

ON THE FATE OF
NEWCOMERS IN THE
EUROPEAN UNION:
LESSONS FROM THE
SPANISH EXPERIENCE

Barbara Dluhosch

ON THE FATE OF NEWCOMERS IN THE EUROPEAN UNION: LESSONS FROM THE SPANISH EXPERIENCE

Barbara Dluhosch (*)

(*) Universität zu Köln, Germany.

This paper is part of a research project carried out while the author was a visiting researcher at the Banco de España, whose support is gratefully acknowledged. The views expressed in the paper, however, are those of the author and do not necessarily reflect those of the Bank. The paper has much benefited from discussions with Malte Krüger, suggestions by Una-Louise Bell and comments by participants of the weekly round table of the Servicio de Estudios at the Banco de España, especially those made by Santiago Fernández de Lis, Juan María Peñalosa and José Viñals. Thanks are also due to Amparo Ricardo and Neil James Gilfedder for technical assistance. The usual caveat applies.

Banco de España - Servicio de Estudios
Documento de Trabajo nº 9603

In publishing this series the Banco de España seeks to disseminate studies of interest that will help acquaint readers better with the Spanish economy.

The analyses, opinions and findings of these papers represent the views of their authors; they are not necessarily those of the Banco de España.

ISSN: 0213-2710

ISBN: 84-7793-453-3

Depósito legal: M-2807-1996

Imprenta del Banco de España

ABSTRACT

The removal of barriers to trade and mobility is usually promoted as it allows for greater division of labor and, thereby, for improved economic welfare. Recent theory, however, suggests that the integration of markets might have serious consequences for the regional allocation of economic activity. In particular, economies of scale and distance to the market are said to put the periphery at a disadvantage, thus promoting regional divergence rather than convergence in per capita incomes. By focussing on European economic integration and the experience of Spain joining the EU, the paper shows that this view frequently stems from a competitiveness approach to economic integration which need not hold on an aggregate level.

CONTENTS

- I. THE CONCERN ABOUT THE DYNAMICS OF ECONOMIC INTEGRATION
- II. OUTLINE OF THE PAPER
- III. REAL CONVERGENCE IN THE EU
 - 1. THE POINT OF DEPARTURE
 - 2. A FUTURE FOR EUROPE WITHOUT FISCAL FEDERALISM?
- IV. INTEGRATION AND ECONOMIC DEVELOPMENT:
NEW AND OLD SCEPTICS
 - 1. THE CANONICAL MODEL OF INTERNATIONAL TRADE AND
THE LAW OF CONVERGENCE
 - 2. A MODEL GOING OUT OF BUSINESS?
 - 3. REGIONAL EVOLUTIONS BASED ON
COST AND PRICE COMPETITIVENESS?
- V. A SUPPLY-SIDE APPROACH TO ECONOMIC INTEGRATION:
THREE REASONS FOR BEING MORE OPTIMISTIC
 - 1. A METHODOLOGICAL ISSUE: LACK OF EXPLANATORY POWER
 - 2. THE MISSING VARIABLE:
THE DYNAMICS OF TRANSPORTATION COSTS
 - 3. MORE BARRIERS TO LOPSIDED ALLOCATION:
SAY'S LAW AND THE MOBILITY ISSUE
- VI. SOME EMPIRICAL EVIDENCE ON REGIONAL EVOLUTIONS
 - 1. SPAIN: FROM PERIPHERY TO MEMBERSHIP
 - 2. LOSING GROUND IN INTERNATIONAL PRICE AND COST
COMPETTIVENESS: CATCHING UP OR FALLING BEHIND?
- VII. HOW FAR CAN WE PUSH THE "LAW OF CONVERGENCE"?

NOTES

REFERENCES

I. THE CONCERN ABOUT THE DYNAMICS OF ECONOMIC INTEGRATION

Although in principle seen as welfare enhancing, there have always been considerable doubts whether economic integration benefits all members of the "club". Instead, it is often argued, it might well be that economic activity gravitates towards centers in the course of opening up national markets, leaving some countries at the periphery of economic activity. For, if markets become more integrated, economies of scale can be exploited far better by concentrating production locally. Looking at economies of scale and the size of the market, the prospects of catching up for countries that are backward in relative terms seem therefore to be rather disappointing. Instead of being ironed out, already existing differences might even be reinforced in the course of economic integration.¹

Does economic integration promote a regional divergence in per capita incomes instead of strengthening the centripetal forces as traditional theory along Heckscher/Ohlin lines suggests? In particular, is there good reason to assume that economies of scale and distance to the market put the periphery of the European Union at a locational disadvantage in terms of price and cost competitiveness as compared to the center? As the paper shows, the notion that the core-periphery pattern is necessarily reinforced the more national markets are opened to international competition is frequently based on a competitiveness approach to economic integration, focussing primarily on the ability to sell of individual firms. A closer look at the facts reveals that this is too narrow a perspective to derive any firm conclusions about the implications European economic integration might have with regard to development prospects of backward countries - however disappointing that may be for politicians all too easily blaming economic integration for their own failures.

II. OUTLINE OF THE PAPER

The paper is in five parts. In the first section (paragraph III) some data on the current dispersion of per-capita income within the European Union is presented. As the discussion about the consequences of economic integration often refers to the United States, corresponding figures for the United States are provided.

The following paragraph (IV) gives an overview of the various forms in which the divergence hypothesis is stated. Starting with a brief outline of different sources to which the divergence is traced back, one of the arguments most prominent in European policy debates, namely economies of scale internal to the firm and distance to the market, is chosen for further discussion. After looking at the factors which lead to economies of scale, or, in general, to the subadditivity of cost functions, the implications for the development of whole regions are examined.

In the third part of the paper (paragraph V) theoretical shortcomings of this divergence hypothesis are revealed. As the analysis shows, arguments drawing upon price and cost competitiveness due to economies of scale can be misleading as they are most often based on microeconomic considerations which need not apply on an aggregate level. Instead, a supply-side analysis based on Say's law is developed.

In the fourth section (paragraph VI) empirical evidence on the validity of the supply-side approach to economic integration as compared to the competitiveness-approach is given. Rather than adding more econometric evidence to the already existing studies on real convergence and divergence undertaken so far,² the approach adopted in this paper is an individualistic one which draws upon the experience of Spain joining the European Union. A closer look at country-specific indicators of economic performance after entering the European Union is in order since it reveals striking differences among countries which can hardly be explained by referring to the size of the local market alone. Although some of the figures for Spain seem to support the divergence hypothesis, it is shown that the traditional interpretation of these indicators along the competitiveness approach is not compatible with the rest of the data. A different interpretation is offered which not only fits the data, but is also consistent with the supply-side perspective as presented in the paper.

In a concluding chapter (VII) main results are summarized and some general remarks on the discussion about real convergence are made.

III. REAL CONVERGENCE IN THE EUROPEAN UNION

1. THE POINT OF DEPARTURE

The concern that already existing differences might even be exacerbated is especially strong in the case of the European Union (EU).³ If those who predict a growing gap as integration is pushed forward prove to be right, regional economic evolutions might indeed become a serious problem for Europe, since the cross-country differences in average per-capita income are already substantially higher than those between the US states.⁴ Figure 1 highlights the case in point. It shows the distribution of the country-specific (state-specific) average per-capita income in terms of the overall EU average (US average). In each case, the overall weighted average is indicated by the grey shaded vertical line in the middle. The one to the left marks the weighted average in countries (states) that are relatively backward, whereas the one to the right shows the respective average for those ahead. Data for the EU member states was derived from national data by using purchasing power parity (PPP) as well as actual exchange rates as neither provides for an exact aggregation. Calculations drawing upon PPP might be more appropriate for long-run phenomena like economic growth. Yet, as politics is often guided by the short run, both cases are depicted in figure 1.

Although results differ somewhat depending upon whether the EU data is based on PPP or actual exchange rates, the spread of average per-capita income is in any event higher in the case of the EU than the US. Referring to the weighted mean of per-capita income in the EU and the US in 1990 (the latest data currently available in the case of the US), the spread differs not so much with regard to states ranked among the highest in terms of average per-capita income, but with the lowest. On average, per-capita income below the overall mean reached only 74.2 (actual exchange rates) or 66.7 (PPP) per cent in the EU, whereas in the US it came up to approximately 90.2 per cent. Looking upon the state or country marking the lower boundary, relative differences turn out to be even greater. For in the case of Mississippi average per-capita income amounts to at least 70.3 per cent of the overall US average. In the EU, Portugal brings up the rear, showing an average per-capita income of only 33 per cent of the EU average. Penultimate-ranked Greece is not much better off, with 35 per cent. In PPP, the order is reversed, with Greece approaching 47 per cent and

Portugal 53 per cent. Yet, although somewhat higher, the average per-capita income is still substantially lower when compared to the EU average than in the case of the US.

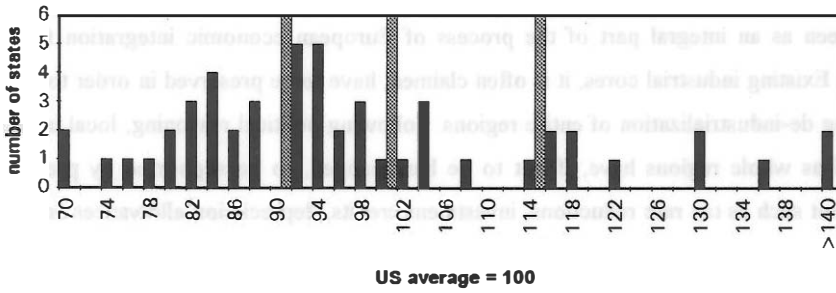
Dispersion as usually measured by the coefficient of variation is also greater within the EU than within the US, namely 24.9 compared to 16.5. However, if in the case of the EU the national data is converted to US Dollars at PPP, the difference in dispersion becomes much smaller, for in this case the coefficient of variation for the EU shrinks to 17.8. Clearly, individual European countries are known to be more homogenous. On a local or even individual basis, dispersion of per capita income is therefore likely to be lower in the EU than in the US. From a political economy point of view cross-country differences might nevertheless be important for the route further European integration takes. Admittedly, both of the calculations, for the EU as well as the US, draw only upon a certain point in time. Hence, it is not clear whether the dispersion in the EU in the future will reflect more closely the one currently observed in the US or whether national income gaps will become even bigger in size. However, there is a widespread concern that the latter rather than the former is to be expected.

Questions of regional adjustment are expected to become even more pressing as the economies of Eastern Europe apply for membership in the EU. Since, for instance, the Czech Republic, Hungary, Poland and Slovakia for the time being all have to be considered as periphery in terms of per-capita income, the gap between richer and poorer countries within the EU might even grow larger, should they join the EU. The same applies with regard to the Baltic States. If, in effect, distance to the market and comparative diseconomies of scale make catching up for newcomers difficult, the hope that EU membership might lend not only macroeconomic stability to Eastern Europe in the period of transition but also provide a development-pull effect would prove to be ill-founded.

Figure 1 :

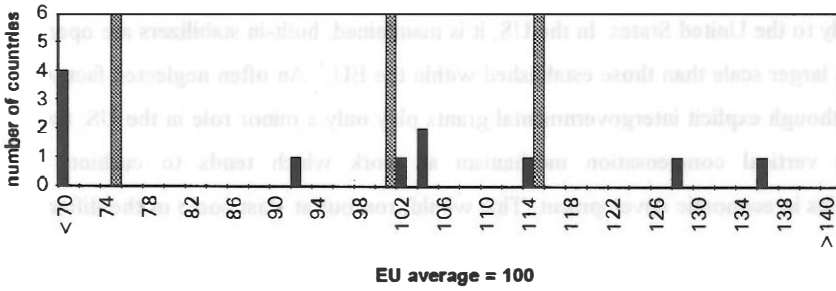
Regional Dispersion of Per-Capita Income in 1990

(a) *US States*

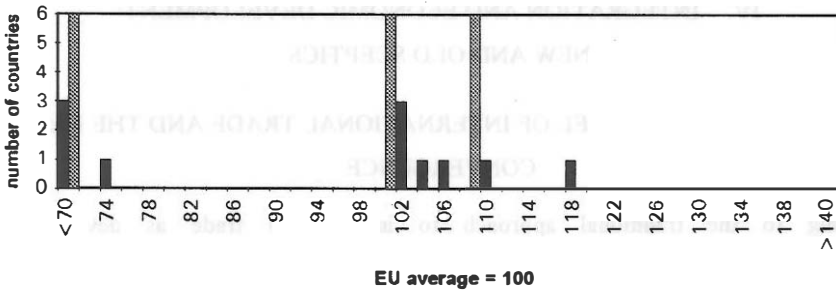


(b) *European Union*

(bb) *National Data Aggregated at Actual Exchange Rates*



(cc) *National Data Aggregated at Purchasing Power Parity*



Sources: *Statistical Abstract of the United States 1994; International Monetary Fund (1994), OECD (1994a), own calculations.*

2. A FUTURE FOR EUROPE WITHOUT FISCAL FEDERALISM?

Because of the dispersion currently observed, it is frequently stated that convergence and cohesion cannot be taken for granted but must be backed by economic policy. And policy measures aimed at raising the development potential of the so-called periphery have indeed been seen as an integral part of the process of European economic integration from the outset. Existing industrial cores, it is often claimed, have to be preserved in order to prevent a lasting de-industrialization of entire regions. Following political reasoning, local industries as well as whole regions have, if not to be handicapped, to be supported by preferential treatment such as tax rate reductions, investment credits, depreciation allowances and direct governmental grants. By implementing a special "cohesion fund", government assistance for less developed regions has even been extended recently. Yet, some argue that this still falls far short of what would be appropriate for equilibrating regional economic development.

