *fixed-but-adjustable* exchange rate regimes become unstable unless relative supplies of currencies are allowed to fluctuate with almost no bound. Otherwise, speculative attacks betting on adjustments are likely to be successful. In other words, if -say, the peseta and the DM- are fixed at a rate (or the peseta reaches a prespecified band), no speculative attack against the peseta would be successful if DM were printed to satisfy the new demand of DM against pesetas. However, quantities are not allowed to fluctuate that much, i.e., the Bundesbank, because of its commitment to price stability, does not allow an arbitrary expansion of its money supply to help the peseta. Hence, existing Central Bank reserves cannot offset capital flows and central bankers are bound to loose against (large enough) speculative attacks. Instability, therefore, does not arise from the "unwillingness" of the Bundesbank to help the peseta, but from its commitment to price stability. The fallacy of the ERM is to use the *fixed-but-adjustable* exchange mechanism as a commitment device while, in fact, commitment is needed for the stability of the system.

The main issues are the extent of the *legal restrictions* on currency transactions and the corresponding degree of substitution among currencies. With fairly restricted across the border capital movements, currencies are poor substitutes. With the liberalization of capital markets, some legal restrictions, such as the restriction preventing private citizens from borrowing in other currencies, have been lifted. As a result, European currencies are now closer substitutes than they were before 1992. In fact, after the suspension of the lira and the pound from the ERM in 1992 and the widening of the ERM bands in 1993, the European exchange rate system is, as close as it has ever been, to a pure system of *floating exchange rates with free capital movements.* The MU is, with respect to Europe, on the other side of the spectrum: first exchange rates will be fixed and then only an European Central Bank will have control of the European money supply. But, as we have seen, the existence of large capital markets makes unstable any other intermediate solution. Does it have any other implication regarding the choice between a floating rate regime *vs.* a currency union regime?

Let us consider first the present situation with flexible exchange rates. Hedging against exchange risks has become less costly, but this, in turn, can make exchange rates more volatile. It is convenient to consider the extreme case where currencies are almost perfect substitutes. With high substitutabil-

ity, small events can trigger large shifts on currency holdings[13]. Say that in a particular day, because expectations of a local currency devaluation, there is a move away from this currency making its value fall. Some agents will be caught carrying relatively more of this currency and suffer a loss, others will gain from their appreciated currency holdings. This currency risk is usually the cost associated with flexible exchange rates.

If we consider, for example, that both currencies are legal tender and all agents are free to choose in which currency payments will be made, then there should be no well defined pattern of whose agents are carrying more of one currency. The distributional effect of a move away from a currency should not be predictable *ex-ante*. This also means that any news concerning agents, say about an unexpected loss of income, should have no bearing on which currency is likely to devalue.

The situation is different when some legal restrictions on currency holdings still apply. For example, in the current *free floating rate system*, taxes must be paid in national currencies, most labor contracts, and an important share of domestic assets, are denominated in national currencies. Government debts are either denominated in local currency or in some other currency -say, ECU- and the shares are publicly known. These legal restrictions imply that currencies are not perfect substitutes (for example, agents must still keep a fraction on local currency). However, what distinguishes most this situation of close substitution to the one of perfect substitution is that now there are well defined patterns of who is holding which currency. In particular, the government collects taxes in local currency and must satisfy debt commitments. If these are denominated in another currency, the public sector will suffer from a devaluation, if they are mostly denominated in local currency, the debt holders will suffer. In any case, a seemingly small political event is likely to have the same meaning to all agents (e.g., Italy's political instability). A huge capital outflow may be generated prompting the expected devaluation (and possibly, overshooting)[14].

With capital mobility, the problem of floating exchange rates is not just

[13]In fact, when currencies are perfect substitutes the exchange rate is indeterminate (see, [54] [79]).

[14]The Mexican crisis at the end of 1994 is a good example. As a 'commitment device' when Mexico had to negotiate NAFTA, a large fraction of the Mexican debt was denominated in dollars. News of possible insolvency had a devastating effect causing the December devaluation (it seems beyond the previous peso appreciation).

that exchange rates may fluctuate, it is that, as long as an important share of the assets of an economy are denominated in a specific currency, news about these assets' prospects are likely to have a feed back effect. There is an agent that always has a name: the government whose revenues (taxes) and debts have publicly known denominations[15].

In summary, with flexible exchange rates and capital mobility, it is difficult to avoid that perturbations of the public sector will not have a much larger effect on capital and exchange rate fluctuations. There are two partial solutions to this problem. One, which has been suggested under different forms (e.g., the Tobin tax) as a general way to smooth capital fluctuations, is to introduce some additional legal restriction or tax on capital mobility. (see [35], [42] and [56]). This may slow things down, but hardly seems a solution. First it is moving in the "wrong direction" by introducing distortions, second, as it has been pointed out, sophisticated capital markets tend to find ways around such distortions.

A second form of "isolation from political events" is to diversify, as much as possible, government portfolio. In particular, public debt. While a standard argument of time-consistency will call for debts to be denominated in a foreign currency, the portfolio diversification argument outlined here shows that this is not a correct solution.

A common currency, or a fully fixed exchange rate regime, avoids these capital fluctuations among participating countries. Money is more likely to satisfy better its roles of: *store of value* (presumably real returns fluctuate less); of *medium of exchange* (trade within the community does not require costly hedging operations) and of being a *"safe" asset* (exchange rate risk disappears within the community)[16]. However, as we have noticed, in describing

[15]This is also true of the stock market, where assets are close substitutes and firms and managers have names. There are, however, important differences: with some legal restrictions agents must hold the domestic currency or use it to denominate contracts, etc. (no one is forced in to hold a particular stock); the government may have more direct monopoly over the money supply than managers have over issuing stocks (here is where Central Bank independence can help); for most firms if the value of sales (or cost) change the value of the stock may be affected, but changes in value of the stock do not feed back into changes of the value of sales, in contrast governments receipts and payments are affected by the value of domestic currency, and, last but not least, money is fiat, while the value of the firm is linked to its expected net gains.

[16]To our knowledge, the discussion of the "public sector" effect is new. A good discussion of some of the other issues discussed here can be found in [24]. However, these issues can

the "heterogeneity of the transmission mechanism", a common currency is likely to perform worse than national currencies in its role of "liquid" asset. The example of UK in 1992 shows that the cost of giving up monetary autonomy may not be trivial. Our view, however, is that it is likely to be outweighed by the benefits of a common currency (if properly managed).

4 The Political Economy of the European Monetary Union

As we have seen, the ERM crises of 1992-93 and 1995 reflect problems which are specific to the ERM, but also more general problems which show the difficulties of coordinating monetary -and, as much as it is required, fiscal- policies. With a monetary union in place, the ERM problems -such as, speculative attacks- will disappear for the member countries[17]. Differences among countries (regions and economic sectors), however, will persist. A careful design of the institutions that will have to carry out monetary policy is a first step towards a successful coordination and integration of these differences.

The Maastricht treaty provides a first general blueprint of the MU institutions: the European System of Central Banks (ESCB), the European Central Bank (ECB) and, the transitional, European Monetary Institute (EMI). A central task of the EMI is to "specify the regulatory, organizational and logistical framework necessary for the ESCB to perform its tasks" ("At least by 31 December 1996"; [21] art. 4.2).

The Treaty, together with the corresponding Protocol [21], define basic organizational principles for the ESCB. With the constitution of the EMI the more detailed designing process is underway[18]. Many elements of this design will probably shape the future ECB. In our opinion, there are "design problems" that, if not corrected, may jeopardize the same constitution of the ECB. More specifically, we think the main problems with the current design

only be treated properly in the context of an explicit model. For example, here we do not take into account for the fact that, with a currency union, the possible effects of currency competition disappear (see, [57]) and that there may be other strategic delegation problems (discussed in the next Section).

[17]Although they may persist with "outside" or "derogated" countries if the external exchange mechanism is not one of free floating rates.

[18]Some of this development is reflected in [18] and [38].

are:

1. The inconsistency between the choice of *price stability* as "priority #1," and the ambiguous role of the ECB and the national banks as financial intermediary. As we will see, this inconsistency shows the need to clarify the role of the ESCB.

2. The lack of accountability inherent in the "independent" status of the ECB. This problem also reflects the general institutional weakness of the European Union as it is designed in the Maastricht Treaty.

3. The conflicts and moral hazard problems that can be generated by the present design regarding how policies are "delegated" and "coordinated." In particular, the allocation of resources within the ESCB, the internal voting rules and the rules regarding membership (and *derogation.*)

One could extend the list to cover many more aspects that are insufficiently developed in the Treaty and Protocol, but we think the above list covers most of the difficulties that lie ahead[19]. As we said, some of these difficulties will be present in any design trying to integrate in a unique ESCB a heterogeneous Europe. It is better, however, to be explicit about these difficulties. Minor modifications of the Treaty may result in design improvements. We now briefly discuss these problems[20].

4.1 The ESCB, the Federal Reserve System, Friedman's proposal and the Real Bills Doctrine

The main reference for the ESCB has been the US Federal Reserve System (FRS). However, when the FRS was created, it was considered a central bank

[19]We have not mentioned an important one: the role of the ECB as **the lender of last resort**. If we do not elaborate on this issue it is because we think it is fairly clear and we do not have much to add: the ECB must take this role as most current central banks do (e.g., the Federal Reserve System in United States).

[20]Some of these problems have been already been pointed out by other economists. In particular, the lack of accountability of the ECB (see, for example, [19] and [46]) and the "inconsistent" delegation of the exchange rate policy (see, for example, [7]). We have not seen, however, an explicit treatment of the "real bills" problem discussed below, or a discussion of "derogation" problem, nor a joint treatment of the problems here discussed.

should have a major role in providing liquidity to the system. The founders of the FRS were clearly influenced by the real-bills doctrine, as it can be seen in its legislation. The *real-bills doctrine* calls for an active policy of open-market operations in private securities and, possibly, an active discount window to enhance financial intermediation[21]. It is precisely against this mix of 'credit policy' and 'monetary policy' that M. Friedman launched its *Program for Monetary Stability* [41]. In the *quantity theory* view, monetary policy should be isolated, as much as possible, from intermediary credit considerations.

Without mentioning it, the Maastrich treaty, endorses Friedman's view by defining that "the primary objective of the ESCB shall be to maintain price stability." ([21] art. II.2). There are, however, two problems with this endorsement. First, the complete design (as much as it is complete), even if takes central bank independence much further that has ever been done, it is not fully consistent with Friedman's prescription. For example, as Goodhart [46] and many others have pointed out, it does not define what is meant by price stability. Second, even if in the last ten years price stability has been a major concern of European monetary authorities, increasing attention has been placed on interest rates and, as it has been seen in the 1992-93 crisis, an active discount window has often been the preferred tool of the monetary (credit) authorities. Let us consider these two issues with some more detail.

It is not fair to compare Friedman's proposal [41] –a well argumented proposal, far from actual implementation– and the Maastricht Treaty –a legal document, fruit of negotiations, etc., but with a serious chance of being implemented. For Friedman, to be consistent with the main goal of price stability, one must first set an explicit rule (for example, its recommendation #1 is to set a 4% growth rate of the total currency held by the public), and second to repeal the power of the FRS to act as a financial intermediary, which "would eliminate any necessity for the System to establish discount rates or eligibility requirements" ([41] p.100). In contrast, the Treaty leaves the explicit rule unspecified and considers a task of the ECB to "conduct credit operation with credit institutions and other market participants" ([21] art. 18.1)[22].

[21]See [72] for a formalization of the real-bills doctrine.

[22]A more recent report to the European Parliament [18] explicitly states: "Because of statistical difficulties an inflation rate of up to 2% can be deemed to mean price stability." However, this is not defined as a target and, in fact, the same report states that: "At the moment, it is not possible to lay down the exact strategy and the exact means to be

There is another important difference: while Friedman considers that "open market operations and debt management are different names for the same monetary tool" ([41] p.52) and, therefore, the FRS and the Treasury should be consolidated, the Treaty stipulates that debt management and monetary policy should be completely separated and, in particular, the different institutions of the ESCB are prohibited from "direct" purchase of debt of public entities ([21] art. 21). We discuss the "debt management" problem below, let us consider the "credit problem".

The "inconsistency" of the Treaty with respect to Friedman's proposal would only be an academic curiosity if it was not because it has important policy implications. While the historical trend on central bank practices has been to concentrate on open market operations, the discount window policy is still often been used. In fact, it has been proposed that, in order to achieve price stability, it is better to use *nominal interest rates* as monetary policy instruments (see, for example, [67]). This view has been endorsed by most central banks, with the exception of the Bundesbank that –perhaps due to a more stable velocity of money– targets a monetary aggregate (see [11] and [38]). In fact, the recent documents of the community seem to endorse the view that "the announcement of an intermediate target in the form of one or more monetary aggregate by the ECB would best meet the criteria of transparency and accountability" ([18], p.5) while in the "day to day implementation of the monetary policy, the ESBC will focus in one or more short run interest rates" ([?], sect. 2.1)[23]

The divergent behavior of the prominent Bundesbank, with its success in keeping price stability in the last few years; the success of the Bank of England in bringing down the interest rates in 1992, and the increasing evidence, both from Europe and US, on the real effects of changes in nominal interest rates (see, for example, [14] and [15]), show that "focusing on interest rates" may not be perceived as simple passive monetary policy instruments. The different *feed back* that such instruments may have for different countries can

employed by the ESCB, because what the economic situation at the beginning of the third stage will be is so uncertain," and, furthermore, considers "major drawbacks" in pursuing an inflation rate target. Such eclectic views may help a compromise, but are not very informative as a guide for monetary policy.

[23]The same report leaves open the question of whether (and which) an intermediate monetary target should be followed.

be a central element of conflict within the ESCB[24]. The perception –say, by Germany– of such potential conflict may delay the creation of the ECB.

The Treaty is mute regarding how "discount window" policies should be conducted and leave for later definition other important aspects, such as the policy regarding *minimum reserves*[25]. Nevertheless, how monetary policy will be conducted must be made explicit if Stage Three has ever to take place.

With Friedman's proposal of total separation of "money" and "credit," all these differences will only be reflected in the decision of whether to join or not to join the monetary union. With the more "flexible" rule of the Maastricht treaty, these differences will be the source of every day conflicts. These, as we said, are likely to persist, but at least "the rules of the game" should be clear. That is, to which extent must the ESCB respond to unexpected liquidity problems -say, arising from a financial innovation or a "credit crunch"? and, how will this discretionary policy be decided and *accounted* for? As we will see, the problem is not only how to define a common policy for an heterogeneous Europe, conflicts and inefficiencies may arise even if countries were homogeneous. This bring us to consider the "independence" and "delegation" problems.

4.2 The "independence" of the ECB and the role of the national central banks

As we said, it is consistent with the goal of price stability to isolate the monetary authority from short run "treasury" pressures. A large literature on the *time-consistency* problem shows that the monetary authority -acting on behalf of society- will be systematically tempted to levy an inflation tax to lessen the burden of other distortionary taxes. This *ex-ante* inefficient outcome can be avoided if the monetary authority could commit to follow a pre-specified course of action -say, a given money growth rule (see, for exam-

[24]The transmission mechanism is also being affected by the increased use of derivative instruments, which implies that borrowers and lenders are no longer constrained to accept the risk embodied in the primary lending structure. It will also be affected if, as proposed (see [38]), the creation of the ESCB enhances the international arbitrage opportunities across 'national discount windows'.

[25]Art. 42 specifies that minimum reserves (art. 19.2) will be decided when the "date for stage three" is set.

ple, [66], [57]). This money rule need not be as "insensitive" as Friedman's $k\%$ growth of money supply rule, but it must be pre-specified and subject to verification.

Taken to the last consequence, the best solution to the commitment problem is to leave the execution of the monetary policy to an *expert system*. That is, a computer program designed by experts (such as, the ones that should be appointed at the Executive Board of the ECB) and previously approved -say, by the Council- who will specify to which events and how the monetary authority will react. Such a program could be revised, but the revision must be subject to the appropriate approval. To a large extent, such a program can be written. However, unforeseen circumstance may come up. Central Bank independence from political authorities and finance responsibilities is seen as a more adaptable commitment device.

4.2.1 The independence of the ECB

The status of independence of the ECB, with the long term non-renewable contracts for positions of responsibility, seems to be the "right answer" to the commitment problem. Furthermore, there is some evidence that "central bank independence" and "inflation" are negatively correlated (see, for example, [48], [26] and [27]). Therefore, it is not surprising that the independence status of the ESCB in the Maastricht treaty has had strong support from the academic community (see, for example, [7], [77]). However, economists' support is, almost by definition, non-unanimous. R. Cooper, among others, argues that "Maastricht has taken the notion of central bank independence much too far" [19][26]. In fact, the treaty does not provide instruments (other than revising the treaty) by which the Executive Board and the Council are accountable for their actions. An annual report to the Parliament does not make them accountable. An annual report (with its ex-post justifications) does not commit to a future path of action. In particular, an annual report that only has to respond to "having pursued price stability."

The problem with the independence of the ECB is not a problem of the Protocol of the ESCB, but of the Treaty itself. In particular, of the lack

[26]In fact, the consensus among lawyers and political scientists seems to be on Cooper's side, and the "exceptional" independence of the ECB is seen as another instance of the "democratic gap" of the Maastricht treaty (see, [32] for a recent lawyers' appraisal of the treaty).

of power of the European Parliament. Under a normal federation, such as Germany, an "independent" Central Bank, such as the Bundesbank, will be ultimately accountable to the parliament, who will be responsible of the pertinent legislation. Explicit legislation can make meaningful the accountability of an annual report. The revision of such legislation may be subject to special clauses (of qualified majority, timing, etc.) to avoid pre-electoral time-inconsistencies, but a design that leaves a policy unspecified, and calls for a treaty revision if the parliament, or the Council, is not satisfied, is time-inconsistent.

