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## The Impact of EMU on cohesion - further research needed?

39th Congress of the European Regional Science Association: "Regional Cohesion and Competitiveness in 21st Century Europe", August 23 - 27, 1999, Dublin, Ireland

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**THE IMPACT OF EMU ON COHESION – FURTHER  
RESEARCH NEEDED?**

**ABSTRACT:** Among the 11 Member States that have adopted the euro as their single currency since 1 January 1999 three are in a process of catching-up, frequently referred to as cohesion countries (Spain, Ireland and Portugal). The Greek government has declared its intention to join in the year 2001. A question frequently raised is whether EMU could accelerate or slow down the process of catching-up of these countries or of less favoured regions. Looking at EMU not only as the introduction of the single currency, but also as a long-term process of co-ordinating Member States' economic policies, gives three main channels of potential economic impact of EMU on cohesion: convergence of economic policies, single monetary policy, and enhanced economic integration. The paper confront some basic arguments with the available evidence from literature and statistics in order to identify issues on which further research might be of major interest. It seems that the most interesting area for future research would be on the impact of a single monetary policy on cohesion as soon as more "post-euro" data become available. Studies on the impact of the convergence of economic policies are likely to bring few surprises while research on the effects of integration on Europe's economic geography is on-going.

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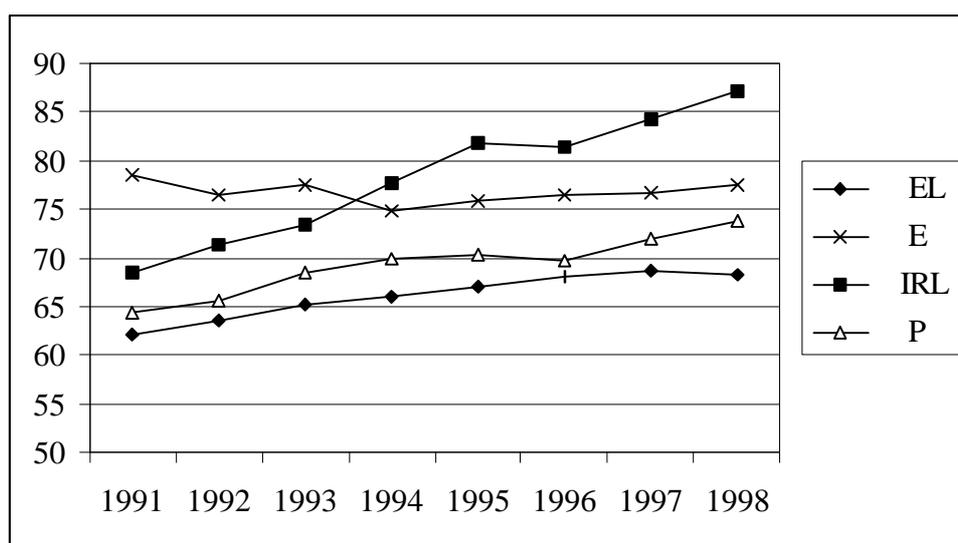
\* Views expressed in the paper are exclusively those of the author and do not necessarily correspond to those of the European Commission, for whose Directorate-General for Economic and Financial Affairs (DG II) the author is working.

## 1. Introduction

Among the 11 Member States that have adopted the euro as their currency on 1 January 1999 three are in a process of catching-up, frequently referred to as cohesion countries (Spain, Ireland and Portugal). Another cohesion country, Greece, has declared its intention to join at the beginning of the year 2001. After their accession to the EU, Central and Eastern European Countries (CEECs) with even lower income per capita will also prepare for their participation in EMU.

A question frequently raised is whether EMU will accelerate or slow down the process of catching-up of these countries or of less favoured regions. As can already be seen in Figure 1.1, cohesion countries' GNP per capita has approached the EU15 average during the 1990s. This trend has been particularly strong in the case of Ireland while catching-up had a much slower pace in Greece, Spain and Portugal.

Figure 1.1: Gross national product (GNP) at current market prices per head of population (in PPS; EU15 = 100), 1991-1998



Source: Commission services (DG II); author's calculations.

The purpose of this paper is to confront some basic arguments with the available evidence from literature and statistics in order to identify issues on which further research might be of major interest. In mainly aiming at an overview of available material, the paper refrains from a detailed description and assessment of the various studies and methodologies referred to. In particular, the "Lucas critique" applies to most analyses in that EMU is a systemic change in all participating countries which limits the pertinence of empirical studies based on historical data.

Considering EMU not only as the introduction of the euro, but also as a long-term process of co-ordinating Member States' economic policies, the paper proceeds by

dealing with three aspects in the subsequent sections which can be considered as the main potential channels of economic impact on cohesion:

- Convergence of economic policies (section 2);
- Single monetary policy (section 3);
- Enhanced economic integration (section 4).

The first two effects bring about similar changes within a Member State, while the third could also have a different impact at the sub-national, regional level.

## **2. Convergence of economic policies**

Based on the rationale that economic policies should not vary too much within a currency area, the EC Treaty defines several criteria of economic convergence which need to be met in order to participate in EMU. Having reached a high degree of sustainable convergence regarding price stability, the government financial position (deficit and debt), exchange rate fluctuations and long-term interest-rate levels, the Council decided in May 1998 that 11 Member States could participate in EMU as from 1 January 1999. In addition, the Stability and Growth Pact obliges participating countries to regularly present their medium-term orientation of economic policies in Stability Programmes and to avoid excessive deficits by targeting a medium-term objective of budgets in balance or in surplus.

