ISSN 0265-8003

TRADE AND FOREIGN DIRECT INVESTMENT WITH CENTRAL AND EASTERN EUROPE: ITS IMPACT ON SPAIN

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Discussion Paper No. 1006
August 1994

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CEPR Discussion Paper No. 1006

August 1994

ABSTRACT

Trade and Foreign Direct Investment with Central and Eastern Europe: Its Impact on Spain*

The increased integration of the economies of Central and Eastern Europe with the European Union (EU) as the Europe Agreements are progressively implemented, is projected to have a significant impact on trade flows with Spain, as exports and imports grow very rapidly, albeit starting from a very low base. In particular, the effect will be important for labour-intensive industries, which will confront export displacement in third (EU) markets and some foreign direct investment (FDI) diversion.

Trade with Central and Eastern Europe is projected to increase, although it will still be a minor component of total Spanish trade or of EU trade with the Central and East European Countries (CEECs). The product composition of this trade will probably respond to the relative factor endowments underlying current trade patterns. Spain is likely to increase its exports of physical and human capital-intensive goods to the CEECs. An increase in Spanish imports of labour-intensive goods from these countries is also predicted. But the similarity of factor endowments with regards to the labour factor *vis-à-vis* the main countries in the EU, implies that some displacement of labour-intensive Spanish exports to the Union is going to take place.

The evolution of trade flows will, of course, be contingent upon developments in FDI. Most FDI in Spain in recent years has been driven by a set of locational advantages which are unlikely to be replicated in the CEECs in the short and medium term (access to a large domestic market and to specialized resources such as pools of trained workers, suppliers, and infrastructure). The comparatively small part of FDI which has been attracted by relatively low unit labour costs (and tends to be geographically concentrated in the less developed regions of Spain) may be seriously affected by FDI diversion, however, since alternative locations in the CEECs provide lower cost export bases and a significantly better access to the main EU markets.

JEL classification: F1, F2, F10, F14, F15, F21
Keywords: international trade, foreign direct investment, Eastern Europe, Spain, European integration

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*This paper is produced as part of a CEPR research project on *Trade between Central and Eastern Europe and the European Community*, supported by a grant from the Commission of the European Communities under its PHARE Programme (contract: ZZ.93.01/02.01/B036). The first part of the paper, which focuses on trade issues, has been written by Carmela Martín. The second part, dealing with FDI, has been prepared by Jordi Gual. The paper has benefited from the helpful comments of Riccardo Faini and other participants at the CEPR Workshop, *Trade with Central and Eastern Europe: Its Impact on Members of the EC*, Brussels, 13/14 April 1994.

Submitted 7 July 1994

NON-TECHNICAL SUMMARY

The first part of this paper looks at the impact of the Europe Agreements signed between the Central and East European Countries (CEECs) and the European Union (EU) on Spanish trade. A descriptive analysis of bilateral trade flows between Spain and the CEECs, and of each region with the other Community countries, provides an initial picture.

Trade relations between Spain and the CEECs are basically characterized by trade of an inter-industrial nature – with a notable presence of goods intensive in natural resources – where the CEECs enjoy an overall surplus. It is remarkable, however, that intra-industry trade represents approximately one-fourth of total trade flows.

As for trade with the rest of Community countries, the CEECs seem to have a clear advantage in all sectors intensive in natural resources and in light manufacturing, i.e. textiles, food and other manufactured products, which accords with their labour cost advantages. It seems, therefore, that Spanish producers will have to face increasing competitive pressures from the CEECs as the liberalization process envisaged in the Europe Agreements gains momentum.

To analyse further the determinants of trade patterns, this part of the paper examines the total content (direct and indirect) of capital and labour for a fixed quantity of imports and exports and compares it with the sectoral composition that exists in the trade flows of the countries analysed, thus inferring the relative factor endowment of each country. The results indicate that Spain is better endowed in physical and human capital than the CEECs. Relative to the EU, both Spain and, particularly, the CEECs appear to have a greater endowment of labour.

The analysis of trade flows leads to several conclusions. First, Spain-CEEC mutual trade flows are likely to increase, and some displacement of Spanish exports to the EU market by CEECs' products may well occur. Second, in relation to the product composition of these likely future trade adjustments, our results suggest that they will probably be driven to a large extent by the relative factor endowment underlying current trade patterns.

Consequently, it seems that Spanish exports to the CEECs of products relatively intensive in physical and human capital will increase. The same will happen to Spanish imports of labour-intensive products from this area. Additionally, there may be a certain displacement of Spanish exports of labour-intensive products to the EU.

A word of caution is needed, however, with regard to these predictions. They may not fully materialize because relative factor endowments are only partial determinants of trade specialization. The paper shows that a significant amount of trade already has an intra-industry nature and is therefore driven by other factors. Additionally, the trade pattern will also depend on the evolution of foreign direct investment. This is examined in the second part of the paper and provides a clearer focus on the kind of industries which are likely to be more affected by the integration of the CEECs.

The second part of the paper assesses the extent to which foreign direct investment (FDI) in Spain may be diverted by new investment opportunities arising in Eastern Europe. This is a serious concern, since Spain has been attracting substantial flows of FDI in recent years from some of the areas which are likely to be main investors in the CEECs.

To assess the potential for FDI diversion we focus on the determinants of the location of FDI, and we judge the comparative attractiveness of Spain and alternative investment areas in Eastern Europe.

FDI regulations in Spain have already been quite liberal for some time. Full integration in the European Community has given more credibility and a boost to this open policy by widening the set of industries open to non-resident (EC) investors, and – through capital flows liberalization – facilitating cross-border operations.

FDI grew rapidly between 1986 and 1990/1, moving from a share of GDP below 1% to a significant 4% in 1991. Since then FDI flows have been reduced substantially. There has been a drastic change in the country of origin of inward FDI with an increase of the share of investment with origin in EC countries.

The paper analyses several stylized facts of Spanish FDI to assess its main determinants. First, FDI has involved a substantial and increasing share of acquisitions of domestic companies, as opposed to greenfield investments.

As for the sectoral composition of FDI, the predominance of services indicates that the prime objective of foreign acquisitions and investments in Spain has been to serve the domestic market. In fact, the evidence on the export and import propensity of foreign-owned firms confirms that FDI has not been driven by an objective to use Spain as an export base.

Finally, FDI has concentrated geographically on the more advanced, high-income, industrialized parts of the country, where unit labour costs are high but infrastructure, market access and the pool of well-trained workers is largest. The regions that have received most of the FDI provide important access to consumer and industrial markets, good infrastructure and large pools of skilled

manufacturing and service workers. All of these factors increase the productivity of investments and compensate for a higher (relative) level of unit labour costs.

The expansion of FDI in Spain correlated with entry into the EC. The question arises as to whether the conditions that led to this dramatic change in FDI are likely to be met by the CEECs in the near future.

For the foreseeable future a very important condition is unlikely to be met. The signing of the Europe Agreements has temporarily eliminated the prospect of EC entry and although it presses the signing countries towards the harmonization of legislation, it also limits exports to EC markets, thus potentially deterring investors.

An analysis of the locational attractiveness of the CEECs relative to Spain indicates that their advantages are significant, provided that the regulatory uncertainties are overcome. It appears, however, that the strongest competitive advantage of the area is as a low-cost production base for exports to the European markets. This might affect strongly labour-intensive industries in Spain and, in particular, some areas that base their attractiveness on low unit labour costs (an advantage which has been increasingly eroded over recent years) and, as export bases, have poor access to the main European markets, in particular when compared to alternative locations in the CEECs.

In summary, the increased integration of the economies of Central and Eastern Europe with the European Union, as the Europe Agreements are progressively implemented, is projected to have a significant impact on trade flows with Spain, as exports and imports grow rapidly, albeit starting from a very low base. In addition, some foreign direct investment diversion is likely to ocurr.

Contents

Part 1 : The impact of trade with Central and East European countries on Spain

Part 2 : Will Central and Eastern Europe divert foreign direct investment from Spain?

PART I: The impact of trade with Central and East European countries on Spain

by Carmela Martín*[1]

* This paper has benefited from helpful comments of Riccardo Faini and other participants at the CEPR Workshop, Brussels 13/14 April 1994.

1. Introduction.

Given the mutual interest in deepening and consolidating the political and economic changes which have swept Central and East European Countries in recent years, the Community signed a series of association agreements with these countries[1](*) (Hungary, Poland, the Czech Republic, Slovakia, Romania and Bulgaria) between 1991 and 1993. Known as the Europe Agreements, their purpose is to create a new framework for economic relations intended to promote bilateral trade and capital and technological transactions for the purpose of easing the transition of these economies to the market system, with a view to their future integration in the European Community.

There is little doubt that these developments, together with the recent unravelling of the COMECON, will increasingly affect both trade and investment flows --as well as migration movements in the event that controls are eased-- in member states of the European Union. In principle, the gradual liberalisation of economic transactions outlined in the Agreements may be seen as an opportunity for companies in Community countries to create new markets and investment projects. However, these changes may also give rise to events such as the quickening of migration pressures or, in the case of the Community's less advanced countries, an increase in imports as substitutes for autochthonous products and a shift in the inflow of international investment, with the ensuing social costs or damage to the future growth capacity of less developed Community economies(*)[2].

Against this backdrop, the present paper proposes to advance in the search for an answer to an important question for the Spanish economy: the impact of the above-mentioned changes in Central and East European Countries (hereafter CEECs). As an initial approach to this issue, we focus our attention on how commodity trade is likely to be affected.

(*)[1] Signed with Poland and Hungary on 16/12/91, with the Czech Republic and Slovakia on 4/10/93, and with Romania and Bulgaria on 1/02/93 and 8/03/93, respectively. Only the first two have been ratified (on 1/02/94), while the rest are expected to be ratified in June 1994.

(*)[2] A number of recently published studies deal with the implications of developments in Central and Eastern Europe. See, for example, CEPR (1990), Collins and Rodrik (1991), Hamilton and Winters (1992), and Rollo and Smith (1993).

As its starting point, the paper assumes that the Agreements will be the main driving force behind the impact that these changes are likely to have on Community economies and, by extension, on Spain. Our analytical scenario also includes the belief that the countries in transition are firmly committed to move towards market economies.

With the investigation's objective now defined, we can turn to the approach used here to address the question. First of all, after giving a brief review of the contents of the Agreements (Section 2), we describe the theoretical framework and explain why we consider it the most appropriate basis for empirical analysis. More concretely, we examine available theoretical evidence of the determining factors in trade and the relationship between trade and international direct investment flows, including the way in which the one and the other may be altered by a liberalisation process (Section 3). With this evidence as our guide and using the scant statistical data available, we go on to describe the "stylised facts" which define the pattern of Spain's trade relations with each of the areas in question and, in particular, Spanish trade specialisation --both inter- and intra-industrial-- vis-à-vis the CEECs (Section 4).

We then explore the determinants in Spain's trade pattern with the CEECs, through the measurement of the relative factor content of trade flows (Section 5).

Lastly, Section 6 draws certain conclusions as to the most likely course of future trade --under different assumptions regarding the conduct of direct investment-- and the resulting repercussions on industrial activity in Spain.

2. Expectations about the future integration of the CEECs in the European Union.

This section summarises the available information on the commitments between the European Community and the CEECs, with a view to defining the most plausible framework of their mutual economic relations in the years ahead.

In this respect, the most relevant source of information is, as noted above, the Europe Agreements, which establish conditions that affect trade and factor mobility, as well as the CEECs' present institutional and legal frameworks, in order to pave the way for the entry of these economies into the European Community.

Although the Agreements abound more in declarations of principle than in concrete measures(*)[3], they do contain several points which allow us to sketch the broad outlines of the scenario where the economic relations between the two areas will unfold in coming years.