4.2.2 The ESCB: a federal organization in a confederate state

The ESCB, as any organization involving multiple government bodies, has to balance the *representative* aspect of being an intergovernmental organization and the *efficient* aspect of being an organization with a supranational task. There is a long historical debate on whether the European Union should be a federation or a confederation. We do not want enter this debate here, we just take as a fact that the Maastricht treaty, by compromising among both structures, defines a union that will be "operating as a federation but working with the institutions of a confederation"([8], p.24). That is, since the Single European Act, the EC is operating as a federation in as much as countries have lost their veto power. This aspect is strengthened by the Maastricht treaty, where majority rule (possibly qualified) is the general decision rule, and, even more, with the possible expansion of the community with the corresponding practical impossibility of having country delegates in all committees. In other words, the community, as long as it develops, is evolving into a federation[27].

The ESCB fits much better within a federal state. For example, as we have argued, it could be made accountable to a more powerful Parliament, without loosing independence, in this case, the Governing Council could be

[27]The confederative structure of the EMU gives rise to the principle of *co-decision* (between the Council and the Parliament on one hand, and the Commission on the other), articulated in one of the most baroque pieces of legislation in the history of constitutional law: [20], art. 189c. It is difficult to think that such a decision procedure will ever be operative (Article 189c *must be* one of the "pieces to be revised" in the 1996 conference!). Fortunately, *thanks to its independence*, the ESCB is not directly affected by these cumbersome, co-decision, procedures.

less of a Council of "representatives", without jeopardizing its authority. That is, the ESCB suffers from a problem of 'external inconsistency' due, in part, to the hybrid design of the community and, in part, to the fact that, as long as fiscal and other policies are decided and implemented at the national level, citizens' delegation to the European institutions will maintain a strong national identity (reinforcing cultural differences). This 'external inconsistency' complicates the accountability problem since, for example, a parliament of 'national delegates' is not an adequate institution to supervise the work of the ESCB. Nevertheless, this is probably a better alternative than the current one.

4.2.3 The subsidiarity principle within the ESCB

There is an "internal inconsistency," associated with the "external inconsistency," that may be a permanent source of potential conflicts. It is reflected in the statement that "the implementation of the common monetary policy must take place in accordance with the principle of subsidiarity, with the national central banks taking as full a role as possible." ([18], A. p. 5). As in other aspects of the Treaty, what the subsidiarity system means –within the ESCB– is not clear. That is, it is not clear what the role of the Central Banks will be. If a Central Bank is a passive local window of the ECB, a country may as well decide to close it if costly to operate. If, on the contrary it is an active window (subject to the restraints that capital mobility imposes), then it is not clear that the treaty (art. 14.3) assigns the ECB with enough power over central banks as to prevent unwanted competition or deviations from central policies, or that powerful national parliaments and governments will not try to influence their national central banks[28].

While it has not been decided, the current trend seems to be that, with respect to *open market operations*, "decisions on the provision of liquidity and the condition for providing it could come under the ECB, but implementation

[28]In fact, the initial attempts to create a Federal Reserve System in United States and the final evolution of the Federal Reserve Board, is a good example of how a system based on regional representation has finally evolved into a system where regional representation has ceased to be important. It is not clear, however, that such evolution would have been possible in a confederate state. As a compromise solution, von Hagen and Süppel [78] have suggested a system where the Governing Council meets much less frequently than the Executive Board. One should add to proposals of this type that the Executive Board should have enough power over national central banks.

would be left to national central banks" ([18], B p. 6). However, it remains an open question "whether one or more standing bank-refinancing facilities would be desirable. In such cases, national central banks and the ECB would provide liquidity at a fixed rate as and when requested by banks." ([18], B p. 7). That is, the more detailed design seems to be evolving towards a system of "passive national windows" and "delegated national open market operators." This may be attractive (outweigh its operating costs) since even in a world of integrated capital markets, credit (and liquidity) markets –which take into account reputation (and local shocks), etc.– have an important local component.

Two things are, however, not clear: *i)* that the optimal decentralized configuration would be the actual one of national central banks (why not regional?)[29], and *ii)* that, the national central banks, directly –taking advantage of the imperfect monitoring and weak political power of the ECB– or indirectly –through their "national representatives" in the Council– will not *feed back* their national concerns as to distort the common monetary policy. This last point bring us to consider in more detail the problem of delegation within the ESCB.

4.3 Delegation and policy coordination within the ESCB

As we have said, a successful delegation requires accountability. However, delegation -and accountability- becomes increasingly difficult when different "delegated authorities" cannot act independently or, alternatively, when they may easily perform tasks for which have not been delegated. In the Maastricht treaty, the first type of problem arises regarding the delegation of the exchange rate policy; the second, with the possible indirect debt management of the monetary authority.

4.3.1 The MU exchange policy

One of the rationalizations of the MU is to improve competitiveness of Europe in the world through a coordinated policy. The exchange rate policy of the community -say, *vis a vis* US and Japan- will affect its relative competitive position. Perhaps because of this importance, the treaty defines that

[29]The principle of "continuity" ([18], B p. 6) seems to be the only justification.

exchange rate policy will be decided directly by the Council and not by the "independent" ECB (who will be consulted). Unfortunately, different policies (fiscal policy, money supply, interest rates and exchange rates) cannot be chosen independently[30]. This inconsistency is another source of potential conflicts, but it is not unique to the ESCB design. Independent central banks (often following an exchange rate target) usually depend on their national governments for decisions concerning exchange rate policies (see, [38]). As in the 'national' case, independence must be constrained by the need to coordinate non-independent policies. A clean solution would be to delegate exchange rate policy to the ECB and enhance its accountability. This, however, is not the choice that emerges from the Treaty and –day to day– forms of coordination between the Council and the ECB will have to be found to design and implement exchange rate policies.

4.3.2 The "unpleasant arithmetic" of policy coordination, seignorage, and debt management.

As we have seen, in contrast with Friedman's proposal [41], the treaty calls for independence from *Treasury* pressures. This takes several specific forms: fiscal polices are decided at the national level; the union has a very marginal budget and no power to levy taxes (it can only keep a fraction of "national" indirect taxes); the ESCB cannot *directly* trade government bonds (art. 21 [21]). On the other hand, (seignorage) profits (and losses) should be distributed between "the general reserve fund" and the "shareholders of the ECB" (art. 33 [21]).

This is another piece of engineering ingenuity. Not dealing directly with "public debt instruments" does not prevent the ESCB (the national central banks, the national delegates in the Governing Council, etc.) from favoring the purchase of such instruments (through the friendly private banking system, for example)[31]. Of course, the more important a country's debt is (and the risk premium paid on it!) the more the pressure that can be felt on the corresponding central bank and "delegates." In particular, as Sargent and Wallace [73] have pointed out , fiscal and monetary policies cannot be

[30]This problem was already noticed by economists when the first drafts of the treaty circulated (see, for example, [7]).

[31]Again, this has been noticed by many economist familiar with "moral hazard" problems.

treated as independent and certain debt paths must result in their monetarization. This is true even if they are "delegated" to independent –but not perfectly committed– authorities. Correspondingly, lowering the level of debt can ease this pressure. The Maastricht convergence criteria, and the treaty *recommendations* about fiscal policy in the monetary union, point in this direction. However, as we discuss below, there may be alternative –possibly, better– commitment technologies.

In a monetary union, the links between (decentralized) fiscal and (centralized) monetary decisions go beyond the standard "unpleasant arithmetic" of the pressure to monetarize large debts. As long as there are profits (seignorage) and these are returned to the "shareholders of the ECB," there is an extra source for distortions. The simplest case is when, as it happens now, shares in the ECB do not match the relative holdings of currency. Then, for example, a country with more than average shares and below the average money holdings may want to vote for higher inflation (even if as a separate country had an impeccable record of price stability) and, this way, enlarge its fiscal base with the residents of other countries paying the inflation tax. But even if all countries are equal (share the same preferences, etc.) and have the same shares, the distortion is still present. It is in the interest of a country to have their member in the Governing Council of the ECB voting for higher inflation, while the local tax authority tries to reduce money holdings. At equilibrium all countries do the same and no country is effectively shifting the tax burden to other countries. Nevertheless, fiscal policy is distorted[32].

In summary, in a monetary union (*a la* Maastricht), there is a double "unpleasant arithmetic" on the interdependence between fiscal and monetary policy that must be taken into account. The possibility of having fiscal deficits may feed back as a pressure to increase inflation. The possibility of having a community inflation tax may feed back as a possible distortion on fiscal policy.

4.3.3 The Maastricht discontinuity

The "low debts and deficits" and "low inflation" "principles" of the Maastricht treaty go in the direction of avoiding fiscal pressures on monetary

[32]Here we refer to an optimal fiscal policy which takes into account marginal conditions. Of course, one needs an explicit model to properly discuss these issues. The above result is formally developed in [57]).

policy. However, while the criteria are somewhat clear as convergence criteria, they are very ambiguous as operating rules of the MU. Somehow, there is the implicit idea that, if countries have behaved before the formation of the union, they will keep doing so within the union. Inertia and reputation are certainly important elements of policy formation, but what should be clear is that under a union regime the system of incentives changes. Rather than 'hope for the best' it would be better to specify mechanisms that, as much as possible, generate the right incentives. A set of mechanisms is to pre set strict *rules*, such as Friedman's k per cent rule, balanced budgets amendments, etc. another is to set *delegation* mechanisms which create the right incentives. This bring us to discuss in some more detail the organizational form of the ESCB, its voting procedures and an alternative proposal.

4.3.4 Voting procedures within the ESCB

Within the ESCB there are three alternative decision procedures. The first is the 'delegation' to national central banks following the *subsidiarity* principle. As we have seen, the tendency is not to delegate decisions but only the implementation of policies decided by the ECB (although the current level of ambiguity does not preclude other options). The second is the simple majority of the members the General Council of the ECB (President, Vice-President and the Governors of the national central banks; [21] 45.2), which parallels the procedures of the Council[33]. Monetary policy decisions of the ECB should be adopted according to this procedure. The third is the 'shareholders majority' of certain ECB (Governing Council) decisions ([21] 10.3). That is, a country's vote is weighted by its ECB shares[34]. Decisions concerning allocation of resources (ECB capital, monetary income of national central banks, seignorage and losses of the ECB[35]) should be adopted according to this procedure.

There is a substantial correction from the 'one country one vote' rule of ordinary policy decisions to the 'shareholders vote' of allocation decisions. Sim-

[33]The General Council is a subset of the Governing Council, which also includes the other four members of the Executive Board. According to [21] 10.2 for most decisions the Governing Council shall act by simple majority.

[34]ECB shares are assigned according to the relative *importance* of a country, and *importance* is measured, *fifty-fifty*, in terms of population and GDP (art. 29 [21]).

[35]Art. 10.3, 28,29,30,32,33 and 51 of the Protocol [21].

ple majority rule do not reflect the different importance of countries within the community and, with its potential expansions, is unlikely to be a stable mechanism (or weaken the role of the institution as it has happened with ONU, UNESCO, etc.). While a shareholder rule tends to reflect the relative importance of countries, there is no political-economic basis for the current sharing rule. Theoretical models of cooperative agreements will suggest that shares should be related to a country's contribution to the community and to the gains -for this country- in joining the community. This gains and losses depend on the activity of the union, and may be poorly represented by measures of population and GDP size. The policy followed by the union will affect the value of the union to a country, however if shares where to depend on the policy there will be a *feed back* mechanism that can create many distortions. Shares can not change with changes of policies. But even fixed policies will affect a country's evaluation of the community. This is the case, for example, if seignorage is an important source of revenue in the community[36]. As we have said, a *raison d'etre* for price stability is to avoid strategic behavior. Unfortunately, if there is no explicit rule binding the ECB, the inflation level will be endogenous to the Governing Council. Even if we *assume* that the objective of price stability will be followed, we think that the actual voting and allocation procedures should be revised.

4.3.5 The *derogation* status

The question of the 'power of one vote' arises, for example, when the "derogation" principle is taken into account. According to this principle, a country of the community that does not satisfy the convergence criteria can be in a "purgatory" state. In practice, this should mean that the country is not in the union although he would like to be part (if the country has no interest in the union, then his non presence should not be qualified). Other countries may prevent its entry either because the country: *i)* presents serious instability problems that could contaminate; *ii)* does not satisfy some nominal convergence criteria, and/or *iii)* does not satisfy a budget management criteria. The first problem is strictly political and, presumably countries of the community are not subject to serious instability; the second problem, to

[36]For example, Casella [12] uses a model where seignorage is the only source of revenue (and monetary policies are *strategic complements*) to show that small countries must be given more than proportional shares in order to keep them in the community.

a large extent, disappears once the country is in the monetary union; the third problem is the one that creates a problem: accepting a highly indebted country may be a form of giving voting power to a country that may want to follow inflationary policies.

The Treaty's way to deal with the problem of "avoiding that the fiscal problems of a country will not translate into monetary weakness of the community" is, on one hand, radical and, on the other, inconsistent. It is radical, since by keeping a country in a 'derogation' status may further weaken the position of this country (e.g., increase the risk premium on its debt). It is inconsistent, since once the country is admitted to the Monetary Union there are no clear punishments to prevent the country from falling into new debt problems.

The recent experience of Mexico and the NAFTA is an example to keep in mind. First, it shows that, once market integration is pursued, contamination is spread even without a monetary union. Second, it shows how a country may "force the situation" in the transitional process. In the case of Mexico, by not devaluating before signing the NAFTA agreement; in the potential case of the European Monetary Union by –for example– postponing necessary public expenditures or levying special temporary taxes as to 'satisfy the Maastricht criteria'.

In summary, we do not think that current decision rules are appropriate mechanism neither for the operation ECB nor for the transition to its constitution and possible amplification. This takes us to consider other alternatives.

5 Alternative voting and allocation procedures within the ECB

In any committee with delegates, such as the General Council of the ECB, we can consider three different hypothesis regarding how delegates vote. One is that delegates "behave as professionals" and make the decisions that will guarantee the success of the task that have been assigned. In the ECB context this corresponds to the view that independent central bankers will professionally pursue price stability. In fact, central bankers' independence can be seen as a form of "strategic delegation" to achieve the necessary degree of commit-

ment (see, for example, [69]). It should be clear from our previous discussion, that in the ECB context this view -endorsed by the Treaty- is fairly naïve. A second hypothesis is that delegates behave as country representatives, a possibly more realistic hypothesis. In this case, however, different countries are likely to have different preferences for monetary policies and will vote according to their preferences. There is also a third case to consider which is that of "perverse strategic delegation" in which all countries send the representative who are more likely "to bring the bacon home", for example the most pro-inflation if a seignorage is to be returned home (see, for example, [13]).

A good design must take into account of this possible problem of "perverse strategic delegation" in the allocation procedure. The current system of shareholders' vote for the allocation of seignorage does not preclude such distortions. There is, however, a relatively simple solution: *to transfer all the net benefits of the ECB to the general reserve fund*[37]. That is, the shareholders of the ECB must be shareholders of a firm which never distributes dividends and, if anything, may be asked for help in case of losses[38]. It should be noticed that this does not completely solve the problem of "strategic behavior" since the general reserve fund will have to be managed by the ECB, but it certainly reduces the possibility that a "country representative" will distort the policy of the Governing Council in an attempt to manipulate the ECB policy. In fact, any amount of seignorage above a certain limit could be transferred to some other instance of the community –say, for the 'foreign aid' policy of the community.

This simple reform will not preclude, however, that "country representatives" vote according to their country preferences. After all, even they have an 'independent status', they are selected by their country of origin and their future career may be at home more than in the community. It is not obvious how to represent a country's preferences on monetary policy, presumably they are shaped by those economic indicators that may be affected by such policies. According to this view, we assume that a country's preferences on monetary policy are determined by its relative position in some economic

[37]This requires to modify the current Article 33.1 of the Protocol [21] which limits such transfer to no more than 20%.

[38]Article 33.2 [21], concerning losses, should not be changed or, if modified, some proviso should be made for the –unlikely– case that the ECB has losses that can not be covered with the general reserve fund.

indicators, such as debt/GDP. Then given any configuration of the ECB, we can characterize the "median preferences." That is, we can construct a 'potential median delegate' as an approximation to the preferences that should define the monetary policy in the case that such policy is chosen by 'majority voting' and delegates follow their country's preferences[39].

In Table 8 we show the 'median economic indicators' for different ECB arrangements: EC 15, EC 12, the current 9 ERM countries and the 'core 6' countries (Belgium, Denmark, France, Germany, Luxemburg and the Netherlands). We consider the 1994 values of Deficit/GDP, Debt/GDP, Inflation, Long Term Interest Rates and Unemployment as possible indicators shaping a country's preferences on monetary policy[40]. We first consider the current rule of 'one country, one vote'[41]. It should be noticed that the resulting 'median values' are fairly similar. For example, comparing the two extreme arrangements, CORE 6 and EC 15, we see that only the deficit and the interest rate indicators are slightly higher with the EC 15 than with the CORE 6, while the debt indicator, in fact, is lower. There is, however, not clear indicator that our 'potential median country' corresponds to any particular country (although Belgium appears repeatedly).