Those who call for a stronger regional focus of European economic policy often refer precisely to the United States. In the US, it is maintained, built-in stabilizers are operating on a much larger scale than those established within the EU.⁵ An often neglected fact would be that, although explicit intergovernmental grants play only a minor role in the US, there is an implicit vertical compensation mechanism at work which tends to cushion regional disparities in economic development. This would iron out at least some of the differences in regional economic strength, whereas in the EU there would be no comparable mechanism in place. Nevertheless, notable regional evolutions have taken place in recent times in the US.⁶

IV. INTEGRATION AND ECONOMIC DEVELOPMENT: NEW AND OLD SCEPTICS

I. THE CANONICAL MODEL OF INTERNATIONAL TRADE AND THE LAW OF CONVERGENCE

According to the traditional approach to international trade as developed by Heckscher/Ohlin and reformulated by Samuelson, the concern about the locational consequences of economic integration due to strong centrifugal forces lacks a theoretical basis.⁷ Rather than centrifugal, the traditional approach gives support to the dominance of centripetal forces. Following the lines of this theory, differences in endowment give rise to

specialization. By concentrating on the production of goods and processes in which the relatively abundant factor is used more intensively, the price of the relatively abundant factor in each country is being pushed upwards, thus leading to a regional equilibration of factor returns via international trade, i.e. convergence. In this framework, intra-industry trade might add flavor to the picture, however, without really reversing results. Thus, the international division of labor and the pattern of international trade are primarily guided by comparative advantage due to different factor endowments of the center and the periphery.

Moreover, especially "small" countries should gain from integration, however backward they might be. The reason is that the probability of the price structure under autarky being close to the one prevailing after economic integration with a region which is bigger in size should be relatively small due to their small weight in economic terms. The trend towards convergence applies also in a world with international capital mobility. Rather than anything else, capital on the move will reinforce the tendency for convergence already prevailing through international trade. For, if the periphery is characterized by a relatively small capital stock, there is ample room for the expectation that returns on investment are higher and wages are lower at the periphery than at the center, thereby inducing capital flows from the center to the periphery.

Because of diminishing returns, the equilibrating forces are also at work in a growth setting. Even though across-the-board calculations based on the traditional model seem to indicate that the dynamics towards convergence are not that strong, they provide no backing for the notion that the opposite is the case. When the observed capital-output ratio is used as a benchmark for the elasticity of output with regard to capital input, an additional capital input of some percentage points of GNP yields only a much smaller increase in growth rates. This is because the elasticity, as measured by the capital-output ratio, is substantially smaller than unity. Most of the persistent differences observed are therefore stored in the black box of technological progress and differences in endowment of human capital, without giving a satisfactory answer to the gaps remaining. In any event, the gains from integration might be smaller than hoped for, but, according to traditional neoclassical analysis, due to diminishing returns there are at least some forces prevailing which pull towards a more regionally balanced process of economic growth as barriers to trade and mobility are reduced. Growing

each year by one or two percentage points more than otherwise is not a factor which can be completely ignored. It makes a difference.

2. A MODEL GOING OUT OF BUSINESS?

The view of economic integration having a strong centripetal impact has been recently challenged by a whole new branch of economic theory, called the new trade and new growth theory. The main focus of the new view is the assumption of diseconomies of scale which forms a building block of the traditional approach. For if this condition no longer holds, it is argued, there will be no countervailing forces in place which tend to equilibrate the regional pattern of economic activity. The result of this would be that in some places economic integration leads to a process of self-sustaining economic development whereas in others the removal of barriers to trade brings about a shrinking industrial base.⁸

In principle, again, two strands of economic theory can be differentiated, the models of both of which can give rise to a regional concentration of economic activity. The first handles the intra-temporal consequences of economies of scale and distance to the market and is therefore primarily concerned about the regional allocation of a given amount of economic activity. The subadditivity of the cost function can either be due to indivisibilities (such as in the case of specialization, networks etc.) or to the so-called two-thirds rule which holds for a range of production processes in which the elasticity of the costs with regard to output is two-thirds (such as, for instance, in the case of pipelines). A third driving force can be the law of large numbers in the case of demand being stochastic as far as bundling allows for economizing on costs. Trade is not traced back primarily to exogenous differences in endowment, but determined by market structure changing endogenously as driven by economies of scale and distance to the market.⁹

The second is inter-temporal in nature since it examines the regional evolutions of economic integration in a growth context. In contrast to the former, the main focus of the latter is therefore accumulation. In this setting divergence is due to non-diminishing returns of the accumulated factors and locational fixity. Most often, non-diminishing returns are traced back to economies external to the firm, usually linked to the production of knowledge.¹⁰ By increasing the stock of knowledge accessible in the economy they thwart the law of diminishing returns decisive for a Solowian outcome. Yet, for promoting a

clustering of economic activity the non-rivalry must become effective only on a local basis which means that the costs of excluding non-payers must decrease significantly with distance. Specialization can provide a link between both strands, the static and the dynamic, insofar as it speeds up the process of accumulation.¹¹

Table 1: The New View of Economic Integration

Regional concentration of economic activity due to....	
"economies of scale", or in general: subadditivity of the cost function either external or internal to the firm	"economies of growth", non-diminishing returns of the accumulated factor; production functions either convex or non-convex (non-convexity based on external economies, monopolistic competition or financial market imperfections)
Usually traced back to....	
- indivisibilities - 2/3-rule - law of large numbers	- non-rivalry and - high costs of excluding users
and.....	
proximity to the market	locational fixity
Main contributors:	
- Smith (1776), Marshall (1920), Young (1928) - Lösch (1943), Giersch (1949) - Stigler (1951) - Kaldor (1972) - Arthur (1990), David/Rosenbloom (1990), Krugman (1991)	- Marshall (1920) - Rosenstein-Rodan (1943), Mandelbaum (1945), Nurkse (1953), Myrdal (1957), Hirschman (1958) - Romer (1986), Rivera-Batiz/Romer (1991), Aghion/Howitt (1990), Greenwald/Kohn/Stiglitz (1990), Lucas (1988), Grossman/Helpman (1991)

Thus, the new approach to regional evolutions, although arguing at least in some cases along different lines, seems to give support again to conclusions already derived from some of the development theories of the 1950s and 1960s.¹² By stating that, due to forward and backward linkages between different kinds of industries, the process of take-off will be rendered difficult, they already seemed to draw upon some kind of increasing returns and network externalities, now again being seen as a center-piece of differences in regional development. However, by assuming either economies of scale or non-diminishing returns, both strands of the new view argue basically along the same line, despite differences in

focus. By doing so, they arrive by and large at the same conclusions, namely that economic integration fosters the agglomeration of economic activity.

Consequently, we need not even refer necessarily to a dynamic setting which draws upon growth theory for deriving agglomeration. According to the arguments put forward, we should observe agglomeration even in a static setting, which allows for reallocation of economic activity only. Hereafter, we will therefore focus primarily on the static issue of reallocation.

3. REGIONAL EVOLUTIONS BASED ON PRICE AND COST COMPETITIVENESS?

The notion that the allocation of economic activity might be rather lopsided in a laissez-faire setting is also widespread in economic policy debates. The recent models developed by the new trade and new growth theory have fuelled the discussion anew. Main results are gladly picked up in economic policy debates without paying further attention to the assumptions they are based upon. Instead, the outcome is often taken for granted and interpreted as providing a legitimate basis for actively promoting regional development.¹³ Frequently, the head start of prosperous countries compared to those which are less developed is even attributed to economies of scale internal to the firm which could be exploited at the center, but not at the periphery. Looking at the shape of the demand curve as usually assumed, it seems obvious that firms which are closer to the market are better off in terms of cost and price competitiveness since they do not have to incur the additional costs of transportation faced by suppliers located at the periphery. Consequently, the penetration of markets seems indeed to be much easier for producers that already have a footing in prosperous regions, as the size of local markets obviously makes for a head start on the cost curve. In the case of integration it seems therefore as if firms located at the center slide down their cost curve as they gain in market share. All those at the periphery instead suffer a loss in market share, thereby being forced to operate on a smaller scale at higher costs and finally being pushed out of the market. In short: The former gain in international price and cost competitiveness whereas the latter fail even to keep the status quo ante. Time and again, differences in regional development are therefore traced back to differences in price and cost competitiveness.

Seen in this way, the prospects of catching up for relatively backward countries appear indeed to be rather disappointing. Instead of taking off, they might be caught in a trap, locked in simply because of small regional markets and comparative diseconomies of scale. From there it seems to take only a small step to suppose - well in advance of any further analysis - that the critical mass for initiating a process of self-sustaining economic development will not be reached without governmental support. Yet, one might wonder why we still observe so diversified a regional structure nowadays or as STIGLER (1951, p. 185) put it with regard to ADAM SMITH's famous theorem that the division of labor is limited by the extent of the market: "If this proposition is generally applicable, should there not be monopolies in most industries?"

Although already posing theoretical problems concerning the calculation of equilibria, we will see that there is indeed more reason than mathematics for being sceptical about the validity of the agglomeration hypothesis. For the notion that the new allocation induced by economic integration is somewhat lopsided rests on three crucial assumptions, all of which imply that the periphery will become even more backward.

V. A SUPPLY-SIDE APPROACH TO ECONOMIC INTEGRATION:

THREE REASONS FOR BEING MORE OPTIMISTIC

I. A METHODOLOGICAL ISSUE: LACK OF EXPLANATORY POWER

The first premise implicit in the argument is that the landscape is already scattered with centers at the beginning, i.e. it does not explain how they develop in the first place. The way the individual actions are coordinated in the beginning remains largely a black box. But, like the case of driving on the left or the right of the street,¹⁴ which might be considered as equivalent ex ante, the question arises why the former is chosen rather than the latter since there seems to be no case of Pareto-superiority prevailing. True, if by accident one set is bigger in size (either those driving on the left or those driving on the right) than the other, it forms a basin of attraction. From thereon, there is a strong incentive for switching to the set already bigger in number which even increases as differences in size become greater. Yet, merely invoking accident is quite unsatisfactory a solution. For the question of why there is more than one center still remains to be answered. The latter obviously requires a closer

look at the forces which make for regional concentration. Thus, it seems as though we are back to our initial question without having gained many more insights.

If it is assumed that the landscape is inhomogenous, providing some places with a natural locational advantage, the presumption of an uneven regional distribution of economic activity seems not that far-fetched and therefore might well be accepted. Furthermore, from the perspective of European economic integration, the question of how centers start up from scratch might be considered irrelevant, since this is already a bygone from the point of departure. Although the question of how new centers evolve still lies very much at the heart of the dynamics of economic integration, it shall therefore be supposed for a moment that an uneven distribution of economic activity is already given, without investigating further how the evolutionary dynamics got started. Yet, a considerable portion of discomfort remains. Furthermore, even if we put the lack of explanatory power aside, it is by no means clear whether agglomeration is the outcome of the dynamics initiated by economic integration. This is for two reasons, namely a microeconomic and a macroeconomic one.

2. THE MISSING VARIABLE:

THE DYNAMICS OF TRANSPORTATION COSTS

The microeconomic rationale to be more optimistic lies in the dynamics of the costs of transportation. The belief that a strong core-periphery pattern emerges from economic integration assumes that the costs of transportation increase in a linear fashion with distance to the market and volume of goods supplied. Yet, if transportation itself shows economies of scale the regional evolutions might be quite different from those assumed by the new view. For in this case, the regional evolutions depend upon which of both effects is stronger, the one prevailing at the level of production or the one at the level of transportation.

