THE IMPACT OF EU TRADE AGREEMENT WITH CENTRAL AND EASTERN EUROPEAN COUNTRIES: THE CASE OF SPAIN

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Abstract

This paper makes a tentative forecast of the impact on Spanish trade of the liberalisation of economic transactions between the European Union and the former communist countries of Central and Eastern Europe (CEECs), as envisaged in the association agreements aimed at the eventual enlargement of the EU to include these countries. For this purpose, it describes the trade patterns between the signatory countries –Spain, the rest of the EU and CEECs– since the fall of the communist bloc and analyses, through the econometric estimation of a gravity model, the determining factors in these patterns. Lastly, starting from the projection of the model estimated, along with several complementary analyses, a prediction of the agreements' effects on Spanish trade is made.

Key words: European Union, Central and Eastern Europe, gravity model

JEL: F150, F120, F210

THE IMPACT OF EU TRADE AGREEMENTS WITH CENTRAL AND EASTERN EUROPEAN COUNTRIES: THE CASE OF SPAIN

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Contents: I. Introduction. II. Theoretical framework and strategy of the empirical analysis. III. Trade patterns of the CEECs in relation to Spain and the rest of the EU. IV. Tentative forecast of the impact of the integration of CEECs on Spanish trade. V. Conclusions and final remarks.

I. Introduction

The Essen summit of December 1994 ratified the resolve of the European Union (EU)[1] to expand eastwards through the incorporation of the six former communist countries of Central and Eastern Europe (hereafter CEECs), namely Bulgaria, the Czech Republic, Slovakia, Hungary, Poland and Romania.

Remark: This paper enlarges on a study conducted by the author for the Commission of the European Communities whose main findings were published in No. 1006 of the Discussion Paper Series of the Centre for Economic Policy Research (CEPR). I would like to thank Richard Baldwin

[1] This study refers to the 12 countries that formed the EU until January 1, 1995.

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Unquestionably, the enlargement of the EU to include the CEECs –together forming a market of roughly 95 million people– will significantly affect the economies of the current member states. Naturally, it would be interesting to know what course this impact is likely to take.

With this in mind, the most sensible approach is to take as a starting point the already existing commitments of the EU with the CEECs, since their objective is to lay the groundwork for the future integration of the six countries in the Union. These commitments are framed in a series of association agreements –known as the Europe Agreements– signed between 1991 and 1993 with each of the counties.

In this context, the aim of the present paper is to estimate the extent to which the volume and composition of Spanish trade will be affected once the liberalisation of economic relations with the CEECs, as envisaged in the above-mentioned agreements, has been achieved.

To this end, the paper is organised in the following way. After a brief overview of the contents of the agreements, Section II presents the theoretical approach and the empirical strategy used in the study. Section III describes the trade patterns of the countries involved in the agreements –CEECs, Spain and the rest of the EU– and also seeks to explain their determining factors starting from the estimation of a gravity model. On the basis of this equation and the measurement of the relative factor content of trade flows between the areas in question, Section IV provides a tentative prediction of the impact of the Europe Agreements on the volume and composition of Spanish trade by product and geographical region. Lastly, the conclusions of the study and several final remarks are given in Section V.

II. Theoretical framework and strategy of the empirical analysis

After reviewing the many hundreds of pages that make up the association agreements between the EU and the CEECs, we find that their most substantive features can be summarised in the following four points:

- The gradual liberalisation of the mutual trade of goods with an asymmetrical calendar: a maximum period of five years for the EU and twice that for the CEECs.

- The liberalisation of direct investment. In fact, by now this is practically a reality, given the interest of the former communist countries in receiving investment from abroad.

- The imposition of restrictions on the flow of migrant workers, reflecting the desire of EU countries to forestall the likely migratory pressure from the CEECs.

- And, lastly, the gradual alignment of the legal and institutional frameworks of the former communist signatory countries with the EU framework, for which the Union has agreed to provide financial backing through the PHARE programme.

Thus, for analytical purposes, the Europe Agreements can be considered a type of preferential trade arrangement that incorporates the liberalisation of foreign direct investment between the signatory countries.

