

# POLITICAL AND ECONOMIC LOGIC OF WESTERN EUROPEAN INTEGRATION

A study of convergence comparing member and  
non-member states, 1980–98

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**ABSTRACT:** One of the few cross-national studies, which contrast members of the EU with a comparable set of other countries as benchmark, suggested that membership is beneficial for economic growth and may cause faster economic convergence of less wealthy EU member states. Employing a newly collected data set on inter-state transfers in the EU, we test whether this faster economic convergence is due to access to the Internal Market (proposition of the economic logic) or rather a consequence of special forms of inter-state redistribution within the EU (proposition of the political logic). We find that if EU countries grew faster in the 1980s and 1990s (as compared to the benchmark and controlling for relevant growth factors), then this was due to transfers within the community. These benefited the poorer EU countries, which thus experienced faster economic convergence. This evidence suggests support for the argument of the political logic regarding Western European integration which we contrast with the economic logic. The empirical results are highly significant regarding the prospects of catching up for new EU members in Central and Eastern Europe. The decisions about the future EU transfer system will determine the chances for convergence for these countries.

**Key words:** Western European integration; European Union; economic convergence; cohesion policies; comparative analysis

## 1 Introduction<sup>1</sup>

In reflecting on the economic consequences of the European Union, we focus in this article on the following question: has EU membership accelerated the economic convergence – i.e., have the less developed members been able to catch up due to higher growth rates? Two different arguments for an accelerated convergence effect due to membership are presented in this article. To decide empirically upon the question, we apply the classical comparative method using a sample of 33 countries, with the non-EU member states in the sample acting as benchmark. The details of this comparison of member and non-member states are described in the annex. With regard to the EEC and later EU, we analyse one of those policy fields more closely, which influence the parameters for national economies at the supranational level, namely: the regional, structural and cohesion policy. The transformation of these, and other, policy fields since the 1980s has been described and explained in detail elsewhere (Bornschiefer (ed.) 2000).<sup>2</sup>

The creation of the internal market and the technology policy within the EU have been imitated in the course of time by other integration projects and state initiatives within the political world economy. Yet, concerning regional, structural and cohesion policy, the efforts of the EU are actually quite unique, since they are measures of balancing wealth between countries, which are remaining formally sovereign states. More efforts have been made for equalization *within* nation states (e.g., between the US states or regions in Japan), but this is irrelevant in our comparison of sovereign nation states. However, a different problem arises in analysing the convergence efforts of the EU. The economic convergence effect among different societies has been empirically solidly established, at least for more developed countries, and proves to be quite strong in this context. Therefore, the question arises as to whether the effort the EU has made is justified by an even stronger convergence process than could have been expected otherwise.

The first section of this article presents two competing arguments, and the second section depicts an overview of the history of market integration and the EU cohesion policy. In Section 3, the new data we collected are described. Section 4 starts with the replication of the earlier finding of a stronger convergence effect for EU member states and then expands the

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2. Research project of Volker Bornschiefer and Patrick Ziltener. The results served as the qualitative basis for this quantitative study.

analysis to clarify the question of whether EU membership accelerates convergence through market access and/or through redistribution measures. Finally, in the fifth section, we discuss the results and draw conclusions from the evidence we have so far.

## 2 Theoretical considerations

Why should member states benefit from integration and experience faster convergence? The economic logic of European integration is broadly debated. However, the political logic – even though economically motivated – is just as relevant. Yet, it has hardly been discussed so far. The above question is approached by referring to the ‘European Economic Community’ as the new formation in Europe called itself for a long time.

### 2.1 The community as an exchange system – asymmetric giving away of individual power

‘Community’ is an important element in economic life, even in modern times. Like all other forms of exchange (anonymous market, bargaining market, organization), the association as a community is based on the giving away of valuable goods, possibilities or resources by members in order to achieve a benefit (Bornschier 1994). The giving away of individual resources in reciprocal exchange (be it an association of individuals, firms, or societies) is the price for increasing possibilities of the community as a whole. The main objective of such an exchange system lies in achieving or enhancing solidarity – as a collective good. The aim is to be more effective in confronting competing actors in the external exchange system and/or to have greater weight in determining the rules of the system. Associations therefore build social power, which improves the competitiveness of the community. This power, aimed against the exterior, belongs to the collective, and is rooted in solidarity. To achieve this goal of solidarity, the individually more powerful members of the association cannot fully deploy their power *vis-à-vis* the less powerful if they do not want to threaten the cohesion of the community. Therefore, the more powerful actors of the association have to donate potential individual power to other members of the association to participate in the increased solidarity. Although all association members benefit from this collective good, not all members pay the same amount for it. The benefits are the biggest for those members of the association which have the smallest individual power. The donation of possibilities and their redistribution within the association is the price for the collective good of solidarity and

the cohesion of the community. Community as an exchange system is thus inherently a system with internal balancing transfers.

If this exchange system logic is applied to the European Community, then the redistributive character of political power at the supranational level is apparent right from the beginning. Within the Community, and later in the Union, the smaller countries always had a larger political weight, relative to their size, in all institutions of the Community. With the further extension of the integration project, countries with lower levels of economic development joined, and consequently an economic balance had to be made by transfers of resources. Advancing cohesion by means of an 'internal balance of finances' within the community follows, thus, a political logic inherent to this exchange system. Of course, these politics within the association are also *motivated* economically, as mentioned above, but do not constitute economic action in a narrow or immediate sense.

These considerations suggest stronger economic convergence of poorer community members as a consequence of the *political* logic expressed by an internal redistribution of economically useful means. Such a proposition can be confronted with the argument of *economic* logic of faster convergence through market creation and expansion.

## 2.2 Market creation and market expansion in Europe

According to the economic theory of integration, the abolition of trade barriers and the expansion of markets result in a general increase of wealth. The arguments are the following: market creation/expansion eliminates constraints that prevent enterprises from being as efficient as they could be and from employing their resources to the full. It establishes a more competitive environment which incites them to exploit more opportunities. This leads to a reduction in costs due to a better exploitation of economies of scale associated with the size of production units and enterprises, to improved efficiency, to a rationalization of industrial structures, and to adjustments between industries on the basis of the play of comparative advantages. This leads to an increase of the level of investment and consumption (*economic gains of integration*; Emerson *et al.* 1988; cf. Molle 1991; Pelkmans 1997; Ziltener 2001). Therefore, the resulting economic growth rate will be above the growth rate which would be expected without, or with less, abolition of trade barriers and without market expansion.<sup>3</sup>

3. The economic integration theory based on neo-classical assumptions predicts short- and medium-term growth effects; approaches based on the endogenous growth theory postulate a sustained 'growth bonus'.