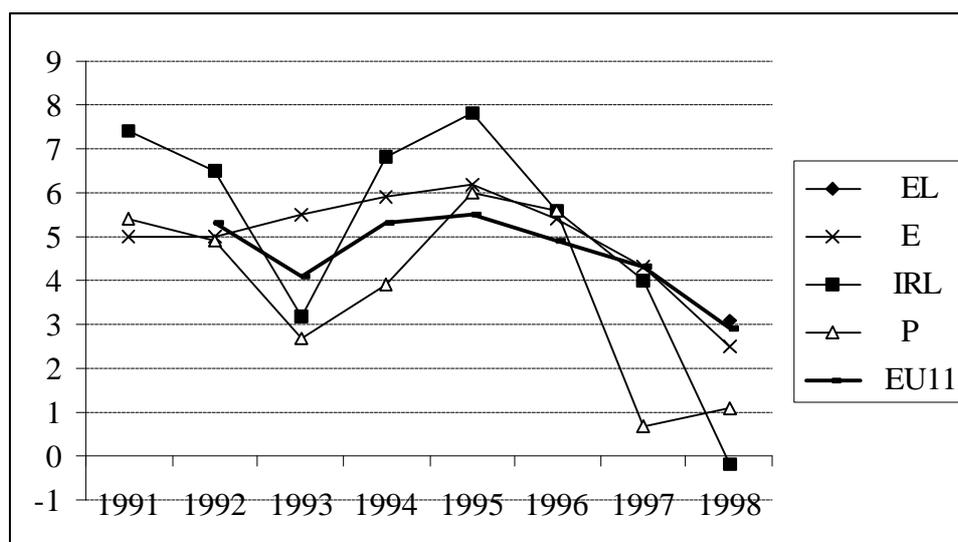
In the last years, there have been some theoretical contributions on the relationship between growth and inflation and on what determines inflation.<sup>1</sup> On this basis, it is generally recognised that enhanced stability in cohesion countries would have been difficult to achieve outside the framework of EMU and has considerable positive effects for the process of catching-up. The most important effect, which is already visible and can hardly be overestimated in its positive impact on cohesion, is the decline in real long-term interest rates which have moved to historically low levels in all participating cohesion countries (see Figure 2.1). This is part of the explanation for the increase in private investment in cohesion countries to above EU11 average (in % of GDP) since 1994.

However, the process of stabilisation may also involve adjustment costs if, firstly, price setting behaviour on goods and factors markets is sluggish in adapting to the new environment of lower inflation and causes stabilisation crises due to higher real prices of goods and factors or if, secondly, reductions in public expenditure to reduce deficit and debt affect mainly public investment.

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<sup>1</sup> For an overview see e.g. IMF 1996.

Figure 2.1: Real long-term interest rates in % (GDP deflator), 1991-1998



Source: Commission services (DG II)

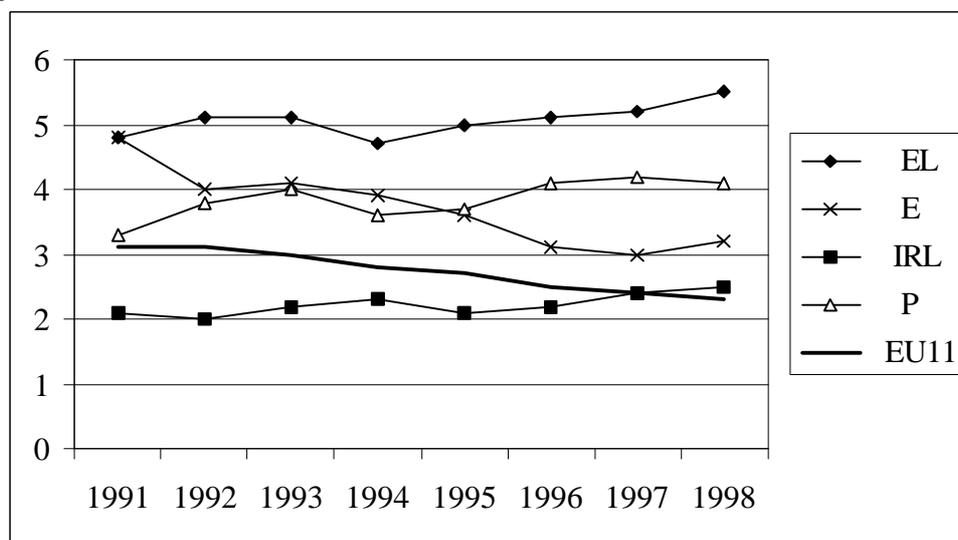
Note: No data available for Greece before 1998.

There have been no signs of stabilisation crises for several reasons which contributed to a favourable policy-mix. Starting levels of inflation in cohesion countries have been relatively low already at the beginning of the 1990s allowing for a smooth and credible process during which economic agents adapted their expectations on inflation. Medium-term agreements on moderation in wage bargaining have largely facilitated this process by keeping real wages in line with changes in productivity. Furthermore, the reduction of public deficits has reduced inflationary pressure which allowed monetary policies not to be as restrictive as to have growth-dampening effects.

As regards public investment, there is a case for having higher public investment in catching-up countries than in other countries in order to enhance long-term growth by increasing the public capital stock. In this view, it could be argued that a public deficit target of 3% is too much of a constraint for these countries given that - for reasons of political economy - governments might prefer reductions in public investment rather than reductions in public consumption. Defined as gross fixed capital formation of the general government sector in % of GDP, there is however little evidence - except for Spain - that reductions in public investment have actually been made to reach the public deficit target (see Figure 2.2). All cohesion countries have reached a level of public investment in 1998 (in % of GDP) which was higher than the EU11 average.

percentage of gross domestic product at market prices), 1991-1998

Figure 2.2: Gross fixed capital formation of general government (at current prices) as



Source: Commission services (DG II)

Similarly, it is also argued that the Growth and Stability Pact would be too restrictive in case of an economic slowdown by allowing in principle only a public deficit of 3% of GDP. If these restrictions were more at the expense of reducing public investment in cohesion countries than in other countries, there could be a negative impact on cohesion. However, the restrictions imposed in case of an economic slowdown depend very much on the starting position: If the deficit stands already at 3% in times of a boom, then this rule is indeed restrictive. The Stability Pact's rationale is therefore that member states shall pursue a medium-term objective of a budget in balance or in surplus which gives sufficient margin of manoeuvre for automatic stabilisers to come into effect by running a temporary deficit.

An issue arising in this context is the medium-term sustainability of Member States' fiscal policies. An attempt to identify conditions for the sustainability of public finances has been made by Perotti/Strauch/von Hagen (1997). One of their results is that successful cases of fiscal consolidation address both expenditure and revenues equally, whereas unsuccessful consolidations adjust mainly the revenue side of the budget with cuts in expenditure mostly on investment. The authors conclude that the public deficit is insufficient to monitor and that institutional aspects of budgetary processes should also be looked at.

As a whole, on these issues of convergence of economic policies, little analysis has yet been done for the specific context of EMU - and in particular on the cohesion countries - apart from more descriptive statistics. Nevertheless, in view of the data, few surprising results can be expected from studies on these topics, while the more interesting issue of medium-term sustainability of fiscal policies is rather speculative.