The case in point is not primarily the fact that transportation itself is characterized by economies of scale. What matters is the dynamics, namely whether the decrease in transportation costs in time is stronger than the change in costs of production in time.¹⁵ If transportation shows a stronger dynamic towards the exploitation of economies of scale, the regional division of labor should increase rather than decrease as integration proceeds. Although the impact of a decline in transportation costs itself is ambiguous, the dynamics in relative costs might well shift comparative advantage of some industries towards the

periphery. For it is primarily the latter which can take advantage from economies of scale in transportation. Looking at the history of transportation technology such as for instance ships, aircraft and telecommunication, even in a microeconomic setting, we can no longer be sure that economies of scale inevitably promote a regional concentration of economic activity. Not only is transportation by itself characterized by economies of scale, as all of these technologies allow for bundling, but overall costs of transportation have also decreased significantly over time. Hence, focussing on production is not only too narrow a perspective, but might even give rise to wrong conclusions.

3. MORE BARRIERS TO LOPSIDED ALLOCATION: SAY'S LAW AND THE MOBILITY ISSUE

This applies all the more once the economic repercussions of the competition on product markets are added to the picture. A general equilibrium perspective reveals that neither the cost-push effect of competition at the center is sufficiently recognized nor is Say's law which creates balance of payments constraints on the lopsided allocation of economic activity. Yet both deserve a closer look, the first of which shall be at the cost-push effect. Once it is recalled that there is not only a rivalry for purchasing power, but also a rivalry for inputs, it becomes apparent that the notion of economic activity becoming more regionally concentrated frequently stems from a microeconomic perspective focussing on the ability to sell.¹⁶ This is at least the case as far as European economic integration is concerned. By looking primarily at product markets, the hypothesis that EU integration keeps the periphery from catching up disregards the fact that the competitive position of each firm not only depends upon the position of its foreign competitors, but very much upon how other domestic firms perform¹⁷ (which in principle can also benefit from being close to the market). There is no doubt that, with regard to product markets, competition becomes indeed Intra-European.¹⁸ Thus, looking at product markets, one gets the impression that the change in market share as well as earnings hinges on the question of how each domestic firm performs vis-à-vis its foreign competitors in the relevant market. Therefore, an increase in the ability to sell of an individual firm in the course of economic integration seems indeed to translate automatically into a higher ability to sell of the economy in general, thus promoting agglomeration of economic activity.

Yet this kind of "competitiveness-approach", with its focus on the face-to-face competition between suppliers of different origin who struggle for the same market, i.e. the same purchasing power, can be quite misleading. Before deriving any firm conclusions about the regional evolutions economic integration might induce, it has to be recognized that each firm also has to be competitive in local factor markets. Whereas with regard to product markets competition becomes increasingly global, things can be quite different when it comes to competition in factor markets. As international capital mobility is quite high, competition for capital is to a large degree international as well. But this is definitely not the case with regard to labor.¹⁹

Although data on international migration is rather poor, it gives every indication that until now it has remained relatively low. One of the main sources providing data on international migration on a regularly basis is the OECD. Table 2 gives an overview. It shows the stock of foreign labor as compiled by the OECD as a per cent of the national labor force. Labor force instead of employment was chosen for comparison since in most cases the stock of foreign labor as published also contains the unemployed. Admittedly, there is good reason to assume that the numbers depicted underestimate the amount of migration. First, all statistics on mobility are incomplete. This applies especially the less regulated international mobility becomes. Thus, the statistics on Intra-European mobility tend to become less informative the more the EU effectively moves towards a single market. Second, all those applying successfully for citizenship are no longer registered in the stock of foreign labor. Consequently, data on international labor mobility has to be interpreted very carefully with regard to conclusions about the development of international mobility over time. Referring to the last point, change of citizenship, flow statistics would do better since they would allow something like the effective openness of national labor markets (e.g. inflows + outflows as per cent of labor market turnover or net inflows) to be measured. Unfortunately, there are no overall EU statistics available on the subject, which include Intra-EU migration. The only overall numbers of the OECD refer to inflows and outflows of foreign population, which are by definition bigger in size. To multiply by average participation rates would not do the job since there is good reason to assume that participation rates of the overall population and foreigners flowing in and out differ substantially without having any firm basis of whether the bias is in one or the other direction.

Table 2. International Migration of Labor: Selected EU Countries

Country	Stocks of foreign labor in per cent of national labor force										
	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
Belgium	4.58	4.32	4.60	4.41	4.36	4.35	4.29	4.34	4.73	n.a.	n.a.
France	6.07	6.33	6.64	6.95	6.84	6.42	6.26	6.36	6.47	6.26	6.03
Germany	5.87	5.63	5.50	5.13	5.00	4.98	5.03	5.11	5.16	5.27	5.57
Luxembourg	34.12	34.18	35.16	34.42	35.48	37.63	40.06	43.11	46.75	51.33	n.a.
Netherlands	3.14	2.95	2.77	2.68	2.63	2.64	2.71	2.65	2.86	2.87	3.05
Spain	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.40	0.47	0.57	0.69
UK	n.a.	n.a.	n.a.	2.79	2.91	2.93	2.90	3.06	3.18	3.07	2.90
Total	5.68	5.62	5.65	4.76	4.73	4.81	4.61	4.2	4.27	4.23	4.21

Source: OECD (1993), OECD (1994b), own calculations.

Seasonal workers and frontier workers are excluded, except for Germany. Luxembourg and the Netherlands. ■ = Intertemporal comparability is limited due to differences in aggregation

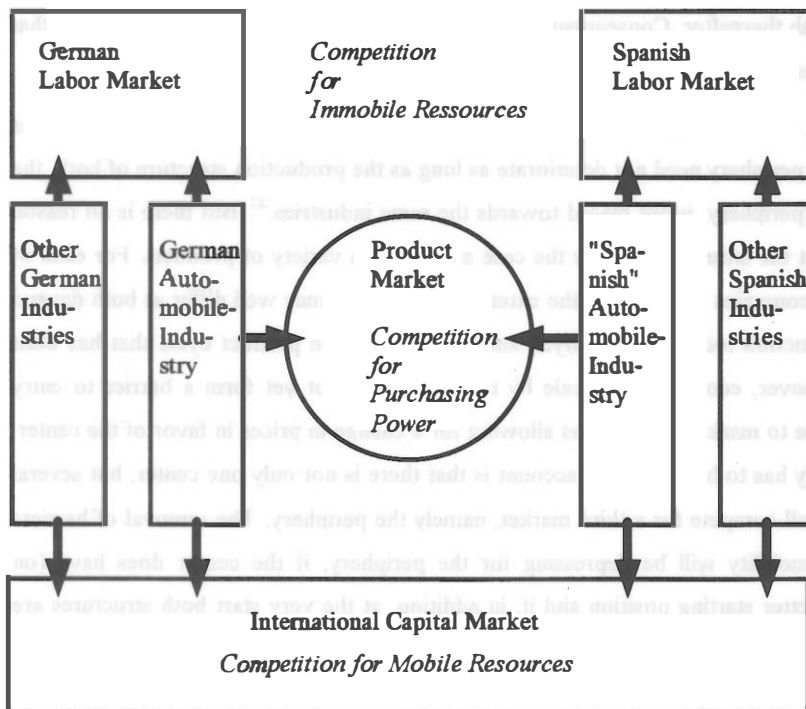
Moreover, inflows and outflows as published by the OECD differ in definition so that no meaningful net flows can be derived therefrom. Anyway, having all these caveats in mind, we can still say that effective labor mobility was not only fairly stable throughout the eighties but was also still relatively low. This makes for rather strong limits on the regional evolutions of economic activity.

The reason is straightforward: For economies of scale and distance to the market to drive whole countries out of business, it is necessary that the competitiveness of a country is the sum of the ability to sell of its local firms. Yet this is definitely not the case as long as there are several sectors in a country which compete for the same scarce but quite immobile resource, namely labor (for instance the national automobile industry and other branches). In this case, gaining in market share (e.g. by the German automobile industry) must come at the expense of other local suppliers (e.g. German chemical industry). For expanding production is only possible by bidding resources away from other uses which means bidding up the price of the resource. Whereas the competitive position of foreign suppliers (e.g. the "Spanish" automobile industry as well as other Spanish industries) will almost be left untouched by the local increase in costs, other local suppliers will face a tough stance. Thus, at the same time as some local suppliers gain in market share (or to be more precise, are more successful) due to economies of scale and being close to the market, the relative competitive position in other sectors of the economy will change in favor of foreign suppliers, driving other local suppliers out of business.

The crowding-out effect need not take place if the situation prevailing is a purely Keynesian one with cyclical unemployment in which either money supply or velocity are determined by desired spending. But this situation is not the one currently at hand.²⁰ Although there can be no doubt that there is a cyclical component in European unemployment, the main part of unemployment has proven to be persistent during cyclical swings, showing that structural unemployment carries much more weight nowadays. And that money supply is in fact endogenous is lacking a firm basis so far. Hence if, as nowadays, the cyclical component is rather minor and money supply is fairly stable, things turn out to be quite different: It is the ability to sell of some firms and the competition for immobile resources in the center which often impedes the ability to sell of others located in the same region. The price of immobile resources is pushed up and so are the costs of

producing in the same area. The cost-push effect of competition at the center makes it easier for producers located at the periphery to acquire markets which pay. Hence, immobile resources, while being scarce at the same time, make economies of scale on an aggregate level unlikely.

Figure 2: The Different Levels of Competition: An Example



The development-push effect also works through the balance of payments. For it is precisely the lack of international labor mobility which serves as a binding factor between the export-side and the import-side of the current account. The reason is Say's law, which states that every buyer must be a seller.²¹ Or to put it differently: Demand presupposes a marketable supply which provides the means to purchase products supplied by the center. But, Say's Law and the competitiveness approach are hard to reconcile.

Even if it is assumed that the center has a better start, i.e. a higher ability to sell throughout ex ante, it is by no means certain whether this shows up in a surge in exports, i.e. ex post. Due to balance of payments constraints faced by the periphery, the center will hardly sell more without buying more unless the periphery becomes more attractive to investors. The latter, however, would run contrary to the arguments posted by the sceptics since capital would not be attracted if investors did not expect that the periphery's ability to sell would climb thereafter. Consequently, neither can the center increase its net exports that easily, nor does a boost in exports necessarily have an expansionary impact.

Admittedly, it is not only volume which is important, but prices too. However, the terms of trade of the periphery need not deteriorate as long as the production structure of both, the center and the periphery, is not biased towards the same industries.²² But there is no reason to suppose that the latter is definitely the case as there is a variety of products. For each of the products economies of scale and the extent of the market may well differ as both depend upon the production technique employed and the stage of the product cycle that has been reached. Moreover, economies of scale by themselves do not yet form a barrier to entry which gives rise to market power, thus allowing for a change in prices in favor of the center. What ultimately has to be taken into account is that there is not only one center, but several centers which all compete for a third market, namely the periphery. The removal of barriers to trade and mobility will be depressing for the periphery, if the center does have (on average) the better starting position and if, in addition, at the very start both structures are biased towards the same products and production techniques. Clearly, as far as rigidities and the costs implied thereby are concerned, it is national economic policy which is to blame more than economic integration. But the very fact that in this case the ability to sell of local producers is preserved via a real depreciation provides a clear-cut indicator for the validity of the divergence hypothesis based on path dependence which itself is due to economies of scale and distance to the market. However, as we will see shortly, looking at the performance of newcomers in the EU, the data will not be equally clear-cut in support of the divergence hypothesis. Obviously, other factors matter much more when it comes to catching up or falling behind than simply economies of scale and local market size.

In any event, there is already a body of evidence concerning EU enlargement as well as EU deepening on the one hand and regional evolutions on the other hand which allows for

the assessment of the individual performance of newcomers. Hereafter we will therefore concentrate on the economic performance of Spain right after joining the EU in the mid-eighties and on Spanish price and cost competitiveness in particular. As Spain was handicapped as far as relative local market size is concerned, one should observe that price and cost competitiveness deteriorated as markets were opened, provided the pessimistic view holds: While producers at the center slide down their cost curve as economies of scale and local market size provide for a head start, Spanish producers have to spread their fixed costs over an ever smaller quantity sold as producers located at the center conquer Spanish markets. Yet, it will turn out that although price and cost competitiveness worsened right after entering the EU and foreign trade slipped into deficit, both movements, in relative prices as well as in trade flows, cannot be traced back to economies of scale and local markets being smaller, but are basically in line with the canonical model and the supply-side approach to economic integration.

VI. SOME EMPIRICAL EVIDENCE ON REGIONAL EVOLUTIONS

1. SPAIN: FROM PERIPHERY TO MEMBERSHIP

Hence, focussing on the convergence issue, there are two competing views which have to be checked as to whether they are consistent with the data, namely the competitiveness hypothesis and the supply-side hypothesis. While both predict a decline in price and cost competitiveness in the course of integration, the interpretation differs substantially. In the case of the former it is interpreted as a sign of falling behind, whereas in the case of the latter it is part of the adjustment process while catching up. Yet, as far as Spain is concerned, the macro-data at the early stage of entry are clearly in line with the supply-side view: a significant fraction of the decline in price and cost competitiveness took place while investment was on the rise which was partly financed by long term capital imports.