Unlike foreign trade (across national borders), a common market leads to increased profitability (in addition to the mentioned effects) due to economies of *common governance*. Companies and consumers can sell and buy goods, invest or offer labour outside their own state, but within the common market, without the obstacle of different regulations or political structures. Members of European integration benefit from this advantage much more than non-members – even though the significance of foreign trade across national borders is the same – since two thirds of foreign trade of the EU states are dealt with within the EU (data from 1996).

The reason for accelerated *convergence* due to economic integration can be argued as follows: according to neo-classical theory, the law of decreasing marginal return on capital generally makes poorer countries grow faster than richer ones, with closed national economies as well (Barro and Sala-i-Martin 1995). Furthermore, under certain conditions, international trade leads to convergence even without factor mobility (Heckscher-Ohlin theorem). Convergence, however, according to economic theory, is mainly propelled through international mobility of capital and human resources, which are potentially larger due to integration and should thus strongly enhance convergence. This prediction is of special significance here. Integration theory describes these processes according to the following pattern:

If wages are higher in the developed regions, labor will migrate to them from the less developed ones. Consequently, labor will become scarce in the latter and abundant in the former type of region, respectively, triggering an upward or downward movement of wages. On the other hand, if wages and the marginal product of capital are inversely correlated, capital will move to labor-intensive sectors in low-wage regions, diminishing the trend for labour to migrate outwards. Thus, economic growth would be faster in peripheral than in central regions, which would make for convergence.

(Molle 1990: 177)

Another reason for accelerated convergence within the EU (as compared to convergence among non-members) can be found in endogenous growth theory, which points to the importance of technological spillovers. According to this new theoretical approach, investment in the creation of new technologies usually exhibits positive external effects, since other firms can also use these technologies as an input for further research and new technological innovations. While in closed economies technological spillovers may be restricted to domestic firms, in integrated markets they are quite likely to affect foreign firms as well, thus leading to faster growth rates in all member countries (Crespo-Quaresma *et al.* 2002). At the same time, less developed member countries stand to gain the most from this

process, since they can take advantage of the large stock of knowledge capital developed in the more advanced members without having to pay the cost for its creation (cf. Grossman and Helpman 1990).

Regional integration, we summarize, can foster convergence in two ways, then, through market integration and/or political redistribution. The latter was described above as stemming from the community as an exchange system. It aims at balancing wealth to increase the solidarity of the association. This article wants to examine whether more empirical evidence can be found for either of the two explanations.

In the following section we shall analyse the various measures of balancing wealth within the community and then view them within the broader framework of the history of Western European integration.

### 3 Market integration and cohesion policy

The process of successive creation, deepening and expansion of the market can best be presented in a table as a short history of important steps in Western European integration (Box 1). Regarding an evaluation of possible economic effects it becomes clear that market creation and expansion in Western Europe has not taken place in one or two ‘big bangs’ but was a more or less continuous process of negotiation and implementation of trade liberalization. For our hypothesis this means that trade liberalization had an effect over the whole 1980–98 period which we study in this article.

#### 3.1 Cohesion policy

Right from the beginning – i.e., even before the integration relaunch of the 1980s – European integration implicitly and explicitly politicized the question of cohesion within the community (Ziltener 2000b; cf. Anderson 1995; Borrás and Johansen 2001). Structural Fund expenditure increased from 4.8 per cent of the EU budget in 1975 and 9.1 per cent in 1987 up to 28 per cent in 1992. During the 1980/90s, several *qualitative* shifts also took place, the anchoring of regional policy in the Treaty with the Single European Act and several important political reforms. This transformed the original *juste retour* transfer system between the nation states into a European system of cohesion policy, which to a large extent is implemented according to supranationally defined criteria and goals. But the actual system still maintains a ‘hybrid’ character. Following the Maastricht decisions, as much as 35 per cent of Union’s expenditure was reserved for regional policy in 1999. According to the *1st Report on Economic and Social*

**BOX 1. Market creation and market expansion in Western Europe, 1945–2000**

<i>Date of Agreement</i>	<i>Enactment</i>	<i>Measure</i>	<i>Countries involved</i>
1944	1948	Market creation: Benelux Customs Union	B, NL, LUX
1951	23.7.1952	Market creation: Common Market for European Coal and Steel (ECSC Treaty) Implemented on 1 May 1953	EC 6 (D, F, Benelux, I)
1957	1.1.1958	Market creation: Common Market for industrial goods; common agricultural policy (Treaty of Rome) 1 January 1959 first reduction of tariffs by 10% 1962–66 Agreement on agricultural, financial and competition system 1 July 1968 Customs Union completed 1 July 1977 Reduction of internal tariffs completed (EC 9)	EC 6 (D,F, Benelux, I)
1959	3.5.1960	Market creation: European Free Trade Area (EFTA)	EFTA 7 (GB, DK, P, SW, NW, A, CH)
1972	1.1.1973	Market expansion: EC entry of Great Britain, Ireland, Denmark	EC 9 (D,F, Benelux, I, GB, IRL, DK)
1972/1973	1973	Market creation and expansion: Free trade agreement EC – EFTA countries	EC 9 and EFTA (P, SW, NW, IS, A, CH, later plus NW, FIN)
1979	1.1.1981	Market expansion: EC entry of Greece	EC 10 (D,F, Benelux, I, GB, IRL, DK, GR)
1985/86	1.7.1987	Market creation and deepening: Programme to create a Single Market by 31 December 1992; in mid 1995, 90% of measures are implemented by member countries	EC 12 (D,F, Benelux, I, GB, IRL, DK, GR, SP, P)
1985	1.1.1986	Market expansion: EC entry of Spain, Portugal	EC 12 (D,F, Benelux, I, GB, IRL, DK, GR, SP, P)
	3.10.1990	Market expansion: Inclusion of the German Democratic Republic into the Federal Republic of Germany and therefore into the EC	EC 12
1992	1.1.1994	Market expansion: European Economic Area (EEA) Agreement Integration in Single Market, R&D policy, cohesion policy; not integrated: agricultural policy, foreign trade, economic and monetary policy	EU 12 plus FIN, SW, NW, IS, A, FL
1994	1.1.1995	Market expansion: EU entry of FIN, SW, A	EU 15 (D,F, Benelux, I, GB, IRL, DK, GR, SP, P, FIN, SW, A)
since 1991/ 1998		Eastern Europe enlargement: 'European Agreements' and negotiations for accession	

*Note:* Transition and implementation periods of different length have to be considered in the accession agreements; for instance, three and a half years (six years for financial regulations) for the enlargement of 1973; five years (seven years for freedom of movement of labor and trade with specific agricultural products) in the case of Greece; seven years (ten years for certain agricultural products and fishery) in the cases of Spain and Portugal; special regulations for the new 'Länder' in Eastern Germany in the agricultural and transport sectors and for the single market implementation by 31 December 1995.