Since 'one country one vote' rules do not take into account the different importance of countries we consider applying the Maastricht's shares rules

[39]Voting mechanism which are not subject to manipulation ("strategy-proof") are of the median voter type, even in multiple dimensions (see [5]). We build on this idea here. Our dimensions are characteristics of the countries. That is, we consider as if countries first were to decide which values of certain indicators (unemployment, debt, etc.) had to be taken into account in order to choose on monetary policy -say, growth of money supply. With many dimensions (indicators) affecting the choice of monetary policy, the choice of a 'potential median delegate', constructed out of all the 'median' indicators, is not equivalent to the 'median' choice of the delegates. However, if the 'potential median delegate' corresponds to few countries (or one) our procedure provides a reasonable (exact) approximation to the 'median' choice.

[40]Notice that we do not include indicators of differences on the *monetary transmission mechanism* or the *fiscal business cycles*, differences that we have identified as potential sources of conflict. We have not included such indices for lack of data.

[41]In fact, Article 10 [21] prescribes simple majority voting for the Governing Council which includes as members the Governors of the national central banks and the *six members* of the Executive Board. Again, the members of the Executive Board can act as "professionals" or take into account the preferences of their countries of origin. How they vote will affect our characterization of the 'potential median voter,' but at this point it is more clear to only account for country votes.

(see, Table 7) as defining the shareholders majority within the ECB. That is, as if the weights affecting now allocation decisions (Art. 10.3) were always in place[42]. As it can be seen, not only the median values are more uniform across different ECB arrangements but also large countries are obviously more likely to represent the median choices. For example, Germany appears as the country characterizing the median level of debt and inflation.

As we have said before, one can design voting mechanisms that prevent countries with fiscal debility from affecting the community monetary policy. Such mechanisms have the double advantage of eliminating the 'derogation' status and of designing a preventive mechanism for the future operation of the ECB. Along these lines we also consider in Table 8 the following simple exercise: the characterization of the 'potential median voter' when the simple majority rule is applied with 'punishments'. In particular, we consider two possible punishments: first to exclude from voting decisions those countries with more than 100% Debt/GDP ratio, and second to exclude those countries with more than 6% Deficit/GDP ratio (of course, alternative punishments may be considered). We have chosen numbers much larger than the Maastricht convergence criteria to illustrate the impact of such preventive measures. Notice, for example, than when the deficit punishment is applied to the EC 15 (which is the double than the Maastricht 3%!) the resulting median values correspond to the values obtained with the CORE 6, with the exception of the debt indicator which is now lower.

In summary, three lessons can be learned from this exercise of considering the "potential median voter" of the ECB: *i)* even with current rules there is not a substantial difference from considering a reduced CORE 6 Monetary Union or a wide EC 15; *ii)* taking explicit account of the relative weight of different countries implies that different ECB configurations are likely to be characterized by the same median countries, which may also help possible future expansions, *iii)* relatively weak fiscal criteria for preventing a country from vote on monetary policy may have an important impact in the final policy choice. These three lessons point out in one direction: there does not seem to be much justification for considering a small monetary union, such

[42]Following the previous footnote, one can see that the seats on the Executive Board could be assigned to correct the 'one country one vote' rule in favor of the 'most important countries'. This, which is a standard procedure within the community, has the disadvantage of not being *ex ante* explicit and of distorting the supposedly 'professional' character of the Executive Board.

as the CORE 6.

6 Conclusion: a move towards the MU with a revised treaty.

As we have seen in Section 2 important differences between European countries are likely to persist well into the XXIst Century. Some of them call for autonomous monetary policies. In Section 3 we supported the view that with integrated capital markets the only stable exchange rate systems are: floating exchange rates (and other forms of increased currency substitutability) or a monetary union. We have also argued that to isolate *money* from financial fluctuations (in particular from fluctuations triggered by national fiscal and political events) the best choice was to establish a monetary union. Furthermore,we have identified the differences that, we think, can be more destabilizing for a currency union and can be a reason for a particular country not to join the MU: public debts and fiscal diversity; the effect on public finances of business cycle differences; the heterogeneity of the monetary transmission mechanism, and, finally, the differences in position with respect to the rest of the world economy.

More detailed studies of the magnitude of these differences are in order[43]. In a first approximation, however, in the EC12 the only countries that present idiosyncrasies that may prevent them from joining a MU at this point are: Greece (for many indicators, in particular, its high debt and no clear indication of its attaining the necessary fiscal discipline to finance it through taxes; although it is making an effort to reduce deficits) and UK (for being the country that may gain more from monetary autonomy; although in other dimensions ranks well within a MU). Other countries with high debts, such as Ireland, Belgium and Italy, have had positive primary surpluses in the last years, and if they consolidate their fiscal policies should not present special inflationary pressures (in this regard, Ireland seems to have passed the test, while Italy has not reached the necessary political stability as to consolidate the recent reforms introduced by the Dini government). Spain, is a non-core

[43]In particular, of the transmission mechanism of monetary policy (see, [3] for a recent study for Spain) and of the effects on public finances of business cycle differences ([62] provides a first approximation).

country that does not present serious divergence problems, except that current primary deficits raise questions about mid-term fiscal plans. Similarly happens with Portugal that, although in the past has followed a policy of competitive devaluations, it is now on a path to convergence in its macroeconomic indicators. Finally, Denmark and Germany are two "core" countries that having relatively more commercial links with the outside community, than the other EC12 countries, may have different preferences on the conduct of the external policy of the community. This is reinforced, in the case of Germany, by the capital inflows generated by the strength of the DM after Mexico's end of 1994 devaluation crisis.

Whether these differences will indefinitely postpone the MU, or whether there will be an European Monetary Union by the end of the Century depends, to a large extent, on the final design of the MU (ECB, ESCB, etc.) and the political willingness to implement such design. As we have seen in Section 4, it is unlikely that the MU will take place without some basic changes in the current design, since, with the current design, some unnecessary conflicts may arise.

We have identified two main types of inconsistency: external and internal. The external inconsistency is due to the fact that the design of the ESCB will fit better in a federal structure than in the proposed confederate structure. Within a federal structure, the ECB could be made accountable to the parliamentary institutions without losing its independence. However, it may not be politically feasible to revise the treaty to such an extent It is not a question of *political opportunism*, it is more that, as long as fiscal policy remains a "national policy," and the community does not extend its responsibilities in other areas (for example, defense)," political delegation" is likely to have a strong national character irrespective of the exact institutional form (parties' main concern in front of the community is to win over its national constituencies)[44]. The internal inconsistency is due to the application of the principle of subsidiarity within the ESCB. Decentralized policy implementation can be a source of coordination problems if the "liquidity of the system" is one of the policy concerns.

To overcome these inconsistencies with respect to the design of the ESCB we propose that:

[44]Regarding the global constitutional design, the proposed principle of *co-decision* (Art. 189c [20]) should be revised if the community has ever to operate effectively.

1. The ECB is made *accountable* to the community: if not to the European Parliament, at least to the Commission. That is, these institutions should be ultimately responsible for the legislation of the ESCB (According to the treaty, a revision of the treaty itself is required to change such legislation[45]).

2. The ECB should operate under explicit rules regarding price stability, interest rates and exchange rate policies[46]. In particular, deviations from past rules should result in some form of "punishment" to the Executive Board of the ECB, or else such "justified deviations" should be incorporated into the operating rules.

3. Either "national representation" (through the Governors of the Central Banks) in the Governing Council of the ECB is in a minority position, or operating procedures are revised as to guarantee a dominant role of the Executive Board within the Governing Council.

4. In the election of the Executive Board and, with respect to the decisions of the General Council (as well as the decision of the Governing Council covered by Art. 10.3), simple majority should be changed to a system of shareholders majority according to ECB shares (with no shares for the President and Vice-President of the ECB).

5. The General Council shall be informed by the President of the ECB of decisions of the Governing Council[47] and, if deemed appropriate, communicate (possibly, by urgency procedure) to the corresponding decision-making body (see (1) above) of the activities of the Governing Council.

6. ECB capital shares should be determined, and revised, not only as a function of GDP (and population), but should also be appropriately discounted by the level of the country's debt and/or deficit.

7. The Governing Council of the ECB must be responsible for the exchange rate policy of the ECB.

[45]This point has been raised previously by R. Cooper [19].
[46]This point has been raised by many economists (see, for example, [46]).
[47]This first part reproduces Art. 47.4.

8. The ESCB should be a "lender of the last resort."[48]

9. Seignorage gains should not be returned to the member countries, but should be transferred 100% to the general reserve fund. If the ESCB were to incur in losses larger than the existing general reserve fund, ECB shareholders will contribute in proportion to their paid-up shares.

10. The operating procedures for open market and credit operations and operations with foreign reserves by national central banks (arts. 18.2 and 31.3 of the protocol) must be pre-specified[49].

11. Similarly, the "complementary legislation" concerning *minimum reserves* and other operating procedures (art. 42 of the protocol) must be pre-specified (before "the decision on the date for the beginning of the third stage").

12. The principle of "derogation" should be eliminated.

Note that our proposals attempt to make more consistent the current blueprint for the ESCB[50]. First, it is more consistent with a "central bank" independence principle to define its *accountability* and then reduce the internal "regional" representation. Second, some internal inconsistencies must be fixed. In particular, in those places where countries' representation is appropriate it is better to have it in the form of shareholder's majority. Third, some operating procedures must be defined before there is commitment to a "date for Stage Three" otherwise this stage may never happen. Fourth, changing shareholders rights may smooth the transition to MU and future integrations, making it then possible to eliminate the "derogation" status (which without ERM is already fairly meaningless).

It remains then to specify *the transition to MU*. We share the view, expressed by de Grauwe [29] and Fitoussi [40], among others, that the best is to

[48]These last two points have also been raised by many economist –in particular [7].

[49]The "quantity theory" position consistent with the stable price principle calls for closing such operations by Central Banks. We do not favor this position, at this point, since national central banks can act as useful domestic intermediary which will ease the transition to MU. However, as we argued in Section 5, until these operating procedures are specified it will not be clear what the ESCB is.

[50]Of course, other possibilities can also be considered along the same lines. Furthermore, some of the above proposals would have to be more carefully drafted in order to make them operational.

"jump to MU". In contrast with de Grauwe, however, we do not characterize the MU as a club in which anyone can become a member. In our proposal, membership can only be proposed when there are no insolvency problems and it may be qualified by the rights within the club. Our proposal implies a reassessment of the Maastricht convergence criteria and the ERM. In some sense, it is not a new reassessment since the recent exchange rate experience has shown first that the Maastricht criteria are unlikely to be the "final test" applied to all countries with the same rigor[51], and second that the ERM cannot be the final anchor for fixing exchange rates. We now briefly discuss these points.

An interesting feature of the Maastricht treaty is its *ex-ante* specification of "rules of membership." This, in principle, seems an appropriate approach. Rules are specified and, then, whoever satisfies these rules can be a member of the "club". However, this non-discrimination procedure was not used in the community (a country has to be admitted first to the community), nor are the rules very clear. For example, the debt/deficit convergence criteria have several escape clauses, which are subject to arbitration. In fact, in a community that has been operating under the principles of "renegotiation and arbitration," it is not credible that the convergence criteria will be applied very strictly (otherwise the Maastricht calendar will not be followed). The widening of the ERM bands is further proof of this renegotiation principle. We think, it is better to be explicit about it.

With the modification of the share rules, proposed above, the debt/deficit criteria are not needed, unless a country shows signs of having unsustainable debts (when the future inflation tax is excluded). Setting a fixed number for this is not to recognize that what is sustainable for one country may not be for another. A commission of experts should evaluate if there are severe debts problems and the country's authorities must present a viability plan (as they already do). The price criteria are fairly irrelevant once the MU is in place. For a country with high inflation there should also be a viability plan under a change to a "price stability" regime. In fact, important divergences on inflation or long-term interest rates, most likely reflect underlying fiscal problems. It is better to evaluate them directly and to have the possibility to make an offer to "join without votes."

[51] For example, the 1995 devaluations have had little relation with the Maastricht indicators (compare Tables 3 and 6).

The ERM bands were, in part, designed as a means of smoothly arriving at well defined fixed rates. Now, in practice without ERM, a rule for defining final exchange rates must be decided. There is a classical one: *negotiation*. Which means that in the original formation of the community, negotiation should be among the possible countries -say, EC15 or some suitable subgroup. After that, between the member countries and any possible candidate[52].

With these principles, and an appropriate revision to the treaty a "jump to MU" is possible in the immediate future, and we consider it desirable. This does not mean that it will happen this way, what should be the policy to follow in the *interim*?. Our list of "important divergences" suggests that a country should evaluate them (for example, its own "transmission mechanism") to determine its advantage of joining MU and, if the are advantages, the country should try to accelerate convergence in the dimensions that may constitute potential handicaps within MU (for example, move towards long-term financing).

In the *interim*, the current *floating exchange* system should prevail (without even considering the wide bands). Fluctuations of exchange rates are likely to occur, in particular, in response to domestic political or fiscal events, and to international financial events. A country should follow a policy of portfolio (assets and liabilities) currency diversification (and hedging). In particular, debt denominations should be diversified.

The "jump to MU" can be done with different subgroup of countries. As we have seen, this will not only preclude the smooth functioning of the single European market, but it is unnecessary. Even if countries vote according to their preferences, even with current rules there is not a substantial difference in the outcome when considering different MU sizes (within EC 15). Furthermore, alternative voting mechanisms, as the ones here proposed, may guarantee that the monetary policies of a EC 15 or a CORE 6 unions should be practically the same. Therefore, it does not seem reasonable to exclude EC countries willing to participate.

The calendar of the Maastricht treaty keeps its own countdown. We have made some suggestions to revise the treaty with the aim that, as the

[52]Negotiation of a number -say, the exchange rate with the ECU- may be difficult. A possible form for such a negotiation can be as follows: through a process of negotiation, arrive to an acceptable *range* of exchange rates, then use the observed distribution of exchange rates -say, for the last two years- within the specified range and use this distribution to obtain (extract) the final exchange rate.

Maastricht calendar foresees, MU will not be delayed.

Appendix: Convergence: the facts

This Appendix examines the convergence of European countries according to a number of indicators. Our aim is to discuss convergence in a broad (multidimensional) framework in order to assess whether any particular aspect is crucial for the transition to Monetary Union.

We emphasize aspects in which convergence has been reached and aspects where there are notable differences in (at least) some countries. We divide the EC countries into three groups where the countries included present a high degree of similarity, namely, core countries, catching up countries and, separately, Italy and the UK (which are no longer in the ERM and seem very idiosyncratic). A fourth group, the newcomers (Sweden, Austria and Finland) is also added, when data are available, to evaluate convergence at EC15 level.

A.1. Real convergence: GDP per head

An overall process of income convergence, measured in terms of GDP per capita at current PPPs[53], prevailed in the '60s and the first half of the '70s (cf. Graph 1), but has been stalling since 1975, in spite of greater integration amongst European countries. The existing (and persisting) divergences in per capita income are fairly large. Setting the GDP of Europe of twelve to 100 (including East Germany would lower the index to 97.9 for 1994), in 1994, GDP per capita measured by PPPs of the four poorest countries (Greece, Portugal, Ireland and Spain) is between 48,5 and 75,5 of the Community average. Furthermore, the same four countries are below 100 for the whole period[54].

The same pattern is reproduced at regional level, too. All the regions of Greece and Ireland and most regions of Portugal have a GDP per capita below 75% (cf. Table 1). In Italy and Germany the dispersion between regions is particularly high (around 25%): Hamburg, for instance, has a GDP per capita 2.2 times higher than the community average, while the

[53]The PPP standard allows a comparison of GDP per head because it takes into account the price level in each member country and excludes short term exchange rate fluctuations.

[54]UK is below the Community average in the '80s, with a minimum of 94,9 in 1991 and is the only country with a drastic reduction of relative GDP per capita in the period considered.

East Germany lander are experiencing serious development problems (GDP is below 100); In Italy and Spain highly dynamic regions coexist with regions experiencing difficulties. Calabria, with a GDP per capita of 56.7 coexists with Lombardia, 134.4 and Madrid (96.6) and the Baleares (102.3) with Extremadura (50.5) and Galicia (59). It should be noted, however, that for some countries, in particular Spain, there is a much higher convergence if we use GDP per employee rather than GDP per capita

European economies seem however to have converged more in their structure in the last 20 years than was suggested by the comparisons of GDP per capita. To have a complete picture let us look at other aspects of convergence in a more detailed way.

Productive structures and employment patterns

The level of unemployment is very different in different European countries (cf. Table A1). However, to a large extent, differences of employment correspond to differences in the employment structure in the mid-seventies. Furthermore, almost all EC countries witnessed a similar profile over time, with a peak of unemployment in 1985, a declining trend till 1990 and a new increase after 1990[55]. This path and the relative differences can have strong consequences for government current expenditure (e.g. increase of social transfers) and for Monetary Union itself. If we consider value added and employment by sector, however, we can see (cf Table A1) that there is a substantial convergence amongst European countries in the period 1975-1990, with a shift out of agriculture into the service sector for the countries of the mediterranean area, along the lines of what had happened in the rest of Europe in the previous decades. In Spain, for instance agriculture employment goes from 21.5% of total employment in 1976 (the EC9 average was 8.4%) to 10.1 % in 1992 (EC10 average 5.4 and EC12 average 6.4).

The Public Sector

The State is a major economic agent in European economies: Graph 3 shows that in 1994 its weight ranges from 42.2% of GDP in Ireland to 62.7% of GDP in Denmark, with a fairly low dispersion (EC12 average is 51.1%,

[55]See [59] for such an account of European unemployment patterns.