### 3. Single monetary policy

Since 1 January 1999, the European Central Bank (ECB) is responsible for monetary policy within the euro area. At its meeting on 13 October 1998 the Governing Council of the ECB agreed on the maintenance of price stability - defined as a year-on-year increase in the Harmonised Index of Consumer Prices (HICP) for the euro area of below 2% - as its primary objective and explicitly stated that “the single monetary policy will adopt a euro area-wide perspective; it will not react to specific regional or national developments.” As regards cohesion, a single monetary policy can therefore have an impact mainly via two channels: the loss of the nominal exchange rate instrument between participating countries and different responses to monetary policy.

#### *3.1 The loss of the nominal exchange rate instrument*

The irrevocable fixing of exchange rates in a monetary union implies that the nominal exchange rate is no longer available as an instrument of adjustment. In this context, the general question is whether this is really a loss or whether it is less so because changes of the nominal exchange rate are rarely an efficient instrument for adjustment. In theory, cohesion countries may have to rely - more than other countries - on changes of the real exchange rate for at least three reasons: Firstly, the so-called Balassa-Samuelson effect argues that consumer price index levels tend to be higher in more prosperous countries so that catching-up countries experience real exchange rate appreciation. Secondly, pressure for real exchange rate depreciation may arise from structural trade and current account deficits which often accompany the process of catching-up because of higher demand. Thirdly, as argued by the theory on the optimum currency area, cohesion countries' trade may be less diversified making sectoral shocks more likely to impact on the whole economy.

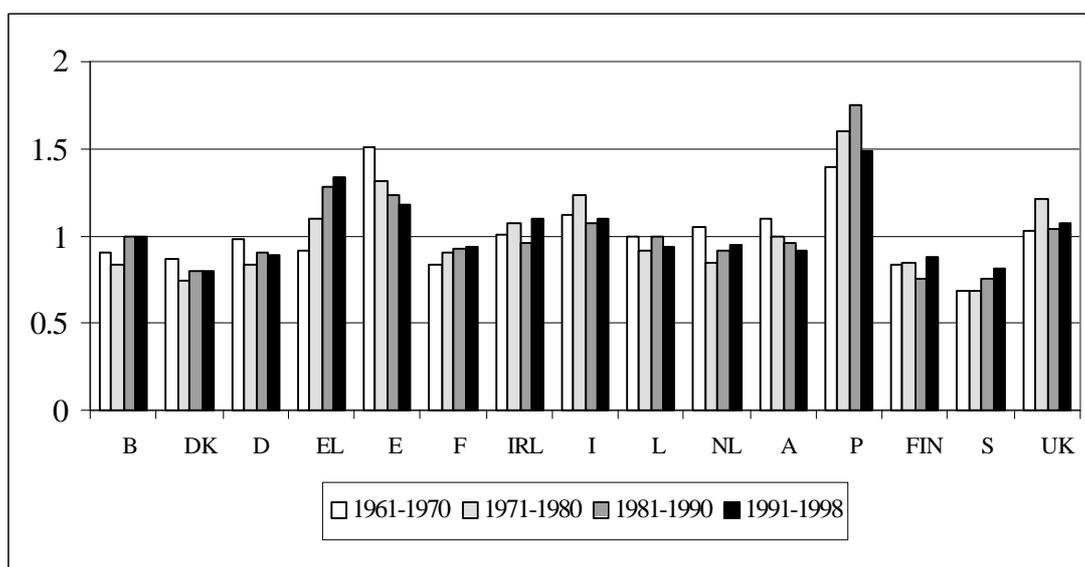
#### *The Balassa-Samuelson effect*

According to Balassa and Samuelson, technological progress has historically been faster in the traded goods sector than in the non-traded goods sector, so that the productivity bias for traded goods is more pronounced in high-income countries. As a consequence, consumer price levels tend to be higher in richer countries so that catching-up countries experience real exchange rate appreciation in the course of development.

Figure 3.1 indicates for the cohesion countries (as well as for Italy and the UK) that income comparisons in market exchange rates tend to underestimate the purchasing power, as expressed by a ratio above 1. Although the ratio also depends on exchange rate developments, as well as indirect taxation, this result should be mainly due to lower prices for services and non-traded goods in catching-up countries. Over the decades, a constant convergence of market exchange rates and purchasing power parities can be seen for Spain whereas the ratio for Portugal only decreases since the

mid-1980s from a high level indicating further potential for price adjustments. At first sight, the trend for Greece is somewhat surprising, starting at a level below 1 in the 1960s and increasing since, which may be better understood if it is taken into account that it partly coincides with a period of diverging income per capita relative to the Union average during the 1980s.

*Figure 3.1: Average ratio of ECU exchange rates over GDP purchasing power parities in EUR15, 1961-1998*



Source: Commission Services (DG II); author's calculations by arithmetic averages over annual ratios.

In general, the empirical evidence in favour of the Balassa-Samuelson effect is weaker than commonly believed (Froot and Rogoff 1995, or Asea and Mendoza 1994). Since EMU increases integration and enlarges the share of traded goods relative to non-traded goods, the Balassa-Samuelson effect, if it occurred at all, would be reduced. In addition, the theory on the effects of changes in relative prices led by sectoral productivity differentials both within a country and across countries relies on a number of strong assumptions. One of them is the "law of one price" meaning that wages between sectors are not necessarily equalised, but that their ratio is at least kept constant. This can be avoided or minimised by sectoral wage differentiation limiting spill-overs of wage increases from one sector to the others and by real wage increases in the traded sector below productivity gains. Alberola/Tyrväinen (1998) have tested the standard Balassa-Samuelson hypothesis of uniform wage development in the traded and non-traded goods sectors by applying co-integration methodology and found that it only holds for Belgium, Germany and Spain while differences in sectoral wage development did matter in France, Italy, the Netherlands, Austria and Finland.