*Cohesion* (1983–93; European Commission 1996), the total sum of payments in the analysed period amounts to about 100 billion ECU. In Box 2 we summarize important steps in the development of the cohesion policy.

‘Cohesion’ and ‘Convergence’ undoubtedly belong to the ideological keywords of the European Community. This was not only rhetorical, as the total sum of payments shows. The question is whether these measures also had an *effect*. The cross-national analysis in Section 5 will examine whether the convergence effect really was larger in the countries of the European Union than would have been expectable otherwise and whether this convergence effect results from transfers or mainly from successive market liberalization. The efforts made to balance wealth, i.e., the accumulated cohesion payments to certain member states, as well as data on net transfers, are described in the following section.

#### 4 The empirical evaluation of transfers in the EU

To empirically evaluate transfers in the EU, there are two dimensions that have to be looked at: first, the net transfer flows between the member states and the EU institutions, and, second, the payments from the EU to the member states as part of its regional, structural and cohesion policies.<sup>4</sup> Therefore, the tables for the twelve EU member states from 1986 until 1993 (annex) include:

- total EU payments to its member states,
- total member state payments to the EU (agricultural levies, custom duties, VAT-equities, financial contributions of member states),
- net position of member states (total EU payments to member states minus member state payments to the EU),
- EU regional, structural and cohesion policies: EU payments to member states (payments of the EAGGF guidance section, regional and social funds, without the payments of the EAGGF guarantee section, without the reimbursement of levying costs of equities and other payments), in absolute figures (million DM) per year and accumulated over the period under consideration (1986–93); i.e., Belgium received structural payments amounting to 260,000,000 DM in 1986, for instance, which means 26.37 DM p.c.

4. Source: Statistical Yearbooks of the German Federal Bureau of Statistics, various volumes.

**BOX 2. Regional, structural, and cohesion policy**

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The ECSC Treaty of 1951 included financial resources for regions with problems resulting from economic structural change (transition aid). In the EEC Treaty of 1957, regional policy appears in different contexts: cohesion as a political goal was included in the preamble (the member states are 'anxious to strengthen the unity of their economies and to ensure their harmonious development by reducing the differences existing between the various regions and the backwardness of less favoured regions'). However, no EC policies had been developed to achieve this goal; there was a large trust in the market mechanism itself.

The *Funds* that were established with the Treaty of Rome had a regional policy dimension right from the beginning: the European Agricultural Guidance and Guarantee Fund (EAGGF), established in 1962, provided resources to modernize rural areas. The European Investment Bank (EIB) issued loans and guaranteed to finance investment projects, which contributed to the goal of 'harmonious development'. In actual fact these were mainly infrastructural projects. As a bank, the EIB applies the usual economic lending guidelines. The European Social Fund (ESF) was founded in 1960 to finance resettlement and retraining measures for workers, and was increasingly turned into an instrument of European employment policy.

The establishment of a European Regional Development Fund (ERDF) was part of a package deal that included the first EC enlargement round (Denmark, Great Britain and Ireland) as well as the project of a monetary union. The monetary union project, which was decided in 1969, was only possible with compensatory payments. Especially Italy, which repeatedly applied the instrument of realigning parities to strengthen the competitiveness of its export industries, asked for such payments. A pressure group with the accession countries Great Britain and Ireland as well as Italy was formed in alliance with the supra-national actors that had significantly different motives behind the demand of compensatory payments. At the Paris summit in 1972, the ERDF was established, whose goal was the elimination of structural and regional imbalances within the Community. Shortly afterwards, the EC was severely shaken by the oil crisis and the recession that followed. The monetary union project vanished without a sound in the eddy of the anti-crisis strategies of the individual states. The planned regional fund did not fall victim to the crisis; it was introduced on 1 January 1975. With the fixed distribution ratio, the principle of the *juste retour* (fair return) was adhered to, that is, the claim of the Member States to a balanced relationship between payments and receipts, and not a regional policy based on superordinate criteria. A coordination of the national regional policies was not intended, nor was there any anchoring of Community regional policy in the treaties.

With the EC's Southern enlargement in the 1980s, a further extension of the Community's regional policy was expectable. Using the term 'cohesion', the Commission suggested an ambitious package of social regional policy measures at the intergovernmental conference in 1985 with varying success in different sectors (cf. Ziltener 2000a). This resulted in Art. 23 of the Single European Act (SEA, Art. 130 a–e of the EC Treaty), which explicitly anchored regional policy in the Treaty, making it an integral part of Community policy. Art. 130a includes a general aim, according to which the EC develops its policy to strengthen economic and social cohesion and continues to promote a harmonious development of the community as a whole. This is effected by the specified aim of decreasing the gap between the regions and the lag of the least developed regions. The first so-called *Delors Package* in 1988 fulfilled the SEA's 'promises' of regional policy within a complex package solution of financial policies (doubling the regional policy payments until 1993).

The Community's structural policy had five main goals according to a reform effected on 1 January 1989:

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**BOX 2. (Continued)**

- 1 Aid of regions with a development backlog (action goals of ERDF, ESF, EAGGF). Such a backlog is determined if the region's GDP per capita amounts to no more than 75% than Community average. The aim of the intervention is the development of the regional potential through investment aid, creation or modernisation of infrastructure, etc. Four-fifths of the ERDF means are assigned to these regions. Of the means that were to be applied according to this goal until 1993, 16% were granted to regions in Greece, 33% in Spain, 25% in Italy, 18% in Portugal and 6% in Ireland.
- 2 Transition of regions that were severely affected by regressive industrial development (ERDF, ESF goal). This is determined if industrial employment is significantly declining and unemployment is above EC average.
- 3 Reduction of long-term unemployment, especially the unemployment of youth,
- 4 Assistance for the adaptation of workers to industrial change (both goals of ESF).
- 5 Accelerated adjustment of agricultural structures and development of rural areas (EAGGF goals). The necessary conditions are a high proportion of agricultural employees within total regional employment, a low income level in agriculture and also a total regional production below average.