Then, if we take into account the theoretical evidence available in this field since the seminal work of Viner [1950], which for reasons of space we cannot describe here[2], the most appropriate starting point for predicting the impact of the Europe Agreements on Spanish trade would be to study the trade patterns of the three areas involved in the agreements and their determining factors. This would seem to be the only way to evaluate the importance of the "trade-creating effect" and the "trade-diversion effect" that can be expected to occur after the tariff and non-tariff trade barriers now affecting the signatory countries have been lifted.

Here, of course, the problem is that there is no single theoretical reference for studying these patterns of trade. Much to the contrary, what the theoretical evidence on trade specialisation has offered up to now is a very broad spectrum of models which, without entirely breaking with the Heckscher-Ohlin-Samuelson (HOS) model, are formulated in the framework of imperfect competition and introduce many other factors aside from the relative factor endowment (in the strict sense of physical capital and labour) in order to explain the observable features in trade flows between countries and, in particular, the coexistence of inter- and intra-sectoral trade relations[3]. The more recent models also postulate 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, the empirical investigation encounters a large array of models of international oligopoly that are very difficult to test, since they require very detailed information on the markets' structures and on the strategies of their productive units, obviously creating serious statistical barriers.

Naturally, the difficulties arising from the empirical application of these models are magnified in the case of Central and Eastern European countries. By way of example, due to the differences in the concept of productive activity between these

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2 Good surveys can be found in Robson [1987], Jacquemin and Sapir [1989], Winters [1992], and Baldwin and Venables [1995].

3 See, by way of example, Helpman and Krugman [1985], Grossman and Helpman [1991], Krugman [1990] and Grossman [1992].

countries and Western economies, figures for per capita income are still the subject of debate; the disaggregated data of their trade are framed in incompatible sectoral nomenclatures, and information on the characteristics of their productive structures is also practically impenetrable[4] .

In view of this, it is not easy to formulate an empirically viable analytical strategy that can be used as the basis for predicting future trends and changes in the composition and geographical structure of the CEECs' trade flows.

Fortunately, however, the problem posed by the limited information available on these economies can, in the case of trade figures, be largely be overcome by using those of Spain and other EU countries as a "mirror" for inferring the trade structure of the CEECs in each market. Notwithstanding, the unavailability of statistics on the features of these countries' productive structures continues to be a problem.

In short, at least until a larger supply of statistics on the CEECs is available, the most appropriate procedure would seem to be:

1) To describe the CEECs' trade patterns vis-à-vis Spain and the rest of the EU members, incorporating the analysis of both inter- and intra-industry trade relations.

2) To estimate an econometric model to explain these patterns, whose testing does not require data on the CEECs that are still unavailable. Then, in the case that the fit is good, to simulate the impact of the CEECs' trade integration on the EU as a way of foreseeing what type of trade adjustment this would entail for Spain.

[4] As is widely known, countries with centrally planned economies had a different concept of productive activity, and thus their national accounts material production system encompassed macro-variables with entirely different meanings from those used in the accounts of market economies.

And, lastly, to revise the resulting predictions on trade adjustment in the light of the expected changes in foreign direct investment.

This will be our objective in the next two sections.

III. Trade patterns of the CEECs in relation to Spain and the rest of the EU

In line with the theoretical observations in the previous section, the most likely –and, in any event, the most significant– changes in Spanish trade resulting from the fulfilment of the stipulations in the Europe Agreements are two: first, an increase in bilateral trade between Spain and the CEECs and, second, a displacement in Spanish exports to the EU in favour of exports from East-bloc countries. Thus the most logical approach is to centre our analysis on these trade flows and also on the trade relations of Spain and the CEECs with the rest of the EU countries in order to learn their degree of similarity. From there, we can assess the extent to which the products that Spain exports to the EU market are likely to be substituted by products from the former communist countries.

For this purpose, the figures for the trade flow of Spain and the other 11 EU countries with the CEECs –disaggregated by sectors of activity under the NACE-CLIO R. 25 classification– are used. Thus:

. 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}^{UE} and M^{UE} : exports and imports of the European Union, excluding Spain, with the CEECs of sector i in the year t.