Furthermore, although relative price changes can in general not be avoided in a catching-up process and are necessary in the context of structural change, there is no inherent need for higher inflation rates, the latter depending rather on the stability orientation of economic policy. This is especially the case in the EU, given the small growth differentials and the long term character of catching-up which makes the

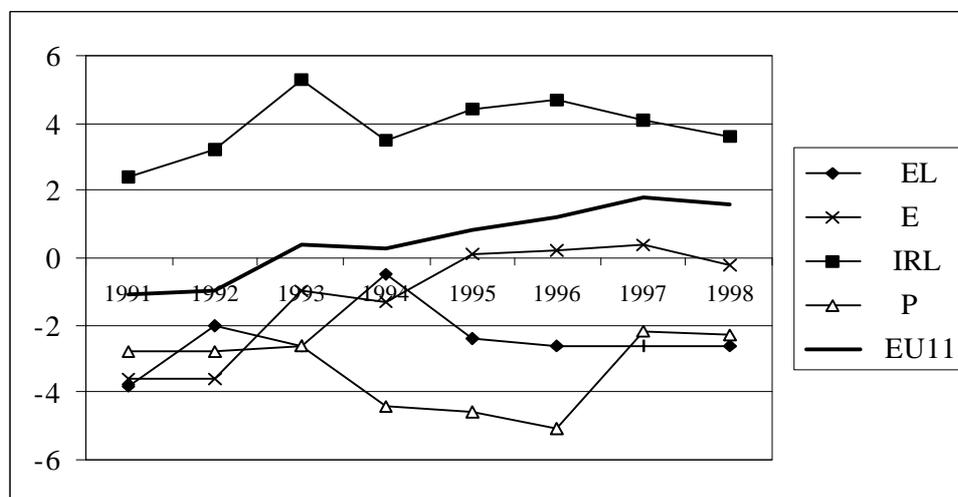
increase in prices of non-traded goods likely to be slow enough to avoid inflationary pressure. Already within countries, growth is not spatially uniform and rather takes place in growth poles which spread their positive effects to other regions. Hence, changes of real exchange rates between regions within a country do take place, although not through a nominal exchange rate but through prices of non-traded goods and immobile factors of production.

Alberola/Tyrväinen (1998) simulated EMU countries' inflation rates with a model of an extended Balassa-Samuels model, setting an EMU-wide inflation rate of 2% and assuming that the law of one price holds for traded goods, and found inflation to vary some +/- 1 percentage point. The authors conclude from the result for Belgium and Spain, which both have the highest above average inflation in non-traded goods prices, that catching-up in productivity might be less of a determinant for inflation than wage linkages between the traded and the non-traded goods sector. A monetary union, therefore, would allow for adjustments of relative prices with regionally different inflation rates without necessarily causing an overall higher inflation rate in the currency area as a whole.

#### *Balance of payments effects*

Balance of payments constraints can affect the real exchange rate in different ways: On the one hand, imports of investment goods which are hardly available in the early stages of catching-up and high domestic demand may cause a structural trade and current account deficit, thus giving rise to a tendency for depreciation. On the other hand, this may be a transitory phenomenon until supply-side effects set in, increasing capital inflows and external competitiveness. Figure 3.2 suggests, however, that current account deficits are no longer particular problems for cohesion countries which they used to be in the 1970s and early 1980s. Ireland and, since the mid-1990s, Spain are even running a surplus, while Greece and Portugal are now at a deficit of about 2% which seems to be sustainable and useful in view of the corresponding capital imports.

*Figure 3.2: Balance on current transactions with the rest of the world (national accounts, in % of GDP), 1991-1998*



### *Asymmetric shocks*

Short-term and unexpected changes in basic economic conditions may cause temporary asymmetric shocks. The institutional level of economic policy response to such shocks should depend on their spatial dimension. For shocks concerning the entire currency area, monetary policy continues to be a possible instrument among others as a coordinated policy response for smoothening their negative effects; an asymmetric shock of a region within a Member State is - according to the principle of subsidiarity - to be tackled by the Member State which should in any case never have made use of the nominal exchange rate instrument for this purpose. For country-specific shocks the possibility of a change of the nominal exchange rate ceases to exist with the participation in EMU which gives rise to two questions:

1. Are catching-up countries more likely to suffer from country-specific shocks? and
2. Are cohesion countries specifically constrained as regards the alternative mechanisms of adjustment?

For an answer to the first question, the search for possible causes of country-specific shocks points to their diminishing relevance in a single market with a single currency since there have to be country-specific features which are inherent in the financial or economic system. With progress in market integration, the spatial dimensions of such specific features will be less and less identical with national borders, particularly since shocks triggered by monetary causes do no longer exist inside EMU. The likelihood of country-specific shocks is also reduced with the product diversification of foreign trade and/or the importance of intra-industry trade, so that industry-specific shocks do not spread to country-specific shocks. Product diversification and intra-industry trade is clearly lower in the cohesion countries - in particular in Greece and Portugal - but tend to increase with integration and catching-up (European Commission 1996, pp. 63ff.). Despite the overall reduced probability of country-specific shocks it can not be fully excluded that cohesion countries, due to their smaller product diversification, could be somewhat more affected by sector-specific shocks than other countries (Bayoumi/Eichengreen 1993).

In the case of an adverse country-specific shock, the instrument of nominal exchange rate depreciation is no longer available in an EMU oriented at price stability. Already in the past, this instrument has been associated with high costs or little success, given the high degree of openness to intra-EU-trade of the small economies of Greece, Ireland and Portugal. Hence, in answering the second of the above questions, those alternative mechanisms of adjustment have come into effect which keep production and employment at a stable level.

In this respect, labour markets have a key role to play. Real wages corresponding to productivity changes, taking the respective sectoral and regional developments into account, require an adequate flexibility and decentralisation of wage bargaining. In the case of excessive centralisation or inertia of wage policy, the theory of optimum currency areas considers geographical labour mobility as the most important

mechanism of adjustment in avoiding unemployment or inflation following a regional asymmetric shock. The argument is that in the case of inflexible wages and the missing instrument of nominal exchange rates, unemployment would occur in the region with reduced demand whereas inflationary pressure would occur in the region with excess demand, so that factor movements are to bring about a new equilibrium.

From a positive point of view, migration causes high costs in terms of getting information, moving houses or adapting to a new environment, which are further increased by cultural and linguistic differences. Therefore, the low level of intra-EU-mobility compared to inter-state mobility in the US is of little surprise and can be in equilibrium in spite of high differences in income and unemployment. Empirical evidence confirms that geographical labour mobility is important as an adjustment mechanism for regional shocks within the US, while this is hardly the case in Europe (Commission of the EC 1990, p. 151f., Blanchard/Katz 1992, Eichengreen 1993, Bayoumi/Prasad 1995, Obstfeld/Peri 1998).