EC10 average 51.2%) and that its role has been increasing almost everywhere over the period 1965-94 (notable exceptions are the UK and Ireland). Furthermore, total expenditures of general government are much higher in Europe than in the US (37.2% in 1994) and Japan (32% in 1992).

The main differences in expenditure between EC12 countries correspond to: *i)* the development of social protection indicators (namely transfers to households), and *ii)* the different sizes of debt, which translate into different amount of interest payments.

As far as the development of social protection indicators is concerned, in turn, two main features can be mentioned. First, social protection expenditure as percentage of GDP increased substantially in most European countries up to the mid-70s and has then tended to stabilize around the level achieved (cf. Graph A1 and Table A3). Notable exceptions are Greece, Portugal and Spain, where the increase (which had, however, started much later) has continued up to the end of the 80s, with a catching up of other European economies. It can be noted that there was an increase in social protection expenditure in the Netherland, too, due to important reforms at the end of the 80s. .

Second, despite the convergence, there are significant differences in the evolution of these expenditures over time. On average for EC 12, social security expenditures were about 17% of GDP in 1970, reaching 23% in 1980 and 26% in 1992. However, the Netherlands, the top country for social security, still has a level of social protection 13 points higher than Portugal, the bottom country (down from 17.1 percentage points in 1970).

As far as the dangers of an escalating deficit/interest burden spiral is concerned, it is interesting to look at the developments in primary balances (i.e. excluding interest payments), which provide evidence on the determination of governments to reduce their deficits. The main issue raised in this context is whether a country with a primary surplus but with a high percentage of interest payments can have sounder fundamentals than a country in primary deficit. Most member States with large budgetary disequilibria actually have attained primary surpluses, clearly indicating that measures have been taken to consolidate in those areas where room for manoevre existed. Such efforts have been particularly marked in Italy (where the primary balance has improved by 3.3 percentage points of GDP in the period 1990-93), Belgium and Ireland. However, the primary surpluses have not been enough to reduce the government debt level. In particular, the combination of a high level of gov-

ernment debt and high interest rates has led to increasing interest payments. Table A3 shows that interest payments as percentage of GDP have increased everywhere, though with huge differences amongst different countries. In the EC as a whole the interest payments represents more than 5.6% of GDP, with peaks of 12.7% for Greece , 11.5% for Italy and 9.6% for Belgium, in 1993.

On the revenue side, it can be noted that General government total tax revenue as a percentage of GDP (Table A3) is increasing over time and converges strongly in the last twenty years. However, if we consider the composition of total receipts, we can point to differences. Notwithstanding the overall convergence, in 1992, taxes on income have a weight varying from 17.3% of total taxes for France to 39.1% for Italy, taxes on goods and services range from 26% of Italy, Germany and France to 46% of Greece and social securities contributions span from 15.3% of Ireland to almost 45% of France (cf Graphs A2a and A2b). More specifically, the relative share of taxes on income is very low in France (17.3% of total taxation and 7.6% of GDP in 1992) and in Greece (18.2% and 7.4% respectively) and above average in Italy (39.1 and 16.6, respectively) and the UK (36.1 and 12.7), the EC 12 average being 14.1% of GDP and 33.6% of total taxation. In Italy and Spain, furthermore, indirect taxes still represent less than 30% of total receipts (and slightly more than 10% of GDP), while in Ireland, Greece and Portugal they represent between 40 and 46% of total taxes (14-18.5% of GDP). It may be worth noting that in the UK, the proportion of indirect taxes with respect to total taxes has increased substantially in the last 3 years (from 30.5% to 34.4% of total tax and from 11.2% to 12.1% of GDP) without apparently affecting the inflation performance.

The different composition of receipts is due to different ways of financing social securities as well as different preferences in tax structure[56] and provide hints on how increases in receipts could be implemented (see, for example [37]).

The fluctuations in government receipts and spending depend on a num-

[56]The creation of a single integrated market, free of restrictions on the movements of goods requires that products taxes are closely coordinated. To that end, in the '80s, Greece, Portugal and Spain introduced the Value Added taxes. By now the tax base of VAT is nearly fully harmonised across EC12. In 1992, the minimum VAT rate was raised to 15%, as for January 1993

ber of different factors[57] which may or may not be influenced by discretionary policies. The pattern of expenditures and receipts resulting from these fluctuations has however induced a generalized worsening of the budgetary situation in all the European countries at the beginning of the '90s (after an improvement in the late '80s; cf. Table A2). In Belgium, Italy and Greece, the size of debt exceeded that of GDP (respectively 142,2%, 118,3% and 145,2% in 1993).

Intra-EC trade

Most of the convergence in trade flows amongst European countries was again already attained before 1975. More precisely, considering Europe as a whole, for exports as well as for imports, three main periods can be identified: from a level of about 40% of total exports in 1960, intra-EC exports jump to about 55% in 1970, they are fairly constant between 1970 and 1985 and they peak at 60% in 1990; intra-EC imports as percentage of total imports follow pretty much the same pattern: from 35% to 60% (cf Table A5). Of course, individual countries have different levels and speed of integration. Belgium, Luxembourg, Portugal, Spain, Ireland and the Netherland seem to be clearly specialized in intra-EC exports (cf. Table A5). Germany, where the intra-EC export share is almost 10 points lower than the extra EC share, and Denmark are instead more oriented towards non-EC markets, compared to the EC average. Table A5 also presents total intra-EC exports (imports) as a percentage of total export (imports) in 1958 and 1992 and intra EC imports and exports as percentage of GDP in selected years. With the notable exception of Denmark, where exports to EC countries slightly decrease, it can be noticed that the increase in exports (imports) within the Community is very large. The Table also presents some data on current account developments[58].

[57]Some of these factors are exogenous and cause automatic fluctuations in revenues and expenditure. For instance, the age structure of a country's population determines spending on education, pensions, public health; the rate of growth affects revenues; inflation reduces the real value of government debt and increases tax receipts, unemployment reduces payments to the social security system, while at the same time increasing the payments from it and so on.

[58]Current account developments are difficult to interpret in integrating economies. The financing aspects of current account imbalances lose most of their significance in a fully integrated capital market.

Graph A3a and A3b emphasize the degree of openesss of Belgium, Luxemburg, the Netherland and Ireland with respect to Spain and Greece but also how the differences between countries have tended to decrease over time.

Direct Investment

Direct investment has been one of the salient features of European Economies since the mid-80s: inflows, but also outflows, of capital within Europe have been increasingly relevant. Greater integration (one of the consequences of 1992 liberalization) in fact means that firms have incentives to invest in the lowest cost location in which to produce (e.g. Portugal), since they can -at least in principle- serve the whole european market from anywhere in the EC. Notwithstanding a generalized "Europeanisation" process, i.e. an increasing percentage of mergers and acquisitions between EC companies, the individual country patterns have been fairly different.

Table A6 shows direct investments as % of GDP providing a measure of the relative importance of exports (and imports) of capital by way of direct investment. Portugal and Belgium stick out as the main recipients of foreign flows in percentage of GDP, even though, most likely because of the oil industry, the UK is the main recipient of foreign flows in absolute terms. In Germany, despite unification, the size remained rather low (0.2% of GDP).

As far as direct investment abroad is concerned, the differences between European countries are more relevant than for foreign direct investment (cf again Table A6). Small countries, such as the Netherland and Belgium and Luxembourg have invested abroad about 4% of their GDP (The Netherland reached a peak of 5% in 1989), outflows from the UK were three times as much as from France and Germany in the late 80s (respectively, 4.2%, 1.9% and 1.2% of GDP for instance in 1989) even though in the 90s they seem to have converged. Reasons for these developments should be related to industrial structure (e.g. the UK has two of the largest oil companies, big multinational are in the Netherland and Belgium; Italy and Germany have many small competitive firms producing differentiated products etc.) and a complete analysis is outside the scope of this Appendix. Outflows to European countries have, however, increased, on average from 30% of total investment abroad in the early 80s to about 50% of total outflow in 1992 triggered by the creation of the single European market [59].

[59]Some anomalies of behaviour are due to Middle Eastern countries, which had invested

A.2. The Maastricht Criteria

The Maastricht Treaty provides quantified criteria for convergence regarding inflation, long term interest rates, debt management and exchange rates.

Inflation

The convergence criteria on inflation is stated in terms of a threshold value calculated on the -at most three- best performing countries in terms of price stability in the previous year[60].

As Table 3 shows, the three lowest annual inflation rates in 1993 and 1994 were around 2% (Denmark, Ireland and the UK in 1993 and France, Denmark and Luxembourg in 1994) but most of the other countries had low inflation rates too. Hence, the Maastricht price stability criterion was fulfilled by half the EC countries (6 out of 12) and, apart from Greece and Portugal, the dispersion of inflation rates was low[61].

Furthermore, sensible progress has been made in terms of convergence of inflation rates with respect to the period 1987-92. Portugal, in particular, has halved its inflation rate, down to 5.2% in 1994; also Greece has improved its performance though still having a two digits inflation (10.8% in 1994). However, the fact that in the last few months inflationary pressures have build up in some countries (specially, those experiencing large devaluations, such as Italy) shows that inflationary episodes may recur in the current floating exchange rate regime.

Interest rates

substantially in Europe in the early - mid 80s and have disinvested afterwards, for instance in Italy in 1986.

[60]The lack of an absolute standard has been criticised, on the ground that there are potential costs in entering a monetary union unless the starting inflation rate among the members of the union was close to the Maastricht Treaty price stability objective (see, for example, [24]). It must be noted that there are some problems of comparability between countries for different definitions of CPIs

[61]Notice that the price criterion is satisfied also if the threshold is calculated on the best performing country rather than on the three best performing, a slightly more restrictive criterion which implies a target inflation rate of 2.8% for 1993 and 3.1% for 1994.

The Maastricht criterion on long run interest rates states that:"..observed over a period of one year before the examination, a Member state has had an average long-term interest rate that does not exceed by more than two percentage points that of, at most, the three best performing States in price stability." (Article 109j and Article 4 of the Protocol). Hence, the reference interest rates are not necessarily the lowest ones. For instance, in 1994, France had the lowest inflation rate, even though its long run interest rate, 7.2%, was higher than that of Luxembourg (6.4%), the Netherlands (6.9%) and Germany (7%). (see Table 3). In line with progress in reducing inflation, the Maastricht criteria on long run interest rates is satisfied by 8 out of 12 countries both in 1993 and 1994, exceptions being the southern countries, Spain, Portugal, Italy and Greece[62]. It must be noted that yearly data (such as those reported in Table 3) may conceal some differences in developments. For instance, in the last months of 1994, there was an increase in the differentials on long term interest rates between Spain, Italy and Portugal on the one hand and Germany (and other best performing countries) on the other hand (cf Graph A4). This development can be accounted for by concerns of the markets on the fiscal situation, and on risk premium on long rates, given the wide fluctuations bands.

Budget management

The fiscal conditions have in the Maastricht Treaty a different role from the nominal criteria. The protocol requires that the fiscal criterion is subject to a degree of discretionary decision. In particular, while reference values are set out for the general government deficit (its ratio to GDP should not exceed 3%) and for gross government debt (its ratio to GDP should not exceed 60%), a number of escape clauses is provided[63].

[62]Again the criteria is equally satisfied in the more restrictive case of the best performing country in terms of inflation, in which case, in 1993, the target long run interest rate would be 9.2%. As in the case of inflation, and even more so, there are some problems of comparability, since long term interest rates are not completely consistent in European countries.

[63]As it has been pointed out in the literature, it is worth noting that the two criteria are mathematically linked: if a country is able to hold its deficit to less than 3% of GDP and GDP is growing at 5% in nominal terms then the debt/GDP ratio will stabilize below 60%.

It is clear from Tables 3 and A2 that convergence in the domain of public finance is far from having been reached among the EC 12, and that fiscal issues are the dimension on which potential MU members differ most. Furthermore, no progress has been registered in 1993 and very little in 1994. In the last two years the situation has even worsened with respect to 1992. Only Ireland, Luxembourg and Germany out of the EC of 12 managed to keep the public budget deficit below the ceiling of 3% stated by the Maastricht Treaty in 1994 (Ireland and Luxembourg in 1993). Few EC countries kept the aggregate public indebtness below the ceiling of 60% of GDP (namely, France, Germany, Luxembourg, and the UK , while in 1993 Spain, too).

The adoption of binding fiscal rules has been subject to a number of objections and criticisms (see, for example, [9]). Mainly, the Maastricht fiscal criteria are considered "economically undesirable, necessarily arbitrary, and in any case ineffective", since they are based on the current economic conditions of the late 80s, and are likely not to be credible in a different condition (which may induce a choice of different ceilings). Furthermore, national government may need to use fiscal policy (not having monetary autonomy) for stabilization purposes.

Exchange Rates

According to the Maastricht Treaty exchange rates should be stable for at least two years prior to the transition to monetary union. However, since mid 1992 the ERM has experienced a series of crises, which altered its operation as a framework for monetary policy coordination in the EC. As Graph 8 shows, since early August 1993, , when the band were widened to 15% (apart from the bilateral exchange rate DM florin) ERM exchange rates have fluctuate over a wider range than that of the previous band. On average, the use of wider bands has been around 6% in 1994, (with some episodes bringing it to 8%) but in March 1995 a further realignment was needed for the peseta and the portuguese escudo. However, these currencies seem to have recovered their previous level vis a vis the DM in May 1995. The 1993 and 1995 crisis, in contrast with the outcome of the earlier turmoil, did not result in a major realignment of exchange rates. Hence, a striking feature of the last two years is the stability of exchange rates of ERM currencies . Preservation of central parities within a wider band (de facto flexible exchange rates) may have made this stability achievable. Three countries, namely Italy, the UK and Greece, have remained outside the ERM of the EMS.

A.3. The convergence of Spain

We now address the specific case of Spain in relation to the "community standard".

GDP per head

In line with most European countries, Spain shows a very strong convergence from 1960 (59.0 over EC12) till 1975 (79.4). Then, in the first years of the democratization process, GDP slowly starts to diverge, the lowest level is reached in the mid 80s. However, there has been a boost of catching up since Spain accession to the EC in 1986 and convergence has picked up again, though at a much lower speed, to reach 75.5 in 1994, a level still lower than in 1975 (cf. Graph A6). It is worth noting that the same pattern can be observed with respect to OECD countries. Spain has recovered in 1992 the 1975 value (respectively, 70 and 71) and the pattern is exactly the same than versus EC countries, namely catch up (60-75), reversion of the process (75-85), narrowing the gap (85-91), worsening of the relative position (91-94).

The Public Sector

This is one of the areas where convergence has been more striking. The weight of the public sector has increased from 21.4% of GDP in 1970 to 48.8% in 1994, very close to the EC12 average of 51.1.

Furthermore, in 1965, in Spain the total tax receipts were representing a mere 14.7 % of GDP while in Germany they were 31.6% (in EC 27.3%). In 1992 the proportion has reached 35.8% in Spain and 39.6% in Germany (EC average of 41.4) (cf. Graph A7)[64]. As far as the structure of tax revenue is concerned, Spain has a very high marginal rate on personal income, but its revenue is still less than the EC average (probably due to a large amount of evasion), value added taxes (introduced in 1986) are much below EC average (and therefore there is room for an increase), although a series of reforms has recently narrowed the gap.

[64] If we exclude social securities the convergence is even more evident: the share of taxes to GDP is significantly lower, but the adjustment is spectacular, in Spain taxes go from 10.5% of 1965 to 35.0% of GDP in 1992, and in Germany from 23.1 to 24.4 in the same period.

As a catching up country, Spain has witnessed a huge increase in spending over the last 20 years. More specifically, social protection expenditure passed from 15% of GDP in 1980 (earlier data are not available) to over 17.5% in 1990 and social security transfers jumped from 7.5% in 1970 to 15.9% in 1990, very close to the European average. Interest payments have also been increasing steadily above nominal GDP since the early '80s. In 1993, they accounted for 12.1% of total current expenditure and 4.8% of GDP.

Trade

Trade integration has progressed in Spain at a very high speed. Only in the 80s, in fact, Spain started opening up to international trade. Against this background, intra-EC exports of goods pass from about 5% of GDP in the early 80s to almost 9% of GDP in 1994 (extra-EC exports in the same period remain fairly constant, from 4.6% to 4.7%); intra-EC imports increase in the same period from 4.9 of GDP to 10% (extra-EC imports decrease from 10.8 to 7%)still placing Spain at the lower end of EC countries in terms of degree of openness. Trade integration has been significant in general, but much higher within the European Community than with the rest of OECD countries (a number of nontariff barriers -e.g. quotas- exists with respect to third countries, for instance Japanese cars). Trade is probably the aspect where Spain has converged at the highest speed.

Foreign Direct Investment

Foreign direct investment to Spain show a strong increasing trend from 1986 to 1990, when they peaked at 2.8% of GDP . Afterwards there is a reversal and FDI drop to 1% of GDP in 1992. Outflows in the same period are fairly constant, around .2% of GDP (never very relevant). Considering intra-EC flows, investment from EU countries was 64% of total in 1992 but slipped to 55% in 1993.