. X_{it}^{SU} and M^{SU} : Spain's intra-Community exports and imports of sector i in the year t.

Where:

i = 1 ... 15 branches of goods of the NACE-CLIO R. 25 classification.

j = 1981 ... 1992.

In addition, the availability of data on Spain's bilateral trade with these economies and also with the members of the Union (with the maximum degree of disaggregation of the CUCI classification, i.e. five digits) allows us to measure, in these cases, the intensity of intra-industrial trade[5] .

It could be argued that, due to the autarkic policies of the former communist countries in their trade with non-COMECON members, the trade structure of the CEECs does not adequately reflect the nature of their comparative advantages. Although this problem cannot be ruled out, in which case the study's findings should be interpreted with caution, there is also reason to believe that planners attempted to achieve the most efficient specialisation on non-COMECON markets in order to cope with their more competitive market conditions[6] . Moreover, insofar as the analysis focuses on the years after the fall of the communist system in 1989, this problem, had it existed, would have diminished.

Although, for reasons of space, this paper does not describe the method of analysis or its findings in detail (both are developed in Martín and Gual [1994]), it is worth reviewing the main conclusions.

To begin with, as to the principal features observed in the <u>bilateral trade between Spain and the former communist countries</u>, it should be noted that the weight of these

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[5] Unfortunately, figures for the trade relations of the rest of the Union with the former communist countries were not available to the same degree of disaggregation, thus preventing us from measuring the intra-industry trade between them.

[6] In this respect see CEPR [1990].

countries in Spanish commodity trade is still small (nearly 1%), although their presence is much more significant in certain sectors: metals, food, textiles and, above all, non-metallic minerals (more than 3%) on the import side, and agricultural goods and mechanical machinery on the export side.

Second, there is a notable predominance of intersectoral trade, with Spain running a deficit in most of the branches studied. Thus, in the most recent three-year period for which information was available (1990-1992), Spain ran a surplus in its trade with the CEECs in only four sectors: agriculture, agricultural and industrial machinery, electrical goods, and rubber and plastic products. However, it should also be mentioned that the computation of the Grubel and Lloyd[7] intra-industry trade index indicated that, in 1992, 26.6% of Spain's manufacturing trade with these countries was of this type. For a clearer idea of the significance of this proportion, it is worth noting that, according to the estimate for 1990 based on the same methodology (see Martín 1992), Spain's intra-industry trade with its EU partners represented 54.1% of manufacturing transactions, while this figure was 32.2% in the case of trade with the rest of the world.

Turning to the <u>trade relations of Spain and the CEECs with the rest of the EU countries</u>, the most significant finding –by measuring the indices of revealed comparative advantages and specialisation– was the strong similarity in the structure of the comparative advantages and disadvantages of the two economies (Spain's and the CEECs as a whole) on the market formed by the rest of the EU countries. This lends further support to the above-mentioned hypothesis that the rivalry between firms in Spain and in the CEECs to export to the EU market is likely to increase.

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[7] I.e.:

$$IIT_i = [1 - \frac{|X_{it} - M_{it}|}{X_{it} + M_{it}}] \times 100$$

This index was calculated from the bilateral trade figures for Spain and the CEECs as a whole, disaggregated at the five-digit level of the SIT classification and then aggregated by calculating the weighted average of the volume of trade.

In view of the results obtained in the descriptive analysis of the trade patterns of the three areas in question, it is clear that any attempt to explain these patterns must take into account the coexistence of trade relations of both an inter- and intra-industry nature. Consequently, a model must be used whose explanatory variables incorporate the relative factor content –the determinant in trade relations of an inter-industry nature– and others factors such as the economies of scale and product differentiation associated with intra-industry trade.

In this sense, it can be argued, as in Bergstrand [1985, 1989] and Helpman and Krugman [1985, chap. 8], that the gravity model provides a good equation for explaining the bilateral trade flows between the areas in question. Indeed, this model, as formulated in Linneman [1966], has earned a good and increasingly better empirical reputation, and in more recent years, thanks to the aforementioned works, it has received the theoretical support that justifies its use.