At the Maastricht summit in 1991, the peripheral countries linked their demand of increasing adjustment and compensation payments to their acceptance of the Monetary Union. A new fund was established, the *Cohesion Fund* (since 1993) for member states whose GDP per capita amounted to less than 90% of the EU average. This not only contributes to half (maximum of 75% in Goal-I-regions) of the finances for investments as in the case of the Regional Fund, but can provide up to 90% (sectors: environment, infrastructure). The necessary budget decisions to realize the Maastricht decisions were enacted in December 1992 as the *Delors II Package*. As a result of the negotiations with the EFTA states, a sixth goal was added, namely to develop regions with a very low population density (< 8 inhabitants per km<sup>2</sup>). Such regions in Scandinavia are treated as Goal-I-regions.

The step by step expansion of regional policy had its effect in the Community budget: Structural Fund expenditure increased from 4.8% of the budget in 1975 and 9.1% in 1987 up to 28% in 1992. Following the Maastricht decisions, even 35% of Community expenditure was reserved for regional policy in 1999. According to the *1st Report on Economic and Social Cohesion* (1983–93), the total sum of payments in the analysed period amounts to about 100 billion ECU. For the four ex-EFTA countries, 5.9 billion ECU were projected in 1995–9.

During the 1980s/90s, several *qualitative* shifts also took place, the anchoring of regional policy in the Treaty with the SEA and several important reforms. This transformed the original *juste retour* transfer system between the nation states into a European system of cohesion policy, which to a large extent is implemented according to supranationally defined criteria and goals (Ziltener 2000b). Yet, the actual system still maintains a 'hybrid' character.

Based on these data, two new variables were created:

- *EU structural policy payments to member states* = EU payments to member states (payments of the EAGGF guidance section, regional and social funds, without the payments of the EAGGF guarantee section, without the reimbursement of levying costs of equities and other payments, accumulated 1986–93, per capita).

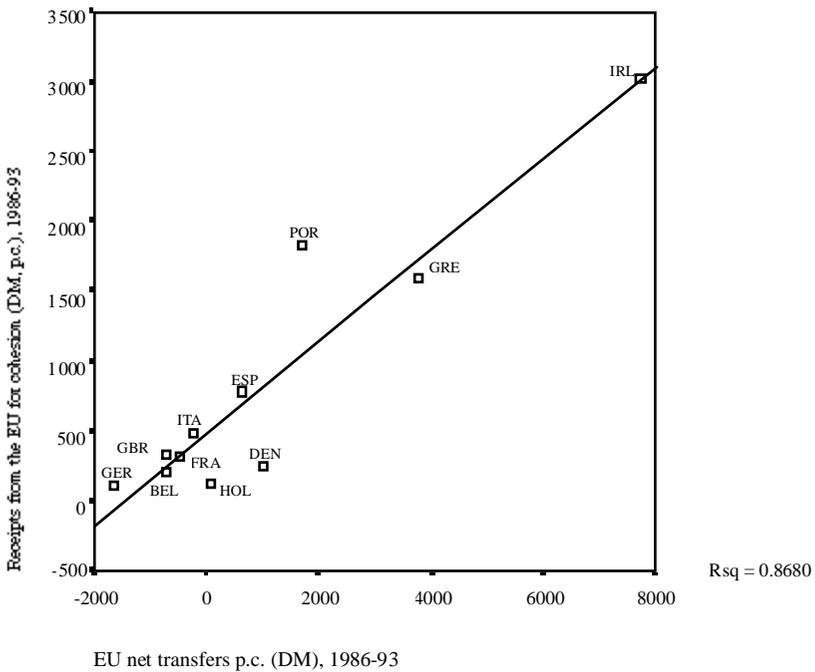


Figure 1. EU net transfers and cohesion payments

- *EU net position* = total EU payments to member states minus member state payments to the EU, accumulated 1986–93, per capita.

Figure 1 shows that the recipient countries of payments from the structural fund are also those countries with a positive net balance for all transfers. The correlation of 0.93 (86 per cent of variance in common, see Figure 1) implies that the two variables EU net transfers 1986–93 and EU structural policy transfers 1986–93 cannot be simultaneously included into a multiple regression model. Since structural policy transfers conceptually describe redistribution according to the level of development more accurately, we will primarily rely on this variable.

As Figure 2 shows, structural policy transfers actually are transferred to the poorer EU member states. However, Ireland receives more structural fund payments in relation to its wealth than the lesser developed members Greece and Portugal.

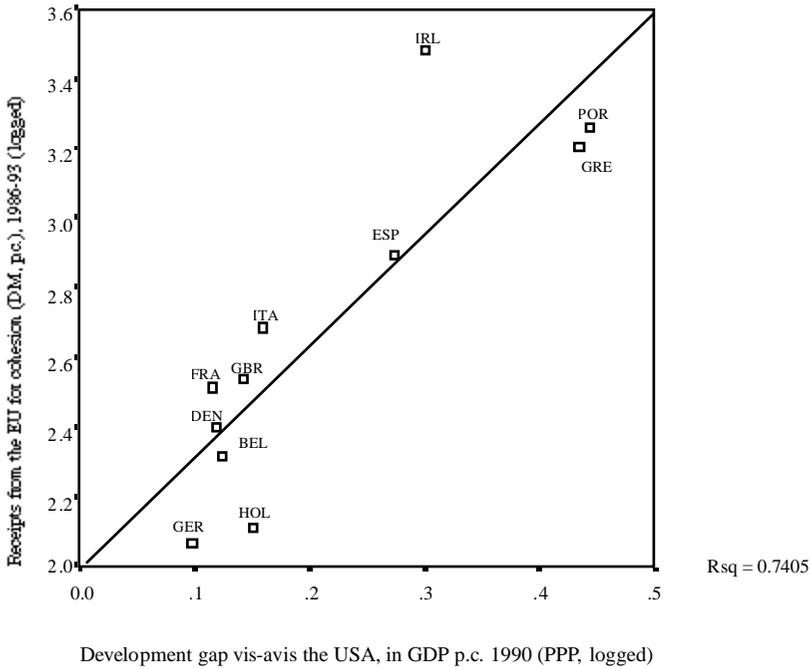


Figure 2. EU development gap and cohesion payments

**5 Testing the hypotheses on the economic benefits of EU membership – a replication and an extension of previous results**

In Table 1 we predict for a sample of 33 countries total economic growth between 1980 and 1998 (for the measures, see Annex). The sample includes 14 EU members (data for Luxembourg are included in the figures for Belgium) and 29 non-members (for selection procedure, see Annex). The cases are (ordered according to per capita income in 1990, PPP values): United States, Canada, Switzerland, Norway, Japan, *Sweden* (1995), *Germany* (1958), Hong Kong, Australia, *Finland* (1995), *France* (1958), *Denmark* (1974), *Belgium/Luxembourg* (1958), *United Kingdom* (1974), Iceland, *The Netherlands* (1958), *Austria* (1995), *Italy* (1958), New Zealand, Singapore, *Spain* (1986), *Ireland Rep.* (1974), Taiwan, *Greece* (1981), *Portugal* (1986), Korea Rep., Mexico, Malaysia, Chile, Brazil, Turkey, Thailand, Argentina (italic: actual members of the European Union, in brackets: year of accession).