By far the most concrete agreements have been reached under the item for trade(*)[4]. In this sense, with the goal of creating a free trade area in a maximum period of ten years, the Community is committed to lifting trade barriers on most industrial products from these countries within no more than five years, with the CEEC signatories agreeing to do the same in no longer than ten years. There are, however, several industrial products --textiles and clothing, iron and steel-- which, like agricultural products, are considered sensitive by the Community and are subject to special --i.e., much more protectionist-- treatment by the EU. Moreover, in the Agreements, the Community leaves open the possibility of applying anti-dumping and safeguard clauses.

With respect to the movement of workers, the Community's concessions are minimal and clearly selective, favouring more highly skilled workers.

An effort is made, however, to stimulate international direct investment through the liberalisation of investment flows in general and the transfer of profit to the country of origin (Heading IV).

Additionally, the Agreements urge the CEEC signatories to align, as swiftly as possible, their institutional and legal frameworks to the Community's, particularly in the area of EU laws on competition, which these countries have agreed to adopt --with the sole exception of government aid-- within three years. Likewise, the CEECs are urged to adopt, in a period of five years, the Community system of industrial property protection and many other norms (covering consumer protection, indirect taxation, transport and environment, among others), although no exact timetable has yet been set (Caption V).

(*)[3] In addition, they fail to include a financing protocol, although this is palliated to a certain extent by the start-up of the PHARE programme, whose purpose is to provide financial assistance to these countries during their transition to market economies.

(*)[4] A series of interim agreements have been in force since March 1, 1992, pending ratification of the Europe Agreements.

In sum, judging by what we know so far regarding the course of the Europe Agreements, the basic features of what will become the framework for economic relations between the CEECs and the European Union in the years ahead would seem to be the following: gradual liberalisation of commodity trade, with the exception of farm produce and so-called "sensitive" industrial goods (whose trade system has yet to be fully clarified); almost full mobility of capital flows (international direct investment, in particular), and restrictions on migration movements.

Accordingly, this is the scenario we will use as a benchmark in attempting to predict the impact of the Agreements on the Spanish economy.

3. Theoretical framework: basic hypotheses on the impact of liberalisation on trade flows and its relationship to international direct investment.

In line with our earlier comments on the Europe Agreements, it can be reasonably assumed that barriers to commodity trade between Community countries and the CEECs will be eliminated in ten years at most. Consequently, liberalisation will entail, *ceteris paribus*, a reduction in the price of bilateral trade flows between Spain (or any other EU member state) and the CEECs, as well as relatively lower transaction costs with the CEECs, in respect of both intra- and non-Community trade. Thus, as reflected in Table 1 in reference to the case of Spain, once the terms of the Agreements have been met, trade with the CEECs is likely to expand, in what we call a "trade creation effect" (captions 2 and 5 in the table). Moreover, in response to changes in relative prices, Spain(*)[5] may possibly see products previously traded with EU members and third countries substituted by trade with the former communist signatories of the Agreements (captions 1, 3, 4 and 6 in the table). But this should not be taken as a "trade diversion effect", because, in the sense that it is not the result of an alteration in trade barriers with the rest of the world, it entails no loss of efficiency.

(TABLE 1 around here)

Therefore, to evaluate the impact of the Europe Agreements on the Spanish economy, an estimate would have to be made of the future course of the volume and composition of

(*)[5] This line of reasoning could be extended to the case of any other EC country.

trade with the CEECs and the rest of Spain's trading partners. This in turn would require knowing Spain's trade pattern with each of the areas in question, as well as its determining factors. However, given the growing interlinkage which --as we later argue-- appears to exist between trade and international direct investment flows, the analysis should also incorporate some consideration of the future course of this trend.

Here it must be kept in mind that the opening-up of the CEECs could give rise to two types of change in international direct investment: on the one hand, an increase in investment projects by Spanish firms on the new markets and, on the other, a shift in direct investment inflows to Spain, from both the Community and other countries, towards former communist countries.

At this point, the next step would be to review the theoretical evidence in order to select the most appropriate method for advancing in this line of investigation. We will attempt to do this, albeit briefly, in the present section.

As is generally acknowledged, economic theory of international trade does not have a specific model capable of providing a satisfactory explanation for the observable patterns in trade relations between countries. This has become particularly apparent in recent decades, when evidence of certain developments --the existence of intra-industrial trade, for example, or the growing weight of intra-firm trade generated by companies located in different countries but belonging or linked to multinational corporations-- has demonstrated the limitations of the neo-classical theory of comparative advantage, even in the broader versions of the Heckscher-Ohlin-Samuelson (HOS) model. Thus, as events increasingly called the HOS model into question, "new models"(*)[6] emerged: starting from more relaxed versions of the earlier model's assumptions and generally formulated in the framework of imperfect competition, they attempt to overcome such shortcomings although, admittedly, their intention is to complement rather than exclude the previous model.

(*)[6] It is worth noting that many of the ideas emphasised in the more recent literature on international trade (i.e., the so-called "new models"), such as the existence of increasing returns to scale, were already present in the classical literature, including the works of the creators of the orthodox model; see Ohlin (1924) and Ohlin (1933) for references to the importance of technology, human capital and economies of scale.

As a result, while not ruling out the validity of the principle of comparative advantage but merely cutting it down to size as an explanation for trade specialisation, the new theoretical developments have been incorporating other factors --hitherto buried under the HOS model's rigid assumptions-- in their search for an explanation more in accord with the reality of international trade. Thus we have monopolistic competition models, such as those formulated by Krugman (1981) and, at a more general level, Helpman (1981), whereby the coexistence of inter- and intra-industrial trade can be explained. There are also models that account for the existence and expansion of multinational companies and their growing influence on trade via intra-firm transactions, such as Markusen (1984), Helpman (1984) and, above all, Helpman (1985), which manages to articulate an explanation for trade patterns with three elements: intersectoral, intra-industrial and intra-firm (the latter encompassing trade both of invisibles and intermediate inputs).

Going further, the more recent literature has even formulated model specifications combining inter- and intra-industrial trade with the generation of technical innovation via R&D activity, which, in assuming the existence of spillovers or technological externalities at an international level, continue to postulate that factor endowment, in the long run, determines trade patterns (Grossman and Helpman (1991), Chapter 7). Nonetheless, making this and other models of the same group(*)[7] compatible with the factor proportions model depends crucially on the assumption that spillovers or technological externalities do, in fact, exist at the international level. And, of course, the problem is that testing the existence of such effects --and, in general, of any type of externality-- is extremely difficult if not impossible.

Although the above considerations hardly comprise a survey of the theoretical evidence on the determinants of international trade specialisation patterns(*)[8], they do, as we intended, illustrate the complex task facing the empirical researcher whose objective is to describe and explain the trade pattern of a specific country; in view of the multitude of

(*)[7] A good survey of the models which emphasise the importance of technology in shaping trade specialisation can be found in the other chapters of the book by Grossman and Helpman (1991).

(*)[8] In addition to the works cited here, surveys of the most recent literature can also be found in Helpman and Krugman (1985), Krugman (1990) and Grossman (1992).

models, the researcher would, for honesty's sake, have to test them all in order to weigh their relative merits. Logically, this same procedure would have to be used for predicting, as in the case which concerns us here, the trade adjustment derived from an agreement of economic integration between two or more countries. However, in this case, along with the added difficulty attached to predicting the impact of liberalisation on trade flows, there is the further difficulty of determining the behaviour of the factors of production when their mobility is contemplated in the agreement. In this respect, it is worth recalling that, once we abandon the idyllic world of perfect competition, the different relative factor endowments are no longer the sole reason for their international shift and, moreover, the substitutability link between commodity trade and factor movements which Mundell (1957) indicated in his adaptation of the HOS model does not necessarily hold.

More concretely, turning to capital and to international direct investment in particular (as the chief factor in the liberalisation process contemplated by the signatory countries of the Europe Agreements), mention should be made of the many other determining variables. Thus, from the pioneering work of Hymer (1960), we know that direct international investment forms part of corporate growth strategy, since it provides a way to capture new markets via the creation of certain intangible assets (technology and human capital, among others) which give the investor a strategic advantage over local companies, while also allowing the exploitation of the comparative advantages of each country of destination, as well as the economies of scale and external economies that normally arise when a company operates at an international level.

Moreover, in this framework, the links which can be established between trade and direct investment are complex and basically depend on the investor's strategy, in turn influenced to a certain degree by the differentiating features of the host country. In the first attempts to develop a theory integrating both types of transaction, most notably the so-called "product cycle model" formulated in Vernon (1966) and Hirsch (1967), direct investment followed exports in a sequence aimed at generating profit on investment in product innovation during the course of the different stages of the product's life cycle on the market. This sequential approach was later questioned --by its creator (see Vernon, 1979), among others-- on the grounds that, despite the usefulness of the initial creation of subsidiaries in countries less developed than the investor's, the validity of the product cycle hypothesis is increasingly

weak as an explanation for the intricate trade relations among the different centres of international production deployed by multinational companies(*)[9]. In an attempt to clarify such relationships, the literature distinguishes between two very different activities: first, those oriented at exploiting the natural or other resources of the host country and its use as an export platform (resource-based or export-platform strategy), and, second, activities whose priority target is to supply local markets (local market-oriented or import-substituting strategy).

In any event, as shown in Martín & Velázquez (1993) it seems that, irrespective of the specific strategies of multinational companies, their activity promote intra-firm trade that is both inter- and intra-industrial in nature. The question of which of these two types of trade actually predominates must, however, be resolved empirically, and the evidence in this regard is still very slim.

In sum, in reviewing the points in this section, it could be said that the theoretical evidence gives us a very broad range of models which, while not breaking with the HOS model, introduce many additional factors to the relative factor endowment (in the strict sense of physical capital and labour) in order to explain the features observable in trade flows among countries and, in particular, the coexistence of inter-sectoral, intra-sectoral and intra-firm trade. A good number of these "new" factors --trade capital, human capital and, above all, technology-- are intangible assets which can be generated by accumulating investments and, therefore, entail a dynamic view of comparative advantages. Lastly, the more recent models postulate the existence of a strong interlinkage between trade and direct investment. However, when attempting to specify the terms of this interlinkage and the relative weight of each of its determining variables, empirical work runs up against numerous models of imperfect competition which are very difficult to test, since they require an enormous amount of disaggregated information on the features of the markets in question and on the conduct of companies.

(*)[9] Nonetheless, just as the product cycle theory is still a valid approach to understanding the development of joint ventures and the establishment of new subsidiaries in countries with a lower degree of development, I believe that it can also be of help in predicting the course of trade and direct investment in countries such as the CEECs, with practically virgin markets for companies of Western economies.

4. CEECs' trade patterns in relation to both Spain and the EU(11).

When this array of theoretical models, of great analytical wealth but extremely difficult to translate empirically, faces the available comparable data which exist in the CEECs, the shock is tremendous. Simply by way of example, due to the differences in the concept of productive activity between these countries and Western economies, figures for per capita income are still being debated; the disaggregated data of their trade are framed in incompatible sectoral classifications, and information on the characteristics of their productive structure is also practically inaccessible.

Consequently, the situation calls for a) re-orienting the project to viable empirical strategies and b) inventing ways to overcome the problem posed by the meagre information available on these economies.

In relation to the first point, the prediction of changes likely to occur in Spain's trade flows as a result of the Europe Agreements must necessarily be confined to the area of the signatory countries. I.e., the impact of the possible alteration in transactions with third countries (effects 3 and 6 in Table 1) must excluded from the equation. Moreover, said prediction must be based on an inevitably partial analysis of the trade pattern. Regarding point b), we opted to investigate the factor endowment and other production features of the CEECs vis-à-vis those of Spain and the other EU countries by analysing trade flows on the basis of bilateral trade data compiled by the OECD. In other words, we use --by way of "mirror statistics"-- the data on the trade flows of Spain and the EU(11) with the CEECs, and, with this as our starting point, infer their implicit structure of comparative advantages and disadvantages, once again drawing on what we know about the features of the productive process (factor intensity, R&D and human capital, etc.) of each branch of activity.