Later on, the process of catching up got stuck and during the worldwide recession of the early nineties Spain even lost ground vis-à-vis the rest of the EU in terms of per-capita income. Investment declined, the maturity of capital inflows dropped and finally the exchange rate collapsed. But although the worldwide recession contributed thereto, the reason for performing poorly was basically home-made. It was especially fiscal policy which proved to be quite costly as it not only failed to curb deficit spending, but in the early

nineties even posted substantially higher deficits. However, the evolution of price and cost competitiveness as well as trade flows will be addressed first.

As far as trade is concerned, joining the EU implied quite a change for Spain since due to a rather high rate of effective protection Spain was much less open than the rest of the EU member states, and even much less so than Portugal and Greece. Whereas effective openness as measured by imports plus exports of goods and services relative to GDP reached on average 61 per cent in the EU of twelve, Spain was well below, showing only a ratio of 44.3 per cent. Portugal was far ahead with 78 per cent and Greece had at least a ratio of 54 per cent.²³ Although using the total of exports and imports as per cent of GDP as a proxy for openness is not without its problems, the evolutions observable should have thus been rather strong in case of Spain.

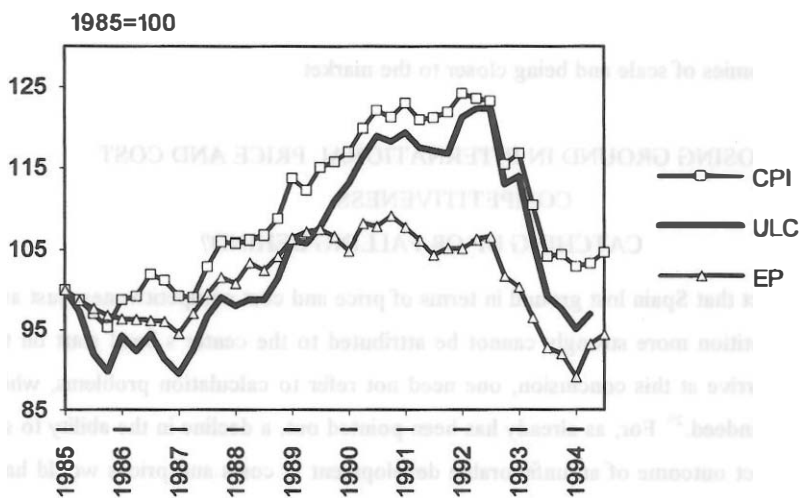
Indeed, the step towards liberalizing economic relations between Spain and the rest of the EU had substantial consequences for the volume as well as the structure of trade flows. Whereas imports increased substantially thereafter, exports remained almost stagnant. Subsequently, namely in 1988, the balance on current account slipped into deficit, showing a negative sign until the end of 1992. Although significantly smaller in size, the current account remained also in deficit in 1993.²⁴ Yet, the main swing took place between 1985 (+1.7 per cent of GDP) and 1989 (-3.0 per cent of GDP). Since deficits climbed just as Spain entered the EU, it appears that becoming a member of the EU had in this case not only a trade-diverting effect, with Spanish/Non-EU trade slowing down and Spanish/EU trade on the rise, but also a direct impact on the current account. Seeing that current-account deficits concentrated in trade with the EU members, most of which were more developed than Spain, at least part of the deficits were traced back to the center's superiority in terms of cost and price competitiveness.²⁵

Usually, different concepts of real exchange rates serve as an indicator for the development of domestic costs and prices relative to those of foreign competitors. They are all derived by deflating the trade-weighted nominal exchange rate with different price and cost indices, the most common of which are import and export unit values, GNP deflators, CPIs and unit labor costs (either with reference to manufacturing or to the economy in general). Taking PPP as a reference, deviations are often interpreted as shifts in international

competitiveness, with an appreciation signalling a deterioration of the price and cost competitiveness of the economy under consideration.

Judged by this standard, Spain performed badly right after entering the EU: Although different in degree, most of the indicators show an increase and therefore a worsening of the competitive position of Spanish suppliers compared to their foreign competitors (figure 3). When measured in the same currency, Spanish goods became much more expensive than those supplied by the rest of the European Union. Real exchange rates based on export unit values increased by 10 pp between 1985 and 1990, those calculated by CPIs rose by 32 pp, and drawing upon GNP deflators they climbed by some 22 pp.

Figure 3:
Indicators of Price and Cost Competitiveness: Spain 1985-1994



Source: Banco de España
CPI: Consumer Prices; ULC: Unit Labor Costs; EP: Export Prices.

In addition, many observers who are concerned about the international performance of an economy concentrate on some kind of cost index. Their main argument is that competitive positions might be kept for some time by accepting a shrinkage of margins, in which case the relative development in prices might not be informative about the true competitive position.²⁶ A shift in costs on the other hand could be interpreted as a clear sign of a change

in competitiveness. Yet the cost component on which most of the discussion is focussed is the cost of a factor which is relative immobile, namely labor. This seems plausible, since many firms obviously cannot keep up with their international competitors when the latter do not have to cope with a similar increase in costs. However, with an increase of 31 pp the picture is basically the same if exchange rates are deflated by unit labor costs.²⁷ Thus, in terms of price and cost competitiveness the Spanish economy fell behind immediately after Spanish markets were opened to foreign competitors.²⁸

The change in trade flows as well as international price and cost competitiveness corresponds to what the competitiveness approach to economic integration would predict. Performing poorly in terms of price and cost competitiveness seems to be in line with arguments put forward in favor of the divergence hypothesis. For the center showing an improvement in terms of price and cost competitiveness as barriers to trade are removed seems to fit into the picture of firms located at the center having generally a higher ability to sell due to economies of scale and being closer to the market.

2. LOSING GROUND IN INTERNATIONAL PRICE AND COST COMPETITIVENESS: CATCHING UP OR FALLING BEHIND?

However, the fact that Spain lost ground in terms of price and cost competitiveness just as it faced EU competition more strongly cannot be attributed to the center's head start on the cost curve. To arrive at this conclusion, one need not refer to calculation problems, which might be severe indeed.²⁹ For, as already has been pointed out, a decline in the ability to sell which is the direct outcome of an unfavorable development in costs and prices would have been associated either with a nominal depreciation of the exchange rate or a loss in foreign reserves.

Yet the evolution of the Spanish economy is clearly marked by two different periods: In the first period, right after entering the EU, the nominal exchange rate climbed and foreign exchange had been accumulated. The second period, by contrast, was characterized by the collapse of the nominal exchange rate and the decline in foreign reserves (table 3).

The competitiveness approach clearly fails to explain this up-and-down pattern, whereas a supply-side interpretation using an intertemporal tradeables/non-tradeables model can offer

a consistent explanation of the macroeconomic evolution. According to the latter, the worsening of the usual indicators for assessing international competitiveness right after joining the EU has also to be seen in the context of the surge in capital inflows, while the improvement thereafter was partly due to the fact that structural adjustment was under way and partly due to deficit spending which considerably impaired locational quality.

*Table 3:
Nominal Effective Exchange Rate and Change in Foreign Reserves:
Spain 1985-93*

	1985	1986	1987	1988	1989	1990	1991	1992	1993
nominal effective exchange rates (1985=100)	100	96.84	99.38	104.05	107.65	107.79	105.42	93.21	87.08
change in foreign reserves (bill. Pts)	-371.1	+318.7	+1593.2	+961.8	+581.2	+709.8	+1489.1	-1778.0	-566.0

Source: Banco de España.

The decline in international price and cost competitiveness which took place in the first period was clearly part of a catching-up process: Due to favorable expectations regarding future profitability, investment activity boomed. As savings fell short of investment, investment was partly financed by capital inflows. However, with net capital imports on the rise, the structure of demand usually changes as well. While tradeable prices are basically given by the rest of the world, supply elasticity is usually much smaller in the case of non-tradeables. Consequently, relative prices change as a fraction of the additional funds is devoted to non-tradeables, thus leading to a real appreciation of the exchange rate.³⁰ Because of the demand for non-tradeables the net effect of the surge in capital imports on the market for foreign exchange will be an increase in demand for the capital-import currency.³¹ Hence, the setback in price and cost competitiveness right after Spain joining the EU can well be explained by resorting to an intertemporal tradeables/non-tradeables model.

If there is not much room for nominal exchange rate movements, the real appreciation necessary for the corresponding adjustment of international trade flows can only be brought about by inflationary pressure, complicating the task of monetary policy in pursuing the goal

of price stability.³² And indeed, trying to curb inflation on the one hand and aiming at exchange-rate shadowing³³ on the other hand turned out to be difficult in Spain as the surge in capital inflows kept the Peseta under pressure. Stabilizing the nominal exchange rate was therefore only possible by accumulating international reserves. Furthermore, whereas the inflation differential between Spain and other EU member countries fell in absolute terms as from the late seventies, the gap widened again from 1987 onwards.³⁴ However, the very fact that foreign reserves were accumulated right after Spain joining the EU is inconsistent with the competitiveness approach to economic integration. Instead, it supports the supply-side view.

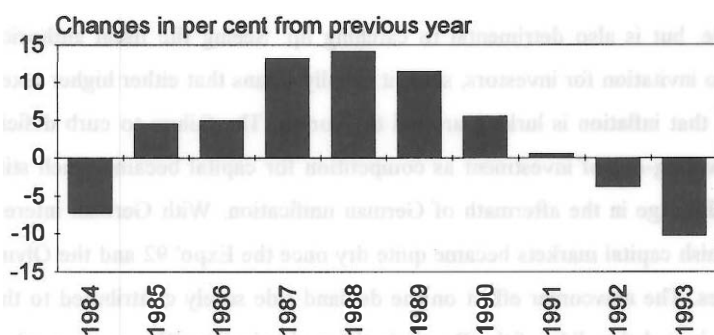
The setback in international price and cost competitiveness at the very beginning of membership must not be interpreted as signalling a favorable development throughout; the real appreciation is not only due to preferences differing as purchasing power is shifted. Given differences in demand, it also reflects the structural elasticity of supply. The more hampered by rigidities, the stronger the real appreciation necessary for bringing the real transfer about will be. Moreover, the more investors expect the real appreciation to fade in the future, the higher an interest rate they will ask for. Consequently, net capital imports will be smaller than otherwise.

After a while the trend in price and cost competitiveness will be reversed - even in cases in which economic prospects stay favorable and the economy keeps on catching up.³⁵ This is because the demand for foreign exchange rises as supply expands in the non-tradeables sector and as demand shifts from non-tradeables to tradeables. Hence, the Marshallian dynamics make for an up-and-down pattern of the real exchange rate in the course of catching up with the help of capital imports. However, in the case of Spain investors also became increasingly reluctant, thus putting additional pressure on the exchange rate, which finally collapsed.

This supply-side explanation is clearly supported by the intertemporal pattern of investment activity and capital inflows. While strong at the beginning of EU-membership, investment activity and net capital inflows not only ebbed after a while, but investors even turned their back upon Spain as fiscal policy moved increasingly onto the track towards unsustainability: In the period 1984-88, the growth rate of investment (figure 4) exceeded that of the EU average by approx. 6 pp.³⁶ Investment would hardly have soared if prospects

concerning the ability to sell had been dim. Instead, they indicated the expectation by investors of a higher rate of return in Spain than that they were able to reap by investing their funds in the old center of Europe. That productivity growth remained rather flat does not prove the opposite since employment was on the rise.³⁷

*Figure 4:
Real Fixed Capital Formation: Spain 1984-1993*



Source: International Monetary Fund and Banco de España

In the period from 1988-90, the growth rate of investment decelerated before coming to a halt in 1991. During the recession of 1992/93 investment even declined in real terms. But the fact that Spanish investment activity became quite sluggish cannot be solely traced back to the cyclical downswing of the world economy. It was also fiscal policy which proved to be detrimental to locational quality. Whereas other countries experiencing an upswing in growth rates, such as Mexico and Thailand in the late eighties,³⁸ have used the opportunity to curb deficit spending, Spain failed to do so. Although public deficits slowed down somewhat compared to the average of the last three years before the boom, they remained high, thereby sucking up capital. Insofar as funds have not been used for investment, but for government consumption, future growth prospects are diminished rather than increased.