In the first two columns of Table 1, we reproduce the findings of Bornschieer (2001) on the economic benefits of EU membership.<sup>5</sup> The

<sup>5</sup> The construction of the variables is explained in the technical annex.

**TABLE 1. The basic model and its (non-additive) extensions**

*Dependent variable: economic growth between 1980 and the end of 1998; n = 33; OLS-estimates*

	(1)	(2)	(3)	(4)	(5)	(6)
Growth of real capital stock	0.70** (8.48)	0.69** (8.92)	0.67** (8.91)	0.68** (9.09)	0.67** (9.31)	0.72** (9.00)
Growth of manpower	0.34* (2.30)	0.37* (2.67)	0.34* (2.44)	0.33* (2.49)	0.32* (2.89)	0.11 (1.14)
Convergence forces	0.81** (5.42)	0.69** (4.54)	0.70** (4.72)	0.71** (5.10)	0.71** (5.32)	0.63** (4.16)
Technology capital	0.51** (3.37)	0.43** (2.97)	0.41** (2.88)	0.41** (2.97)	0.41** (3.22)	0.35** (2.49)
Quality of education	0.08 (0.88)	0.14 (1.53)	0.15† (1.75)	0.15† (1.77)	0.15† (1.90)	0.06 (0.73)
Social capital	0.38** (4.3)	0.35** (4.07)	0.36** (4.31)	0.37** (4.58)	0.37** (4.72)	0.30** (3.43)
'EU years'	0.30** (2.68)	0.11 (0.80)	0.01 (0.10)	0.01 (0.10)		
Interaction: convergence forces * EU-years		0.25* (2.12)	0.04 (0.24)			
EU transfers			0.28 (1.42)	0.32* (2.63)	0.33** (4.05)	
EU net position						0.21** (3.09)
R-square, corrected	0.86**	0.88**	0.88**	0.89**	0.89**	0.87**

Note:  $\beta$  values shown,  $t$  values in brackets; \*\*P < 0.01; \*P < 0.05; †P < 0.1.

results of the former study (Bornschieer 2001: 194, 199), replicated in column 1, can be summarized as follows. The convergence effect, which has already been analysed intensively and proven to be quite stable (e.g., Bornschieer 1989, 1996, 2000; Barro and Sala-i-Martin 1995; Weede 1996; World Bank 1998: 198), turns out to be the most important factor in the model. Its contribution to economic growth is even slightly bigger than the effect of capital growth. With all other growth factors held constant, growth of manpower also shows a significant coefficient, and technology capital seems to have a substantial effect on the dependent variable as well. Furthermore, the growth enhancing contribution of social capital that has been discovered in earlier studies (cf. Knack and Keefer 1997; Bornschieer 2000; Leicht 2000) proves to be significant once more.<sup>6</sup> The effect of the variable 'quality of education' is slightly positive, but statistically insignificant. This might be due to the fact that five of the 33 values had to be estimated. Yet the variable that is of particular relevance to our research

6. Following the advice of one of the commentators, we also controlled for trade openness (for details on variable construction, see the annex). It turned out to be an insignificant predictor of economic growth in our sample and has, thus, been excluded from further analyses.

is 'EU years', i.e., our indicator of membership in supranational European integration.<sup>7</sup>

Compared to the effects shown by the other predictors in the model, the *direct* effect of EU membership weighted according to years on economic growth from 1980 until 1998 is relatively small (beta 0,30 at the most).<sup>8</sup> It is, nevertheless, highly significant (cf. the earlier results: Bornschier 2001: 194).<sup>9</sup> In addition, the effect remains constant even if the operational definition of EU membership is modified (i.e., if the new members of the expansion round in 1995 – Finland, Austria and Sweden – are coded to have the same values as non-members on this variable). The positive direct growth effect of membership in the EU again found in our replication must be offset against possible indirect effects, however. We refer to this problem below.

### 5.1 Accelerated Convergence due to EU Membership?

The main concern of this article is to study the process of convergence in more detail, relying on a comparative research design (cf. Bornschier 2000 on convergence forces in detail). As mentioned before, European integration involved the question of cohesion within the Community/Union as a central political problem right from the beginning – i.e., even before its new departure in the 1980s. Initially, measures based upon the common agricultural policy constituted the main means to limit the gap between incomes in the agricultural sector and the developing industrial society (Rieger 1996). Later, particularly in the 1980s, new policies were added, and the respective financial measures were introduced; the EC funds have been described in Box 1 (Section 2) and the corresponding transfers are listed in Section 3 for the years 1986–93. Yet, the question as to whether these measures were successful remains unanswered. Was the process of convergence among the members of the European Union faster than could have been expected in countries not belonging to the community?

7. The new members that joined the EU in 1995 (Austria, Finland, Sweden) are here assigned the value '1' for our membership variable. The rationale is that the prospective membership had an impact well before 1995 since the applications for membership were already made many years before. These three new members were affected for only part of the examined time period by measures of the EU, but this is reflected by the fact that they receive the lowest value on our variable EU years (see also Annex). If they were assigned the value '0' as non-members, the interaction effect (Equation (2) in Table 1) would be significant only on a 10 per cent level.

8. Such a significant albeit a somewhat smaller effect is also found when EU membership is measured by a dummy variable, see Bornschier (2001: 194).

9. There the reader can find a discussion of findings from comparable studies (Landau 1995; Cambridge Econometrics 1997; Henrekson et al. 1997; Vanhout 1999).

In order to give a preliminary answer to this question, the former study introduced a statistical interaction into the above-mentioned growth equation. We reproduce this test here, adding the interaction term 'EU-years\*convergence' to the growth model presented in Table 1. As indicated in column 2, the statistically significant interaction found earlier can be replicated. The existence of a significant interaction effect leads to the following conclusion: the process of convergence was faster and more notable among EU members than among other nations. Less developed EU members caught up faster than other poor countries (cf. Crespo-Quaresma *et al.* 2002). This finding of a significant effect pertains to the whole time period under study here: 1980–98.