It could be argued that, due to the autarkic policies of former communist countries with respect to non-COMECON members, the current trading structure does not adequately reflect the nature of the CEECs' comparative advantages. Although this is possible, in which

case the results of the present analysis should be interpreted somewhat cautiously, there are also reasons to believe that planners would have attempted to achieve the most efficient national specialisation(*)[10], since trade outside the COMECON had to face the greater pressures of international market conditions.

In any event, the use of time series reflecting the pattern of trade in the years before and after the unravelling of the centralised planning system can give us an idea of the extent of the possible distortions of the previous economic system in shaping trade flows.

In line with the methodological procedure described above, this section will, first of all, describe Spain's trade pattern with respect to the CEECs and, second, the features observable in the trade of the Community of the eleven with Spain vis-à-vis that of the CEECs.

For this purpose, the basic data used are:

. X_{it}^{SE} and M_{it}^{SE} : Spanish exports and imports with the countries of Central and Eastern Europe of sector i commodities in the year t.

. X_{it}^{CE} and M_{it}^{CE} : EU(11) exports and imports, i.e., excluding Spain, with the countries of Central and Eastern Europe of sector i commodities in the year t.

. X_{it}^{CS} and M_{it}^{CS} : exports and imports of the EU(11) with Spain (S) of sector i commodities in the year t.

(*)[10] See CEPR (1990).

Where:

i = 1 ... 15 agricultural and industrial branches of the NACE-CLIO classification R. 25, obtained from the aggregation of the of data originally compiled by the OECD in the Standard International Trade Classification.

j = 1981 ... 1992.

4.1. Main features of CEECs' trade flows with Spain

To define the main features of the pattern of trade flows between Spain and the CEECs, we begin by examining their weight in relation to total trade.

(Table 2 around here)

As seen in Table 2, the CEECs as a whole represent a very small share of Spanish commodity imports and exports. Moreover, the relative presence of these countries tended to decline after Spain's incorporation in the EU, although in the 1990s, parallel to the changes in the CEECs, their participation has again been rising. Within the CEECs, Czechoslovakia and Poland play the strongest roles, both as suppliers and clients.

The increase of trade between Spain and the CEECs, since the revolutions of 1989, suggests that bilateral trade flows are likely to continue rising in response to the gradual removal of trade barriers committed in the Europe Agreements. In fact, the findings presented in Baldwin (1994) confirm the idea that the CEEC's trade with Spain have the potential to continue expanding at a higher rates. More specifically, by using a gravity model, Baldwin estimates that exports of Spain to the CEECs are projected to be roughly twice as

large when the CEECs become as integrated into European trade as was the average West European countries (EU plus EFTA) in the 1980s. This figure, however, account for only a very small proportion of the EU extra exporting projections to the CEECs.

In any event, as reflected in Table 3, the weight of the CEECs in Spanish trade differs substantially from one sector to another. The most significant import sectors are textiles and clothing, food, ferrous and non-ferrous ores and metals, and, above all, non-metallic minerals and mineral products, while agriculture and mechanical machinery stand out on the export side.

(Table 3 around here)

As indicated in the previous section, three types of trade can be distinguished in the trade relations of industrialised countries: inter-industrial, intra-industrial and intra-firm. But the available information only allows us to examine the first two.

To analyse inter-industry specialisation in the bilateral trade between Spain and the CEECs, we estimated their revealed comparative advantage indices (RCA), defined as:

$$RCA_{it} = \frac{X_{it}^{SE} - M_{it}^{SE}}{X_{it}^{SE} + M_{it}^{SE}} \times 100$$

whose values, calculated by grouping together triennial import and export data in three periods to allow us to evaluate their stability in recent years(*)[11], are reflected in Figure 1. From these figures we can deduce, as a first outstanding feature, that Spain enjoys a stable comparative advantage with respect to the CEECs in only two of the 15 sectors analysed -- namely, agriculture and rubber and plastic products-- although, in the final triennium (1990-92), this advantage also included agricultural and industrial machinery and, very slightly, electrical goods.

(*)[11] The periods chosen are: the triennia prior to and after the year of Spain's entry into the EC and the last three years for which information was available and which, moreover, were the years of strongest change in the CEECs.

(Figure 1 around here)

Looking at the results for the three periods, we find the most glaring disadvantages in the food sector and, above all, in energy products(*)[12].

On simple examination, the intersectoral specialisation pattern does not provide a clear idea of Spain's relative factor endowment vis-à-vis the CEECs. In any event, this issue will be analysed in greater depth in the next section.

In order to measure the importance of transactions of an intra-industrial nature, the following traditional Grubel and Lloyd indices were computed, i.e.:

$$B_i = \left[1 - \frac{X_i - M_i}{(X_i + M_i)}\right] x\ 100$$

on the basis of bilateral trade flows of industrial products in 1992 at the five-digit level of the SIT classification, which were then aggregated to our 14 industrial NACE-CLIO sectors by calculating a weighted mean for industry, using the relative size of exports and imports of each product as weights. Thus, to a large extent, the aggregation problem can be avoided. Table 4 summarises the results.

(Table 4 around here)

As reflected in Table 4, intra-industrial trade in 1992 represented 26.64% of total Spanish trade of industrial goods with these countries. To evaluate this figure, it is worth keeping in mind that, according to the estimation for 1990 based on the same methodology, Spain's intra-industrial trade with the EU and non-EU countries was 54.1% and 32.6% of total trade, respectively (Martín 1992). Indeed, the level of intra-industry trade with the CEECs appears to be lower that what would be expected on the basis of the CEECs' level of development. However, this would seem to be a logical consequence of the different demand structure in the former communist countries, characterised by a narrower product range --both in style and quality-- than exists in market economies.

(*)[12] Note that results are quite similar when RCA's indices are corrected by trade balances.

In short, a synthesis of the results obtained suggests that trade relations between Spain and the CEECs are basically characterised by trade of an inter-industrial nature --with a notable presence of goods intensive in natural resources, or "Ricardo goods"-- in respect of which Spain reflects a deficit position in most sectors. Nonetheless, approximately a fourth of goods traded are of an intra-industrial nature.

4.2. Role of the CEECs vis-à-vis Spain as a source of exports to the EU(11)

As stated earlier, the Europe Agreements may give rise to a shift in products exported by Spain to the EU, due to the relatively lower prices of CEEC products in respect of Spanish exports. It seems clear that the greater the similarity in the trade patterns of Spain and the CEECs vis-à-vis their respective trade with Community countries, the greater the likelihood of such a shift occurring.

To find out the degree to which Spain and the CEECs compete in the same sectors of the Community market, we compiled a specialisation index (SI) based on figures for Spanish and CEEC exports to the EU during the following triennia: 1983-85, 1987-89 and 1990-92. I.e:

$$SI_{it} = \frac{X_{it}^{SC} \,/\, \sum_{1}^{15} X_{it}^{SC}}{X_{it}^{EC} \,/\, \sum_{1}^{15} X_{it}^{EC}} \; x \; 100$$

i = 1 ... 15 sectors

t = years 1983-85, 1987-89 and 1990-92.

The values of the specialisation index (Table 5) show that Spanish exports to the EU are relatively specialised vis-à-vis those of the CEECs in all capital goods sectors and particularly in transport equipment (which includes automobiles), paper and printing products, and rubber and plastics. In contrast, all other sectors reflect a larger participation of CEEC exports to the EU, especially in energy products, metals and textiles.

(Table 5 around here)

Another interesting item which gives an idea of the probability that products exported by Spain to the EU may be substituted in the future by products from the CEECs is the revealed comparative advantage (RCA) structure of Spanish and CEEC trade with the Community. Figures 2 and 3 illustrate this point.

However, in examining the RCA of Spain's intra-Community trade (Figure 2), first of all we run up against a fact that makes it difficult to analyse --and, consequently, to compare-- these advantages: the drastic deterioration, after Spain's entry into the EU, in the trade balances of most sectors and, in particular, in those which enjoyed a comparative advantage in the years prior to membership, most notably: food, textiles and clothing, and other manufactured products. Indeed, it seems that, since Spain's admission in the EU, its traditional advantages in labour-intensive light manufactured products have been increasingly undermined by the more advanced Community countries, given their technological leadership and ability to reduce production costs via corporate internationalisation. Moreover, the Spanish economy does not seem to have been able to reduce its comparative disadvantages in chemical products and capital goods. As a result, in 1992, Spain only registered a positive balance in intra-Community trade in three sectors: agriculture, non-metallic minerals and mineral products, and transport equipment (due to automobile exports).

But, in looking at the RCA of the former communist countries in their trade with the EU(11), a much clearer picture emerges. As shown in Figure 3, the CEECs --like Spain-- have a disadvantage in chemical products and capital goods. However, these countries seem to have a clear advantage in all sectors intensive in natural resources as well as in the so-called light manufacturing industries, i.e., textiles, food, and other manufactured products, in consonance with their labour cost advantages. It seems, therefore, that Spanish producers in these sectors will have to cope with increasingly competitive pressures from CEECs as the liberalisation process envisaged in the Europe Agreements gains momentum.

5. Determining factors in Spain-CEEC trade patterns in relation to each other and to the EU.

The descriptive analysis of bilateral trade flows between Spain and the CEECs and of each region with the other Community countries provides us with an initial picture of the opportunities and threats which Spain may face due to the elimination of trade barriers contemplated in the Europe Agreements. In order to fill in further details, this section proposes to examine the determinants in Spain's trade pattern with the CEECs, as well as the underlying factors in the trade flows of both sides with European Community countries. To this end, we analyse the capital-labour intensities in bilateral trade flows on the basis of input-output tables.

The survey of trade models in Section 3 made it clear that the HOS theory, despite its limitations, continues to be useful in explaining the stages of specialisation in international trade. In addition, the scant proportion of intra-industrial trade --which, as we saw, still exists in commodity trade between Spain and the CEECs-- suggests that the factor proportions model probably has a notable capacity to explain the direction and composition of the trade of these countries. Thus, in order to predict the trade adjustments that Spain will have to cope with as the CEECs gain an increasingly larger presence on international markets, it would seem relevant to know the factor content in their mutual trade flows and also in the trade of each one with the EU.

For this purpose, following the procedure initially proposed by Leontief and using the latest published I-O tables of the Spanish economy (whose data refer to 1989), we will calculate the total content (direct and indirect) of capital and labour for a fixed quantity of imports and exports and compare it with the sectoral composition that exists in the trade flows of the countries or country areas analysed. In this way, assuming the existence of common technology(*)[13], we can infer, in accordance with Vanek (1968), the relative endowment of each country.

[Table 6 around here]

(*)[13] In the absence of a better option, such as the availability of an aggregate I-O table for all EC countries, this technology is assumed to be that represented in the technical coefficients of the Spanish I-O table and in the vectors of direct sectoral coefficients of capital and labour, calculated on the basis of data for the Spanish economy also referring to the year 1989.

Table 6 shows the total content of capital (both physical and human) and labour for 1 million pesetas of imports and exports in manufacturing trade between Spain-CEEC, CEEC-EU(11) and Spain-EU(11), as well as the corresponding ratios. From these results, it can be inferred that Spain is better endowed in physical and human capital than the CEECs. Also, in comparison with the EU, both Spain and particularly the CEECs appear to have a greater relative endowment of labour. Consequently, the findings of the test on the H-O model confirm those obtained in the previous section on the basis of historical analysis of trade patterns.

6. Conclusions

From both the theoretical and empirical evidence provided in the various sections of this first part of the paper, several preliminary conclusions can be drawn.

First, regarding the direction of trade, as liberalisation proceeds, Spain-CEEC mutual trade flows are likely to increase. Additionally, a displacement of Spanish exports to the EU(11) market by CEECs' products may well occur.