For these reasons, in our attempt to explain the bilateral trade relations between Spain, the rest of the EU and the CEECs –ultimately aimed at predicting the trade adjustments associated with the lifting of trade barriers stipulated in the Europe Agreements– we set up a gravity model, using a panel data approach for the period 1989 to 1992[8]. Thus the sample comprises 240 bilateral trade flows (Belgium and Luxembourg, on the one hand, and the Czech Republic and Slovakia, on the other, the latter considered jointly for reasons of statistical availability) and spans four years, together totalling 960 observations.

The gravity model equation that is used as a starting point to explain the bilateral trade flows of the countries in question is, expressed in logarithms, as follows:

$$Lbt_{it} = \beta_0 + \beta_1 Lpopex_{it} + \beta_2 Lgdppex_{it} + \beta_3 Lpopim_{it} + \\ + \beta_4 Lgdppim_{it} + \beta_5 Ldist_i + \varepsilon_{it}$$

[8] Wang, Winters [1991], Hamilton, Winters [1992] and Baldwin [1994] also seek to foresee the trade repercussions of the changes in the former communist countries by setting up a gravity model, although their specifications and geographical and time frames differ.

Where:

bt_{it} = bilateral trade, from the export country to the import country in the year t.

$popex_{it}$ = population of the export country in the year t.

$gdppex_{it}$ = GDP per capita of the export country in the year t.

$popim_{it}$ = population of the import country in the year t.

$gdppim_{it}$ = GDP per capita of the import country in the year t.

$dist_{i}$ = distance between the export country and the importer, invariant during the period.

And where:

i = the number of annual bilateral trade flows, which amount to 240 (16 x 16 - 26).

t = 1989 ... 1992 (4 years).

The economic interpretation of the regressors and their expected sign are as follows: the GDP per capita of the import and export countries are indicative of their income and, moreover, in accordance with the monopolistic competition model of Helpman and Krugman [1985, chap. 8], are linked to the degree of differentiation in demand and supply, respectively, whereas the populations are an approximation of their sizes and, therefore, of the degree to which production is subject to increasing returns to scale. Consequently, considering that the model assumes the existence of differentiated products, the expected sign of all the variables is positive[9]. With respect to distance, this variable seeks to evaluate the transport costs between the trade partners, and therefore the sign of its relationship to bilateral trade flows is likely to be negative[10]. Moreover, as indicated, this is the only variable that is defined as invariant over time. Lastly, a final remark on the variables in the equation: the random disturbance term incorporates two types of error –one associated with the variables that change both between individuals and over time, and a second type related to components that may not vary over time.

This said, and considering that the information on the statistical sources is given in the Appendix, we can now turn to the method used to set up the equation.

As is widely known, estimations under the ordinary least squares (OLS) method can lead to biased estimators of the parameters, due to the presence of individual effects. In this context, the usual procedure to obtain consistent and non-biased estimators is to use the within-groups, or fix effects, method. The estimators thus obtained are consistent and non-biased, although they may not be the most efficient; in fact, if there is no correlation between the individual effects and the regressors, the estimation under generalised least squares (GLS) would provide for greater efficiency [Arellano, Bover 1990]. However, the use of this method is only recommended when the individual effect is independent of the regressors, and therefore this should be previously ascertained by applying the Hausman test.

In this respect, the results obtained by applying the GLS estimator are given in Table 1. For comparative purposes, these are accompanied by the findings under the

[9] Notice that, if the model assumed the existence of increasing returns but not of product differentiation, the expected sign for the explanatory variables that measure the size of the countries, and therefore their potential for taking advantage of economies of scale, would be negative.

[10] To some degree this variable also reflects certain transaction costs (language differences, information on the institutional framework, for example) with a positive correlation to distance.

within-groups method which was used to apply the Hausman test[11] and also those obtained by OLS.