As already mentioned, there are two competing explanations that could account for the accelerated convergence among EU members found in the original study and in our replication. On the one hand, faster convergence could be a result of the Internal Market from which the less developed EU member countries benefited. On the other hand, it could also result from the transfers flowing to these countries. As outlined in Section 1, both hypotheses seem plausible.

However, the two explanations are not necessarily mutually exclusive, but may be complementary. The faster convergence of the poorer EU countries, which at the same time are also characterized by relatively high agricultural production, could be the result of both, politically motivated transfers (Common Agricultural Policy, cohesion, structural and regional funds) *and* the effects of extended market access. If this were the case, then the interaction shown in column 2 of Table 1 would become less significant if we considered the structural policy transfers as an additional predictor. If the interaction disappeared altogether, this would mean that the accelerated growth of poorer EU members (relative to non-members) was *exclusively* caused by redistribution measures.

In column 3 of Table 1, where the structural policy transfers have been included in the model, the interaction term is no longer statistically significant. As shown in column 4, the variable 'EU transfers' exhibits a highly significant effect, and turns out to be an even better predictor than the former variable 'EU years', when the insignificant predictors are excluded from the equation (see column 5).<sup>10</sup> The interpretation of these results is straightforward: the ability of the less developed EU members to grow faster than non-members can be attributed *exclusively* to transfer payments. This finding supports our argument as to the political logic of Western European integration. The fact that the payments indicated by

10. We like to mention that we performed heteroskedasticity tests and found no problems. The common variance of the squared residuals with the predicted values is only about 3 per cent. The Durbin-Watson statistics are about 2.

our variable 'EU transfers' actually flow towards the poorer EU countries becomes evident in our graphical analysis (cf. Figures 1 and 2 in Section 4).

The existence of a direct positive contribution of EU membership to economic growth, indicated in column 1 of Table 1, has to be re-interpreted in the light of these new results. It is not EU-membership *per se* that leads to increased growth of EU countries. Rather, the poorer member states benefit from growth impulses that are created by convergence policy measures. Hence, the benefits of EU membership are distributed asymmetrically: the poorer member states are profiting, and the richer states – as far as they are net payers within the European Union – are financing them. In column 6 of Table 1, the net position is introduced as a predictor of growth, and the result clearly shows that net recipients were enjoying a growth benefit.

## 6 Discussion

According to the statistical findings presented so far, EU membership actually *does* influence economic performance. The effect, however, seems to stem exclusively from politically motivated transfer payments. We thus conclude that only the group of relatively backward members can extract an economic profit from membership. While the countries of this group exhibit higher growth rates than other developing countries outside the EU do, European integration has been unable to improve the economic performance of wealthier member states. Apart from the influence of transfer payments, there is no purely economic effect of integration on growth in our analysis. The popular contention that European integration should lead to enhanced growth perspectives in all the participating countries does not receive empirical support here.

Yet, having proposed this rather strong statement, some important issues remain to be addressed. For instance, the research design that underlies our results could be accused of not sufficiently considering the economic logic of integration. Economists usually conceive of market creation and amplification as creating important *indirect* effects on growth, with capital formation acting as the intermediate variable. Accordingly, one of the most powerful reasons for creating the Single Market was that some important investment – particularly investment in research-intensive areas such as the chemical industry – is not profitable except for big markets. Hence, the models presented in Table 1, which treat capital formation as a control variable that is held constant, are somewhat 'unfair' to the economic theory of integration.

Thus, we now turn to the question of whether EU membership affects capital formation: do member countries actually accumulate more capital

than others do, as is predicted by economic integration theory?<sup>11</sup> Although there is not much empirical literature on this issue, some preliminary answers can be found: Bornschieer (2001: Table 4), for instance, concludes that EU membership has had a negative effect on capital growth. Bornschieer's analysis, however, is restricted to the years 1985–93, i.e., a relatively short period after the initiation of the Single Market project in 1986. The underaverage capital formation observed by Bornschieer so far could thus be interpreted as a short-term reaction on the creation of a common market. Since mergers and acquisitions were usually followed by the elimination of overlapping activities, the unification of formerly autonomous markets most probably resulted in the destruction of pre-existing capital. Unfortunately, due to a lack of appropriate measures of capital stocks for the years after 1993, Bornschieer's preliminary tests do not allow for any insights into the long-term effects of the Single Market project.

However, in the meantime Gehrig/Gmünder (2000) have computed new capital stock estimates for the years 1994, 1995, and 1996 (in some cases even for 1997–2000). Although these estimates still do not allow for an assessment of long-term processes, at least they enable us to analyse short-term and medium-term effects separately. The findings are as follows: the negative effect of EU membership on growth of capital formation found in earlier work (Bornschieer 2001: 196) for the period 1985–93 also holds for the period 1990–96.<sup>12</sup> We can thus conclude that the slowdown of capital formation in EU countries does not just represent a short-term adjustment process after the implementation of the Single Market policy. Yet, the negative coefficient turns out to be smaller in the period 1990–96 than in 1982–89, lending some support to the idea that the unwanted slowdown of capital accumulation might be reversed in the longer run.

After all, the economic arguments presented by many advocates of regional integration find no support in the results of our tests. Capital stock growth that could act as an intermediate variable in the supposedly positive effect from integration on economic performance is found to be influenced negatively so far. Thus, the above-mentioned lack of any significant effect of EU membership on economic growth, which becomes apparent as soon as the influence of transfer payments is controlled for, seems not to be just a statistical artifact, nor the result of insufficient consideration of economic logic.

11. The effect on the size of labour force, which is seen as another intermediate variable in the integration-growth nexus by conventional economic theory, is neglected here, as labour migration takes on surprisingly modest dimensions in the EU.
12. The sample and the variables under study are almost the same as for the calculations reported in Table 1. However, due to an unfortunate lack of data, Germany, Taiwan and Turkey are excluded from the models.

## 7 Conclusions

According to the statistical results in this article, the direct positive effect of EU membership on economic growth found in previous analyses (Bornschieer 2001) is more precisely explained by transfer payments than by EU membership years. It is thus attributable to measures of transfers between EU countries. We conclude: if EU countries grew faster in the 1980s and 1990s, this was mainly due to transfers within the community, and these benefitted the poorer EU countries. This is not to say that transfers have been the only source of growth differences among poorer EU members; rather, all other variables included in our regression models have turned out to be significant growth predictors as well. Yet, transfers have a significant effect beside these other growth predictors.