Second, in relation to the product composition of these likely future trade adjustments, our results suggest that they will probably be governed to a great extent by the relative factor endowments underlying current trade patterns.

Consequently, it seems that, on the one hand, Spanish exports to the CEECs of products relatively intensive in physical and human capital, as well as imports of labour-intensive products from this area, may increase. And, on the other hand, due to the similarity of the factor endowments of Spain and the CEECs (though the latter have an advantage in the labour factor) in relation to the EU, there may be a certain displacement of Spanish exports of labour-intensive products to the EU by CEEC exports of the same type of product to this market.

However, this forecast may not actually materialise because, as is widely known, relative factor endowments are only one of the determinants in trade specialisation. In this respect, it is worth recalling that, according to the estimation in Section 4, intra-industry

trade represented around one fourth of the bilateral trade between Spain and the CEECs. And this appears to indicate that other factors are at play. Among the factors which could alter the forecasts of trade adjustments following the fulfilment of the Europe Agreements, previously calculated on the basis of the results of the H-O test, international direct investment would seem to be crucial.

In this sense, we already saw (in Section 3) that the links which can be established between trade and direct investment are complex and depend, to a large extent, on investors' strategy, in which the relative advantages of the host country will definitely be a determinant.

Starting from the evidence obtained on the relative factor endowment of the three areas in question, we can predict that the CEECs will receive more direct investment from the EU(11) -and also probably from Spain, but to a much lesser degree- due, among other reasons, to the advantages of former communist countries with respect to natural resources and prevailing labour costs.

This said, the influence that direct investment is likely to have on the future shape of trade adjustments is difficult to forecast and, in any case, would require a specific study of direct investment patterns (see part 2).

TABLE 1: "Ceteris paribus" effects of Europe Agreements on Spanish trade flow prices

			Prices prior to the Europe Agreements	Prices after meeting the terms of the Europe Agreements	Likely effect on Spanish trade with each area
Spanish Imports (M)	(1)	from EU(11) (C)	p^C	p^C	∇M^{SC} due to ΔM^{SE}
	(2)	from CEEC (E)	$p^E (1 + t^C)$	p^E	ΔM^{SE}
	(3)	from other countries (W)	$p^W (1+t^C)$	$p^W (1+t^C)$	∇M^{SW} due to ΔM^{SE}
Spanish Exports (X)	(4)	to EU(11) (C)	p^S	p^S	∇X^{SC} due to ΔX^{EU}
	(5)	to CEEC (E)	$p^S (1+t^E)$	p^S	ΔX^{SE}
	(6)	to other countries (W)	$p^S (1 + t^W)$	$p^S (1 + t^W)$	∇X^{SW} due to ΔX^{EW}

Where:

* M = imports; X = exports; p = price and t= tariff.

* Superindices indicate benchmark countries. Concretely: C = European Union of the 11 (except Spain); E = Central and East European Countries; S = Spain, and W = rest of the world.
When two superindices figure, the first indicates the country effecting the import or export and the second the area of origin or destination.

TABLE 2: Geographical structure of Spanish trade flows

	1981	1985	1989	1992
IMPORTS				
. CEEC:	0.85	0.90	0.58	0.59
Bulgaria	0.07	0.16	0.06	0.04
Czechoslovakia	0.10	0.12	0.13	0.18
Hungary	0.07	0.08	0.09	0.12
Poland	0.18	0.33	0.14	0.18
Romania	0.45	0.20	0.16	0.07
. EU(11)	29.89	35.64	57.72	61.37
. OTHERS	69.25	63.46	41.70	38.04
EXPORTS				
. CEEC:	1.00	0.70	0.43	0.62
Bulgaria	0.20	0.19	0.07	0.02
Czechoslovakia	0.21	0.13	0.15	0.16
Hungary	0.14	0.16	0.07	0.15
Poland	0.15	0.15	0.12	0.25
Romania	0.30	0.07	0.02	0.05
. EU(11)	44.61	49.78	67.70	71.87
. OTHERS	54.39	49.53	31.88	27.50

Source: Dirección General de Aduanas and own elaboration.

TABLE 3: Share of CEEC in Spanish trade by sectors

NACE-CLIO R.25	IMPORTS				EXPORTS			
	1981	1985	1989	1992	1981	1985	1989	1992
1. Agriculture	0.09	0.38	0.45	0.42	1.52	1.34	0.58	1.57
2. Energy	1.26	1.29	0.85	0.16	0.44	0.00	0.01	0.15
3. Ferrous and non-ferrous ores and metals	0.51	0.60	0.61	1.93	2.21	1.82	0.57	0.78
4. Non-metallic minerals and mineral products	0.89	0.63	2.14	3.51	0.38	0.27	0.35	0.49
5. Chemical products	0.71	0.81	0.70	0.60	1.58	0.85	0.86	0.67
6. Metal products	0.36	0.17	0.41	0.62	0.27	0.51	0.41	0.68
7. Agricultural and industrial machinery	0.84	0.75	0.50	0.39	0.83	0.70	1.36	1.67
8. Office and data-processing machines	0.11	0.05	0.05	0.04	0.22	0.03	0.12	0.14
9. Electrical goods	0.45	0.54	0.43	0.46	2.12	0.68	0.31	0.67
10. Transport equipment	0.39	0.16	0.22	0.23	0.07	0.02	0.02	0.23
11. Food, beverages, tobacco	1.21	2.34	1.20	1.19	1.04	1.24	0.78	0.61
12. Textiles and clothing, leather and footwear	0.76	0.93	0.83	0.87	0.46	0.56	0.29	0.39
13. Paper and printing products	0.24	0.95	0.41	0.35	0.52	0.23	0.15	0.43
14. Rubber and plastic products	0.51	0.34	0.24	0.26	1.29	0.51	0.56	0.64
15. Other manufactured products	1.00	0.91	0.49	0.45	0.93	0.27	0.14	0.80
MANUFACTURING (3 to 15)	0.63	0.72	0.55	0.65	0.98	0.71	0.44	0.56
INDUSTRY (2 to 15)	0.94	0.94	0.59	0.60	0.95	0.65	0.42	0.54
TOTAL	0.85	0.90	0.58	0.59	1.00	0.70	0.43	0.62

Source: Dirección General de Aduanas and own elaboration.

TABLE 4: Intra-industry trade in Spain-CEEC bilateral trade flows

NACE-CLIO R.25		1992
2.	Energy	3.05
3.	Ferrous and non-ferrous ores and metals	8.04
4.	Non-metallic minerals and mineral products	12.87
5.	Chemical products	38.44
6.	Metal products	24.11
7.	Agricultural and industrial machinery	29.83
8.	Office and data-processing machines	34.37
9.	Electrical goods	35.41
10.	Transport equipment	51.46
11.	Food, beverages, tobacco	18.74
12.	Textiles and clothing, leather and footwear	29.95
13.	Paper and printing products	45.21
14.	Rubber and plastic products	57.60
15.	Other manufactured products	15.44
INDUSTRY (Weighted mean)		26.64

Source: Dirección General de Aduanas and own elaboration.

TABLE 5: Specialisation index of Spanish and CEEC exports to the EU

NACE-CLIO R.25	1983-85	1987-89	1990-92
1. Agriculture	134.21	141.19	132.06
2. Energy	39.65	22.25	42.21
3. Ferrous and non-ferrous ores and metals	66.65	56.73	48.33
4. Non-metallic minerals and mineral products	111.14	101.68	75.29
5. Chemical products	73.90	85.94	75.11
6. Metal products	214.24	151.39	74.25
7. Agricultural and industrial machinery	149.10	148.44	103.76
8. Office and data-processing machines	830.06	845.48	578.62
9. Electrical goods	156.06	140.25	129.48
10. Transport equipment	732.48	794.31	804.61
11. Food, beverages, tobacco	93.77	75.35	84.81
12. Textiles and clothing, leather and footwear	55.84	45.43	33.42
13. Paper and printing products	189.44	164.11	149.60
14. Rubber and plastic products	290.48	196.65	160.38
15. Other manufactured products	36.41	23.77	22.61

Source: Dirección General de Aduanas and own elaboration.

TABLE 6

TOTAL CONTENT (DIRECT AND INDIRECT) OF CAPITAL , LABOUR AND HUMAN CAPITAL IN ONE MILLION PESETAS OF BOTH IMPORTS AND EXPORTS (1989)

SPAIN-EUROPEAN UNION (11)

	IMPORTS	EXPORTS	IMPORTS/EXPORTS
LABOUR (workers-year)	0,219492	0,225733	0,972352
CAPITAL(millions of ptas.)	2,246808	2,298132	0,977667
HUMAN CAPITAL(workers in R&D-year)	0,002391	0,002148	1,113128
CAPITAL/LABOUR RATIO	10,236400	10,180753	1,005468
CAPITAL/HUMAN CAPITAL RATIO	939,693852	1069,893855	0,878306
LABOUR/HUMAN CAPITAL RATIO	91,799247	105,089851	0,873531

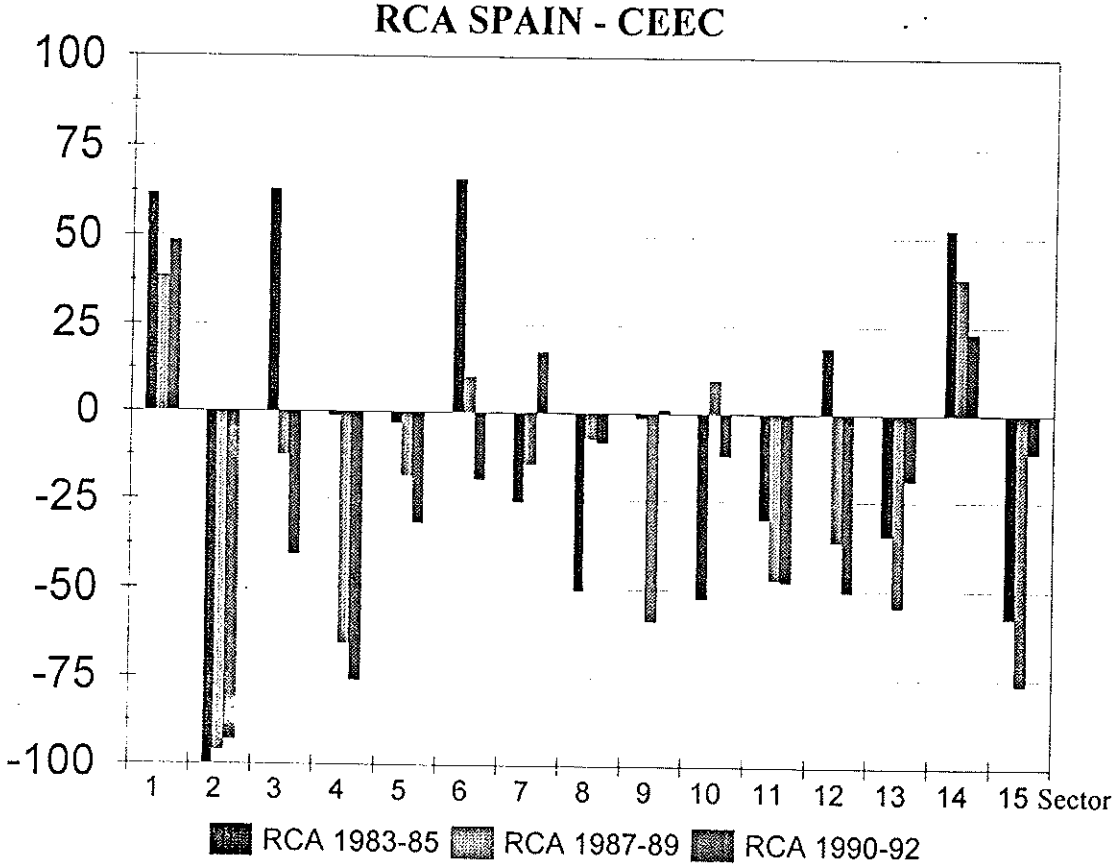
SPAIN-CENTRAL AND EAST EUROPEAN COUNTRIES (6)