The Maastricht criteria

One of the main features of the Spanish economy in the 80s has been the gradual decline in inflation (from 15% in 1982 to less that 5% in 1988). With the hope of enhancing the credibility of its monetary policy, Spain entered the ERM in 1989 with a wide (+-6%) band. Inflation discipline, however, did not

materialize and the rate of inflation increased to more than 6% in 1989 and stabilized at this level, about 2% higher than the average of ERM countries till 1992. As a consequence the real value of the peseta increased substantially between 1989 and 1992 (i.e., competitiveness decreased; cf. Table A7). Nor in 1992 nor in 1993 Spain matched the Maastricht criteria on price inflation even though some progress has been registered. There is an issue of serious concern: the inflation rate of non-tradeables has been dramatically larger than the average of European countries, especially after 1986, when prices of exports, exposed to competition, adapted to prices of competitors (see [4]). This development, not emphasized by the Maastricht criteria, could be problematic to choose the optimal strategy as far as exchange rate policy is concerned in the transition phase to Monetary union. More precisely, the main issues to be addressed in this context are why such a big divergence materialized between the price of non-tradeables and that of tradeables in the late 80s, how much this has affected the lack of inflation convergence and what is a "sustainable" exchange rate of the peseta in view of maintaining competitiveness.

Budget management

When the Maastricht Treaty was ratified, the fiscal criteria did not seem to pose particular problems for Spain. However, both the deficit/GDP ratio and debt/GDP ratio increased substantially between 1992 and 1993.However, while the debt/GDP ratio was still satisfying the ceiling of the Maastricht criteria in 1993, though to overtook it in 1994, the deficit/GDP ratio has been higher than the threshold in both years (cf. Table 3).

The level of the deficit, furthermore, is not the only dimension of concern; for instance, interest payments climbed by 17.1% between 1992 and 1993, advancing by over half a point of GDP, a dangerous upward trend, which can seriously limit fiscal policy leeway [65].

[65] For a detailed account of determinants of the main spending categories and government revenues, together with a study of margins for budget consolidation cf [45]

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Table 1: Regional disparities whithin the Community.

	Per capita GDP (PPPs)			*Dispersion between regions in each country*			*1991: GDP of EC12=100.*	
							% regions where GDP was less then	
	1975	1985	1994	1980	1985	1991	50	75
Germany	115.6	119.6	115.3	16.1	17.6	25	0	0
Belgium	105.3	104.1	106.2	16.4	16.6	15.2	0	0
Denm.	107.6	113.3	108.5	na	na	na	0	0
Spain	79.2	70.4	75.5	14.3	13.9	14.9	0	50
France	114.2	113.2	109.3	9.9	9.3	17.2	0	0
Greece	51.1	50.7	48.5	9.3	7.2	6.1	84.6	100
Ireland	59.6	62.5	79.9	na	na	na	0	100
Italy	94.5	102.3	104.9	22.4	22.7	25.1	0	20
Lux.	123.7	120	133.6	na	na	na	0	0
Neth.	112.6	104.7	100.1	37.1	28.3	15.5	0	0
Portugal	50.1	50.1	60.4	10.6	11.1	17.3	60	80
UK	101.2	100	99.7	12.3	14	13.6	0	0.9
SD*	26.32	26.49	24.36	-	-	-	-	-
SDreg**	-	-	-	26.6	26.8	26.5	-	-

* SD dispersion between member States (standard deviation).
** SDreg dispersion between regions (standard deviation).
Ireland and Luxembourg one region only; Denmark data not available at a regional level.
UK, regional data for 79, 84, 91.

Source: Eurostat, REGIO data base and European Economy, 58, 94.

Table2. Long term interest rates: levels and differentials with respect to Germany.

Countries	December 1992	December 1993	December 1994	Variation 1993	Variation 1994	Differentials vs. Germany 1992	1993	1994
Belgium	7.71	6.42	8.31	-1.29	1.89	0.61	0.72	0.48
Denmark	8.91	6.09	9.14	-2.82	3.05	1.81	0.39	1.31
France	8.07	5.64	8.28	-2.43	2.64	0.97	-0.06	0.45
Germany	7.1	5.7	7.83	-1.4	2.13	0	0	0
Greece	24.5	22.25	19	-2.25	-3.25	17.4	16.55	11.17
Ireland	10.12	6.26	8.76	-3.86	2.5	3.02	0.56	0.93
Italy	13.54	8.84	12.34	-4.7	3.5	6.44	3.14	4.51
Luxemb.^	8.08	6.54	6.23	-1.54	-0.31	0.98	0.84	-1.6
Neth.	7.22	5.5	7.76	-1.72	2.26	0.12	-0.2	-0.07
Portugal*	13.13	8.92	11.68	-4.21	2.76	6.03	3.22	3.85
Spain	12.46	8.12	11.79	-4.34	3.67	5.36	2.42	3.96
UK	8.17	6.07	8.85	-2.1	2.78	1.07	0.37	1.02
EC 12	9.41	6.91	9.58	-2.5	2.67	2.31	1.21	1.75
Austria	7.45	5.99	7.62	-1.46	1.63	0.35	0.29	-0.21
Finland	10.65	6.71	10.09	-3.94	3.38	3.55	1.01	2.26
Sweden~	9.91	7.35	10.68	-2.56	3.33	2.81	1.65	2.85
USA	6.68	5.83	7.84	-0.85	2.01	-0.42	0.13	0.01
Japan	4.52	3.04	4.59	-1.48	1.55	-2.58	-2.66	-3.24

Returns on 10 years bonds, end of month, in percentage term.

*Returns on 3 years and a half

^weekly average data.

~monthly average data.

Source: EMI. Annual Report, 1994

Table 3. Maastricht convergence in the EC12

country	Inflation 87-92	Inflation 1992	Inflation 1993	Inflation 1994	LT int rate 87-92	LT int rate 1992	LT int rate 1993	LT int rate 1994
Maastr.	**-**	**3.9**	**3.1**	**3.5**	**-**	**10.9**	**9.5**	**9.5**
Belgium	2.5	2.4	2.8	2.4	8.7	8.7	7.2	7.7
Denmark	3.4	2.1	1.3	2	10	8.9	7.2	7.8
France	3.1	2.4	2.1	1.6	9.1	8.6	6.8	7.2
Germany	2.4	4	4.2	3	7.5	7.9	6.5	7
Greece	16.5	15.9	14.4	10.8	21.3	21.7	23.4	20.8
Ireland	3.1	3.1	1.4	2.4	9.7	9.1	7.7	7.9
Italy	5.7	5.1	4.5	3.9	11.3	13.4	11.4	10.6
Lux.	2.4	3.2	3.6	2.1	7.9	7.9	6.9	6.4
Neth.	1.9	3.7	2.1	2.7	7.8	8.2	6.3	6.9
Portugal	10.8	8.9	6.5	5.2	14.2	15.4	10	10.4
Spain	5.9	5.9	4.6	4.7	13	12.2	10.2	10
UK	6	3.7	1.6	2.4	10.1	9.1	7.5	8.1
EC ave.	-	5.03	4.1	3.6	-	10.9	9.3	9.2
EC coeff.var	-	0.78	0.88	0.69	-	0.39	0.46	0.42

	Public Debt (% GDP) 87-92	Public Debt (% GDP) 1992	Public Debt (% GDP) 1993	Public Debt (% GDP) 1994	Deficit (% GDP) 87-92	Deficit (% GDP) 1992	Deficit (% GDP) 1993	Deficit (% GDP) 1994
Maastr.	**-**	**60**	**60**	**60**	**-**	**3**	**3**	**3**
Belgium	130.2	131.9	138.9	140.1	6.7	6.9	6.6	5.5
Denmark	68.6	73.4	79.5	78	0.5	2.6	4.4	4.3
France	47.8	39.2	45.8	50.4	1.8	3.9	5.9	5.6
Germany	43.6	44.8	48.1	51	2	2.6	3.3	2.9
Greece	90.6	106.7	115.2	121.3	15.1	13.2	13.3	14.1
Ireland	108.1	91.6	96.1	89	3.8	2.2	2.5	2.4
Italy	97.5	108	118.6	123.7	10.5	9.5	9.5	9.6
Lux.	8.3	7.3	7.8	9.2	-2.4	2.5	-1.1	-1.3
Neth.	78.4	79.7	81.4	78.8	4.4	3.5	3.3	3.8
Portugal	70.6	63.5	66.9	70.4	5.5	5.2	7.2	6.2
Spain	45.2	48.8	59.8	63.5	3.8	4.6	7.5	7
UK	45.9	47.3	48.3	50.4	1.6	5.9	7.8	6.3
EC ave.	-	70.1	75.5	77.1	-	5.2	5.85	5.5
EC st.dev.	-	0.50	0.49	0.48	-	0.63	0.64	0.69

Inflation: annual rates. For Germany inflation refers only to West Germany

LT int. rates: annual average, percentage values.

Source: EMI, Annual Report 1995, and BundesBank Annual Reports 1992, 1993.

Table 4: The Financing of the Private Sector.

	Total firm indebtness (%)		LT ind/total (firms)		interest payments		Mortgages contracts	
					corporate	/ *personal*	*%GDP*	*type*
	1982	1993	1982	1993				
Countries								
France	70.3	58	26.8	34.1	33	3.7	22%	fix.rates (15-20y.)
Germany	55.9	50*	29.6	25.5*	26	6.2	25%	fix.rates (5-10y.)
Italy	69	66.5	23.7	17.1*	31	4	7%	50% fix.rates
UK	na	na	34.8	53.8*	24	10.9	60%	var. rates
Spain	68.3	62.3	33.2	25.1	24	4.2	na	na
Portugal	72.3^	52.7	33.1^	31.4*	52	2.6	na	na
Neth.	51.5	50.6	34.7	37.5	30	3.6	na	fix.rates, LT
Belgium	66.4	58.5	28.5	35.5	44	2.4	na	na

For interest payments last year available 1990. For mortgages contracts last year available: France, 1992; Germany, 1990; Italy 1986; UK, 1992.

* last year available 1992. ^first available year 1985.

Source: Centrale Banks BIS, [illegible] Economie Europeenne Supp. A, Analyses economique [illegible]

Table 5: International portfolio capital flows and underlying transactions*

Countries		1975	1980	1985	1990	1993
			(as a percentage of GDP)			
USA	CF	0.9	0.7	2.1	0.9	3.8
	T	4.2	9.3	36.4	92.1	134.9
Japan	CF	0.6	1.6	5.7	2.5	1.5
	T	1.8	7.7	62.5	121	78.7
Germany	CF	0.4	0.6	3.8	1.6	8.9
	T	5.1	7.5	33.9	54.9	169.6
France	CF	0.7	0.7	2.2	4.3	5.2
	T	3.3	6.7	29.1	58.7	196
Italy	CF	0.1	0.2	0.4	3.5	7.1
	T	0.9	1.1	4	26.6	274.6
UK	CF	0.2	2	7.4	4.4	21.7
	T**	na	na	366	689	1015.8
Canada	CF	0.2	0.7	1.1	0.5	3.1
	T	3.3	9.6	26.7	64.2	152.7

Note: CF=capital flows T=underlying transactions.

* Capital flows are defined as the absolute value of the sum of gross portfolio inflows and outflow. Underlying transactions include all purchases and sales by residents and non-residents.

** 1991; the series has since been discontinued.

Source: Bank of International Settlements, Annual Report, 1994.

Table 3. Devaluations with respect to DM.

country	Jan87-Aug 92	Sept 92-July93	Aug93-Dec 94	Jan95-Mar95	Jan95-May95
Be-Lux	-0.9%	0.2%	-3.2%	0.2%	0%
Denmark	1.4%	0.0%	-3.9%	1.7%	0.0%
France	1.8%	0.1%	-1.6%	2.5%	2.0%
Germany	-	-	-	-	-
Greece	64.0%	8.8%	10.2%	4.6%	n.a.
Ireland	0.8%	9.0%	-2.2%	6.1%	n.a.
Italy	7.2%	14.7%	9.7%	14.1%	9.3%
Neth.	0.1%	-0.2%	-0.5%	0.1%	0.0%
Portugal	12.5%	10.7%	0.4%	2.0%	n.a.
Spain	-7.9%	16.5%	2.8%	5.6%	1.9%
UK	-0.6%	4.6%	3.2%	7.2%	7.3%
Austria	0.0%	0.0%	0.0%	0.0%	0.0%
Finland	12.3%	10.3%	-10.4%	0.8%	n.a.
Sweden	3.2%	25.5%	0.5%	6.1%	6.3%
Norway	5.2%	6.5%	0.5%	2.0%	n.a.
Switz.	7.9%	0.1%	-4.3%	-1.0%	0.0%
USA	23.7%	-15.6%	7.9%	8.9%	7.8%
Japan	8.2%	-25.9%	4.2%	-1.2%	-7.1%

Source: Bundensbank, Monthly Bulletin of Statistics and The Econcmist , Vol.334 n. 7896 and Vol. 335 n. 7915.

Table7. Shares of ECB under different groupings.

	EUR15	EC 12	ERM 9	CORE 6
Belgium	2.8	3	4.55	5.6
France	17	18.3	27.05	33.3
Germany	22.55	24.2	39.1	48
Denmark	1.7	1.8	2.7	3.3
Neth.	4.25	4.55	6.1	8.5
Lux.	0.15	0.15	1	1.25
Ireland	0.8	0.9	1.3	not incl.
Portugal	1.85	1.95	2.9	not incl.
Spain	8.85	9.5	14.4	not incl.
U.K.	15.35	16.45	not incl.	not incl.
Greece	2	2.15	not incl.	not incl.
Italy	15.85	17.05	not incl.	not incl.
Austria	2.3	not incl.	not incl.	not incl.
Finland	1.65	not incl.	not incl.	not incl.
Sweden	2.9	not incl.	not incl.	not incl.

Source: Own calculations on Eurostat, European Economy, 58, 1994 and EMI, Annual Report 1994, April 1995.

Table8. Median economic indicators for different EMU arrangements (1994)

Median voter by "one country, one vote".

	EC 15		EC 12	
	md.country	*median*	*md. country*	*median*
Def.%GDP	Bel	5.5	Fr. & Bel.	5.6 & 5.5
Debt%GDP	Port.	70.4	Dk. & Port.	78 & 70.4
Inflation	Irl., UK, Bel.	2.4	Neth. & Irl., Uk, Bel.	2.7 & 2.4
LT int. rate	Irl.	7.9	Irl. &Dk.	7.8 & 7.8
Unemp.	Bel.	9.4	Dk. & Bel.	10.4 & 9.4

	ERM 9		CORE 6	
	md. country	*median*	*md.country*	*median*
Def.%GDP	Dk.	4.3	Dk. & Neth.	4.3 & 3.8
Debt%GDP	Port.	70.4	Dk. & Ger.	78 & 51
Inflation	Irl., Bel.	2.4	Bel. & Lux.	2.4 & 2.1
LT int. rate	Bel.	7.7	Bel. & Fr.	7.7 & 7.2
Unemp.	Bel.	9.4	Bel. & Neth.	9.4 & 8.8

Median voter with country (Maastricht) shares

	EC 15		EC 12	
	md.country	*median*	*md. country*	*median*
Def.%GDP	Fr.	5.6	Fr.	5.6
Debt%GDP	Ger.	51	Ger.	51
Inflation	Ger. Aus.	3	Ger.	3
LT int. rate	Dk.	7.8	Bel.	7.7
Unemp.	UK	10.5	UK	10.5

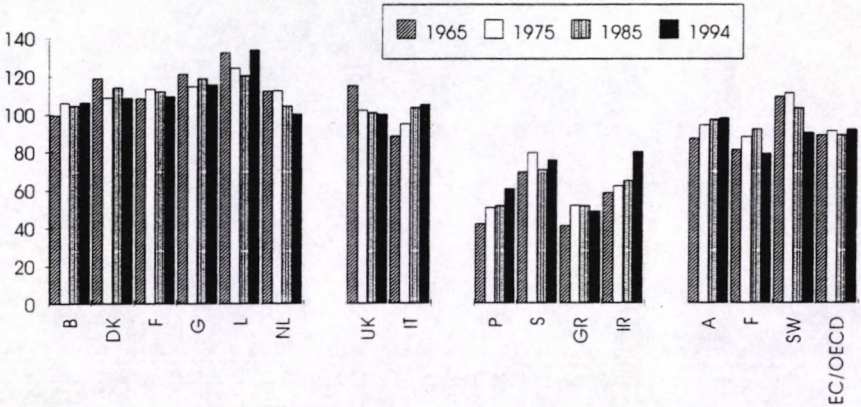
	ERM 9		CORE 6	
	md. country	*median*	*md.country*	*median*
Def.%GDP	Dk.	4.3	Neth.	3.8
Debt%GDP	Ger.	51	Ger.	51
Inflation	Ger.	3	Neth.	2.7
LT int. rate	Fr.	7.2	Ger.	7
Unemp.	Bel.	9.4	Neth.	8.8

Median voter by "one country, one vote" with punishments.

EC15 with Debt/GDP <100%			**EC15 with deficit/GDP <6%**	
No vote for: Bel. Gr. It.			Gr., It., Por., UK, Sp., Sw	
	md.country	*median*	*md. country*	*median*
Def.%GDP	Finl. & Aus.	4.7 & 4.4	Dk.	4.3
Debt%GDP	Finl. & Aus.	70 & 65	Finl. & Aus.	70 & 65
Inflation	Irl., UK	2.4	Irl., Bel.	2.4
LT int. rate	Irl. & Dk.	7.9 & 7.8	Fr.	7.2
Unemp.	Dk. & Neth.	10.4 & 8.8	Bel.	9.4

Source: Own calculations on EMI. Annual Report 1995 and OECD. Economic Outlook, January 1995

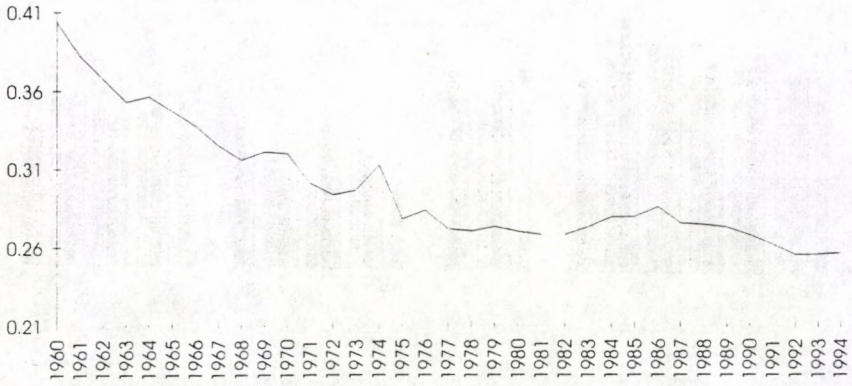
Graph 1: GDP per head, selected years



*EC=100. For non EC countries for which OECD=100, 1970 instead of 1965 and 1992 instead of 1994. EC/OECD added for comparison.