The beneficiary countries of the EU transfers are relatively smaller, and thus the question arises as to whether the taxes paid by the bigger and richer countries in order to fund these transfers did not create a loss for the EU taken as a whole. However, the net effect for the entire EU has to be clarified in another study. Of course, this will need a new methodology, since the regression techniques we applied so far automatically attribute the same weight to each EU country – independent of its size.

The policies of cohesion and convergence, which have received a lot of attention within the Union, did not just have the character of wishful thinking. Nor did they serve only as ‘ideological cement’. Due to the large amount of transfer payments that were made in order to implement these policies, EU membership actually did lead to faster convergence among member states. In the period from 1980 until 1998, the poorer EU members did indeed grow faster than comparable countries outside the Union. According to our results, this over-performance seems to be *exclusively* attributable to the politically motivated transfer payments that were aimed at balancing wealth within the Union.

This might have far-reaching significance for the prospect of catching up for new EU members in Central and Eastern Europe, the so-called accession countries. Social, regional and cohesion assistance will be, as it looks now, less generous than in the past enlargements. The EU is not planning to increase the spending ratio for regional policy beyond the current figure of 34 per cent of its total spending, and the contributions of the newcomers to the EU budget will be rather small. Thus, an only ‘slightly bigger cake’ (Delhey 2001) has to be distributed among a significantly bigger number of less developed regions. However, the main recipient countries of the EU with 15 member states seem to be unwilling to accept a cut back of their assistance. We agree with Delhey (2001) that the outbreak of the conflict over distribution will put an enormous

pressure on the enlargement process; moreover, its result will determine the prospects for convergence for the new EU members.

Our hypothesis on the 'community logic', on which the European Union is based, implies that solidarity has a price. This price has to be paid by the richer and bigger countries. According to a narrow economic calculation of costs and benefits, the advantages and disadvantages of members due to the transfer system should match in the aggregate. From a political point of view, however, this must not necessarily be the case. Solidarity based on cohesion is a valuable good, since it improves the bargaining position of the EU as well as its impact on defining regulation in the world political economy, and, last but not least, in creating a peace zone in Europe. Thus, such advantages may well be weighted more than short-term economic consequences of the price for achieving solidarity.

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### **Technical annex: method, sample, data, and test model**

In the following sections, we present the technical details of our research procedure. We discuss (i) the selection of the research period and the sample, (ii) the underlying growth model, and (iii) the construction of the variables and the data sources.

#### Description of the time period and the sample of 33 countries

The analysis covers the time period from the end of 1980 until the end of 1998. This period was deliberately selected for two reasons: on the one hand, it includes the remarkable expansion of Western European integration, namely the latest enlargement to 15 countries and the deepening of the integration process by way of supranational regulation (the single market project, promotion of technology and regional policies). On the other hand, there is little sense in analysing shorter time periods in broad cross-national comparisons. As the short-term business

cycles are not so closely linked across countries, variance in growth measured over a short period might reflect errors due to different business cycles and, thus, not fully grasp substantial differences. In addition, it is sustainable growth we want to explain. For instance, Latin American countries experienced a ‘lost decade’ in the 1980s, but some of them suddenly revealed remarkable growth rates in early 1990s. Asian newly industrialized countries showed some extremely remarkable growth rates in the 1980s, yet the growth euphoria came to a sudden halt with the Asian crisis of 1997 and 1998. To neutralize this kind of problem, we focus our explorative analysis on long-term growth, 1980–98.

Our total ‘population’ of 49 countries – OECD countries, newly industrialized countries, transformation countries and large developing countries – is defined by the countries’ inclusion in the data compilations of the World Competitiveness Reports and the World Values Surveys. From this population we draw a sample of 33 cases (listed in the main text). Transformation countries are not included, since the revolutionary end of the planned economies of state renders an adequate analysis of their economic growth from 1980 to 1998 impossible. Also poorer developing countries (in the original source: PR China, India, Indonesia and Nigeria) are excluded. South Africa, whose economic performance per capita lies slightly above the one of the excluded countries, is not considered, due to the apartheid regime during the period under study.

Only 14 of the 15 European Union members are included among the 33 countries, since the data from Luxembourg were included in the data for Belgium in the main data sources. The poorest country in our sample is Argentina. Its income per capita only amounts to 60 per cent of the figure for the poorest EU countries, Greece and Portugal. In the remaining sample almost no substantial correlation between development level and EU membership ( $r = 0.30$ ) exists. As regards the average level of economic development, our test sample is thus quite equivalent to the sample of EU member countries. However, there is greater variance within the contrast sample than among EU countries, i.e., the contrast sample includes countries that are richer than the richest EU countries and countries that are poorer than the poorest EU members.

The growth equation and the test model for the empirical analysis

We introduce a set of variables that represent characteristics of social context and of socially created resources ( $C$ ). The aim is to build a model, which reflects influences on aggregate economic output ( $Y$ ) beyond the obvious and uncontested production factors, i.e., capital ( $K$ ) and labour ( $L$ ).

Growth of  $Y = f(\text{Growth of } K, \text{Growth of } L, C)$

$C$  represents contributions to the economic product ( $Y$ ) that cannot be explained by differences in the amount of capital ( $K$ ) and labour ( $L$ ). It includes socially produced resources like education of employees and employers as well as social context created by business organization, institutions of dispute settlement, or

attitudes and motivation of the economically active. Membership in the supranational European integration is also an element of  $C$ , as it potentially influences economic growth.

In the present analysis we study five particular elements of the relevant social context ( $C$ ). The contribution of these elements to economic growth is quite plausible and has already been discussed in the literature:

$$C = f(\text{¥}, T, B, S, M)$$

¥ represents the convergence effect, measured here by the differences in the per capita income (purchasing power parity) with regard to the leading nation. The variable ¥ thus represents the distance to the highest value in the sample and serves as an indicator for convergence.  $T$  is an index for technology capital.  $B$  represents an index for the human capital (amount and quantity of education) available in the economically active population.  $S$  is an index for the capacity to create social capital.  $M$  symbolizes (weighted) EU membership.

The main test in Table 1 (column 1) is based on the following equation:

$$d \log Y_t = b_0 + b_1 d \log K_t + b_2 d \log L_t + b_3 \log \text{¥} + b_4 \log T + b_5 \log B + b_6 \log S + b_7 \log M + e_t$$

$e_t$  is the regression residual,  $d$  is the operator indicating differences, for example:  $d \log X = \log X_{t+1} - \log X_t$ . The other variables have already been defined above.