Clearly, that the financial balance of the private sector coming down from 7.7 per cent of GDP in 1986 to -0.1 per cent of GDP in the late eighties contributed to net capital demand, shows that the surge in capital imports was also due to Spain becoming more attractive as a location for production. Nonetheless, the latter is no excuse for a policy of benign neglect

concerning the budget since net savings of the public sector, although significantly higher than in 1986, still made for -2.8 per cent of GDP.³⁹

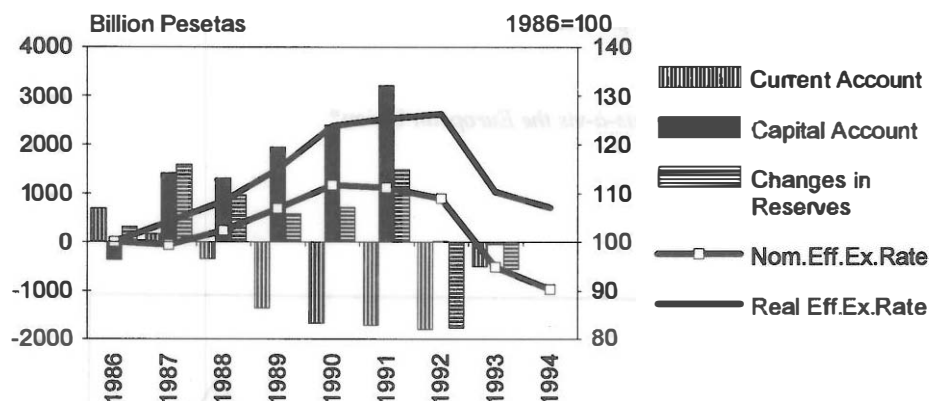
The failure to consolidate government finances did indeed prove to be very problematic as the world economy slipped into recession at the beginning of the nineties, with Spain posting a deficit of 7.3 per cent of GNP at the bottom of the recession in 1993 and Spanish policy suffering from severe credibility problems. With primary balances in deficit and real interest rates significantly exceeding real growth rates, fiscal policy proves not only to be unsustainable, but is also detrimental to catching up. Seeing the fiscal authorities playing Ponzi⁴⁰ is no invitation for investors, since it usually means that either higher taxes are to be expected or that inflation is lurking around the corner. The failure to curb deficit spending led to a crowding-out of investment as competition for capital became much stiffer due to the capital shortage in the aftermath of German unification. With German interest rates on the rise Spanish capital markets became quite dry once the Expo' 92 and the Olympic games were bygone. The newcomer effect on the demand side surely contributed to the hardship faced by Spain and the slide of the Peseta in the early nineties. The process of catching up not only came to a halt, but even gave way to a severe crisis. But the flattening out of growth rates cannot be entirely traced back to a change in circumstances, as Spanish policy is all but painting a clear picture of where to go. Obviously, the latter is neither a matter of economies of scale nor of local market size.

The balance of payments mirrors the ups and downs of investment activity and locational quality: Between 1986 and 1989 investment rates took off by some 5.6 pp, while the Spanish savings rate climbed much less, namely by 1.0 pp.⁴¹ Consequently, a significant part of the increase in investment was financed by capital imports. Whereas the current account showed a slight surplus until the end of 1987, net capital imports increased substantially in 1987, although in 1986 the capital account still showed more outflows than inflows of capital. From 1987 on, however, net capital imports rose steadily until they peaked in 1991, reaching more than 30 mill. US-\$ (5.9 per cent of GNP).

If losing ground in international competitiveness due to the superior standing of the center of Europe in most of the markets had been the reason for the swing in trade flows, the intertemporal pattern would have been a different one, with the current account taking the lead, accompanied by a decline in reserves.⁴² However, net capital imports stayed well

ahead of current-account deficits, until 1991. Thereafter, net capital inflows petered out, so that the capital account was almost balanced in 1993.

*Figure 5:
The Spanish Balance of Payments in the Eighties*



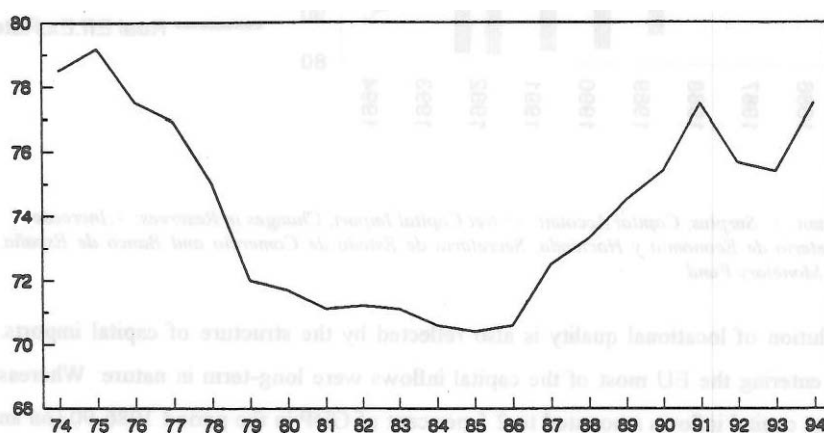
Current Account: +: Surplus, Capital Account: +: Net Capital Import, Changes in Reserves: +: Increase
Source: Ministerio de Economía y Hacienda, Secretaría de Estado de Comercio and Banco de España, International Monetary Fund.

The evolution of locational quality is also reflected by the structure of capital imports. Right after entering the EU most of the capital inflows were long-term in nature: Whereas net long-term capital inflows amounted to 2.5 per cent of GDP in the period 1986-90 (on an annual basis), net short term capital inflows remained comparatively small with 0.6 per cent of GDP.⁴³ The share of capital imports accounting for direct foreign investment was also rather high by international standards. By reaching on average 1.65 per cent of GDP in the period 1986-90, gross foreign direct investment contributed to almost 17 per cent of gross fixed capital formation (construction excluded). In the period 1981-85, by contrast, foreign direct investment accounted for only 9 per cent of total investment (0.7 per cent of GDP). In the late eighties/early nineties, however, the maturity structure changed significantly as the average maturity became much shorter, indicating that investors increasingly lost confidence in the Spanish economy.

As a result, Spanish growth rates exceeded those of the EU average by 1.5 percentage points in the first years after entering the EU.⁴⁴ Whereas in 1985, before joining the EU, Spain reached only approx. 71 per cent of the per-capita income in the EU (at PPP exchange rates), relative per-capita income climbed almost steadily thereafter, going up to 77 per cent in the early nineties, before slightly falling back in 1993 due to the world-wide recession being aggravated by internal problems.

*Figure 6:
Per-Capita Income: Spain vis-à-vis the European Union**

EU=100



Source: European Economy and Eurostat.

** at Purchasing Power Parity.*

Compared to previous periods, the relative performance of Spain was almost rock-bottom in the mid-eighties. The notion that the relative growth in per capita income is not showing primarily benefits from integration, but merely a regaining of lost ground, would be too short a perspective though. An argument like this would only be valid if the relative performance were the outcome of a cyclical swing lagging or leading the EU average.

Nonetheless, relative GDP per capita slowed down steadily as from the mid-seventies, quite independently from any cyclical fluctuations, before it took off in the mid-eighties.⁴⁵

Hence, the first period of EU membership was clearly a period of catching up, while the second was characterized by stagnation and decline. But rather than economies of scale and distance to the market, it was Spanish economic policy itself which proved detrimental to locational quality, thus impairing economic growth. Right after entering the EU, favorable prospects due to the integration of markets dominated. Capital was attracted despite the fact that the fiscal authorities kept on posting high deficits. Clearly, with unemployment rates still in two digits and a productivity gap much smaller than the income gap vis-à-vis the EU average, even at this stage much remained to be done. In the late eighties/early nineties, however, the evaluation by international investors changed significantly. In effect, investment was crowded out by public deficits. Hence, that openness not solely entails the possibility of coming in from the cold, but can likewise speed up the slide downwards, was also exemplified by the experience of Spain.

VII. HOW FAR CAN WE PUSH THE "LAW OF CONVERGENCE"?

The concern that the prevailing center-periphery pattern is reinforced as integration proceeds rests on some implicit assumptions which prove to be rather fragile. Besides the fact that the starting point of the core-periphery pattern is in most cases assumed rather than explained, it is the focus on production and product markets that provides the main shortcoming of the argument. If the dynamics in the costs of production are offset by the dynamics in transportation costs, the regional division of labor might be increasing rather than decreasing in the course of economic integration. Moreover, if it recognized that there are different levels of competition, namely product markets and factor markets, one might well come to the conclusion that integration provides a development-pull effect rather than a setback for the periphery. In effect, if Intra-EU mobility is low, a superior performance by some industries located at the center will imply that others at the center fall behind, which allows the periphery to pull forward. The development-pull effect also works through the balance of payments since according to Say's law buying and selling are two sides of the same coin. If in spite of everything the periphery should indeed suffer a setback in its attempt to catch up, either the exchange rate would face severe pressure and/or foreign reserves would melt away. But, experience has shown that several of the newcomers underwent

anything but a painful depreciation losing foreign exchange right after joining the EU, although clearly being periphery in terms of relative market size.

Spain is a case in point. Although clearly marked by two different periods, the evolution of the Spanish economy basically supports the supply-side view. The first period right after entering the EU was clearly marked by a decline in cost and price competitiveness. However, Spain's poor performance in international price and cost competitiveness right after joining the EU has to be taken as an indicator of catching up rather than falling behind. Instead of being a signal that Spain, i.e. the periphery, was not able to get a firm footing in a substantial number of markets due to Spanish firms operating on a smaller scale,⁴⁶ the loss in cost and price competitiveness was an integral part of the process of catching up with the help of net capital imports as can be seen by the fact that exchange-rate shadowing led to a significant increase in foreign reserves. Obviously, at this early stage of EU membership, unexploited profit opportunities originating from the division of labor dominated any of the structural shortcomings besetting the Spanish economy. As time went by, however, structural rigidities and the lack of fiscal discipline became increasingly important. Capital markets dried up, investment rates dropped and the effective exchange rate plummeted. However, rather than economies of scale and distance to the market, it was economic policy which impaired locational quality, thus showing again the validity of supply-side aspects.

To sum up: The fact that the starting position is a different one for each of the countries participating in European economic integration does by no means imply that the gap in economic activity must necessarily increase because of differences in the starting position. Second, although plausible at first glance, international price and cost competitiveness, as usually measured, is a rather poor indicator with regard to income divergence. As in the case of Spain, the relative increase in local costs and prices need not be part of becoming even more backward, but can be part of the process of catching up.

The case of Spain in the second half of the eighties by no means implies that every departure from PPP showing a loss of international competitiveness can be interpreted as a part of pulling forward. Nor does it follow that there is an automatic mechanism which enables the periphery to catch up once barriers to trade and mobility are removed. Rather, it requires constant efforts on preserving competitiveness in terms of locational quality. This is all the more applicable since there is not only the center as an alternative; investors can

choose among different parts of the periphery too. As the turbulence of the Peseta in the period 1994-95 shows, the confidence of international investors may have weakened too soon.

In addition, some general caveats are in order: By focussing on the relative impact of economic integration one might nevertheless be tempted to conclude that there are losers and winners from economic integration. Yet what may be overlooked is that integration might provide mutual gains even though countries perform differently for whatever reason or even though the gains from integration are somewhat lopsided. Real convergence can be postponed by transfers as they lower the incentives for adjustment and innovation. But to call for transfers to overcome differences in regional economic development which tighten the status quo or even aggravate gaps in economic dynamics would be counterproductive. Witness the fate of Southern Italy.

On the other hand, the notion of convergence must also not be pushed too far, for it draws on the perception of integration as an adjustment to equilibrium. However, the very notion of equilibrium is a static concept, which might not be very successful in explaining market processes. Market processes can be much better grasped by the picture of Schumpeterian competition,⁴⁷ since this allows for creativity which actually does not fit neatly into the disturbance-(i.e. openness)-adjustment-equilibrium framework, because of its de-coordinating character. In an environment characterized by the permanent search for new opportunities and innovation it cannot be expected that the leader-follower pattern observable at a certain point of time should hold. This also applies for locational competition. Consequently, merely removing barriers to competition is by no means a guarantee for taking off, but also implies the risk of falling behind. That said, the latter is the very nature of competition.

The higher the diffusion of know-how due to economic integration and the smaller the differences in endowment, the more we have to focus on competition in economic policy when it comes to catching up or falling behind. Looking at convergence as a goal to achieve and classifying everything else as a failure of economic integration would therefore be "misplaced concreteness"⁴⁸, neglecting the benefits from dynamic competition (including competition in economic policy) instead of pure arbitrage.