	IMPORTS	EXPORTS	IMPORTS/EXPORTS
LABOUR (workers-year)	0,240982	0,234946	1,025691
CAPITAL(millions of ptas.)	2,537694	2,496531	1,016488
HUMAN CAPITAL(workers in R&D-year)	0,001690	0,001704	0,991784
CAPITAL/LABOUR RATIO	10,530637	10,625978	0,991028
CAPITAL/HUMAN CAPITAL RATIO	1501,594083	1465,100352	1,024909
LABOUR/HUMAN CAPITAL RATIO	142,592899	137,879108	1,034188

EUROPEAN UNION (11)-CENTRAL AND EAST EUROPEAN COUNTRIES (6)

	IMPORTS	EXPORTS	IMPORTS/EXPORTS
LABOUR (workers-year)	0,254720	0,230361	1,105743
CAPITAL(millions of ptas.)	2,491121	2,256607	1,103923
HUMAN CAPITAL(workers in R&D-year)	0,001279	0,002083	0,614018
CAPITAL/LABOUR RATIO	9,779841	9,795959	0,998355
CAPITAL/HUMAN CAPITAL RATIO	1947,709930	1083,344695	1,797867
LABOUR/HUMAN CAPITAL RATIO	199,155590	110,590975	1,800830

– fig 1 –


RCA SPAIN - CEEC
100
75
50
25
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-25
-50
-75
-100
1
2
3
4
5
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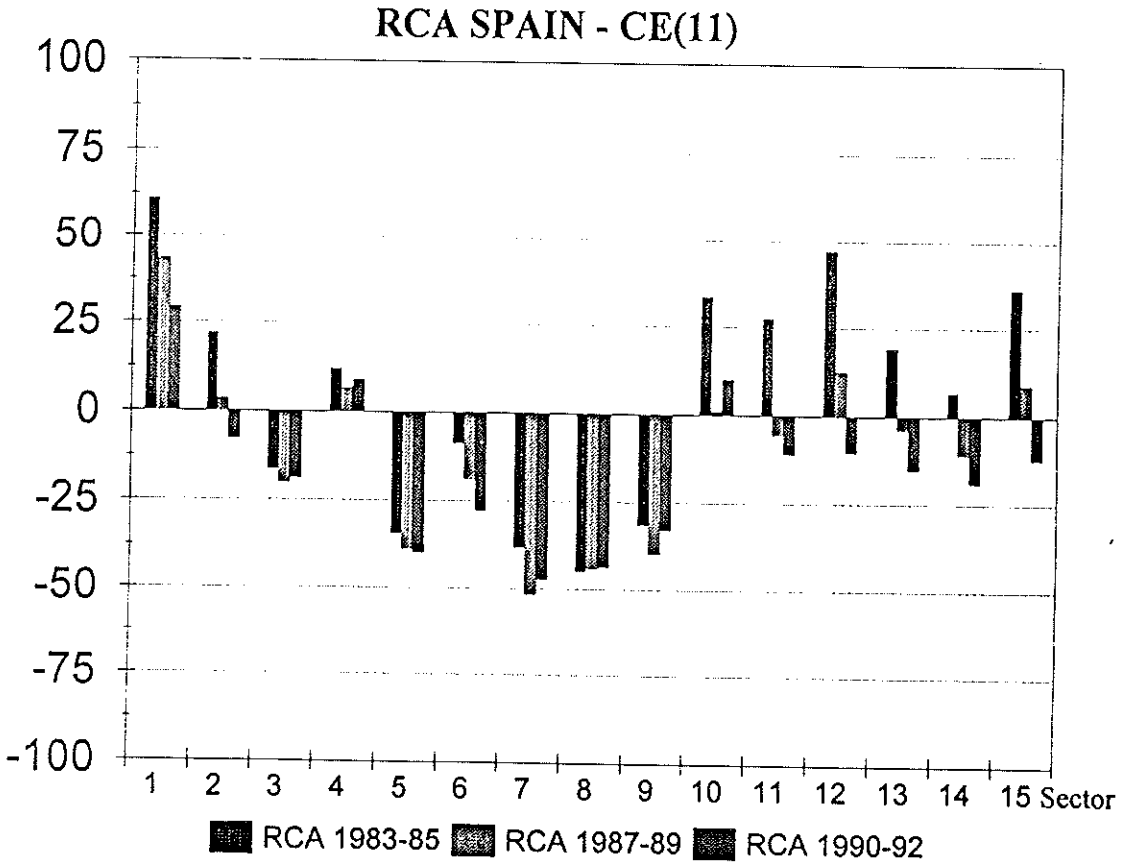
14
15 Sector
RCA 1983-85
RCA 1987-89
RCA 1990-92

- fig 2 -


RCA SPAIN - CE(11)
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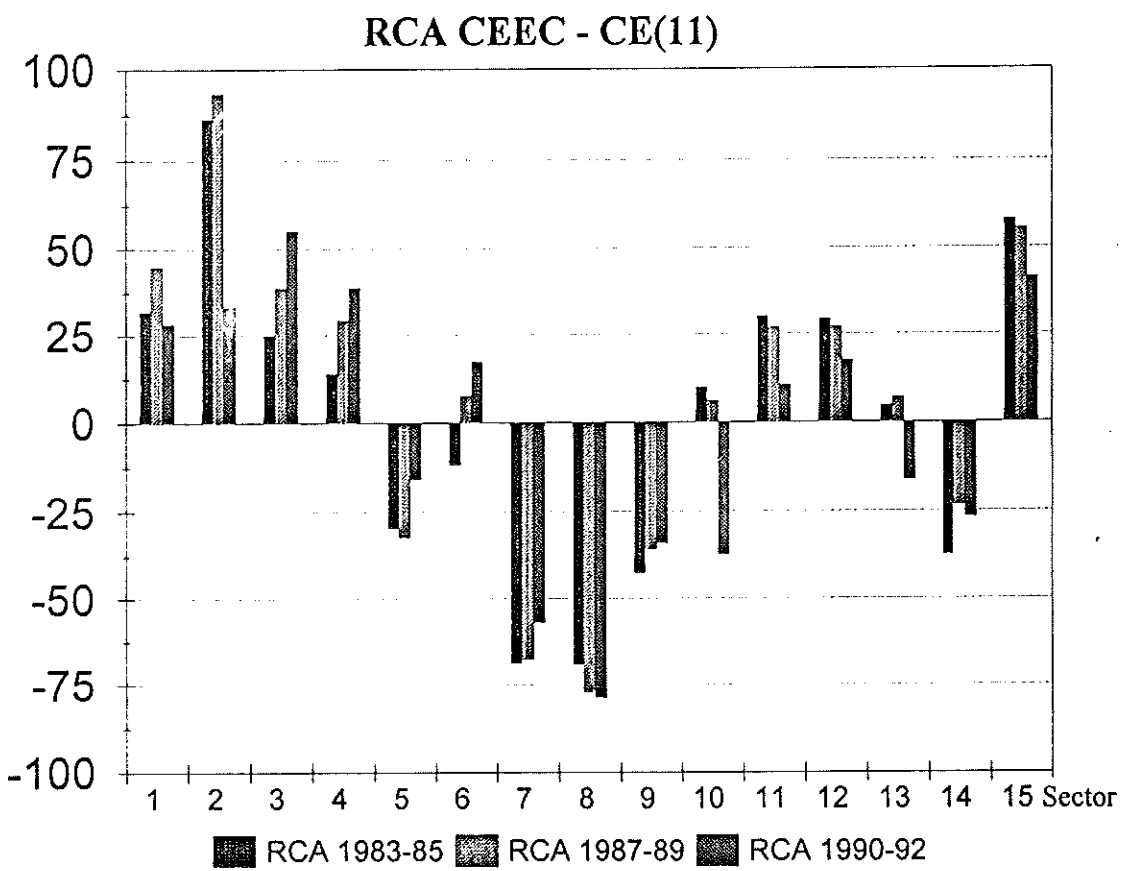
15 Sector
RCA 1983-85
RCA 1987-89
RCA 1990-92

– fig 3 –


RCA CEEC - CE(11)
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Sector
RCA 1983-85
RCA 1987-89
RCA 1990-92

Part 2 : **Will Central and Eastern Europe divert foreign direct investment from Spain?**

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* Suggestions from Ricardo Faini and participants at the CEPR Workshop on "Trade with Central and Eastern Europe: Its Impact on the Members of the EC". Brussels, April 13-14, 1994 are greatly appreciated.

1. Introduction

The objective of this part of the paper is to assess the extent to which foreign direct investment in Spain may be diverted by new investment opportunities arising in Eastern Europe (EE)(*)[14]. This is a serious concern, since Spain has been attracting substantial flows of FDI in recent years from some of the areas which are likely to be main investors in EE.

The paper briefly summarizes the alternative factors that drive the choice of location for mobile investments (section 2) and explores the main features of FDI in Spain (section 3). It is argued (section 4) that Spanish FDI has been driven by location factors unlikely to be replicated in the short or medium run in Eastern Europe. These include a large and growing market, and specific factors -such as skilled labor markets and infrastructure- which boost the productivity of investment. On the contrary, labour costs -the main advantage of locating in Eastern Europe- has not been a basic source of advantage for Spain in attracting investment.

2. Location factors for mobile investments

To assess the potential for FDI diversion we focus on the determinants of the location of FDI, and judge the comparative attractiveness of Spain and alternative investment areas in EE.

Indeed, locational advantages of the host country play a significant role in the modern theory of foreign direct investment as summarized by the OLI (ownership, location, internalization) paradigm (see Dunning (1988)). The usual approach (see for example Greenaway (1992) or Graham (1992)) is to highlight the importance of four kind of factors (see chart 1): the availability of inputs, the importance of scale economies, the role of government and a set of additional elements such as the quality and availability of infrastructure.

(*)[14] In this part of the paper we define EE as including the following countries: Hungary, Poland, Czech Republik, Slovakia, Romania, Bulgaria and Albania.

However, this list of relevant factors offers little guidance as to their relative role in determining the patterns of FDI location. Louka Katseli (1991) has pointed out that the increased importance of FDI flows between developed countries (as opposed to investment flowing to LDCs) is due to the dominant role played by locational advantages captured by these areas. Katseli focuses on the role of the absolute productivity of capital and what she calls thick-market externalities (a third component is risk and uncertainty).

It is easy to show (see Caves et al. (1990) pp. 185-187) that in the presence of mobile factors the specialization of countries is determined not only by comparative advantage, but also by absolute productivity differentials. According to Katseli, factors such as the level of taxation, the business culture and the overall economic and social infrastructure increase the absolute productivity of capital and under some circumstances, might overcome traditional (comparative advantage) location factors -such as differences in labour costs- and drive the location of footloose industries.

With regards to thick-market externalities, Katseli refers to factors such as the availability of skilled workers, the attitudes of the labor force and the existence of a network of businesses (suppliers, competitors, clients, etc.).

The factors behind thick-market externalities and the high productivity of capital are very much those stressed in the recent literature on the geographical location of industries (see Krugman, 1991). That is, market access, and the Marshallian factors that explain industry localization: labor market pooling, the availability of intermediate inputs and technological/informational externalities.

An additional interesting feature of this view of the locational determinants of FDI is its "hysterical" and cumulative nature. FDI takes place basically where previous FDI has ocurred, and many firms might not be willing to invest until others have done so, because only under these circumstances their investment is worthwhile.

In summary, the locational factors of FDI tend to concentrate investment in a few areas to the extent that thick-market externalities and the absolute productivity of capital outweigh traditional cost advantages (basically labour costs, but also -for example- land costs).