[TABLE 1 around here]

As shown, the values of the t statistics, associated with the coefficients of the explanatory variables, reflect the significance of all the variables. However, given the likely presence of individual effects correlated with the regressors and clearly detected by the Hausman test, it becomes necessary to re-specify the model by including other explanatory variables capable of detecting these individual effects. In this respect, the nature of the panel data in our estimations allows us to suspect the existence of individual effects of two types: individual effects in the strict sense, i.e. those related to bilateral flows, and those associated with the heterogeneity of the countries.

In the case of the first type, the most logical candidate is the real exchange rate. Since it is specified as the price index of the export country in relation to the domestic prices of the import country, its sign is presumably negative.

As seen in Table 2, the new specification allowed a certain improvement in the fit, although the Hausman test continues to indicate the persistence of individual effects, thereby preventing us from accepting the estimator by GLS. Moreover, the results of the within-groups estimation, which for the time being are the only consistent ones, now (after the inclusion of the relative prices) give a negative –and, therefore, theoretically perverse– sign for the variable of the import country's GDP per capita. This suggests the possible existence of a non-linear relationship between the latter variable and the price variable[12], which should therefore be explored.

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[11] The Hausman test applied here allows us to accept the hypothesis that the individual effects and the explanatory variables are independent, and therefore the use of GLS, if it accepts the equality between the parameters obtained by the estimator of fix, or within-groups, effects and the GLS estimator (see Hausman and Taylor, 1981).

[12] Due to the negative correlation that arises between the two variables.

[TABLE 2 around here]

To this end, another estimation of the gravity equation was made by introducing both variables multiplicatively (ppcmprer). Table 3 gives the results of this estimation and indicates that, as suspected, the impact of the import country's GDP per capita on the trade flows varies according to the value of the relative prices. Moreover, when the GDP per capita variable is expressed in this way, it takes on the expected sign, thus showing that the sign remains positive even though prices alter the income effect. However, the Hausman test indicates that the individual effects have still not been eliminated. In other respects, as noted earlier, this seems logical, taking into account that the countries in the sample exhibit notable differences in their productive structures and trade regimes. In this sense, it is reasonable to believe that the countries' inclusion within a group –whether as members of the European Union or of the area of former communist countries– may constitute a factor responsible for the existence of individual effects. Therefore, it could prove interesting to test the plausibility of this hypothesis by introducing dummies in the equation.

[TABLE 3 around here]

Under this procedure, we find that the individual effects can, in fact, be controlled by incorporating in the equation two dummy variables, which reflect intra-Community trade (DEU) and trade originating in the area of the former communist countries (DCEEC). Consequently, as shown in Table 4, with this specification of the equation, the estimate under the GLS method provides consistent estimators (the Hausman test is passed), i.e., just as consistent as, but more efficient than, those obtained under the within-groups method.

[TABLE 4 around here]

A reasonably good fit is obtained, and the resulting values for the parameters of the regressors are coherent, in sign and volume, with the theoretical evidence. Thus, first of all, it is noteworthy that the performance of bilateral trade flows is more influenced by demand factors than by supply factors. In this respect, it should also be pointed out that the population and the GDP per capita of the export country have an analogous coefficient, although this is not the case when we consider the importer's variables. Second, it is worth noting that the income effect, particularly that of the import country, is more significant than the price effect. Third, it must be noted that the trade between the countries is unequivocally conditioned by the distance between them. Lastly, the parameters associated with the dummy variables concord with the existence of lower barriers in intra-Community trade than in the transactions with the new capitalist countries.

IV. Tentative forecast of the impact of the integration of CEECs on Spanish trade

In the light of the good results obtained by estimating the gravity model, it would seem reasonable to use it –albeit with due caution– to simulate several different scenarios to gauge the impact of the CEECs' integration in the Union on Spanish trade and also, as a reference point, on the rest of the EU economies.

In this respect, we projected two scenarios with different degrees of integration. In the first, of "lesser integration", it is assumed that the future process of liberalisation of trade transactions with the CEECs will be similar to that observed since the collapse of the communist system in 1989 and which was, implicitly, detected in the model's estimation. In the second scenario, of "greater integration", it is assumed that the opening-up process between the EU and the CEECs will quicken in the future. In this respect, given the lack of information on the level of tariff barriers and other restrictive factors in the trade of these economies, the most reasonable approach would be to estimate the scenario of greater integration through a projection of the model by altering the coefficient of the dummy corresponding to the CEECs. A sensible option could be to give this variable a value mid-way between the coefficients obtained for the dummy variables DEU and DCEEC (see Table 4, column 3), since, no matter how much the integration of the former communist countries advances, it would not seem realistic to confer on them the same situation that exists between the member countries of the Union.