NOTES

- ¹ For references see note 8.
- ² See, for instance, BARRO and SALA-I-MARTIN (1991) and (1992), and SALA-I-MARTIN (1994).
- ³ See, for instance, EC COMMISSION (1990) and BEGG and MAYES (1993).
- ⁴ Although the US is much larger, not in economic weight, but on a geographical scale. Differences are also pointed out by CUADRADO, DEHESA and PRECEDO (1993), p. 266.
- ⁵ Among those who are of the opinion that real adjustment problems in the US are cushioned much more than in Europe because of fiscal federalism is, for instance, EICHENGREEN (1990). See also the calculations by SACHS and SALA-I-MARTIN (1992), who come to the conclusion that in the US almost 40 per cent of the impact of regional shocks is absorbed via vertical flows between the different levels of government.
- ⁶ For some empirical evidence see BLANCHARD and KATZ (1992).
- ⁷ On this subject see OHLIN (1933) as well as the two classic papers by SAMUELSON (1948), (1949). However, the proponents of the traditional approach were well aware of the possibility of economic integration being detrimental to real incomes earned in case the (short-run) elasticity of factors of production should be low. Moreover, by implicitly focussing on multilateral free trade, the approach labelled here as "traditional" disregards the issue of trade diversion and trade creation which can give rise to a setback in regional economic development. Yet, in this framework, there is no reason to assume that the loss in economic activity will systematically fall on newcomers being relatively backward.
- ⁸ See ARTHUR (1990) as well as DAVID and ROSENBLOOM (1990) and KRUGMAN and VENABLES (1990). However, the issue of location in the presence of economies of scale is not a new one in economic theory, as the work of MARSHALL (1920), LÖSCH (1943/1962), GIERSCH (1949) and KALDOR (1970), (1972) shows. But see also YOUNG (1928), who can be considered as a forerunner of the imperfect-(strategic)-competition-models which became fashionable in the eighties.
- ⁹ Proponents of the divergence hypothesis are well aware of the fact that being close to the market need not imply that producers located at the periphery cannot acquire new markets, but are out-competed by producers located at the center. This is evident in all those cases in which innovation, the production technique or regional endowments make up for transportation costs. Aside from that, though, there is not much of a gain to be expected from economic integration.
- ¹⁰ However, there are also models in which they are internalized. In this case the dynamics enter the picture via the market structure, namely oligopoly (see GROSSMAN and HELPMAN (1991/1995) or AGHION and HOWITT (1992)), or via financial market imperfections (GREENWALD, KOHN and STIGLITZ 1990). STOLPE (1992) provides an overview. For a more critical view on the notion of divergence see BARRO and SALA-I-MARTIN (1991) as well as SALA-I-MARTIN (1994).
- ¹¹ See YANG (1994). YANG, however, draws a distinction between economies of scale and economies of specialization, which does not allow for him being subsumed under the economies-of-scale strand.
- ¹² See MYRDAL (1957), NURKSE (1953) and ROSENSTEIN-RODAN (1943).
- ¹³ See, for instance, the arguments put forward by the Delors-Report (CEC (1989), p. 22).
- ¹⁴ See SUGDEN (1986) for this and similar examples of coordination games.
- ¹⁵ Although the question of economies of scale in transportation itself has been touched upon, the dynamics in relative costs has not received the attention in development debates it deserves. KRUGMAN (1993), for instance, handles the static issue of economies of scale in transportation, arriving at a hub and spoke pattern. KRUGMAN and VENABLES (1990) address the question of changes in transportation costs only whereas VON WEIZSÄCKER (1991), although focussing on telecommunications in particular, has obviously the dynamics of relative costs in mind.
- ¹⁶ The term "ability to sell" has been coined by BALASSA (1964).

-
- ¹⁷ For a more detailed discussion of this issue see DLUHOSCH, FREYTAG and KRÜGER (1992/forthcoming).
- ¹⁸ Whether economies of scale are really so prevalent that they cover the whole European market might be called into question since preferences are also quite different. Product differentiation, however, by increasing marginal costs, all but works in the other direction.
- ¹⁹ On Intra-European labor mobility see, for instance, FAINI and VENTURINI (1994). The fact, that migration has so far been minor is not as acknowledged as it should be. Although, for instance, DEHESA and KRUGMAN (1992) admit that "the story is complicated somewhat by labor immobility, which will not change in the near future..." and that "...reducing the barriers to trade within the EC may make it more attractive to produce in low-wage locations," they simply move on by saying "however, matters are not that simple, because reduced barriers to trade also make it more profitable to concentrate production in a few locations to achieve economies of scale - and as long as there remain significant costs of transportation and transaction costs across space, these concentrations may be chosen for market access rather than low cost..." If they were right, production should be much more concentrated than is currently observed. But they offer no explanation for the question of why economic activity is not even more regionally concentrated nowadays (or why it was not more concentrated during the heyday of mass production and huge international capital flows, namely the late 19th century) nor do they draw any conclusions from the fact that labor is all but mobile within the EU.
- ²⁰ If a situation like this should ever be faced, there would be no need for the center to draw on international integration to set the expansionary process in motion. The economy could be steered towards more economic activity by national fiscal policy cum monetary accommodation alone. Moreover, an increase in net exports of the center implies an increase in net capital exports. The latter, however, would foster economic activity in the periphery, especially in the non-tradeables sector.
- ²¹ SAY (1836). For an up-to-date discussion see SOWELL (1994). For an application to international issues see DLUHOSCH, FREYTAG and KRÜGER (1992/forthcoming) and the references cited therein.
- ²² On terms of trade in a dynamic setting see CORDEN (1994), pp. 271-279.
- ²³ VIÑALS (1992) gives a detailed description of the status quo ante with regard to openness and the structure of trade.
- ²⁴ For a description of the development of the main economic indicators during the period of high net capital imports see SCHADLER (1993) and LOPEZ-CLAROS (1988). For a more long-term perspective see VIÑALS (1992).
- ²⁵ On this point see VIÑALS et al. (1990). Right before entering the EU (1985), net exports vis-à-vis the EU showed still a positive sign (39 bill. Ptas), whereas deficits concentrated on the trade with Japan (-116 bill. Ptas.). VIÑALS (1992) provides an overview. See especially table 3.
- ²⁶ The objection to using real exchange rates as an indicator of price competitiveness, because they also reflect changes in prices of services which might not convey information about the competitive position of the international sector, applies only partially. For, if relative prices change due to differences of movements in non-tradeables, the intersectoral allocation of resources will be modified too (as long as markets are permeable to factor movements). Thus, the change in relative prices of tradeables and non-tradeables does also alter the competitive position of suppliers of tradeables.
- ²⁷ See BURNS (1994).
- ²⁸ That changes in real exchange rates jeopardized the international competitiveness of the Spanish economy is, for instance, pointed out by ALZOLA (1992).
- ²⁹ For a discussion of problems of calculation and interpretation see, for instance, LIPSCHITZ and MCDONALD (1992), TURNER and VAN D'TACK (1993) and MARSH and TOKARICK (1994).
- ³⁰ On the role of real exchange rates in the adjustment process see MEYER (1938) and SAMUELSON (1980).

-
- ³¹ This can also be seen by comparing different real exchange rates, since real exchange rates based on export unit values increase by less than those which include a higher portion of non-tradeables.
- ³² On the external constraints faced by macroeconomic policy in the second half of the eighties see DOLADO and VIÑALS (1990). On sectoral price movements due to the easing of monetary policy see PUJOL (1993).
- ³³ See ALZOLA (1992), p. 34.
- ³⁴ See GALY (1993), p. 7.
- ³⁵ Although the movement of the exchange rate looks similar to the one in the overshooting debate, it has to be pointed out that the forces behind the exchange rate movement are quite different. For a detailed analysis see DLUHOSCH, FREYTAG and KRÜGER (1992/forthcoming). The overshooting model as developed by DORNBUSCH (1976) can only explain small changes in exchange rates. See HOMBURG (1989) for a discussion and some back-of-the-envelope calculations. Moreover, this is not to be mixed up either with the tendency for real appreciation in the process of catching up due to differences in changes in productivity in the tradeables sector and the services sector as discussed by BALASSA (1964b).
- ³⁶ See ORTEGA et al. (1990), p. 198, for the data. By undertaking a econometric examination DOLADO and VIÑALS (1990, pp. 330-333) came to the conclusion that the real appreciation was indeed mainly due to the influx of capital thus indicating an equilibrium phenomenon.
- ³⁷ On the evolution of productivity and employment see PEÑALOSA (1994).
- ³⁸ See SCHADLER et al. (1993), table 4, p. 17, for an overview.
- ³⁹ See table 23 in VIÑALS (1992).
- ⁴⁰ For the history of Ponzi-games see KINDLEBERGER (1989), for Ponzi-games with special reference to government finances see DLUHOSCH (1993) and the references cited therein.
- ⁴¹ See DOLADO and VIÑALS (1990), p. 309, for a compilation of data.
- ⁴² For a more detailed discussion of Spanish monetary performance in the eighties see also DLUHOSCH and KRÜGER (1991).
- ⁴³ For figures see BAJO and TORRES (1992), p. 199, VIÑALS (1992), p. 63, as well as DOLADO and VIÑALS (1990), p. 306.
- ⁴⁴ On this issue see ESTEBAN (1994) and PEÑALOSA (1994). For differences in evaluation see BLANCHARD and JIMENO (1994) as well as DIAZ-GIMENEZ and SEBASTIÁN (1994) and VITZTHUM (1994).
- ⁴⁵ See VIÑALS (1994), pp. 12-14, for more statistical details. That the slide of the economy in the period 1974-84 was mainly due to structural factors (e.g. labor market rigidities and economic policy reluctant to change course) has been pointed out by DOLADO and VIÑALS (1990), p. 306.
- ⁴⁶ If Spanish firms are out-competed because of local markets being smaller, the Grubel-Lloyd index measuring the significance of intra-industry trade should be especially low vis-à-vis the EU. As the traditional theory would predict, intra-industry trade already made for a significant element in Spanish trade with the rest of the EU member states at the point of departure, reaching at least 44 per cent in 1985 (26 per cent vis-à-vis all others). Yet, the index indicates that intra-industry trade even widened in the aftermath of Spain's entry in the EU, climbing to 54 per cent in 1990 (33 per cent vis-à-vis all others). See MARTIN (1992) and VIÑALS (1992), p. 26 and 81.
- ⁴⁷ See SCHUMPETER (1949). For a detailed critique of the very notion of equilibrium see also MORGENSTERN (1963), pp. 42-70.
- ⁴⁸ MACHLUP (1967/1991).

REFERENCES

- AGHION, PHILIPPE and PETER HOWITT (1992): A Model of Growth through Creative Destruction, *Econometrica*, Vol. 60, pp. 323-351.
- ALZOLA, JOSÉ LUIS (1992): La Evolución del Tipo de Cambio de la Peseta en el Periodo 1986-90: Causas y Efectos, in: *El Tipo de Cambio de la Peseta ante el Mercado Único y la Unión Monetaria Europea*, ed. by Juan Pérez-Campanero, FEDEA Colección Debates No. 5, Madrid.
- ARTHUR, BRIAN (1990): Positive Feedbacks in the Economy, *Scientific American*, 262 (February), pp. 92-99.
- BAJO, OSCAR and ANGEL TORRES (1992): El Comercio y la Inversión Extranjera Directa Tras la Integración de España en la CE (1986-90), in: *La Economía Española Ante el Mercado Único Europeo*, ed. by Viñals, José, Madrid (Alianza Editorial), p. 167-228.
- BALASSA, BELA (1964): Competitiveness of American Manufacturing in World Markets, in: *Changing Patterns in International Trade*, ed. by Bela Balassa, New York: Norton, pp. 26-33.
- BALASSA, BELA (1964b): The Purchasing Power Doctrine: A Reappraisal, in: *Journal of Political Economy*, Vol. 72, pp. 584-596.
- BARRO, ROBERT and XAVIER SALA-I-MARTIN (1991): Convergence Across States and Regions, in: *Brookings Papers on Economic Activity*, p. 107-182.
- BARRO, ROBERT and XAVIER SALA-I-MARTIN (1992): Convergence, in: *Journal of Political Economy*, Vol. 100, pp. 223-251.
- BEGG, IAN and DAVID MAYES (1993): Cohesion in the European Community: A Key Imperative for the 1990s?, *Regional Science and Urban Economics*, Vol. 23, pp. 427-448.
- BLANCHARD, OLIVER and JUAN F. JIMENO (1994): 2005: Un Nuevo Milagro Económico Español, in: *El País*, 27/12/1994, p. 50.
- BLANCHARD, OLIVIER and L. KATZ (1992): Regional Evolutions, in: *Brookings Papers on Economic Activity*, pp. 1-61.
- BURNS, TOM (1994): Prescription Could Fall Well Short of a Cure, in: *Financial Times*, 30/09/1994.
- CEC (Commission of the European Communities) (1989): Report on Economic and Monetary Union in the European Community, Luxembourg: Office of Official Publications of the European Communities.
- CORDEN, W. Max (1994): *Economic Policy, Exchange Rates, and the International System*, Chicago: University of Chicago Press.
- CUADRADO, JUAN RAMON; DEHESA, GUILLERMO DE LA and ANDRES PRECEDO (1993): Regional Imbalances and Government Compensatory Financial Flows: The Case of Spain, *Finance and Development: Issues and Experience*, ed. by Alberto Giovannini, Cambridge: Cambridge University Press, pp. 261-293.
- DAVID, PAUL and J. ROSENBLUM (1990): Marshallian Factor Market Externalities and the Dynamics of Industrial Localization, in: *Journal of Urban Economics*, Vol. 28, pp. 349-370.
- DEHESA, GUILLERMO DE LA and KRUGMAN, PAUL (1992): *EMU and the Regions*, Group of Thirty Occasional Paper no. 39, Washington, D.C.
- DIAZ-GIMÉNEZ, JAVIER and MIGUEL SEBASTIÁN (1994): 2005: Una Odisea Exterior, Respuesta a 2005: Un Nuevo Milagro Económico Español, publicado en *El País* el 27 de diciembre de 1994, Madrid.
- DLUHOSCH, BARBARA (1993): Strategische Fiskalpolitik in offenen Volkswirtschaften, Köln.
- DLUHOSCH, BARBARA and MALTE KRÜGER (1991): Struktureller Anpassungsbedarf bei hohen Kapitalimporten und festen Wechselkursen: Der Fall Spanien, in: *Zeitschrift für Wirtschaftspolitik*, pp. 151-185.
- DLUHOSCH, BARBARA; FREYTAG, ANDREAS and MALTE KRÜGER (1992): *Leistungsbilanzsalden und Internationale Wettbewerbsfähigkeit*, Köln (totally revised english edition (forthcoming): *International Competitiveness: Do Current Account Deficits and Surpluses Matter?*, Cheltenham: Edward Elgar.
- DOLADO, JUAN J. and JOSÉ VIÑALS (1990): Macroeconomic Policy, External Targets and Constraints: The Case of Spain, in: *External Constraints on Macroeconomic Policy: The European Experience*, ed.