Source: Eurostat. European Economy 58, 94 and OECD, MEI.

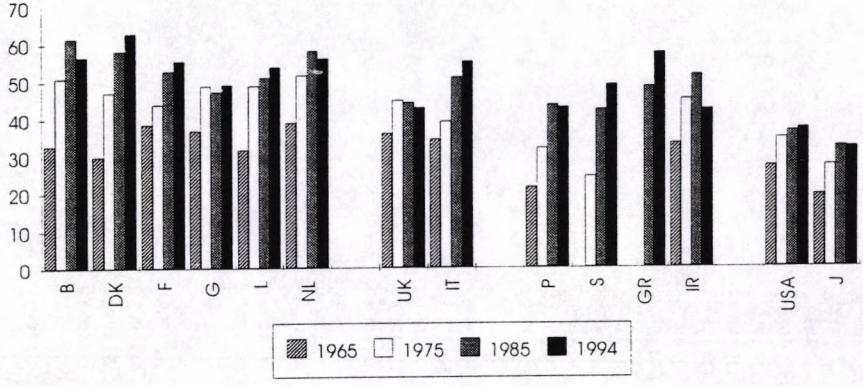
Graph2: GDP per head, convergence EC=12.



Coefficient of variation.

Source: Eurostat, European Economy 58, 94.

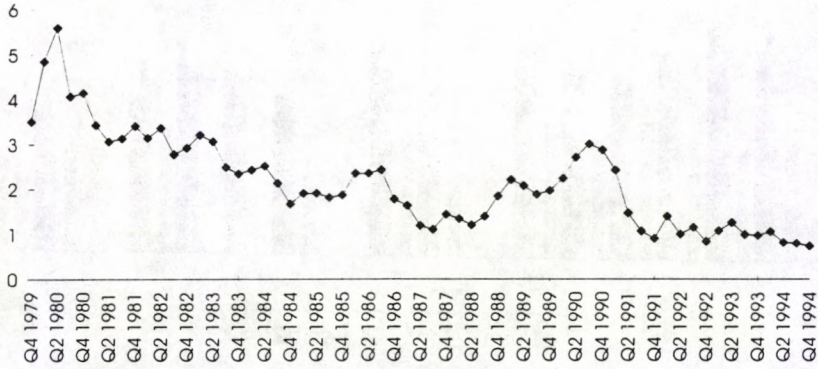
Graph 3: Total expenditure; general government (% GDP)



* USA and Japan added for comparison.

Source: European Economy, 58, 1994 and OECD, Economic Outlook, various issues.

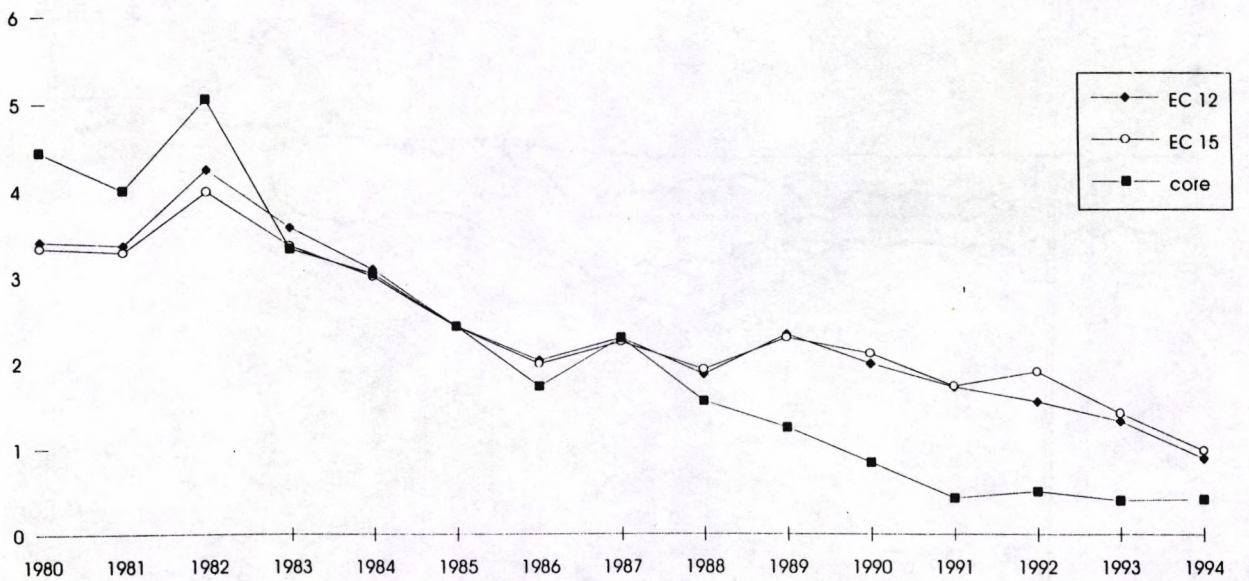
Graph4: Dispersion of inflation rates, selected ERM currencies*.



*Dispersion is calculated as standard deviation of (quarterly) consumer price indices for:France, Germany, Ireland, Italy, Portugal, Spain, UK.

Source: OECD, MEI,various issues.

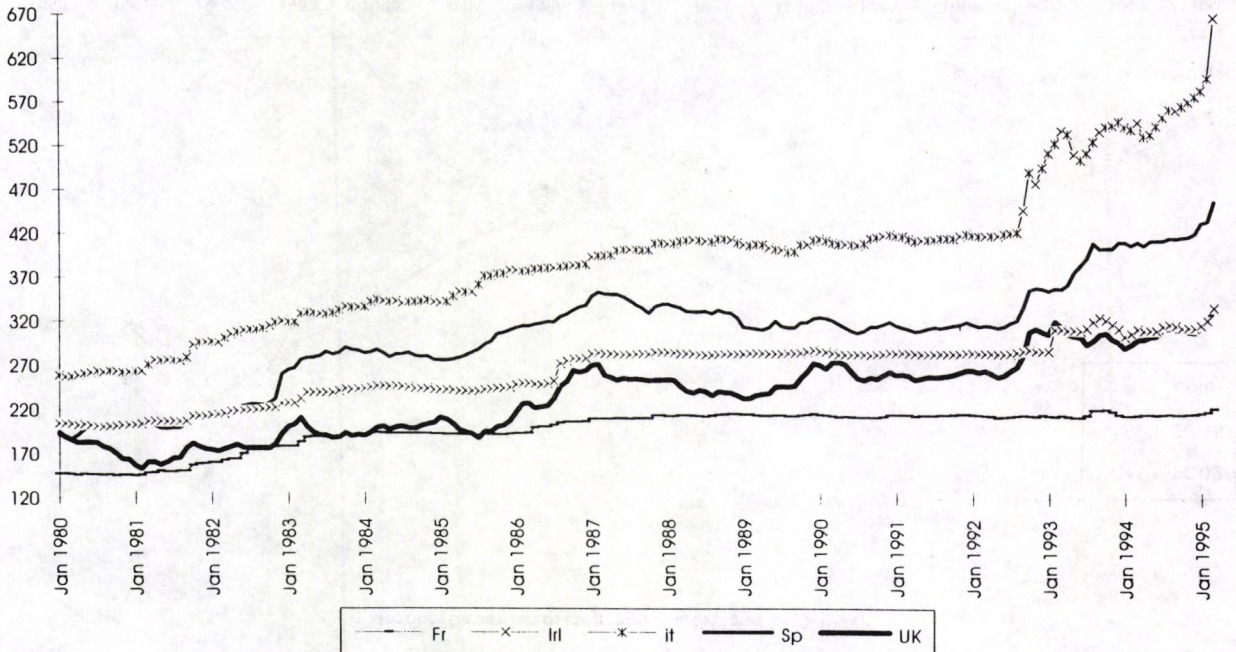
Graph5: Dispersion of long term interest rates,1980-1994.*



*Dispersion is given by the standard deviation for EC12, EC15 and core countries.

Source: OECD, Economic Outlook, June 1994 and OECD, MEI, March 1995.

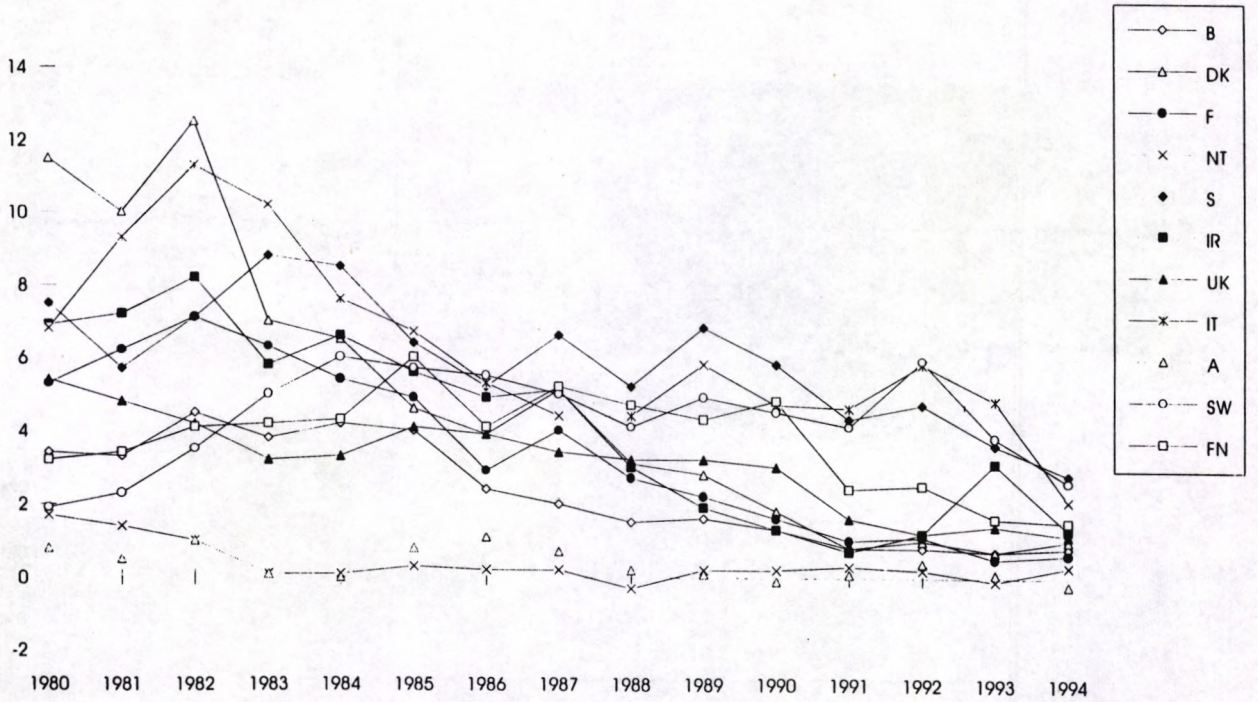
Graph 6: Bilateral exchange rates, vs. DM,



base 1972=100

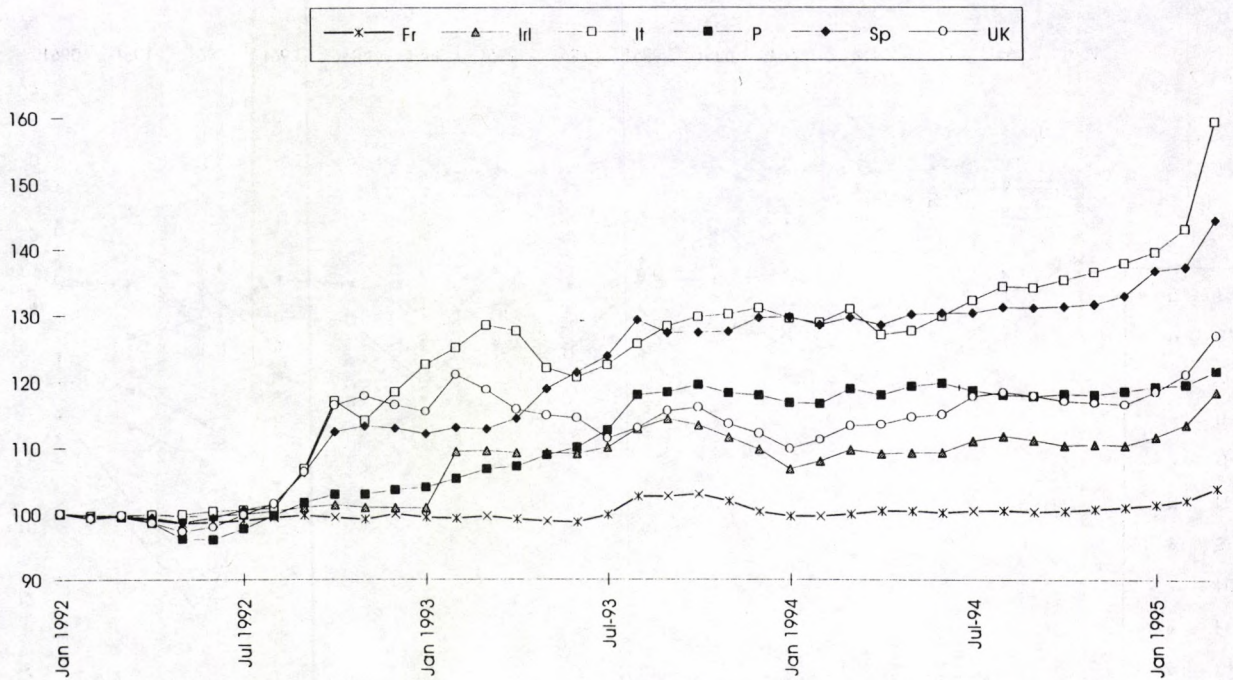
Source: Bundesbank, monthly Bulletin of Statistics, various issues.

Graph7: Long term interest rates: differentials vs. Germany.



Source: OECD, Economic Outlook, June 1994 and OECD, MEI, March 1

Graph8. After 1992: developments of bilateral exchange rates vs. DM.



base January 1992=100

Source: Bundesbank, Monthly Bulletin of Statistics

Table A1: Distribution of value added and employment in the EC member States.

		Distribution of value added by sector			Unemployment rate^	Distribution of employment by sector		
		(% total GDP)			(% of civilian labour force)	(% total employment)		
country	year	*Agric.*	*Ind.+En.*	*Services*		*Agric.*	*Ind.+En.*	*Services*
Germany	75	2.9	50.9	47.3	3.3	7.3	46	46.7
	85	1.7	40.9	57.4	7.1	5.2	41	53.8
	92	1.4	42	64.1	6.9	3.5	39.4	57
Belgium	75	3.2	40	56.9	4.2	3.6	40	56.5
	85	2.4	33.4	64.2	11.8	3.6	31.9	64.5
	92	2.1	33.1	68.9	10.3	2.9	30.9	66.2
Denmark	75	7.4	37	55.6	3.9	9.8	31.5	58.7
	85	5.5	27	67.5	7.2	6.7	27.8	65.5
	92	4.2	28.5	71.7	9.9	5.2	27.1	67.5
Spain	75	9.8	40.7	49.5	4.5	21.5	37.1	41.4
	85	6	35.9	58.2	21.1	16.2	31.8	51.9
	92	4.2	36.2	59.6	23.3	10.1	32.7	57.2
France	75	5.6	41.3	53.1	4	11.3	38.6	50
	85	3.9	36.1	60	10.1	8.1	32.3	59.2
	92	3.5	32.6	68.6	11.5	5.9	29.5	64.4
Greece	75	18.7	30.6	50.7	2.3	34.4	28.9	36.7
	85	17.1	29.3	53.6	7.8	28.9	25.7	45.4
	92	16.3	27.4	56.3	10.1	21.9	25.4	52.8
Ireland	75	18.1	32.5	49.5	7.9	24.3	30.3	45.4
	85	10.6	34.9	54.5	18.2	16.4	29.8	53.4
	92	8.1	35.8	56.1	17.8	13.7	28	58.1
Italy	75	8.7	43	48.3	5.5	15.8	44.1	40.1
	85	4.9	38.3	56.8	10.1	11	33.5	55.5
	92	3.8	37.2	67.4	12	7.9	33.1	59
Lux.	75	3.5	48.9	47.6	0	6.2	47.2	46.6
	85	2.3	34.1	63.6	2.9	4.6	31.7	62.9
	92	1.7	39.8	63.7	3	3.2	28.6	65.1
Neth.	75	4.7	41.9	55	5.5	6.6	34.8	58.6
	85	4.3	35	60.7	10.5	5.2	28	65.9
	92	4.6	34.4	68.1	10.2	3.7	23.8	68.1
Portugal	75	15.6	45.2	39.2	4.4	27.4	33.2	39.3
	85	7.7	36.7	55.6	8.6	21.5	33.9	44.5
	92	7.3	46.5	62.6	6.5	11.5	32.6	56
UK	75	1.9	41.8	56.3	3.2	2.7	40.9	56.4
	85	1.4	41.3	57.3	11.4	2.3	34.1	61.9
	92	1.5	36.2	66.3	9.9	2.2	30.1	67.3

* 1976 instead of 1975 for Spain, Greece and Portugal

^Unemployment rate: 1994 instead of 1992.