The remaining assumptions –referring to the performance of the explanatory variables of trade– necessary to project the model were the same for both scenarios. We assumed a growth rate of 4% for the former communist countries[13], i.e. higher than the rate in the EU, which is assumed to be 3% annually on average, and three alternatives with respect to the changes in the real exchange rates of the CEECs –no growth, 25% growth and 50% growth[14]. Thus we have three different projections for each of the scenarios, whose results are summarised in Tables 5 and 6. From them, we can glean several ideas as to the possible course of trade relations of the CEECs with Spain and the rest of the EU countries in the future.

[Tables 5 and 6 around here]

First of all, what stands out is the likely expansion of bilateral trade flows at a higher rate in Spain than in the average of the remaining EU countries, which is consistent with its clearly lower starting point than that of the EU average. The expected trade expansion is much higher in the scenario of greater integration.

Second, it is notable that the forecasts for the trade balance are, in all the hypotheses, clearly more favourable for the rest of the EU countries on average than for Spain. In any event, it can be seen that the expectations regarding the performance of

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[13] This signifies a growth rate similar to that of the Spanish economy after emerging from its autarkic stage.

[14] For an idea of the plausibility of these assumptions, consider that, in the period 1960-1990, Spain's real exchange rate vis-à-vis Germany grew by approximately 16%, while Portugal's grew by around 29%.

trade balances vary significantly according to the hypothesis used for the real exchange rate, and, logically, these expectations are all the more favourable for EU countries the greater the deterioration in the competitiveness of the CEECs.

Lastly, the results of the projections suggest that the deepening of the process of mutual trade liberalisation with the CEECs would lead to an increase in trade with these countries, with favourable results (in terms of the trade balance) for Spain and, especially, for the rest of the EU[15].

However, it must be borne in mind that the gravity model, whose estimation was used to prepare these projections, does not allow contemplating the possible existence of substitution processes between countries in their exports to international markets. This is a crucial factor, since it means that part of the effects of the association agreements would not reach Spanish trade –concretely, the possible substitution of Spanish exports to the EU market by exports of the former communist countries. Obviously, this would give rise to much less favourable expectations about the impact of the Europe Agreements on Spanish trade.

In this respect, considering the earlier descriptive analysis of the structure of Spain's comparative advantages and disadvantages vis-à-vis the CEECs on the EU market, it must be kept in mind that this substitution effect in Spain's intra-Community exports is not only possible –it is probable. Consequently, this line of research should be pursued further in order to gain a clearer idea of the extent of this probability.

For this purpose, it would seem useful to estimate the underlying factor content in the trade relations between Spain and the CEECs and in the relations of each with the rest of the EU(11) member countries.

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[15] In order to analyse the sensitivity of the projections to variations in the hypothesis of the future growth rate of the CEECs, we prepared projections –for the two integration scenarios– under the hypothesis (naturally less plausible) that the former communist economies grow by 8% (i.e., a rate similar to that of countries in Southeast Asia). The results suggest that the growth in these economies would be beneficial for the trade balances of the European Union, including Spain (see Martín, 1994).

Moreover, an analysis of factor content is the most appropriate channel for predicting the sectoral composition of the expected trade expansion, an equally key subject on which the gravity model also fails to provide information.

Therefore, as the next step in our research, we calculated the content of three underlying factors (labour, physical capital and human capital) in the trade relations between Spain and the CEECs and in each one's relations with the EU(11). For this purpose, we used Leontief's seminal method, i.e., I-O tables, albeit after applying the criterion proposed by Leamer [1980].

Since Martín [1994] explains in detail the way the necessary variables were constructed, the procedure used in the calculation, and the overall results[16], here we shall only comment on the main conclusions.