- by George Alogoskoufis, Lucas Papademos and Richard Portes, Cambridge/Mass: Cambridge University Press, p. 304-338.
- DORNBUSCH, RÜDIGER (1976): Expectations and Exchange Rate Dynamics, in: *Journal of Political Economy*, Vol. 84, pp. 1161-1176.
- EC COMMISSION (1990): Economic and Social Cohesion in the Community, *European Economy* No. 46, Dec., Luxembourg, pp. 121-136.
- EICHENGREEN, BARRY (1990): One Money for Europe? Lessons from the US Currency Union, in: *Economic Policy*, Vol. 10, pp. 118-166.
- ESTEBAN, JOAN M^a (1994): La desigualdad interregional en Europa y en España: Descripción y análisis, in: *Crecimiento y Convergencia Regional en España y en Europa*, Vol. II, Instituto de Análisis Económico (CSIC), Barcelona, pp. 13-84.
- FAINI, RICARDO and ALESSANDRA VENTURINI (1994): *Migration and Growth: The Experience of Southern Europe*, CEPR Discussion Paper No. 964, London.
- GALY, MICHEL (1993): Opening Up of the Spanish Economy in the Context of EC Integration, in: *Spain: Converging with the European Community*, IMF Occasional Paper No. 101, Washington, D.C., pp. 2-12.
- GIERSCH, HERBERT (1949): Economic Union Between Nations and the Location of Industries, in: *The Review of Economic Studies*, Vol. XVII, pp. 87-97.
- GREENWALD, BRUCE C.; KOHN, MEIR and JOSEPH E. STIGLITZ (1990): Financial Market Imperfections and Productivity Growth, in: *Journal of Economic Behavior and Organization*, Vol. 13, pp. 321-345.
- GROSSMAN, GENE M. and ELHANAN HELPMAN (1991/1995): *Innovation and Growth in the Global Economy*, 5th ed., Cambridge/Mass.: MIT Press.
- HIRSCHMAN, ALBERT O. (1958): *The Strategy of Economic Development*, New Haven.
- HOMBURG, STEPHAN (1989): Some Notes on Overshooting, in: *Zeitschrift für Wirtschafts- und Sozialwissenschaften (ZWS)*, Vol. 109, pp. 443-447.
- INTERNATIONAL MONETARY FUND (1994): *International Financial Statistics: Yearbook*, Washington, D.C.
- KALDOR, NICHOLAS (1970): The Case for Regional Policies, in: *Scottish Journal of Political Economy*, pp. 337-348.
- KALDOR, NICHOLAS (1972): The Irrelevance of Equilibrium-Economics, in: *Economic Journal*, Vol. 82, pp. 1237-1252.
- KINDLEBERGER, CHARLES POOR (1989): *Manias, Panics and Crashes: A History of Financial Crises*, 2nd revised edition, New York.
- KRUGMAN, PAUL R. (1991): *Geography and Trade*, Cambridge/Mass.: MIT Press.
- KRUGMAN, PAUL R. (1993): The Hub Effect: Or, Threeness in Interregional Trade, in: *Theory, Policy and Dynamics in International Trade: Essays in Honor of Ronald W. Jones*, ed. by Wilfred Ethier, Elhanan Helpman and J. Peter Neary, Cambridge: Cambridge University Press, pp. 29-37.
- KRUGMAN, PAUL R. and ANTHONY J. VENABLES (1990): Integration and the Competitiveness of Peripheral Industry, in: *Unity with Diversity: the Community's Southern Frontier*, ed. by Christopher Bliss and Jorge Braga de Macedo, Cambridge: Cambridge University Press, pp. 56-75.
- LIPSCHITZ, LESLIE and DONOGH MCDONALD (1992): Real Exchange Rates and Competitiveness, in: *Empirica-Austrian Economic Papers*, Vol. 19, No. 1, pp. 37-69.
- LÖSCH, August (1943/1962): *Die räumliche Ordnung der Wirtschaft*, 3th ed., Stuttgart: Gustav Fischer.
- LOPEZ-CLAROS, AUGUSTO (1988): *The Search for Efficiency in the Adjustment Process: Spain in the 1980s*, International Monetary Fund, Occasional Paper No. 57, Washington, D.C., February.
- LUCAS, ROBERT E. (1988): On the Mechanics of Development Planning, in: *Journal of Monetary Economics*, Vol. 22, pp. 3-42.
- MACHLUP, FRITZ (1967/1991): Equilibrium and Disequilibrium: Misplaced Concreteness and Disguised Politics, in: Machlup, Fritz: *Economic Semantics*, 2nd. ed., New Brunswick: Transaction Publishers, pp. 43-72.
- MANDELBAUM, K. (1945): *The Industrialization of Backward Areas*, Oxford.
- MARSH, IAN W. and STEPHEN P. TOKARICK (1994): *Competitiveness Indicators: A Theoretical and Empirical Assessment*, IMF Working Paper WP/94/29, Washington, D.C.
- MARSHALL, ALFRED (1920): *Principles of Economics*, 8th ed., London: McMillan.

- MARTÍN, CARMELA (1992): *El Comercio Industrial Español Ante el Mercado Unico Europeo*, in: *La Economía Española Ante el Mercado Unico Europeo* ed. by José Viñals, Madrid (Alianza Editorial), pp. 119-166.
- MEYER, FRITZ W. (1938): *Der Ausgleich der Zahlungsbilanz*, Jena.
- MORGENSTERN, OSKAR (1963): *Spieltheorie und Wirtschaftswissenschaft*, Wien und München: Oldenbourg.
- MYRDAL, GUNNAR (1957): *Economic Theory and Underdeveloped Regions*, London: Duckworth.
- NURKSE, RAGNAR (1953): *Problems of Capital Formation in Underdeveloped Countries*, New York: Oxford University Press.
- OECD (1993): *Trends in International Migration, Annual Report*, Paris.
- OECD (1994a): *Main Economic Indicators*, December, Paris.
- OECD (1994b): *Economic Outlook*, December, Paris.
- OHLIN, BERTIL. (1933): *Interregional and International Trade*, Cambridge/Mass.: Harvard University Press.
- ORTEGA, ELOISA; SALAVERRIA, JULIA and JOSÉ VIÑALS (1990): *Spain's Current and Capital-Account Balances Within the EEC*, in: Bank of International Settlements (Monetary and Economic Department), *International Capital Flows, Exchange Rate Determination and Persistent Current-Account Imbalances*, Basle, June.
- PEÑALOSA, JUAN MARÍA (1994): *The Spanish Catching-Up Process: General Determinants and Contribution of the Manufacturing Industry*, Banco de España, Servicio de Estudios, Documento de Trabajo No. 9428, Madrid.
- PUJOL, THIERRY (1993): *Sectoral Aspects of Price Rigidities in Spain*, in: *Spain: Converging with the European Community*, IMF Occasional Paper No. 101, Washington D.C., pp. 49-54.
- RIVERA-BATIZ, LUIS A. and PAUL M. ROMER (1991): *Economic Integration and Endogenous Growth*, in: *Quarterly Journal of Economics*, 106, pp. 531-555.
- ROMER, PAUL M. (1986): *Increasing Returns and Long-Run Growth*, in: *Journal of Political Economy*, 94, pp. 1002-1037.
- ROSENSTEIN-RODAN, P. (1943): *Problems of Industrialization of Eastern and Southeastern Europe*, in: *Economic Journal*, Vol. 53, pp. 202-211.
- SACHS, JEFFREY and SALA-I-MARTIN (1992): *Fiscal Federalism and Optimum Currency Areas: Evidence for Europe from the United States*, CEPR Discussion Paper No. 632.
- SALA-I-MARTIN, XAVIER (1994): *La Riqueza de las Regiones: Evidencia y Teorías Sobre Crecimiento Regional y Convergencia*, in: *Moneda y Crédito, Segunda Época*, Vol. 198, pp. 13-54.
- SAMUELSON, PAUL A. (1948): *International Trade and the Equalization of Factor Prices*, in: *Economic Journal*, Vol. 58, pp. 163-184.
- SAMUELSON, PAUL A. (1949): *International Trade and the Equalization of Factor Prices Once Again*, in: *Economic Journal*, Vol. 59, pp. 181-196.
- SAMUELSON, PAUL A. (1980): *A Corrected Version of Hume's Equilibrating Mechanisms for International Trade*, in: *Flexible Exchange Rates and the Balance of Payments*, ed. by John S. Chipman and Charles P. Kindleberger, Amsterdam, pp. 141-158.
- SAY, JEAN-BAPTISTE (1836): *A Treatise on Political Economy*, Philadelphia: Grigg & Elliot.
- SCHADLER, SUSAN et al. (1993): *Recent Experiences with Surges in Capital Inflows*, International Monetary Fund Occasional Paper No. 108, Washington, D.C.
- SCHUMPETER, JOSEPH A. (1947): *The Creative Response in Economic History*, in: *The Journal of Economic History*, Vol. VII, No. 2, Nov., pp. 149-159.
- SMITH, Adam (1776): *An Inquiry into the Nature and the Causes of the Wealth of Nations*, London: Strahan and Caddell.
- SOWELL, THOMAS (1994): *Classical Economics Reconsidered*, Princeton, Princeton University Press, 5th ed.
- STIGLER, GEORGE J. (1951): *The Division of Labor is Limited by the Extent of the Market*, in: *Journal of Political Economy*, Vol. LIX, pp. 185-193.
- STOLPE, MICHAEL (1992): *Ansätze der neuen Wachstumstheorie - ein Literaturüberblick*, Kieler Arbeitspapier No. 508, Kiel.
- SUGDEN, ROBERT (1986): *The Economics of Rights, Cooperation and Welfare*, Oxford: Blackwell.

-
- TURNER, PHILIP and JOZEF VAN D'DACK (1993): *Measuring International Prize and Cost Competitiveness*, BIS Economic Papers, No. 39, Nov., Basle.
- U.S. DEPARTMENT OF COMMERCE, BUREAU OF THE CENSUS (1994): *Statistical Abstract of the United States 1994*, 114th edition, Washington, D.C.: U.S. Government Printing Office.
- VINALES, JOSÉ et al. (1990): Spain and the 'EC cum 1992' Shock, in: *Unity with Diversity in the European Economy: The Community's Southern Frontier*, ed. by Christopher Bliss and Jorge Braga de Macedo, Cambridge, pp. 145-234.
- VINALES, JOSÉ (1992): La Economía Española Ante el Mercado Unico: Las Claves del Proceso de Integración en la Comunidad Europea, in: *La Economía Española Ante el Mercado Unico Europeo* ed. by José Vinales, Madrid (Alianza Editorial), pp. 15-116.
- VINALES, JOSÉ (1994): *¿Es Posible la Convergencia en España?*, Madrid, mimeo.
- VITZTHUM, CARLTA (1994): Will Power: Spain Still Plays Economic Catch-Up With the EU, in: *The Wall Street Journal Europe*, 3.10.1994.
- WEIZSÄCKER, CARL CHRISTIAN VON (1991): Networks and Progress in Markets, in: *Networks and Society*, ed. by Y. Oishi and M. Komai, Tokio: The Institute for Telecommunications Policy.
- YANG, XIAOKAI (1994): Endogenous vs. Exogenous Comparative Advantage and Economics of Specialization vs. Economies of Scale, in: *Journal of Economics*, Vol. 60, pp. 29-54.
- YOUNG, ALLYN (1928): Increasing Returns and Economic Progress, in: *Economic Journal*, Vol. 38, pp. 527-542.