When FDI obeys this kind of locational factors, the areas of investment are likely to be regions which are already quite developed. We can, therefore, distinguish two basic kinds of FDI. One that aims at taking advantage of low costs, and the other which responds to these more complex set of determinants. Of course, in practice both things matter. But in terms of policy analysis and to discuss FDI diversion , it is important to assess which of the two factors is predominant. FDI based upon locational advantages of the second sort is likely to be less vulnerable to competition from new locations since those advantages -because of its own nature- are not easily deployed.

3. Main features of foreign investment in Spain

3.1. Changes in the regulatory framework

Foreign investments in Spain have been subject to significant regulatory changes during the last years. These changes have been intimately linked to the changes in the regulations on capital flows and to the evolution of EC regulations, and have affected the definition of what constitutes foreign investment and opened to foreign investment from the EC some of the industries which were previously forbidden to foreign investors. By and large, however, Spain had already in 1986 a very liberal approach to foreign investments, with complete freedom of investments and unimpeded repatriation of profits or the proceeds of liquidation.

Early regulations dating from 1974 were adapted in 1986 due to the entry of Spain in the EC. However, formally not much changed(*)[15]. Of course, entry into the EC provided a formidable boost to the overall credibility of the Spain as a suitable location for foreign investment.

The regulation aimed at distinguishing investments in terms of the external or domestic nature of its financing. This was consistent with a system of capital controls but it led to a complex regulatory framework.

(*)[15] This section is based on Eguidazu, (1992).

In principle investments were foreign or domestic depending on the nationality of the investor. However, for individuals an investment undertaken in Spain by a non-resident Spaniard was considered "foreign" (due to the foreign source of the funds) and an investment by a resident (foreign) citizen using domestic funds was not considered as part of foreign investment. For companies, the situation was somewhat simpler because residency and nationality were equivalent. That is, a subsidiary of a foreign firm located in Spain, was a foreign firm(*)[16], and its investment was considered foreign investment event if it was financed with internal funds.

Apart from this classification issue which is important in terms of the interpretation of the FI statistics, foreign investments were liberalized except for industries with specific regulations (airlines, broadcasting, lotteries and arms-related industries which because of national interests were subject to administrative authorization). Entry into the EC only implied that in 1990, following a Directive of Capital Flows Liberalization (88/361/EEC, 24/7/1988) these industries -except for the arms industry, and temporarily banking and finance- were open to residents from other State Members of the Community.

This regulatory framework changed substantially in 1992. The liberalization of capital flows that was put into place on February 1st 1992, made it impossible to distinguish between funds of internal and external origin and led to a complete overhaul of the regulatory system for foreing investments (July 1992). With the new regultions all investments in Spain undertaken by non-resident individuals or companies are considered foreign investments (that is, irrespective of the source of funds).

Regulatory changes have also modified the classification of the different types of foreign investments. Traditionally, three types of investments have been distinguished: direct, portfolio and real estate. Previous regulations established at 20% the (direct or indirect) share of equity that led to the classification of a foreign investment as direct investment or portfolio. The new regulation follows OECD and IMF recommendations and considers a threshold of 10%, plus allowing for the fact that, under certain circumstances, a smaller participation might grant effective control of the company. Indirect investments are included

(*)[16] In fact, when the share of a foreign firm in the local subsidiary was below 50%, only that percentage was considered foreign. For shares above 50% all the investment was included, and none before shares below 25%.

when the company that is investing is majority owned by foreigners (that is, non-residents). Not at all, otherwise.

With regards to portfolio investment, the new regulation attempts to draw a sharp distinction between capital market operations and loan financing. Before the recent deregulation of capital flows, some long term loans to subsidiaries were included as foreign (direct) investments.

As for real estate investments, the new regulation eliminates previous restrictions affecting real estate for business use. Additionally, for statistical purposes, this kind of investments will be considered direct investment rather than real estate investment.

In summary, FDI regulations in Spain have already been quite liberal for quite some time. Full integration in the European Community has given a boost to this open policy by widening the set industries open to non-resident (EC) investors, and -through capital flows liberalization- facilitating cross-border operations. Additionally, new regulations will allow a more reliable international comparison of Spanish FDI data in the future.

3.2. Recent FDI trends

The brief summary of the changing legal environment of FDI in Spain must be taken into account when trying to assess current trends, in particular with regards to the quality and interpretation of the available data.

FDI data in Spain come from two completely different sources. Both aggregate series are included in chart 2. The first series corresponds to balance of payments data. It includes all the transactions which involve payments or receipts from abroad. The second series includes direct investment projects verified or authorized by the DGTE at the Spanish Ministry of Economy. The two series diverge because of several reasons (see Boletín ICE, 1990). The authorizations series does not consider projects involving shares equal or less than a 50% by a non-resident firm; it includes projects that might not finally translate into an effective investment -or that might do so with a significant time lag-; and it includes projects

undertaken by resident firms directly (or indirectly) controlled by non-resident companies or individuals.

As it is apparent from chart 2, the two series are not only divergent, but the extent of the divergence has been changing over the last few years as a result of the regulatory changes which we have reviewed. In 1991, even the direction of change has differed between the two sources. According to the analysts at the Ministry of Economy the difference between the series (see Buisán (1992)) can be accounted for considering the transactions which leave no track in balance of payments data (indirect investments and transactions between non-residents) and the public bid offers which the Ministry of Economy considers to be FDI but which -as of 1991- are considered by the balance of payments data as portfolio investment.

Despite the difficulties with the data, the trends reflected in chart 3 are eloquent. FDI grows rapidly between 1986 and 1990-91 moving from a share of GDP below 1% to a significant 4% in 1991. Since then FDI flows have been reduced substantially.

Several other stylized facts of Spanish FDI are worth describing in a certain detail(*)[17].

First of all, FDI has involved a substantial and increasing share of acquisitions of domestic companies, as opposed to greenfield investments (whether of newly established firms or enlargements of previously operating concerns). This is reflected in chart 4.

Second, there has been a drastic change in the country of origin of inward FDI with an increase of the share of investment with origin in EC countries and a countervailing decline in the participation of non-EC countries such as the US, Japan, Sweden and Switzerland. The data that illustrate this trend is summarized in chart 5. This data do not take into account the fact that some countries are only intermediaries as origins of FDI. For 1991 and 1992, the Spanish Ministry of Economy has published this kind of breakdown which shows that countries such as the Netherlands, Luxembourg (and to a minor extent some non-EC fiscal paradises) are used by investors mostly from the US, the UK, France (as well as Mexico and Kuwait) as intermediate steps in the investing activity (see Buisán, 1993). But,

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(*)[17] Bajo and Torres (1994), Iranzo (1991) and Martínez Serrano y Myro (1992) provide detailed discussions of the features of FDI and the role of foreign-owned firms in the Spanish economy.

as it is apparent from the charts (see chart 6), the general picture does not change substantially.

Third, in terms of the industries which have been the focus of foreign investors, chart 7 shows that services have been predominant. Of particular importance are insurance, real estate(*)[18] and retailing. Some manufacturing industries have also been significant. Notably chemicals, paper and printing, and the cement industry.

Finally, the geographical concentration of FDI has been substantial. Over the years 1987-1992, FDI has been 3,37% of GDP on average (DGTE figures which differ from those of chart 3). But only three regions (Madrid, Catalunya and Navarra) are above this average (see chart 8), which shows the very high geographical concentration of investments (even if one takes into account that some investments might be registered in Madrid because of head office locations).

All the features of FDI in Spain that we have briefly described provide interesting insights which will be used to assess the determinants of FDI in Spain. The vulnerability of the attractiveness of Spain depends on the nature of these determinants and on the type of competition presented by EE countries.

4. Is FDI diversion likely ?

4.1. Determinants of FDI flows in Spain

The informal evidence on FDI flows reviewed in the previous section seems to indicate that FDI in Spain during the period 1986-1992 has not been based fundamentally on low (relative) labour costs, but rather it has been the consequence of other locational advantages offered by some parts of the country.

(*)[18] Note that this refers to investment in the real estate industry. The acquisition of property is not included. Only from 1992 onwards the acquisition of property for business use will be included as FDI.

We argue that the type of investments, its sectoral composition and, in particular, its geographical distribution indicate that this is the case. With regards to the geographical distribution of FDI, we provide some descriptive statistics to reinforce our point.

During the period 1986-1989 investments were predominantly enlargements of previously existing operations. Later on, acquisitions of already established concerns have acquired predominance. This could indicate that investors have aimed fundamentally at controlling a bigger share of a large and growing domestic market.

In fact, the evidence on the exporting and import propensity of foreign-owned firms confirms that FDI has not been driven by an objective to use Spain as an export base. Foreign subsidiaries do have a higher propensity to export (and import) than average Spanish firms. In a recent paper Martín and Velázquez (1993) show that the difference is statistically significant and particularly important in the case of imports. The high propensities for foreign affiliates are probably the result of significant intra-company trade and the higher interconnectedness of multinational frims in international markets, although they could be explained also with other factors such as the size and sectoral composition of foreign affiliates. But, more importantly, Martín and Velázquez (op.cit.) show that the imports of foreign affiliates exceed the exports, which might indicate that these firms could -in general- be sourcing inputs from abroad in order to serve predominantly the domestic market.

As for the sectoral composition of FDI, the predominance of services, which are mostly non-tradables, again indicates that the prime objective of foreign acquisitions and investments in Spain has been to serve the domestic market.

Finally, and more importantly, FDI has concentrated geographically on the more advanced, high-income, industrialized parts of the country (such as Madrid, Catalunya, Navarra and Baleares), where unit labor costs are high but infrastructure, market access and the pool of well-trained workers is largest (see chart 8). This evidence (see also Egea and López, 1991b) can be interpreted as showing that FDI in Spain has been driven by the locational advantages of a few regions rather than by general relative labour costs advantages. The regions that have concentrated most of the FDI provide important access to consumer and industrial markets, good infrastructure and large pools of skilled manufacturing and service workers. All of these factors increase the productivity of investments and compensate for a higher (relative) level of unit labour costs. A descriptive multiple regression analysis

meant to summarize the impact of these factors (see appendix) confirms the relevance of variables such as market access, the availability of skilled workers and infrastructure, and the non-significant contribution of relative unit labour costs.

Additionally, in terms of the evolution of overall spanish unit labor costs relative to alternative locations, see chart 9, the data show that over the years 1985-1992 unit labor costs in Spain increased significantly relative to a set of 19 countries. In fact, except for Portugal, Spain shows the stronger increase compared to a set of countries which could be alternative locations for foreign investment.

The non-significant role of relative unit labour costs and the importance of the domestic market have also been confirmed by the formal evidence available on Spanish FDI (see Bajo and Torres (op. cit.) and Bajo and Sosvilla (1994)). These studies are econometric analysis of aggregate FDI in Spain. Their results indicate that a growing domestic market and macroeconomic stability are the main determinants of FDI, with low relative labour costs being a non-significant factor. Bajo and Sosvilla examine the period 1964-89 and show also that the real exchange rate is not a significant factor in explaining aggregate or manufacturing FDI. In fact, over the period 1987-92 (see chart 9) the real exchange rate of the peseta relative to the countries in the small band of the ERM appreciated by 21,3%, thus affecting negatively the export competitiveness of foreign subisidiaries based in Spain.

At a more dissagregated level, additional evidence is provided by Martínez Serrano and Myro (1992). These authors show that there is no correlation between the sectoral distribution of FDI and the industry-specific relative labour costs advantages .

4.2. Is Eastern Europe going to compete with Spain for FDI ?

It is widely recognized that, thus far, the amount of FDI flowing to East European countries has been rather small (see, for example, OECD, 1993). The estimates provided by the UNECE (1993) indicate that cumulative aggregate flows for the area (covering approximately the period 1989 to mid-1993) could come up to 8 bn US$. According to OECD sources, investment in the broader region which includes the Baltic countries plus some countries of the CIS, amounted (over the same period) to 11 bn US$ (OECD, op. cit.). Most of the activity in terms of FDI has focused on Hungary, the Czech Republic and

Poland. In particular, Hungary has captured about 4 bn US$, in part thanks to the access of foreign firms to the privatization process.