From a normative point of view, the question is how worthwhile it is to have short-term adjustment through migration which results in the desertion of regions in decline and in agglomeration problems in booming regions. In addition, the flow of labour from declining into booming regions is self-reinforcing in that demand moves in the same direction. A low potential for labour mobility as it exists between EU member states can therefore be an important advantage for the euro area, allowing its regions to remain competitive by real wage differentials without causing the desertion of low wage areas. Models illustrating the centripetal effects of high labour mobility have been presented by various authors (Horn 1993, Puga 1997, Saint-Paul 1997). At the same time they demonstrate that a lack of geographical labour mobility can be substituted by regional wage differentiation which requires a low potential of labour mobility to avoid out-migration out of low-wage regions. Regional wage differences corresponding to differences in productivity – requiring a low potential of geographical labour mobility - may thus have centrifugal effects through capital flowing into low-wage regions.

In view of this background, a study carried out for the Commission's DG II (Cambridge Econometrics 1998b) was to find empirical evidence of adjustment mechanisms in existing monetary unions with cultural and linguistic barriers to geographic labour mobility, such as Belgium and Canada, taking the United Kingdom as a control case. The study's two main results can be summarised as follows:

- Region-specific factors do not appear to be important in determining temporary deviations from long-term growth trends in each region which is mostly explained by aggregate and sector-specific factors. The authors explain this by the fact that the regions of a country are subject to the same economic policy and very well integrated. However, regional factors are more important in determining long-run differential growth rates.
- VAR analysis of the reactions to a negative employment shock in the regions with a low potential of interregional labour mobility compared to the rest of the country gives an idea of the main mechanisms of adjustment. While employment did not recover from the shock and most of the adjustment is through unemployment and

migration in the UK and Belgium, a fall in wages and house prices helped employment to return to pre-shock levels in Quebec.

The study's conclusions are, first, that EMU will itself reduce the likelihood of region-specific shocks and, second, that the combination of limited inter-regional labour mobility and inter-regional wage flexibility (as well as flexibility of prices of non-traded goods) can achieve the same result as nominal exchange rate adjustment, but requires flexible labour and goods markets.<sup>2</sup> Hence, relative price adjustment on product and factor markets is another potential alternative to nominal exchange rate changes. Housing prices, for example, can be an efficient adjustment mechanism to maintain competitiveness by allowing nominal wage reactions without reducing real wages. The empirical evidence suggests lower regional price variability in Europe than in the US and Canada (Obstfeld/Peri 1998). The need to improve the efficiency and flexibility of product, labour and capital markets in EMU has been highlighted by the conclusions of the Cardiff European Council in June 1998 and subsequent Commission reports.<sup>3</sup>

After all insufficient functioning of adjustment mechanisms on product, capital and labour markets may give fiscal policy a role to play. A balanced budget as envisaged by the Growth and Stability Pact should give participants' budgets enough margin of manoeuvre to have automatic stabilisers work in case of a shock. In the exceptional case, however, where national efforts of stabilisation prove to be insufficient, negative externalities of recessionary tendencies spilling over to other EMU countries can not be excluded. Considerations for co-ordinating or institutionalising fiscal stabilisation at European level may therefore have some economic rationale, although they are difficult to design in order to avoid moral hazard problems.<sup>4</sup>

Since fiscal bottlenecks are expected in particular in the poorer Member States and stabilisation efforts there might be at the expense of public investment, thus endangering catching-up, a further increase of Structural Funds has occasionally been suggested (Emerson/Gros 1998). For the discussion of these proposals it is important to differentiate between the objectives of growth and redistribution on the one hand and the objective of stabilisation on the other hand. National systems of fiscal federalism usually target both objectives simultaneously, making their volume accordingly high. EU cohesion policies are however not conceived as a short-term instrument of stabilisation, but as an additional financial source of public investment for the long-term improvement of supply-side conditions. The example of Ireland demonstrates that overall economic stability is an important condition for the success of structural assistance in order to develop synergies with private investment; this is the economic rationale of the principle of conditionality regarding excessive deficits as applied to the Cohesion Fund. A "bailing out" of Member States' failures in fiscal or

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<sup>2</sup> However, results and conclusions of the study have to be regarded with caution in view of the usual problems of data and methodology of empirical analyses at the regional level.

<sup>3</sup> See European Commission 1999.

<sup>4</sup> See Commission of the EC 1993, Italianer/Verheukelen 1993, as well as the European Parliament's "Report on the adjustment mechanism in cases of asymmetric shocks" by rapporteur Alman Metten (adopted by the European Parliament on 18 December 1998).

wage policies by additional transfers from Structural Funds could therefore be counter-productive for the cohesion objective by setting the wrong incentives.

### ***3.2 Regional differences in monetary policy transmission***

The transmission of the ESCB's monetary policy into the real economy may vary in kind and time between participating countries. Although the TARGET settlement system for the processing of cross-border payments is to make sure that differentials within the single money market across countries do not occur because arbitrage possibilities are used immediately, there are significant differences in countries' and regions' economies which may lead to variations in reactions to monetary policy changes. In general, monetary policy has an impact on the real economy mainly through two channels, the interest rate and the exchange rate.

#### *The interest rate channel*

The available literature identifies two main reasons why interest rate changes can differentially affect the regions of a currency area:

- The sectoral structure because of varying interest rate sensitiveness in the demand for products such as construction, capital goods or consumer durables;
- The financial structures as regards the importance of bank intermediation, volume and maturity of debt, collateral, fixed or variable interest rates (e.g. due to different housing markets regarding ownership).

Firm size is also occasionally mentioned as a possible influencing factor, but is found to be of low significance. In applying a model which includes indicators for sectoral and financial structures, Carlino/DeFina (1998) find the following results as regards the variation in the sensitiveness of EMU countries to monetary policy shocks: Finland, Ireland and Spain are likely to be the most sensitive countries, France, Italy and the Netherlands are the least sensitive, while the remaining countries show average responses. Based on a Structural Vector Autoregression (SVAR) model, Ehrmann (1998) finds that – although the responses to monetary policy shocks are on average very weak – the magnitude of the response tends to correspond to the size of economies, i.e. they are small in small economies and larger in large economies. Dornbusch et al. (1998) find the impact of an interest rate change on output to be average in Germany, France and the UK, smaller in Spain and highest in Sweden and Italy. In the same paper, they estimate the output elasticities of interest and exchange rate changes in a “European Monetary Condition Index” which gives Spain an average value for the interest rate elasticity and the highest value (jointly with Germany) for the exchange rate elasticity (see Table 3.1).