WORKING PAPERS (1)

- 9310 **Amparo Ricardo Ricardo:** Series históricas de contabilidad nacional y mercado de trabajo para la CE y EEUU: 1960-1991.
- 9311 **Fernando Restoy and G. Michael Rockinger:** On stock market returns and returns on investment.
- 9312 **Jesús Saurina Salas:** Indicadores de solvencia bancaria y contabilidad a valor de mercado.
- 9313 **Isabel Argimón, José Manuel González-Páramo, María Jesús Martín and José María Roldán:** Productivity and infrastructure in the Spanish economy. (The Spanish original of this publication has the same number.)
- 9314 **Fernando Ballabriga, Miguel Sebastián and Javier Vallés:** Interdependence of EC economies: A VAR approach.
- 9315 **Isabel Argimón y M.ª Jesús Martín:** Serie de «stock» de infraestructuras del Estado y de las Administraciones Públicas en España.
- 9316 **P. Martínez Méndez:** Fiscalidad, tipos de interés y tipo de cambio.
- 9317 **P. Martínez Méndez:** Efectos sobre la política económica española de una fiscalidad distorsionada por la inflación.
- 9318 **Pablo Antolín and Olympia Bover:** Regional Migration in Spain: The effect of Personal Characteristics and of Unemployment, Wage and House Price Differentials Using Pooled Cross-Sections.
- 9319 **Samuel Bentolila y Juan J. Dolado:** La contratación temporal y sus efectos sobre la competitividad.
- 9320 **Luis Julián Álvarez, Javier Jareño y Miguel Sebastián:** Salarios públicos, salarios privados e inflación dual.
- 9321 **Ana Revenga:** Credibility and inflation persistence in the European Monetary System. (The Spanish original of this publication has the same number.)
- 9322 **María Pérez Jurado and Juan Luis Vega:** Purchasing power parity: An empirical analysis. (The Spanish original of this publication has the same number.)
- 9323 **Ignacio Hernando y Javier Vallés:** Productividad sectorial: comportamiento cíclico en la economía española.
- 9324 **Juan J. Dolado, Miguel Sebastián and Javier Vallés:** Cyclical patterns of the Spanish economy.
- 9325 **Juan Ayuso y José Luis Escrivá:** La evolución del control monetario en España.
- 9326 **Alberto Cabrero Bravo e Isabel Sánchez García:** Métodos de predicción de los agregados monetarios.
- 9327 **Cristina Mazón:** Is profitability related to market share? An intra-industry study in Spanish manufacturing.
- 9328 **Esther Gordo y Pilar L'Hotellerie:** La competitividad de la industria española en una perspectiva macroeconómica.
- 9329 **Ana Buisán y Esther Gordo:** El saldo comercial no energético español: determinantes y análisis de simulación (1964-1992).
- 9330 **Miguel Pellicer:** Functions of the Banco de España: An historical perspective.
- 9401 **Carlos Ocaña, Vicente Salas y Javier Vallés:** Un análisis empírico de la financiación de la pequeña y mediana empresa manufacturera española: 1983-1989.
- 9402 **P. G. Fisher and J. L. Vega:** An empirical analysis of M4 in the United Kingdom.
- 9403 **J. Ayuso, A. G. Haldane and F. Restoy:** Volatility transmission along the money market yield curve.
- 9404 **Gabriel Quirós:** El mercado británico de deuda pública.

- 9405 **Luis J. Álvarez and Fernando C. Ballbriga:** BVAR models in the context of cointegration: A Monte Carlo experiment.
- 9406 **Juan José Dolado, José Manuel González-Páramo y José M.ª Roldán:** Convergencia económica entre las provincias españolas: evidencia empírica (1955-1989).
- 9407 **Ángel Estrada e Ignacio Hernando:** La inversión en España: un análisis desde el lado de la oferta.
- 9408 **Ángel Estrada García, M.ª Teresa Sastre de Miguel y Juan Luis Vega Croissier:** El mecanismo de transmisión de los tipos de interés: el caso español.
- 9409 **Pilar García Perea y Ramón Gómez:** Elaboración de series históricas de empleo a partir de la Encuesta de Población Activa (1964-1992).
- 9410 **F. J. Sáez Pérez de la Torre, J. M.ª Sánchez Sáez y M.ª T. Sastre de Miguel:** Los mercados de operaciones bancarias en España: especialización productiva y competencia.
- 9411 **Olympia Bover and Ángel Estrada:** Durable consumption and house purchases: Evidence from Spanish panel data.
- 9412 **José Viñals:** Building a Monetary Union in Europe: Is it worthwhile, where do we stand, and where are we going? (The Spanish original of this publication has the same number.)
- 9413 **Carlos Chuliá:** Los sistemas financieros nacionales y el espacio financiero europeo.
- 9414 **José Luis Escrivá and Andrew G. Haldane:** The interest rate transmission mechanism: Sectoral estimates for Spain. (The Spanish original of this publication has the same number.)
- 9415 **M.ª de los Llanos Matea y Ana Valentina Regil:** Métodos para la extracción de señales y para la trimestralización. Una aplicación: Trimestralización del deflactor del consumo privado nacional.
- 9416 **José Antonio Cuenca:** Variables para el estudio del sector monetario. Agregados monetarios y crediticios, y tipos de interés sintéticos.
- 9417 **Ángel Estrada y David López-Salido:** La relación entre el consumo y la renta en España: un modelo empírico con datos agregados.
- 9418 **José M. González Mínguez:** Una aplicación de los indicadores de discrecionalidad de la política fiscal a los países de la UE.
- 9419 **Juan Ayuso, María Pérez Jurado and Fernando Restoy:** Is exchange rate risk higher in the E.R.M. after the widening of fluctuation bands? (The Spanish original of this publication has the same number.)
- 9420 **Simon Milner and David Metcalf:** Spanish pay setting institutions and performance outcomes.
- 9421 **Javier Santillán:** El SME, los mercados de divisas y la transición hacia la Unión Monetaria.
- 9422 **Juan Luis Vega:** Is the ALP long-run demand function stable? (The Spanish original of this publication has the same number.)
- 9423 **Gabriel Quirós:** El mercado italiano de deuda pública.
- 9424 **Isabel Argimón, José Manuel González-Páramo y José María Roldán:** Inversión privada, gasto público y efecto expulsión: evidencia para el caso español.
- 9425 **Charles Goodhart and José Viñals:** Strategy and tactics of monetary policy: Examples from Europe and the Antipodes.
- 9426 **Carmen Melcón:** Estrategias de política monetaria basadas en el seguimiento directo de objetivos de inflación. Las experiencias de Nueva Zelanda, Canadá, Reino Unido y Suecia.
- 9427 **Olympia Bover and Manuel Arellano:** Female labour force participation in the 1980s: the case of Spain.

- 9428 **Juan María Peñalosa:** The Spanish catching-up process: General determinants and contribution of the manufacturing industry.
- 9429 **Susana Núñez:** Perspectivas de los sistemas de pagos: una reflexión crítica.
- 9430 **José Viñals:** ¿Es posible la convergencia en España?: En busca del tiempo perdido.
- 9501 **Jorge Blázquez y Miguel Sebastián:** Capital público y restricción presupuestaria gubernamental.
- 9502 **Ana Buisán:** Principales determinantes de los ingresos por turismo.
- 9503 **Ana Buisán y Esther Gordo:** La protección nominal como factor determinante de las importaciones de bienes.
- 9504 **Ricardo Mestre:** A macroeconomic evaluation of the Spanish monetary policy transmission mechanism.
- 9505 **Fernando Restoy and Ana Revenga:** Optimal exchange rate flexibility in an economy with intersectoral rigidities and nontraded goods.
- 9506 **Ángel Estrada and Javier Vallés:** Investment and financial costs: Spanish evidence with panel data. (The Spanish original of this publication has the same number.)
- 9507 **Francisco Alonso:** La modelización de la volatilidad del mercado bursátil español.
- 9508 **Francisco Alonso y Fernando Restoy:** La remuneración de la volatilidad en el mercado español de renta variable.
- 9509 **Fernando C. Ballabriga, Miguel Sebastián y Javier Vallés:** España en Europa: asimetrías reales y nominales.
- 9510 **Juan Carlos Casado, Juan Alberto Campoy y Carlos Chuliá:** La regulación financiera española desde la adhesión a la Unión Europea.
- 9511 **Juan Luis Díaz del Hoyo y A. Javier Prado Domínguez:** Los FRAs como guías de las expectativas del mercado sobre tipos de interés.
- 9512 **José M.ª Sánchez Sáez y Teresa Sastre de Miguel:** ¿Es el tamaño un factor explicativo de las diferencias entre entidades bancarias?
- 9513 **Juan Ayuso y Soledad Núñez:** ¿Desestabilizan los activos derivados el mercado al contado?: La experiencia española en el mercado de deuda pública.
- 9514 **M.ª Cruz Manzano Frías y M.ª Teresa Sastre de Miguel:** Factores relevantes en la determinación del margen de explotación de bancos y cajas de ahorros.
- 9515 **Fernando Restoy and Philippe Weil:** Approximate equilibrium asset prices.
- 9516 **Gabriel Quirós:** El mercado francés de deuda pública.
- 9517 **Ana L. Revenga and Samuel Bentolila:** What affects the employment rate intensity of growth?
- 9518 **Ignacio Iglesias Araúzo y Jaime Esteban Velasco:** Repos y operaciones simultáneas: estudio de la normativa.
- 9519 **Ignacio Fuentes:** Las instituciones bancarias españolas y el Mercado Único.
- 9520 **Ignacio Hernando:** Política monetaria y estructura financiera de las empresas.
- 9521 **Luis Julián Álvarez y Miguel Sebastián:** La inflación latente en España: una perspectiva macroeconómica.
- 9522 **Soledad Núñez Ramos:** Estimación de la estructura temporal de los tipos de interés en España: elección entre métodos alternativos.
- 9523 **Isabel Argimón, José M. González-Páramo y José M.ª Roldán Alegre:** Does public spending crowd out private investment? Evidence from a panel of 14 OECD countries.

- 9524 **Luis Julián Álvarez, Fernando C. Ballabriga y Javier Jareño:** Un modelo macroeconómico trimestral para la economía española.
- 9525 **Aurora Alejano y Juan M.ª Peñalosa:** La integración financiera de la economía española: efectos sobre los mercados financieros y la política monetaria.
- 9526 **Ramón Gómez Salvador y Juan J. Dolado:** Creación y destrucción de empleo en España: un análisis descriptivo con datos de la CBBE.
- 9527 **Santiago Fernández de Lis y Javier Santillán:** Regímenes cambiarios e integración monetaria en Europa.
- 9528 **Gabriel Quirós:** Mercados financieros alemanes.
- 9529 **Juan Ayuso Huertas:** ¿Existe un *trade-off* entre riesgo cambiario y riesgo de tipo de interés?
- 9530 **Fernando Restoy:** Determinantes de la curva de rendimientos: hipótesis expectacional y primas de riesgo.
- 9531 **Juan Ayuso y María Pérez Jurado:** Devaluaciones y expectativas de depreciación en el SME.
- 9532 **Paul Schulstad and Ángel Serrat:** An Empirical Examination of a Multilateral Target Zone Model.
- 9601 **Juan Ayuso, Soledad Núñez and María Pérez-Jurado:** Volatility in Spanish financial markets: The recent experience.
- 9602 **Javier Andrés e Ignacio Hernando:** ¿Cómo afecta la inflación al crecimiento económico? Evidencia para los países de la OCDE.
- 9603 **Barbara Dluhoscb:** On the fate of newcomers in the European Union: Lessons from the Spanish experience.

(1) Previously published Working Papers are listed in the Banco de España publications catalogue.

Queries should be addressed to: Banco de España
Sección de Publicaciones. Negociado de Distribución y Gestión
Telephone: 338 51 80
Alcalá, 50. 28014 Madrid