Source: Eurostat, National Accounts, Eurostat, Labour Force Survey, 1985, 1992 and Eurostat, European Economy, 58, 1994.

Table A2: The role of the public sector: gross government debt and deficit (as a % of GDP)

Debt												
year	Belgium	Denmark	Germany	Greece	France	Ireland	Italy	Luxemb.	Neth.	Portugal	Spain	UK
1980	78.8	39.9	31.8	28.8	20.1	70.8	57.8	13.8	47.6	37.2	17.5	54.3
1981	93.2	53.3	35.4	34.2	22.2	76.4	59.9	14.4	51.7	47.3	21.5	54.5
1982	103.4	68.1	38.6	38.7	25.8	85.9	64.9	14.3	57.1	50.7	26.7	53.4
1983	114.4	75.5	40.2	44.3	27.3	96.1	70	15.1	63.7	56.6	32.4	53.7
1984	119.1	79.8	41	53.2	29.5	100.3	75.2	15	67.8	62.4	39.2	55.7
1985	123.2	76.8	41.7	62.5	31	103.4	82.3	14.3	71.5	70.9	44.6	53.8
1986	128.1	69	41.6	65	31.4	114.9	86.3	14	73.5	69.5	4.7	52
1987	133.3	65.7	42.6	72.4	33.6	116	90.5	12.5	76.1	72.9	46.1	49.5
1988	133.9	66.8	43.1	79.7	33.7	112	92.6	10.1	79.2	75.2	42.4	43.1
1989	130.8	66.4	41.8	85.5	34.4	102.7	95.6	8.3	79.2	72.1	43.9	37.5
1990	131	66.8	43.8	98.4	35.4	97.2	97.8	5.4	78.8	67.7	44	35.4
1991	133.6	64.6	42.1	103.9	35.5	97	101.2	4.9	79	69.4	45.2	35.8
1992	135.1	68.8	44.8	110.2	39.4	94.5	108.2	5.8	79.7	61.7	48.2	41.7
1993	142.2	80.4	48.9	145.2	43.9	99	118.3	6.8	81.2	66.6	55.9	48.2
Net lending (+) or net borrowing (-)												
year	Belgium	Denmark	Germany	Greece	France	Ireland	Italy	Luxemb.	Neth.	Portugal	Spain	UK
1980	-9.3	-3.3	-2.9	-2.9	0	-12.2	-8.6	-0.5	-4 -	,	-2.6	-3.5
1981	-13.5	-6.9	-3.7	-10.2	-1.9	-12.8	-11.4	-3.6	-5.5	-9.3	-3.9	-4
1982	-11.5	-9.1	-3.3	-7.7	-2.8	-13.2	-11.3	-1.2	-7.1	-10.4	-5.6	-2.9
1983	-11.9	-7.2	-2.6	-8.6	-3.2	-11.3	-10.6	2.3	-6.4	-9	-4.7	-3.4
1984	-9.6	-4.1	-1.9	-10.1	-2.8	-9.4	-11.6	3.7	-6.3	-12	-5.4	-3.9
1985	-9.1	-2	-1.2	-14	-2.9	-10.7	-12.6	7.2	-3.6	-10.1	-6.9	-2.8
1986	-9.4	3.4	-1.3	-12.5	-2.7	-10.6	-11.6	5.1	-5.1	-7.2	-6	-2.8
1987	-7.5	2.4	-1.9	-11.7	-1.9	-8.5	-11	3.3	-5.9	-6.8	-3.1	-1.4
1988	-6.8	0.6	-2.2	-13.7	-1.7	-4.5	-10.7	5.2	-4.6	-5.4	-3.3	0.1
1989	-6.5	-0.5	0.1	-16.6	-1.3	-1.7	-9.9	6.8	-4.7	-3.4	-2.8	-0.1
1990	-5.9	-1.5	-2.1	-18.1	-1.5	-2.2	-10.9	5.9	-5.1	-5.5	-3.9	-1.5
1991	-6.8	-2.2	-3.2	-14.4	-2.1	-2	-10.2	2.3	-2.5	-6.6	-4.9	-2.8
1992	-7.1	-2.6	-2.6	-14.3	-3.9	-2.3	-9.5	-0.3	-3.5	-3.3	-4.5	-6.4
1993	-7	-4.6	-3.3	-16.3	-5.7	-2.3	-9.5	1.4	-2.9	-7.1	-7.3	-7.7

Source: European Economy,.3, 1994

TableA3: The role of the Public Sector: receipts and expenditure (as a % of GDP).

Items	year	Belgium	Denm	France	Germany	Lux	Neth	UK	Italy	Port	Spain	Greece	Ireland
	1975	50.9	47	43.8	48.7	48.7	51.5	44.7	39.1	31.9	24.4		45
Gen Gov Tot Exp.	1985	61.4	58.1	52.7	47.2	50.9	58	44.1	50.9	43.5	42.2	48.3	51.5
	1994	56.5	62.7	55.3	49	53.6	55.9	42.7	55.1	42.8	48.8	57.3	42.2
of which:													
	1975	24.2	25.8	22.9	29.8	22.4	28.1	19.4	22.6	11	11.7		19.7
Soc protection	1985	29	27.8	28.8	28.1	25.4	31.1	24.5	22.5	16.1	18	19.5*	24
	1992	27.5	31.4	29.2	27.3	28	33.3	27.2	26.6	17.8	22.5	19.5	21.6
Interest Paym.	1985	9.8	6.1	2.1	2.3	na	4.7	3	7.4	9.3	2.7	4.5	6.5
	1993	9.6	3.8	3.1	2.6	na	4.7	2.2	11.5	7.6	5	12.7	4.7
Total taxes	1985	47.9	49	44.5	38.1	50.1	44.1	37.9	34.5	31.6	28.8	35.1	36.4
	1992	45.4	49.3	43.6	39.6	48.2	46.9	35.2	42.4	33	41.6^	40.5	36.6
of which:													
Direct taxes	1985	19.5	27.8	7.7	13.3	22.3	11.6	15	12.7	8.1	7.5	6.1	12.6
	1992	16.3	29.4	7.6	12.7	17.1	14.7	12.7	16.6	9.5	11.7^	7.4	14.2
Indirect taxes	1985	11.8	16.8	13.2	9.8	12	11.3	11.7	8.8	13.5	8.3	15	16.2
	1992	11.6	16	11.7	10.6	13.7	12.1	12.1	11.4	14.2	10.7^	18.7	14.7
Soc sec contribution	1985	15.8	1.9	19.3	13.9	12.6	19.5	6.8	12	8.2	11.9	12.5	5.4
	1992	16.4	1.5	19.5	15.2	13.7	18.2	6.3	13.3	8.4	14.6^	12.4	5.6
Memorandum items													
Public pensions	1990	8.5	8.5	18	15.3	11.7	13.4	17.3	21.1	7.2	8.6	10.7	5.4
Public health	1990	5.5	5.2	13.3	13.2	na	6.5	13	11.8	4	4.3	4.1	6.9

* For expenditure on social security as % GDP, Greece, 1988 instead of 1985 and 1991 instead of 1992.

^ Last available data 1994.

Source: OECD, Economic Outlook, various issues, OECD, Revenue statistics of OECD member countries. and Eurostat, European Economy, 58, 94.

TableA4 : General Goverments primary balance (as a percentage of GDP)

	1980	1985	1987	1988	1989	1990	1991	1992	1993
Germany	-1.6	1.1	0.5	0.2	2.3	-0.1	-1.3	-0.4	-0.7
France	0.8	-0.8	0.3	0.5	1	0.8	0.4	-1.1	-2.7
Belgium	-3.9	1.1	2.4	2.7	3.4	4.4	2.9	3.1	3
Den.	-2.8	4.1	6.9	4.8	3.3	1.8	1.5	0.3	-0.6
Neth.	-1.5	0.8	-0.2	0.7	-0.3	-0.7	1.8	0.7	1.5
Italy	-3.9	-5.2	-3.6	-3.1	-1.5	-1.8	-0.5	1.4	1.9
UK	-0.3	0.5	1.7	3.6	3.3	1.1	-0.6	-4.1	-5.5
Greece	-0.9	-8	-4.9	-5.9	-7.8	-4.7	-3.1	-1.2	-0.7
Ireland	-7	-4.3	-1.8	1.9	4.4	4	3.6	2.9	2.3
Port.	8.6	1.9	1.5	2.3	4.1	2.8	2.3	4.9	-0.3
Spain	-1.9	-4.2	-0.3	-0.3	0.3	-0.8	-1.3	-0.4	-2.5
Austria	0	0.4	-1.2	0.2	0.3	1	0.9	1.5	-0.5
Finland	1.9	2.1	0.2	3.2	5.1	3.6	-3.4	-7.9	-7.6
Sweden	-4.4	-0.8	6	4.5	5.9	4.3	-1	-7.3	-12.8
Tot. EC	-1.2	0.9	0	0.4	1.3	0.2	-0.4	-0.8	-1.7

Source, OECD,Economic Outlook, January 1995

Table A5. Intra EC trade, in percentage

	year	Bel-Lux	Denm.	Germany*	Greece	Spain	France	Ireland	Italy	Neth.	Portugal	UK	EC 12
Current acc. balances	85	0.9	-4.7	2.6	-8.2	1.6	-0.1	-3.4	-0.9	3.9	1.6	0.6	0.7
(% of GDP)	93	5.7	4.1	-1.1	-0.9	-1.1	0.8	7.9	1.2	3.3	-0.2	-1.7	0.2
Intra EC Exports	65	26.2	11.6	7.3	2.6	2.2	5.3	18.5	5.5	21.9	6.8	3.8	7
(% of GDP)	75	32.6	10.7	10.1	5.6	3.4	8.1	29.2	8.1	28.8	7	6.6	10.4
	85	44.7	12.2	14.6	7.4	7.6	9.9	36.2	8.9	39.1	17.2	10.7	13.8
	94	37.2	13.5	11.7	8.6	8.9	9.9	42.4	9.1	29.9	16.1	10.1	12.6
Intra EC Imports	65	23.4	13.8	7.1	9.9	6.1	4.8	25.2	4.2	22.8	12.8	4.1	7.1
(% of GDP)	75	32.6	13	9.3	11.5	5.3	8.2	30.2	8	22.3	11.6	8.9	10.5
	85	46.6	15.1	12.9	14.7	6.6	11.4	33.6	10	29.4	16.9	11.6	13.7
	94	39.3	12	10.4	20.5	10	9.6	29.2	8.2	25.4	25.9	10.7	12.1
Intra EC Exports	58	55.4	59.3	37.9	50.9	46.8	30.9	82.4	34.5	58.3	38.9	21.7	37.2
(% of total export)	92	74.8	54.5	54.1	64.2	66.3	63	74.2	57.7	75.4	74.8	55.5	61.3
Intra EC Imports	58	55.5	60	36.3	53.7	31.8	28.3	68.9	30.2	50.7	53.4	21.8	35.2
(% of total import)	92	71.2	55.4	54.7	62.7	60.3	65.6	71.9	58.8	58.8	73.6	50.7	59.3
% Exp. over EC Exp.	92	8.3	2.2	30.4	0.6	4.7	17.1	1.8	12.8	8.7	1.3	12.3	100
Extra EC/Intra EC Exp.	92	0.5	1.5	1.3	1	0.8	1	0.6	1.1	0.5	0.5	1.2	1

* Ger. 1958 West Germany, 1992 Unified Germany

Source: Eurostat, European Economy 1994 n. 58 and OECD, Economic Outlook, Dec. 1994.

Table A6: Direct investments and Fixed capital formation as a % of GDP.*

		1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Spain	FDI	1	1.1	1.2	1.5	1.6	2	2.2	2.8	2	1.4
	DIA	0.2	0.2	0.2	0.2	0.3	0.4	0.4	0.6	0.7	0.2
	FCF	20.9	19	19.2	19.5	20.8	22.6	24.1	24.6	23.9	22
France	FDI	0.3	0.4	0.4	0.4	0.5	0.7	1	0.8	0.9	1.2
	DIA	0.4	0.4	0.4	0.7	1	1.3	1.9	2.3	1.7	1.4
	FCF	20.2	19.3	19.3	19.3	19.8	20.7	21.3	21.4	20.9	20
UK	FDI	1.1	-0.1	1.3	1.5	2.2	2.6	3.6	3.4	1.6	1.7
	DIA	1.8	1.9	2.4	3	4.6	4.5	4.2	1.9	1.5	1.6
	FCF	16	17	17	17	17.8	19.4	20.3	19.4	16.9	15.6
Germany	FDI	0.3	0.1	0.1	0.1	0.2	0.1	0.6	0.2	0.2	0.2
	DIA	0.5	0.7	0.8	1.1	0.8	1	1.2	1.5	1.4	1
	FCF	20.4	20	19.5	19.4	19.4	19.6	20.2	20.9	21.4	21.2
Italy	FDI	0.3	0.3	0.3	0	0.5	0.8	0.3	0.6	0.2	0.3
	DIA	0.5	0.5	0.4	0.4	0.3	0.7	0.2	0.7	0.6	0.5
	FCF	21.3	21	20.7	19.7	19.7	20.1	20.2	20.3	19.7	19.11
Portugal	FDI	0.7	0.9	1.1	0.6	1	1.7	3.5	4.3	4.6	3.6
	DIA	0.1	0	0.1	0	0	0.2	0.2	0.3	0.7	0.9
	FCF	29.2	23.6	21.8	22.1	24.2	26.8	26.4	26.4	26	26.2
Ireland	FDI	0.9	0.7	0.8	-0.2	0.3	0.3	0.2	0.2	0.2	0.2
	DIA	na	na	na	na	na	na	na	na	na	na
	FCF	22.6	20.9	18.6	17.5	16.4	15.7	17	18.1	16.8	15.8
Be.-Lux.	FDI	1.5	0.4	1.1	0.5	1.6	3.2	4.2	3.7	4.3	4.7
	DIA	0.4	0.4	0.3	1.4	1.8	2.3	3.8	3	2.9	4.7
	Bel. FCF	16.2	16	15.6	15.7	16	17.7	19.3	20.2	19.4	19.2
	Lux. FCF	21.2	20	17.7	22.1	25.5	27	27.1	26.9	29	27.7
Denmark	FDI	0.1	0	0.2	0.2	0.1	0.5	1	0.9	1.2	0.7
	DIA	0.3	0.2	0.5	0.8	0.6	0.7	1.9	1.2	1.4	1.6
	FCF	16	17.2	18.7	20.8	19.7	18.1	18.1	17.4	16.4	15.2
Netherl.	FDI	0.6	0.5	0.5	1	1.1	1.8	2.8	3.1	1.8	1.6
	DIA	1.5	2	2.2	1.8	3.3	1.8	5	4.7	4.2	3.4
	FCF	18.7	19	19.7	20.4	20.8	21.3	21.5	20.9	20.5	20.4
Greece	FDI	1.3	1.4	1.3	1.2	1.5	1.7	1.4	1.5	1.6	1.5
	DIA	na	na	na	na	na	na	na	na	na	na
	FCF	20.3	18.5	19.1	18.5	17.1	17.4	19.2	19.6	18.6	18

*FDI=Foreign Direct Investment, DIA= Direct Inv. Abroad, FCF= Fixed Capital Formation

Source: OECD, Int. FDI Yearbook, 1994, and European Economy, 58, 1994

Table A7: Competitiveness of EC12

Relative nominal unit labour costs* *(USD; 1980=100)*

year	Be.-Lux.	France	Germany	Neth	UK	Italy	Spain	Denm.	Greece	Ireland	Portugal
1975	97.2	98.4	101	99.7	83.5	103.2	88.5	108.7	97.8	92.6	150.7
1985	79.1	85.2	83.2	80.7	86.9	106.5	78.1	87.3	103.5	97	90.1
1988	81.3	83.2	93.4	86.2	88.5	116	86.8	99.4	90.1	97.2	93.2
1989	79.3	80.5	89.6	80.5	91.2	119.8	92.2	95.8	92.6	92.7	94.6
1990	84.2	83.8	91.4	83.8	95	129.8	99.9	99.8	97.7	93.4	101.9
1991	85.2	80.7	89.2	80.7	97.7	131.4	100.7	95	90.3	89.5	112.9
1992	87.6	82.1	93.6	82.1	95.1	128.4	101.8	96.1	90.1	89.9	129.1
1993	90.4	83.5	97.6	84.7	85.5	105.8	89.8	96.7	88.6	86.3	124.2
1994	91.7	82.1	95.6	84	86.6	102.6	84.5	94.7	89.8	86.8	120.2

Real Effective intra EU exchange rates *(period average; indices, 1987=100)*

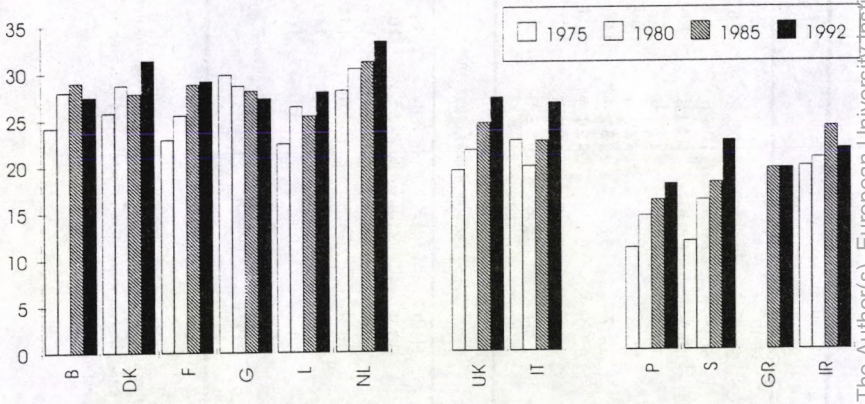
	Belgium	France	Germany	Neth	UK	Italy	Spain
1988	97.9	99.3	98.9	98.4	109	97.5	103.8
1989	100.2	98.2	97.3	98.8	107.4	100.5	109.3
1990	100.4	99	97.6	96.9	104.6	102.1	110.2
1991	97.9	96.6	98.1	95.1	111.1	103.1	110.3
1992	98.2	97.2	101.1	94.3	108.3	99.9	107.4
1993	98.5	99.8	107.1	96.5	105.8	88	97.4
^1994	101.9	99.5	107.7	96.7	105.5	86.1	94.1

*Labour costs refer to total economy; they are expressed in a common currency; the performance is relative to 19 industrial countries and has double export weights; costs are PPPs weighted; the compensation of employees is adjusted for the share of self-employed in occupied population, per unit of GDP at constant prices.