*Table 3.1: Estimated output elasticities in a European Monetary Condition Index*

	<b>Output elasticity of a change in the short-term interest rate</b>	<b>Output elasticity of a change in the dollar exchange rate</b>
<b>Germany</b>	1.40	1.007
<b>France</b>	1.54	0.73
<b>Italy</b>	2.14	0.74
<b>Spain</b>	1.54	1.05
<b>Sweden</b>	2.36	0.29

Source: Dornbusch et al. 1998, p. 30.

Overall, the issue of cross-country differences in monetary policy transmission receives increasing interest as a subject of analysis, although results are very heterogeneous and inconclusive due to methodological problems (Kieler/Saarenheimo 1998). However, very little has yet been done with a particular cohesion perspective and the few results available from studies which include Spain do not show results significantly differing from those for other countries. In principle, it is possible that the sectoral or financial structures in cohesion countries have particular features – such as a high importance of agriculture, a small firm size, a high concentration of real estate or of financial institutions - which differ from those of richer countries. However, income per capita might as well be only one determinant for differences in monetary policy transmission alongside with many others arising from institutional and historical factors.

#### *The exchange rate channel*

In EMU, transactions with partners outside the euro area will be subject to a common external nominal exchange rate which may affect the competitiveness of participating Member States vis-à-vis third countries as far as its changes are passed through to the real exchange rate. For analytical reasons, it is important to make the distinction between the volatility and the level of the exchange rate.

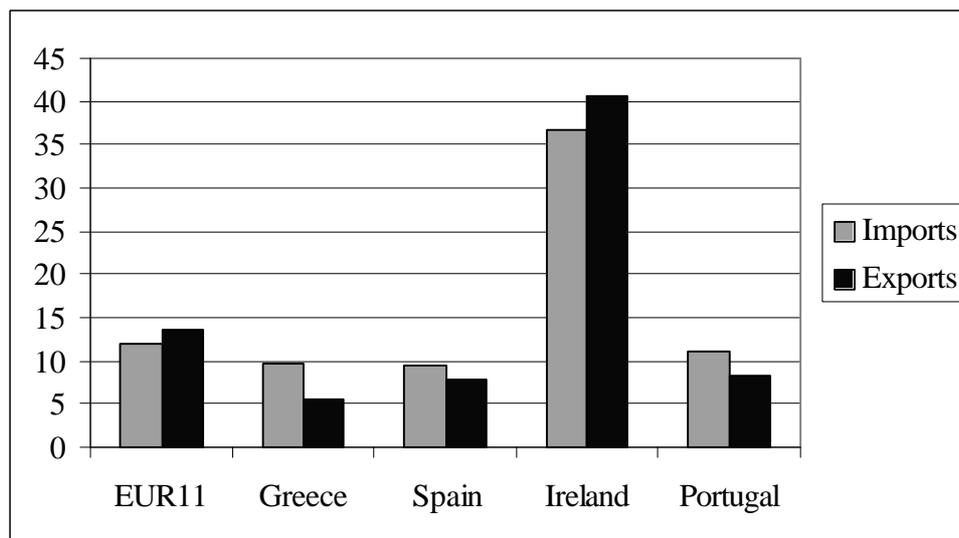
Exchange rate volatility will not only be eliminated between countries participating in EMU, but is also likely to decrease in relation to third countries due to the “country size effect” of EMU. Martin (1997) develops a model leading to a hump-shaped curve of exchange rate volatility as a function of country size differential. He then presents empirical evidence which confirms that EMU means a shift towards the descending part of the hump-shaped curve, i.e. towards a decrease in exchange rate volatility.

As regards the level of the euro/dollar exchange, there is little use in speculating about its future development, i.e. whether the euro will be “strong”/“overvalued” or “weak”/“undervalued”. If, in the medium to long run, the euro became an attractive currency for international financial markets and its value exceeded purchasing power parities, there might be a varying impact on sectors and regions. For example, Corpataux/Crevoisier (1998) provide some case studies illustrating that the overvaluation of the Swiss franc has increased regional disparities in Switzerland by favouring financial and importing activities in the richer urban centres and disfavours poorer regions depending on tourism and exporting industries. Furthermore, as mentioned above (Table 3.1), Dornbusch et al. (1998) found a relatively high output

elasticity of exchange rate changes for Spain, although this result can certainly not be generalised for all cohesion countries.

As regards the possible cohesion impact of volatility or changes in the level of the euro exchange rate, the relevant question to answer is whether cohesion countries might be more sensitive than other EMU countries. In this respect, the most important determinant will be the size of foreign trade with countries outside the euro area. Figure 3.3 reveals that extra-EU11 trade is less important relative to GDP in Greece, Spain and Portugal than on average in the euro area. Only in Ireland is trade with countries outside the euro area, in particular the UK, of significant importance. Although the relative importance of trade between Ireland and the UK has decreased during the last decades, the exchange rate between the Irish and the British Pound has always received considerable attention in Ireland and is likely to continue doing so.

*Figure 3.3: Extra-EU11 exports and imports of goods (in % of GDP at market prices), 1997*



Source: Eurostat; author's calculations

#### 4. Enhanced economic integration

For transactions between different currency areas, costs occur for at least one of the transaction partners in comparing prices, exchanging foreign currency and managing exchange rate risks. Estimates on transaction cost savings under existing production structures, i.e. the static integration effect brought about by the euro, range between 0.3% to 0.4% of GDP (Commission of the EC 1990, p. 68) and 0.8% of GDP (IFO Institute 1998, p. 46). Gretschmann (1997) calculated an approximate 50% reduction in transaction costs related to foreign exchange for North Rhine-Westphalia's foreign trade. Hallet (1998) estimates the regional distribution of the reduction in transactions costs within the euro area for the year 1994 (see Table 4.1) according to which the results are mainly depending on three factors:

1. The exchange rate volatility - as reflected in the bid-offer spreads used for the calculation – which tends to be high for south European currencies, Ireland and Finland, but low for the currencies of the former deutschmark area;
2. The relative importance of trade with other euro countries – depending on location and size of a country – which tends to be high for Belgium, Ireland, Luxembourg, Netherlands and Portugal, and low for Germany, France and Finland;
3. The sectoral structure of regions which implies a relatively high integration effect in regions dominated by manufacturing, and relatively low values for regions dominated by services, such as major cities or peripheral regions.