Nevertheless, these sums are rather small. Over the period 1989-1992 cumulative FDI in Spain amounted to somewhere between 40 and 60 bn US$ (depending on the source of the data and the exchange rate that one uses). As we saw in section 3.2, Spanish FDI grew tremendously in the late eighties. Data provided by Dunning (1993) shows that Spanish FDI stock jumped from 1,8% of world FDI in 1980 to 3,4 % in 1990. FDI flows as a percent of world FDI moved from about 3 or 4% in 1987, to more than 10% in 1991.

The expansion of FDI in Spain correlated with entry into the EC. The question arises as to whether the conditions that led to this dramatic change in FDI likely to be met by EE countries in the near future. Similarly, an additional issue is whether the order of magnitude of the change that we have witnessed in Spain can be replicated in these countries.

For the foreseeable future a very important condition is unlikely to be met. The signing of the European Agreements has temporarily eliminated the prospect of EC entry and -although it presses the signing countries towards the harmonization of legislation-, it also limits exports to EC markets, thus potentially deterring investors (CEPR, 1992).

Apart from this general condition, we will review next the situation of EE countries (in particular Czechoslovakia, Hungary and Poland (CHP)) vis a vis Spain in some of the key elements that determine FDI flows. We will start with the preliminary issue of regulatory stability, and proceed thereafter to the examination of issues such as market access, relative labour costs and infrastructure. The analysis should also shed light on the extent to which Spain and EE compete for FDI and on the relative advantages of each zone.

a) **Regulatory stability**

A very important group of countries in the area have rapidly proceeded to the creation of a legal framework that is appropriate for FDI (see OECD, 1993). Some of them (Hungary, the Czech Republic, Slovakia and Poland) have incorporated these legislation into domestic regulations (corporate and other commercial laws) that affect also domestic investors. But even the most advanced countries present some difficulties and problems which hinder FDI. For example, an analysis of a recent review of the regulatory framework in fourteen

economies in transition (see OECD, op. cit.), reveals some instances of regulations which difficult FDI: in countries such as Hungary and the CSFR, repatriation of wages of foreign employees is still incomplete; in some of the countries conferring tax credits (Poland and Slovakia), issues of transparency have been raised; except for the Czech republic, all of the countries in the area do not provide guarantee against unknown (previous) environmental liabilities of privatized companies; in the Czech Republic, the access of foreign firms to the privatization process is incomplete; in Poland, foreigners are allowed to do business only within the framework of joint stock companies and limited liability companies; in all the four coutnries considered, no branch business is allowed (with a few exceptions) and the companies must therefore be incorporated enterprises with their head office in the host country; finally, the set of industries restricted to foreing investment is small, but it includes some unusual provisions (i.e. in Poland, real estate brokerage, legal services and wholesaling of consumer goods; in the Czech republic and Slovakia, international trade; in Hungary, transportation of persons).

b) Market access

To measure the access to the European markets we have used simple accessibility indices (see chart 10) and parameter estimates of the gravity model estimated by Baldwin (1994) (see chart 11).

It appears that CHP enjoy significant geographical advantages when compared to Spain (see chart 10). However, if one considers market access including the domestic market, the large market of Spain compensates for the locational disadvantages. This indicates that CHP could be very competitive as locations for exports to European markets. On the contrary, Spain may be less competitive in terms of location, but it constitutes in itself a very significant market.

The estimates of the gravity model for Spain and Poland confirm the important locational advantages of Poland with respect to most of the important european markets, with the exception of France and the UK (see chart 11). However, the model provides also an estimate of the extent to which this locational advantages can overcome the significant gap in export potential between Poland and Spain which arises from the size of the Spanish economy. Even assuming a long term scenario of integration in the European Community and strong income growth in Poland, potential exports to most of the european markets are

projected to be larger from Spain than from Poland. Thus, Poland -as other countries in the area- could be a significant export base for products targeted to nearby countries, but it is unlikely to play a major trading role european wide.

c) Relative unit labour costs, labour markets and infrastructure

Other indicators point also that CHP countries may be good locations for exports to european markets, but be less attractive in terms of their own market. In particular, at least for the case of Hungary (as chart 12 reveals), the labour cost gap is rather significant, and unlikely to be compensated by productivity differentials.

In terms of access to a large pool of educated workers and related firms, the educational data presented in the chart indicate the strong competitive position of Hungary. However, the size of the labour force is quite small, and a qualified labour force is not matched by an already established network of firms (suppliers, etc.). This lack of an on-going business base can be a recurrent problem because of the 'wait and see' strategy that is being followed by many potential investors in the area.

In summary, we may conclude that the FDI locational advantages of CHP are significant, provided that the regulatory uncertainties are overcome. It appears, however, that the strongest competitive advantage of the area is in terms of a low-cost production base for exports to the European markets. This feature makes the area only an indirect competitor for Spain in terms of FDI attraction(*)[19].

These results are confirmed by the characteristics fo the FDI flows into the area observed thus far. For example, in terms of export performance, preliminary data for Poland show that as much as 21,4% of the output of operational foreign investments was exported in 1991 (and 12,4% in 1992) as opposed to 9,7% (and 8,3% in 1992) for all polish enterprises (UNECE, op. cit.).

(*)[19] This is confirmed by survey results (EC, 1993) indicating that only 15% of investors in the area perceived the two regions as alternative locations.

In terms of industry(*)[20], dominance (in value) corresponds to manufacturing. In Hungary the figure goes up to 55% including food and machinery and equipment. In Poland, the share is as high as 67,5 % (including mining). Manufacturing is also the most important industry in the Czech republic (consumer goods, food and automobile account for 57% of the accumulted investment). Finally, manufacturing is very important (53%) in Slovakia.

Additionally, investment in the area comes predominantly from Germany and Austria, countries which are not the main investors in Southern Europe. For example, in Hungary 36% of the investment from january 1992 up to mid-1993 came from these two countries. In Poland, the main investors are the US and Italy. In the Czech Republic, Germany 31,3% and theUS (29%). And in Slovakia, Austria (26%) and Germany (18%).

5. Conclusions

The main conclusion of this second part of the paper is that FDI into Spain is unlikely to be significantly affected by investments flowing into EE countries. We argue that direct investment flows into Spain have been the result of a set of locational advantages in some parts of Spain which are unlikely to be replicated in EE in the short and medium term. These include access to a large and growing market, as well as access to specialized resources which boost the productivity of investment (pools of trained workers, infrastructure).

Overall, Spanish FDI has not been based upon (labor) costs advantages, which are the key competitive tool of new areas in EE. However, FDI flowing to the less developed parts of Spain might well suffer. This is quantitatively a small part of total FDI. But it might be affected to the extent that these areas base their attractiveness on low unit labour costs (an advantage which has been increasingly eroded over recent years) and -as export bases- have poor access to the main european markets, in particular when compared to alternative locations in CHP countries.

(*)[20] Data from UNECE (1993).

Appendix

Regression analysis

We have used as dependent variable data on FDI/GDP corresponding to the average over the period 1989-1992 for 17 regions (see chart 8). The independent variables have been those of chart 8. That is: market access (ACCESS), an infrastructure index (INFRA), unit labour costs (ULC)[8] and a variable capturing the percentage of population with skills (SKILL). Market access is highly correlated (0,91) with the infrastructure index. Both of them have significant and positive coefficients when used as alternative regressors. But the results (in terms of goodness of fit and inspection of the residuals) are better with the market access measure, which also gives a more stable parameter. The variable on relative unit labour costs comes out as non-significant. The fit of the regression is quite good. The single observation with a poor fit corresponds to the Basque Country where actual FDI is below expected, probably due to the risk associated to investment in this region.

The regression results are the following:

FDI/GDP = -2,9196 + 0,0236 * ACCESS - 5,3319*ULC + 0,1713 *SKILL
(-2,4443) (5,7738) (-1,7973) (2,7024)

Adj. $R^2 = 0,80$ $F = 21,80$

When the observations corresponding to Madrid and Catalunya are dropped, we do not obtain significant coefficients for ACCESS and ULC, although the signs are maintained.

Since the model specified is descriptive and is not based on a specific economic theory, it is worthwhile to report partial correlations. Additionally, the coefficient of variation is also reported, to indicate the extent of variability provided by the sample, in particular with regards to the unit labour costs variable.

	Partial correlation	Coefficient of variation
FDI/GDP	–	1,1127
ACCESS	0,8598	0,4879
CLU	0,2755	0,2324
SKILL	0,6225	0,2270

Note that using time-series variation (for the four years of data avalaible) would not add much to the analysis. There is some variation in FDI/GDP over the years (see chart 8) but little change across regions in any of the explanatory variables over time. In fact, the correlation across regions of unit labour costs between 1989 and 1990 is 0,96 (and for labour costs, the correlation between adjacent years is above 0,99). Given the nature of the data at the regional level (in some cases one particular investment in a given year alters the series), it certainly makes sense to consider the average over the period -which would amount to an approximation to cumulative FDI- disregarding year to year changes.

[8] We use unit labour costs as a regressor, although our measure of productivity (Value Added per employee) is very imperfect. The results are very similar if we use a measure of labour costs for blue and whit collar workers for the whole economy and disregard the correction for productivity (but in that case the regressor has a reduced variability, with a coefficient of variation of 0,1423).

Charts

Chart 1. Locational factors for foreing direct investment

Inputs
- Spatial distribution of inputs and markets
- Input prices, quality and productivity

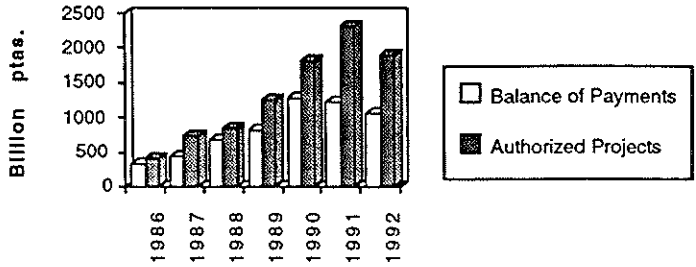
Economies of scale
- Extent to which plant-level economies of scale make for centralization of production

Government
- Direct intervention
- Control of imports (tariffs,etc.), tax rates, incentives, investment climate, political stability

Other
- Transport and communication costs
- Infrastructure (commercial, legal, transportation)
- Psychic distance (language, culture, business, customs)

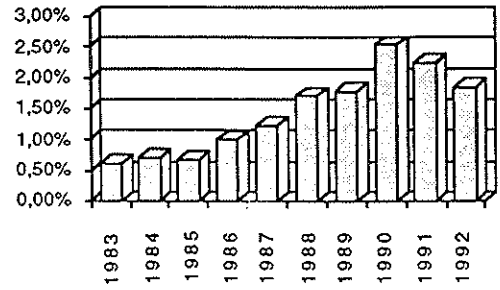
Source: Greenaway (op. cit.)

Chart 2. FDI data by source (1986-1992)



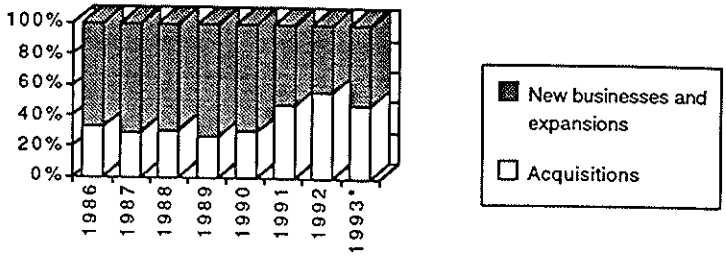
Source: Bank of Spain and DGTE.