The growth rates in this equation are calculated from the first differentials of the logarithms (time-steady growth rates). The elements of  $C$  are logged, as well. Unlike the extended Cobb–Douglas function, from which this equation is derived, this equation can be estimated with the OLS regression procedure. The underlying (extended) Cobb–Douglas function would be as follows:

$$Y_t = K_t^{b_1} L_t^{b_2} \text{¥}^{b_3} T^{b_4} B^{b_5} S^{b_6} M^{b_7} \exp(b_{0t} + v_t) [e_t = dv_t]$$

The variables

*Economic growth:*  $d \log Y = \log Y 1998 - \log Y 1980$ . *Source:* GDP according to World Development Indicators 1999, World Bank, on CD-ROM (values for 1998 are taken from IMF estimates).

*Growth in capital stock (real capital):*  $d \log K = \log K 1993 - \log K 1985$ . *Sources:* Herkenrath (1999, 2003) and Gehrig/Gmünder (2000). Values are estimated according to the method of Bornschieer (1979). Depreciation of capital goods is included in the calculations. Data before 1985 and after 1994 are not available yet.

*Growth of manpower (labour force):*  $d \log L = \log L 1997 - \log L 1980$ . *Source:* World Development Indicators 1999, World Bank, on CD-ROM. *Note:* Since we construct growth rates, the main problem of this indicator, namely that

differential inputs of labour (working time and part-time work) are not covered, is almost completely neutralized.

*Convergence forces:*  $\log \text{GDP per capita } 1990 = \text{real gross domestic product per capita in international prices of } 1985 \text{ (purchasing power parity corrected)}$  according to Summers and Heston (The Penn World Table, Mark 5.5). The measure is re-coded: difference to maximum value in the sample.

*Technology capital:*  $\log \text{technology capital, average for } 1985\text{--}95$ . *Operational definition:* scientists and engineers in R&D per million inhabitants during the period of 1985–95. *Source:* World Development Report 1999/2000: 266ff.

*Education quality:*  $\log \text{education quality } 1992$ . This is a subjective indicator, calculated by factor analysis from the following elements: ‘scope and quality of elementary schooling’, ‘economic literacy’ and ‘computer literacy’. The raw data is taken from World Competitiveness Report, which started surveying these items in 1992. The index measure was constructed by Leicht (2000) and can also be found in Bornschier (2000).

*Social capital index:*  $\text{social capital index} = (\log \text{trust} + \log \text{tolerance})/2$ . *Trust:* ‘Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people?’ *Source:* World Values Surveys. Percentage of answers: ‘Can be trusted’ (without including the answer ‘Don’t know’). Here, the source is Knack and Keefer (1997), who use the data of 1981 and, for three cases, data for 1991. *Tolerance:* scores of the main component of a factor analysis of different test questions. *Source of basic data:* World Competitiveness Reports. The factor analysis is based on the average of items in 1989, 1990, 1991. The data was collected by Leicht (2000) and can also be found in Bornschier (2000) with a detailed analysis using this index.

*Size of the Economy:*  $\log \text{GDP, average of } 1980 \text{ and } 1997$ . Total output has been calculated in PPP corrected values. *Source:* World Development Report 1998/99: 234ff.

*Openness:*  $\log \text{trade ratio, average of } 1980 \text{ and } 1997$ . Trade ratio measures imports plus exports as a percentage of GDP. *Source:* World Development Report 1998/99: 272ff.

*Years of EU Membership:* This variable represents the years of EU or EEC membership. The earlier integration of Benelux countries was not included since it only meant a small market expansion. The European Coal and Steel Community (ECSC) was also excluded since it only meant the integration of two sectors. Our account of membership year starts with the EEC in 1958. The maximum number of membership years until 1997 is 40 and the minimum is 3. The measure was logged, but before this procedure 1 was added to the original values of all countries and, additionally, 6 to the values of the member nations. Thus, non-members receive the value 0 and members at least receive the value 1.

*EU Dummy:* This dummy variable shows the value ‘1’ for EU members and the value ‘0’ for the 21 non-members. Finland, Sweden, and Austria are treated as non-members here, since they joined the EU only in 1995.

*EU Structural Policy Payments:* EU payments to member states (payments of the EAGGF guidance section, regional and social funds, without the payments of

the EAGGF guarantee section, without the reimbursement of levying costs of equities and other payments, accumulated 1986–93, per capita). The variable was logged and the lowest value set to 1. All non-EU member countries have, of course, the value zero on this variable.

*EU Net Position:* Net position of member states (total EU payments to member states minus total payments of member states to the EU accumulated 1986–93, per capita). Due to positive and negative values, this is the only variable which cannot be logged. All non-EU member countries have the value zero on this variable.

*EU transfer data:* These data were described in more detail in the text. We calculated these figures based on the Statistical Yearbooks of the German Federal Bureau of Statistics, various volumes. The figures listed by country are all equivalent to million DM. The Euro/DM exchange rate is 1.9558 DM for an Euro.

The yearly figures from 1986 to 1993 as well as the accumulated values for: total EU payments; total payments to the EU; net position; receipts from structural policy funds, for the then 12 member states are not given in detail due to space limits. The figures can be retrieved from the authors' website ([www.suz.uniz.ch/bornschieer](http://www.suz.uniz.ch/bornschieer)).

The compilation listed above describes the variables applied in the statistical tests.<sup>13</sup>

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13. *Convergence:* The value for Taiwan was estimated according to information in Fischer Weltalmanach and Maddison (1995). *Technology Capital:* data are missing in five cases of the sample. Missing values for Chile, Hong Kong, and Switzerland were estimated by using data on internet host density as an indicator taken from the same World Development Report (correlation with technology capital is 0.86). The value for Taiwan was estimated according to expenditure for R&D, data based on World Competitiveness Report 1992: 555; 1995: 651. Island was given the average value of Western European countries. *Education Quality:* Data are missing in four cases. Estimation procedure: Canada and Island report figures for the individual components of the index; estimations are based upon the regression of the index on these components. Argentina and Chile were given the mean value for the entire sample. *Openness of the national economy:* The missing figures in the source for Germany (1980), Island and Taiwan (1980 and 1996) were estimated by data drawn from different editions of Fischer Weltalmanach. *National Market Size:* Two cases had to be estimated: Taiwan according to data from the World Competitiveness Report 1992, Island according to information in Fischer Weltalmanach.

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