*Table 4.1: National average, highest and lowest regional values for exchange cost savings in % of GVA, 1994*

	<b>average</b>	<b>highest</b>	<b>lowest</b>
<b>B</b>	0.31	Limburg (0.40)	Namur (0.18)
<b>D</b>	0.05	Niederbayern (0.06)	Hamburg (0.03)
<b>E</b>	0.14	Navarra (0.23)	Ceuta y Melilla (0.04)
<b>F</b>	0.09	Franche-Comté (0.16)	Corse (0.03)
<b>IRL</b>	0.22	-	-
<b>I</b>	0.13	Piemonte (0.17)	Calabria (0.06)
<b>L</b>	0.26	-	-
<b>NL</b>	0.18	Noord-Brabant (0.24)	Utrecht (0.13)
<b>A</b>	0.14	-	-
<b>P</b>	0.22	Alentejo (0.28)	Madeira (0.08)
<b>SF</b>	0.12	Etelä-Suomi (0.14)	Ahvenmaa/Åland (0.09)
<b>total</b>	0.10	0.40	0.03

Source: Hallet 1998

Although estimates on the level of transactions savings vary between studies,<sup>5</sup> these results seem to indicate that a clear centre-periphery pattern regarding the static integration effect does not emerge either at the country level or at the regional level. However, higher than average transaction cost savings can be expected for the small, open peripheral economies of cohesion countries. This corresponds with the Commission study “One market, one money” which concludes "that in relative terms transaction costs can be 8 times more important for small open economies than for the largest Member State" (Commission of the EC 1990, p.264). These initial or static integration effects might have dynamic integration effects by changing the regional pattern in goods, capital and labour markets, as will be discussed below.

#### ***4.1 Goods and capital markets***

Major progress in the integration of the cohesion countries' goods markets has already been brought about by their accessions to the EC and the Single Market. The reduction of transaction costs associated to economic integration and the increase in trade can be expected to squeeze price differences within the Single Market. Price convergence, as measured by the coefficient of price variation for different product groups in EU 9 and EU12 in selected years between 1980 and 1993, has indeed taken place for consumer goods, equipment goods and services, but not for energy and construction. As can be seen in Table 4.2, price dispersion has been bigger in EU12 than in EU9 (EU12 excluding Greece, Spain and Portugal), although with a clearly declining trend and almost disappearing for consumer goods.

The static integration effect on regions' trade in goods and services has been shown above to be important for some regions while almost negligible for others. Lower transaction costs for capital movements in EMU will also have an integration effect on the price and availability of capital since interest rate differentials between participating member states will be squeezed due to the disappearance of exchange rate risk premiums and due to an increased efficiency of previously rather fragmented financial markets. Within a single currency area, capital can more easily be transferred to investment in the most efficient locations given that an integrated financial market without exchange rate risk increases the certainty of the rate of return as the crucial determinant of investment behaviour. In other words, the elimination of country-specific risks gives more weight to the characteristics of regions in the competition for mobile capital.

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<sup>5</sup> Bröcker (1998) argues that most of the estimates on transaction costs savings are too high because they neglect hedging possibilities, an asymmetric adjustment of behaviour to exchange rate changes as well as the continuation of fundamental risks in other forms than exchange rate volatility.

*Table 4.2: Coefficients of price variation for selected groupings in EU9 and EU12, 1980-1993*

		<b>1980</b>	<b>1985</b>	<b>1990</b>	<b>1993</b>
<b>Consumer goods</b>	EU9	19.9	19.1	20.3	18.0
	EU12	26.0	22.5	22.8	19.6
<b>Services</b>	EU9	25.2	25.6	24.6	23.4
	EU12	33.0	33.7	31.8	28.6
<b>Energy</b>	EU9	22.1	16.1	24.7	30.6
	EU12	30.8	21.1	28.0	31.7
<b>Equipment goods</b>	EU9	13.1	12.5	12.2	12.9
	EU12	18.0	14.0	13.1	14.5
<b>Construction</b>	EU9	20.1	14.1	16.5	22.4
	EU12	24.4	22.1	23.5	27.4

Note: Prices including taxes

Source: European Commission 1996, p. 134.

For regions with a high static integration effect the question is whether this is good or bad news for them, in particular for peripheral regions which are striving to catch-up to the EU level of income. Economists usually analyse the regional effects of trade integration by addressing the question of whether convergence or divergence of per capita income prevails, i.e. whether income in central regions or in peripheral regions will grow at a relatively higher pace due to increased integration. Income convergence through trade is predicted by the traditional approaches of trade theory: Trade and specialisation shift factor demand in favour of the relatively more abundant and cheaper factor until relative factor scarcities and prices have been equalised between countries. Income divergence is maintained by approaches of regional and development economics based on models of location theory or circular causation, both referring to agglomeration economies as a crucial argument. Models generating a U-shaped curve of the periphery's relative income with increasing integration have been developed by various authors of the so-called "New Economic Geography". The hypothesis is that "while complete elimination of obstacles to trade always raises the competitiveness of the peripheral regions, partial elimination may in principle have a perverse effect" (Krugman/Venables 1990, p. 58). Relative wages in centre and periphery diverge in a range of high to medium trade costs and converge in a range of medium to low trade costs. Similar models including demand linkages also demonstrate that, contrary to widespread concerns, central regions usually also gain from the catching-up of peripheral regions and will only lose in extreme cases of economic modelling (Krugman/Venables 1995). While New Economic Geography models are certainly appealing, their empirical basis is still weak since the main variable of trade costs (or integration) is extremely difficult to measure, making it almost impossible to determine a region's (and sector's) position in the U-shaped curve.

Apart from the convergence/divergence issue, Krugman (1993) maintains that the single currency in combination with the single market would lead to a degree of market integration comparable to that of the US and would therefore cause a similar degree of regional specialisation as in US manufacturing. The result would be a higher vulnerability to regional asymmetric shocks following sectoral shocks. However, the empirical evidence on the impact of the single market on this aspect is much less conclusive. When looking at the empirical evidence, a distinction between national and regional specialisation in the EU is to be made. While groups of regions perform in an increasingly similar manner across national borders and decreasingly within countries (De Nardis et al. 1996, Fatás 1997), there is no evidence of increasing inter-industry trade between member states which should be expected in the case of more national specialisation.<sup>6</sup> For those industries showing a trend towards localisation, there is no overall centre-periphery pattern across member states (Brülhart 1997). Bayoumi/Prasad (1995) present data for the whole economy showing that only the primary sector and manufacturing have a higher regional specialisation in the US, while the EU has a higher national specialisation in all remaining industries, i.e. in construction and all services.