Chart 3. Foreign Direct Investment in Spain



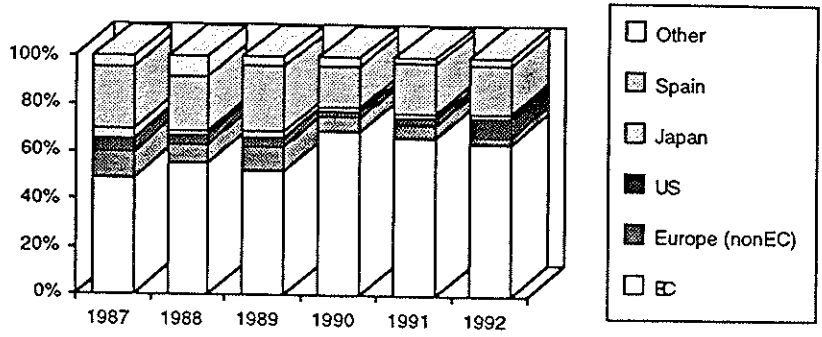
Data in % of GDP. Source: Bank of Spain

Chart 4. FDI in Spain by type of investment



Source: DGTE. * 1993 data up to october

Chart 5. FDI by country of origin



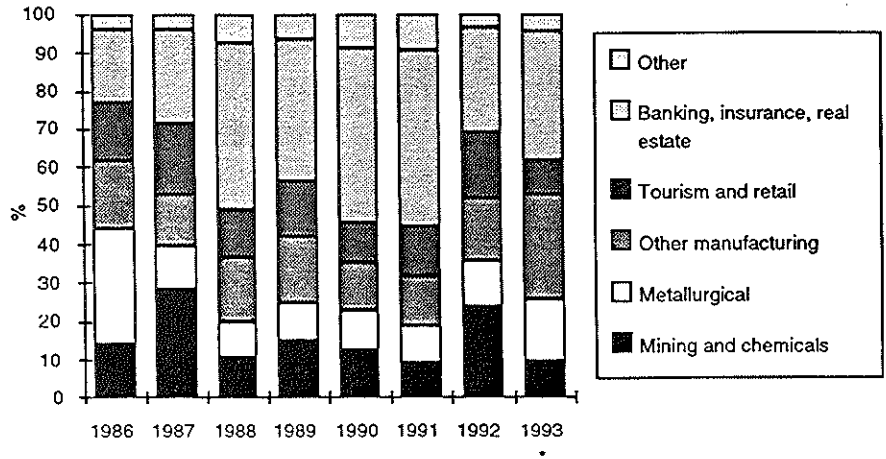
Source: DGTE. Spain appears as a country of origin reflecting FDI by foreign firms located in Spain

Chart 6. FDI by country of immediate and final origin
(data in %)

	1991		1992	
	Country of immediate origin	Country of final origin	Country of immediate origin	Country of final origin
EC	67	57	64	58
Europe (non EC)	5	9	3	5
US	3	8	8	15
Japan	2	3	1	2
Spain	21	4	21	1
Other	2	20	3	19

Source: DGTE.

Chart 7. FDI in Spain by industry (1986-1993)



Source: DGTE. * Data up to October

Chart 8. Factors of geographic concentration of FDI in Spain

Region	*Market access index*	*Infrastructure index*	*Skilled labour*	*Unit labour costs*
Andalucía	135	62,7	0,0	0,43
Aragón	108	51,9	0,0	0,47
Asturias	110	58,5	0,0	0,64
Baleares	125	66,2	0,0	0,43
Canarias	97	50,6	0,0	0,42
Cantabria	112	51,0	0,0	0,52
Cast.LaMancha	105	41,1	0,0	0,29
Cast.León	117	56,6	0,0	0,43
Cataluña	241	93,4	0,0	0,49
Com.Valenciana	193	66,6	0,0	0,46
Extremadura	88	42,5	0,0	0,18
Galicia	112	55,0	0,0	0,42
Madrid	351	100,0	0,0	0,53
Murcia	109	50,4	0,0	0,48
Navarra	102	54,3	0,0	0,46
País Vasco	184	89,1	0,0	0,60
Rioja	89	42,3	0,0	0,43

FDI/GDP	1989	1990	1991	1992	89-92
Andalucía	2,80%	1,31%	1,77%	1,34%	1,81%
Aragón	1,15%	1,44%	1,33%	0,78%	1,17%
Asturias	0,17%	0,72%	1,15%	0,41%	0,61%
Baleares	2,63%	2,00%	1,49%	1,84%	1,99%
Canarias	0,74%	2,01%	0,85%	0,79%	1,10%
Cantabria	1,68%	0,41%	0,26%	1,84%	1,05%
Cast.LaMancha	0,20%	0,48%	0,32%	0,53%	0,38%
Cast.León	0,51%	0,39%	0,30%	0,56%	0,44%
Cataluña	3,30%	5,27%	8,58%	4,54%	5,42%
Com.Valenciana	0,71%	0,74%	0,94%	2,66%	1,26%
Extremadura	0,19%	0,24%	1,63%	0,12%	0,55%
Galicia	0,59%	0,33%	0,47%	1,22%	0,65%
Madrid	6,77%	10,07%	9,78%	7,65%	8,57%
Murcia	0,70%	0,82%	1,01%	0,79%	0,83%
Navarra	1,40%	5,00%	4,83%	3,80%	3,76%
País Vasco	1,77%	1,69%	0,71%	2,37%	1,64%
Rioja	3,14%	0,64%	1,08%	1,20%	1,51%

Notes:

The market access index is computed by weighting 1989 regional family disposable income by distances in kms. between the main cities in the regions. For Baleares and Canarias, we have used flight times equivalents to the nearest connecting airport
The source for regional family disposable income is Fundación FIES.
The market access index includes the market of the region of origin with distance equal to $(1/3)\sqrt{(Area/\pi)}$
Data on infrastructure indicators come from Cutanda et al. "Crecimiento económico y desigualdades regionales: El impacto de la infraestructura" in Papeles de Economía Española, # 51, (1992) page 86. Data on skilled workers corresponds to the percentage of adult population with at least a secondary school education (up to 16 years old). Source: INE.
Labour costs per unit of output correspond to 1989. Yearly compensation per worker in industry over value added per worker. Source: Encuesta Industrial, INE

Chart 9. Unit labour costs in Spain and alternative EC locations (1985-1992)

	1985	1986	1987	1988	1989	1990	1991	1992
Greece	100	84,73	83	87,44	89,95	95,27	89,18	89,76
Spain	100	102,3	105,4	110,8	117,5	126,7	127,1	127,9
France	100	102,9	102,3	98,13	95,55	99,53	95,55	97,42
Ireland	100	106,1	100,8	98,35	93,08	92,56	88,22	90,19
Italy	100	105,7	109,3	108,7	112,2	121,5	122,9	120,3
Portugal	100	101,1	102,3	103,3	104,7	112,5	126,7	143,5
UK	100	92,73	92,84	102,3	105,2	109,2	113,2	111

Pro-memoria

Effective real exchange rate*	100	98,3	97,8	104,6	113,3	116,6	120,2	118,6

Sources: Commission of the European Communities.
Directorate-General for Economic and Financial Affairs June 1993
Statistical annex to European Economy.
* Relative to countries in the small band of the ERM
(Cuentas Financieras de la economía española, 1983-1992. Banco de España)

Chart 10. Market access in Spain and some EE countries

	Accessibility index	*Accessibility index without own market*	*Difference*
CSFR	8,93	8,36	0,57
Hungary	6,35	5,86	0,49
Poland	5,64	4,96	0,68
Spain	7,46	3,82	3,64

Note: The accessibility index is computed by weighting the GDP of several markets by the distance from the country of origin. We have considered distances to capital cities except for Zurich (Switzerland) and Frankfurt (Germany). The markets include the EC (except Luxembourg and Ireland), the EFTA countries, Poland, Hungary and CSFR. GDP data corresponds to 1991 and comes from the World Bank.
Distance to own market is computed as in chart 8.

Chart 11. Comparison of the export potential to EU and EEA markets by Spain and Poland

	Distance factor Spain/Poland	*Export ratio* Spain/Poland	*Market size*
FIN	0,35	0,56	88
ICE	0,96	1,51	8
NOR	0,49	0,76	73
SWE	0,36	0,56	139
SWI	0,99	1,55	162
AUT	0,35	0,55	122
BL	0,90	1,40	12
D	0,72	0,84	740
DK	0,37	0,58	89
F	1,26	2,61	640
GR	0,71	1,11	59
IRL	1,23	1,92	32
I	0,97	1,52	585
NL	0,77	1,20	197
P	4,51	9,36	64
UK	1,13	1,77	582

Note:Baldwin (1994) estimates the following model:
$X_{xi} = -17{,}5 - 0{,}88\ dist_{xi} + 0{,}77\ pop_x + 1{,}16\ gdp_x + 0{,}79\ pop_i + 1{,}22\ gdp_i + 0{,}28\ adj_{xi} + 0{,}53\ eea_{xi}$

where X_{xi} corresponds to exports from country x to country i, *dist* is the great-circle distance between capitals, *gdp* is GDP per capita, *pop* is population, *adj* is a dummy indicating adjacent countries and *eea* in another dummy for membership of EU or EFTA.

According to his estimates, potential exports of Spain to EU+EFTA exceed those of Poland by a factor of 1,56 on account of the differences in GDP per capita and population (assuming a long run scenario where Poland belongs to the EU or EFTA and experiences strong income growth -up from the 1989 figure of 4044 -in 1985 prices- to a figure of 10044).

Potential export differences are influenced also by distance, so that for example exports to Germany are projected to be very similar due to the significant advantage provided by distance (0,72 implies that Spanish exports to Germany are projected to be 72% of Polish exports because of this factor).

As for adjacency, the parameter estimates imply that adjacency factor increases Polish exports by 33% relative to Spanish exports.

Finally, if Poland did not achieve integration into ,the EC or EFTA, Spanish exports relative to Polish exports would increase by a factor of 1,71.

The figure for market size in the chart is computed using the parameter estimates and the data provided by Baldwin, that is $(0{,}79\ pop_i + 1{,}22\ gdp_i)$ for each country i.

Chart 12. Hungary and Spain, selected indicators

	Hungary	Spain
General indicators		
Area (sq. km.)	93030	504782
Population (in millions)	10,5	39,1
Labour force (millions)	5,2	15,3
GDP (bn. dollars)	28	487
Passenger cars (per thousand population)	184	295
Wage costs		
Gross wages (manual workers)	227	1096
Gross wages (non-manual workers)	400	1730
Infrastructure		
Railway line (meters) per sq. km.	84	28
Telephones (per 100 population)	19,2	33,9
Public roads (meters) per sq. km.	321,3	307,0
Freeways (meters) per sq. km.	0,9	10,4
R&D		
R&D Spending as a % of GDP	2	0,75
Education		
Labour force by completed education (%)		
Less than primary school	2	9
Primary school	22	33
Secondary school	59	45
University	15	12

Sources:
Education: National Bank of Hungary and Encuesta de Población Activa (INE)
(data corresponds to 1993)
R&D: Central Statistical Office of Hungary and, for Spain, OECD.
(data corresponds to 1989)
Infrastructure: Central Statistical Office and INE.
(data corresponds to 1991, except for railway lines
which corresponds to 1990 for Hungary and 1989 for Spain)
Wage costs: National Bank of Hungary and Encuesta de Salarios (INE)
(data corresponds to 1993, and has been converted to US$ using average
exchange rates, data refers to total monthly gross wages)
In Spain labour costs amount to 33% more due to social security and other taxes.
General information: The Economist, National Bank of Hungary and INE.
(data corresponds to 1991, except for labour force (Hungary: 1992 and Spain:1993);
and passenger cars (Hungary 1990, and Spain: 1989)).

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