^3rd quarter.

Source: Eurostat, European Economy, 58, 94 and Bank of Italy, Economic Bulletin, various issues.

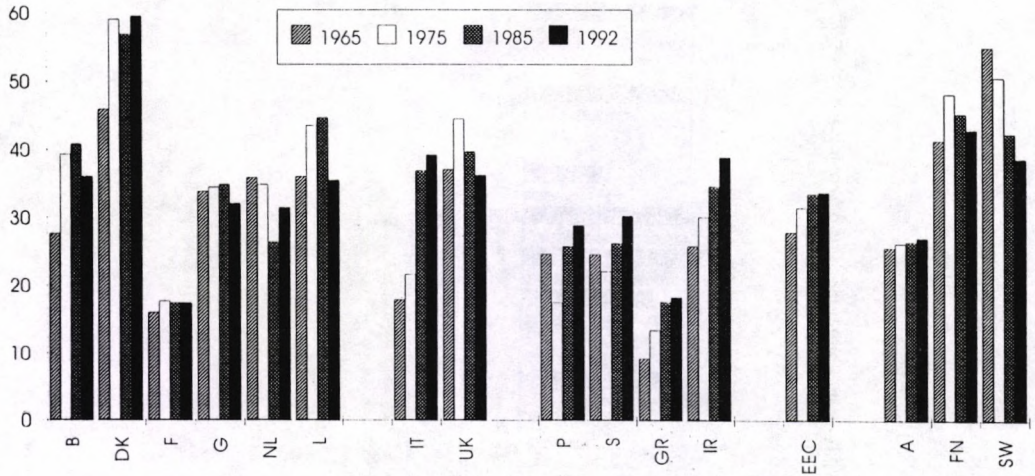
GraphA1: Social protection, % GDP, selected years.



*For Greece first available year 1988 (instead of 1985).

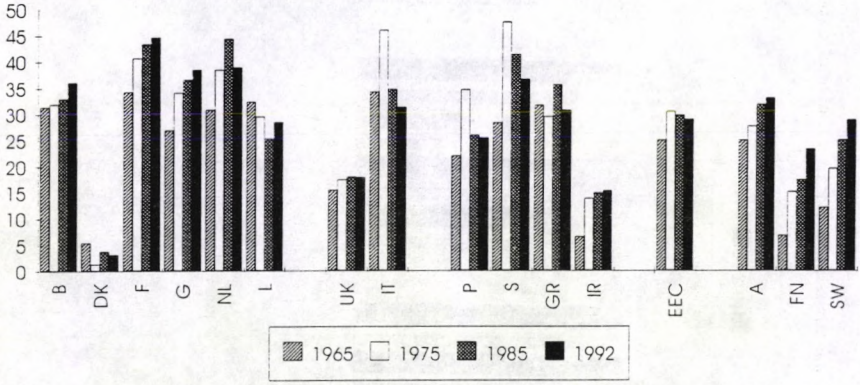
Source: Eurostat, Basic Statistics of the Community, 199

GraphA2a: Taxes on income and profits as a % of total taxation



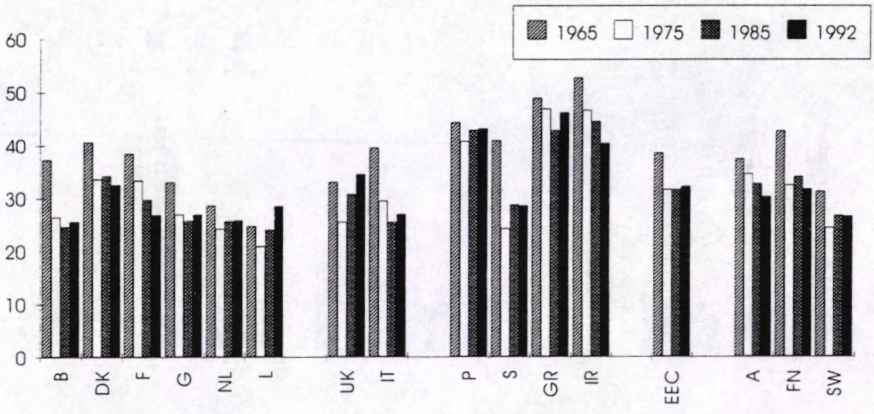
Source: OECD, Revenue statistics of OECD member countr

GraphA2b: Social security contributions as a % of total taxation



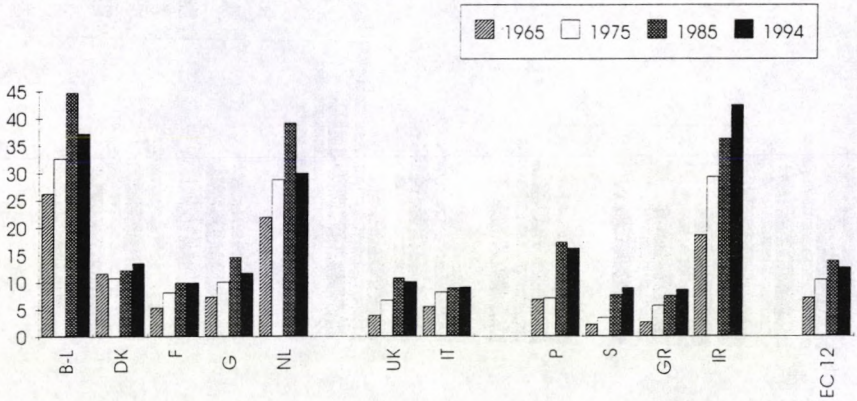
Source: OECD, Revenue statistics of OECD member countries.

GraphA2c: Taxes on good and services as a % of total taxation



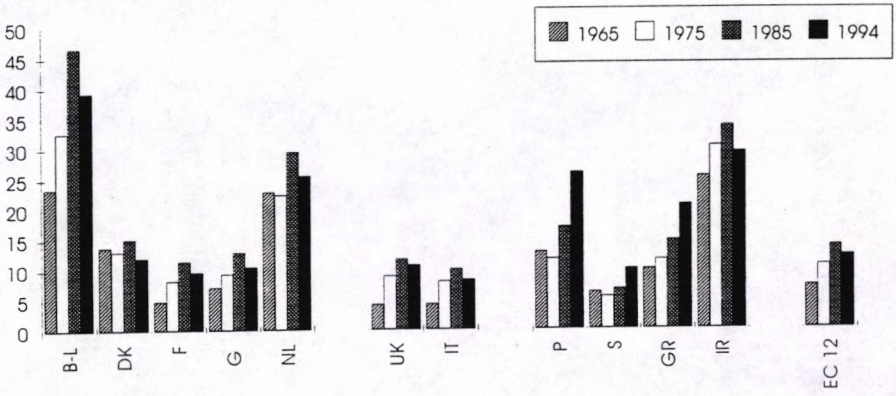
Source: OECD, Revenue statistics of OECD member countries

GraphA3a: Intra EC trade. Exports, % GDP.



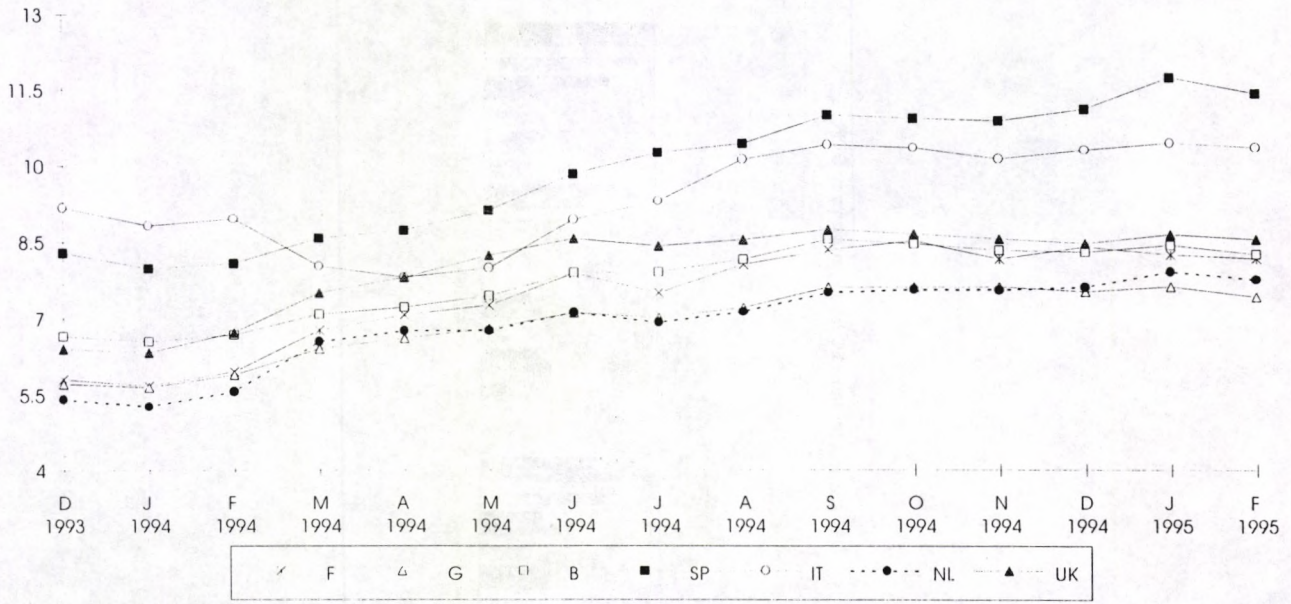
Source: Eurostat, European Economy, 58, 1994.

GraphA3b: Intra EC trade. Imports, % GDP.



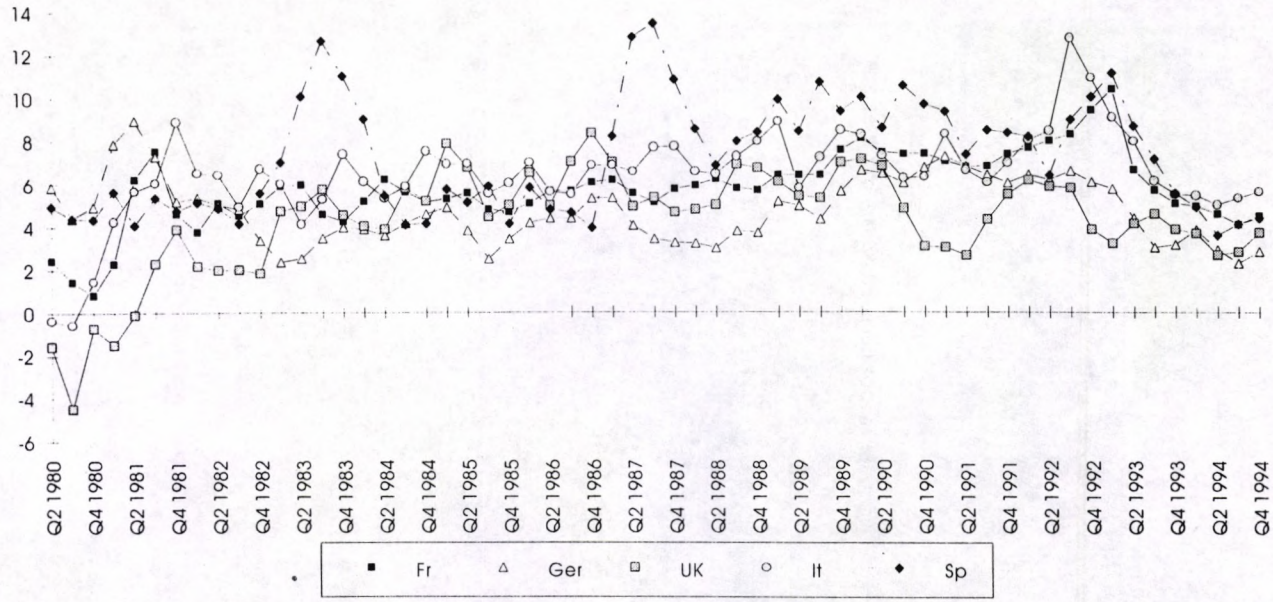
Source: Eurostat. European Economy. 58. 1994.

GraphA4: Long term interest rates, selected ERM countries.



Source: Banque de France Bulletin n. 13, January 95, Table 1.1 and OECD, Financial Statistics Monthly, n.3 March 1995.

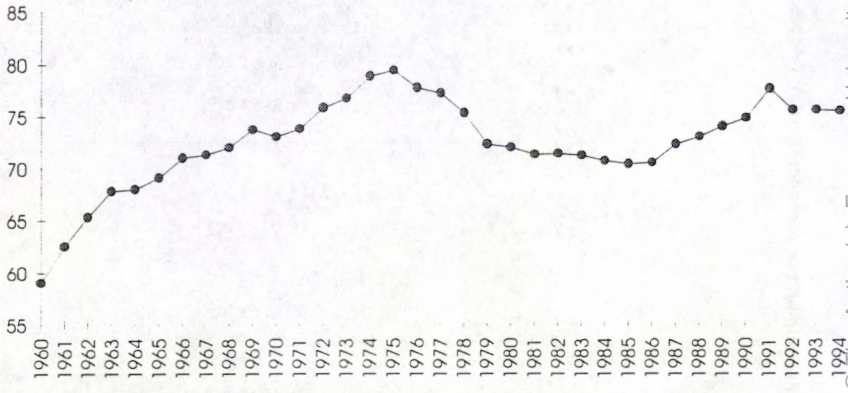
GraphA5: Developments of real interest rates, selected ERM countries.



FR, 3-M Pibor; G, 3-M Fibor; IT, Interbank sight dep.; S, 3-M Interbbank loans; UK, 3-M Interbank loans.

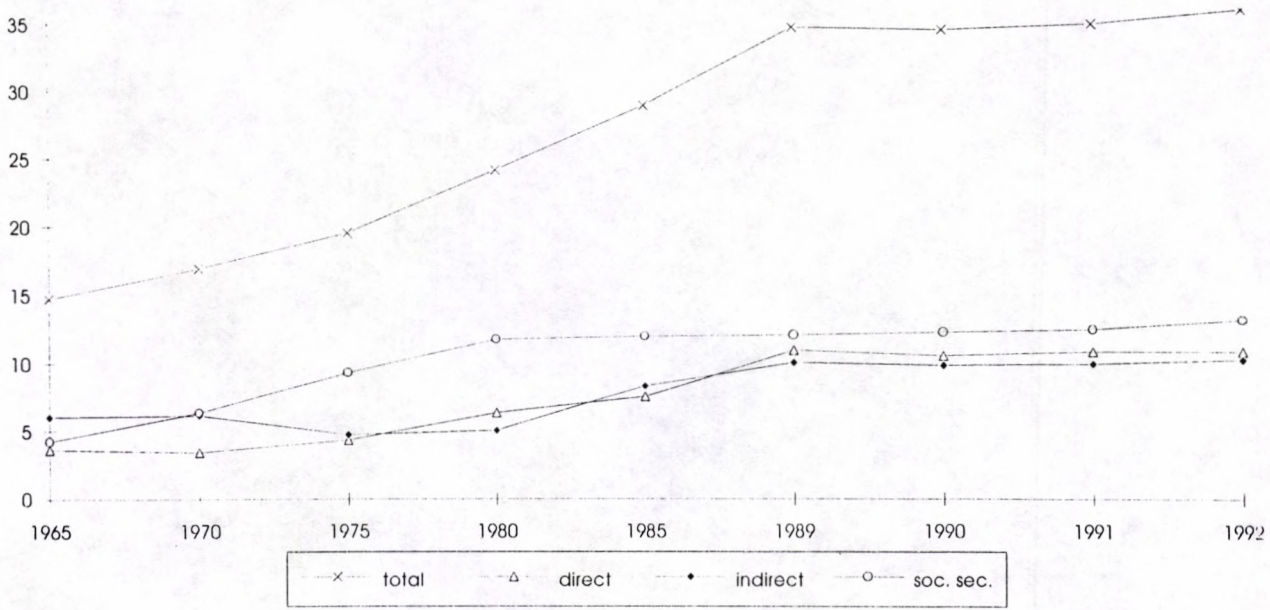
Source: OECD, MEI, various issues

GraphA6: GDP per head, Spain/ec12, PPPs



Source: Eurostat, European Economy 58, 5

GraphA7: Spain, composition of receipts as % of GDP.



Source: OECD, Revenue statistics of OECD member countries.

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