Taken together, this could point to a possible explanation for the inconclusive results which needs to better distinguish between traded and non-traded goods: More national and regional specialisation may occur for traded goods whereas non-traded goods will basically follow settlement patterns (except for when they are exclusively inputs to traded goods). Therefore, given the low mobility of people between EU member states, there is little reason to believe that the euro alone would increase national or regional specialisation in non-traded goods, although some more specialisation in traded goods industries might take place. Based on these ideas, Ludema/Wooton (1997) have introduced imperfect international labour mobility into a typical model of New Economic Geography, the result being that "...weak locational preferences (less-than-perfectly mobile labour) may result in three phases of trade liberalisation. It may initially drive production from diversification into partial agglomeration and then back into diversification ..." (p. 16). In order to avoid the social problems of emigrations and return migrations, the authors conclude on the importance of sequencing integration by first removing all barriers to trade and only then reducing barriers to mobility.

To sum up, the euro will reinforce regions' competition for mobile capital and might further increase national and regional specialisation in the production of traded goods. The regional impact of integration has been the subject of three studies in the context of the European Commission's "Single Market Review" in 1996 (Subseries VI, Vol. 1, 2 and 3). Although difficult to quantify, one of them generally suggests that the single market has contributed to regional convergence within the EU (Cambridge Econometrics 1998a). Furthermore, a DG II study on integration and location applying New Economic Geography, however mainly at the national level, is on-going. A more specific study on the implications of financial integration and EMU on EU financial centres has also been carried out for DG II (IFO 1997). As regards specific types of

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<sup>6</sup> See the literature referred to in Buti/Sapir 1998, pp. 195ff..

regions, results from a survey in border regions have become available (Gramberger et al. 1998).

#### ***4.2 Labour markets***

Transaction cost savings brought about by the euro could also have an impact on labour markets. For an analysis of possible direct labour market effects it is important to distinguish the effects between countries participating in the euro from the effects within countries because the euro only changes labour market parameters between countries and not within countries. The low potential of geographical labour mobility between member states as opposed to a high potential within member states - the latter being however hardly visible due to mechanisms equalising disposable income - is a crucial point which must be taken into account since it makes the analysis of the euro's impact on the labour market very specific. However, the euro is unlikely to increase mobility between countries since different currencies are much less of a barrier to mobility than differences in language or culture.

A widespread concern regarding the impact of the single currency on labour markets is that higher transparency makes it easier to compare wages between participating countries; in other words, that the "law of one price" would apply for labour within the euro area. While nobody expects an induced increase in migration towards high-wage countries, it is frequently argued that collective wage bargaining in low-wage countries would come under pressure to adjust wages to levels of high-wage countries (the "imitation" or "demonstration effect"; Williamson (1975)). The consequence would be - as far as an upward adjustment of wages is not in line with increases in productivity - a loss of competitiveness and jobs with a call for higher EU transfers to regions hit by high unemployment. However, until now there is little evidence that catching-up member states, implicitly assumed to have been subject to exchange rate illusion and unconscious of wage differentials, would pursue a wage policy which deviates from increases in productivity and put at risk one of their main competitive advantages in a single market with increased competition, i.e. low labour costs. Co-ordination between trade unions of different Member States, if taking place at all, is mainly on respecting the productivity rule in wage bargaining.

A similar, but opposite concern is that increased wage transparency in a single currency would give rise to downward harmonisation of wages in the euro area. Firms in high-wage regions would come under competitive pressure, forcing them either to reduce their labour costs or to relocate to low-wage regions (the "wage dumping" argument). However, this argument neglects the fact that regional competitiveness depends not on labour costs alone, but - among several other factors such as market access - on their relation to labour productivity or, in other words, on unit labour costs. Given regional differences in productivity, downward adjustment of labour costs would give high productivity regions major competitive advantages regarding unit labour costs which would soon be reflected in higher wages again once the labour market becomes more and more short of certain qualifications. In addition, even in a monetary union prices for non-traded goods vary between regions, so that the same real wages require regional variations in nominal wages to offset differences in purchasing power.

To sum up, direct effects of the euro on the location of employment can hardly be expected, except for the case of centralisation of wage bargaining or social policy at EMU level which would cause higher unemployment in low-productivity regions. However, indirect effects on the location of employment following changes in the location of production and investment as discussed above will be a more important channel of impact, although extent and direction are empirically difficult to assess.

## 5. Conclusions

Reviewing the issues and the evidence of the three preceding sections, it seems that the most interesting area for future research would be on the impact of a single monetary policy on cohesion as soon as more “post-euro” data become available. Studies on the impact of the convergence of economic policies are likely to bring few surprises while research on the effects of integration on Europe’s economic geography is on-going.

As regards nominal convergence (section 2), literature and data point to the positive cohesion effects of enhanced stability which has taken place without major adjustment problems due to a balanced policy-mix and avoiding cuts in public investment. Studies on whether these policies will be sustainable in the medium to long run in the context of the Stability and Growth Pact could be interesting, but would have a rather speculative character.

On the consequences of a single monetary policy on cohesion (section 3), the importance of losing the nominal exchange rate has probably been over-estimated in the optimum currency area (OCA) debate which hardly made any critical assessment of the OCA criteria. Only recently has the focus shifted to the possibility of regionally heterogeneous reactions to interest and exchange rate changes. Interesting issues for further research might therefore be, in particular:

- Are cohesion countries’ product, capital and labour markets flexible enough to limit the possible effects of country-specific shocks on growth and employment?
- Are cohesion countries’ financial or economic structures such that monetary policy transmits differently into the real economy than in other countries?
- Are cohesion countries more sensitive to volatility or changes in the level of the euro exchange rate and which would be the effects on the process of catching-up?

The impact of integration on the regional distribution of income (section 4) is an issue which has received renewed attention since models of the New Economic Geography have been developed. While the degree of sophistication of these models has increased considerably since then, the empirical evidence applying this approach is still limited. Some studies trying to cope with the limited regional data in Europe have been made during the 1990s and are on-going. Other methodologies such as CGE models or case studies on specific types of regions (e.g. border regions) might bring some additional interesting results.

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