The findings suggest that the Spanish economy and the economies of the CEECs share a situation of relative disadvantage vis-à-vis the EU(11) in the endowment of human capital as opposed to physical capital and labour.

However, when a comparison is drawn between Spain and the formerly centrally planned economies, the Spanish economy seems to have a relative abundance of human capital with respect to physical capital and also of the latter with respect to labour.

Consequently, on the basis of these results, we are able to venture several forecasts of the sectoral composition of the future adjustments of Spanish trade derived from the increasing international integration of the former communist countries:

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[16] See Martín [1994], pages 70-77 and Tables 12 and 13.

- First, in relation to bilateral trade with the CEECs, there is likely to be an expansion in Spanish exports of goods that are relatively intensive in physical and human capital, in exchange for imports of labour-intensive goods.

- Second, in addition to lending further support to the hypothesis regarding the probable displacement of Spanish exports on the EU market by the exports of CEECs, it could be postulated that this displacement will be greater in the case of labour-intensive products.

In any event, these forecasts of the sectoral specialisation of the trade relations promoted under the Europe Agreements should be interpreted with caution, since it must be borne in mind that the composition of trade is influenced by variables other than the relative factor endowment of the countries. Here, foreign direct investment would presumably play a basic role.

Moreover, the fact that the liberalisation of direct investment is one of the areas most clearly contemplated in the agreements heightens the probability that the trade adjustment will be strongly conditioned by the changes arising in direct investment.

Thus, as a final step in the investigation, the paper addresses this question.

More specifically, it seeks to answer two questions:

- What are the most probable changes in the future flow of direct investment?
- How would these changes affect the plausibility of the forecast for the adjustment in Spanish trade?

To start with, in an attempt to foresee the future course of direct investment flows, three types of information were taken into account:

a) The results obtained in the estimation of the relative factor endowment of the three areas, which, as we have just indicated, underscored the weakness of the capital endowment, both physical and human, of the former communist countries in relation to that of Spain and, to a much greater degree, to that of the rest of the EU as a whole.

On this basis, it could be postulated that direct investment will flow from the EU countries (including Spain) in the direction of Central and Eastern Europe and not conversely. Also, most of this investment is likely to come from the more advanced countries of the Union, given the higher capacity of these countries in technological capital and other intangible assets and the greater degree of internationalisation of their companies.

b) The second type of information (in this case for the specific purpose of evaluating the possibility that the increase in the direct investment of EU countries may occur at the expense of investment received by Spain) draws on the analysis of the relative locational advantages of each area. Here, admittedly, the very limited information available on the formerly centrally planned economies precluded obtaining much more than a few indicative signs, which nonetheless do signal the plausibility of a process of investment displacement. Most notably, the CEECs have clear advantages in labour costs[17] and, in most cases, a better geographical location (from the standpoint of their proximity to Europe's economic power centres). Although these advantages could be offset by the larger size of the Spanish market and its better infrastructure endowment, we do not know to what extent.

[17] Notice that in 1992 the average wages of the Czech and Polish economies were $176 and $207, respectively, i.e., roughly 15% of Spain's. Although obviously unit labour costs should be used as the indicator in comparing labour costs, which would most probably narrow Spain's differential with these economies, the wage mismatch is still such that it is safe to say that the CEECs will continue to have an advantage in this respect.

c) The third and last source of information used to predict the future course of direct investment were the data on the its behaviour since the collapse of the communist system. Here two particularly interesting developments were found.

First, as to be expected, Spanish direct investment in communist countries, although of limited volume, amply exceeded the CEECs' investment in Spain, and this tendency was seen to be on the rise.

Second, the main countries of origin of the direct investment received by the CEECs since 1989 (whose growth has been enormous, particularly in the case of Hungary, the Czech Republic and Poland) were Germany, Austria, France and Italy. Notably, the sectors that absorbed the largest portion of this investment were automobiles, electrical goods, chemical products and food industries (see Houde, 1994 and UN, 1993).

In sum, taken together, this information points towards the possibility that direct investment in emerging capitalist countries –from Spain but in particular from the more advanced EU countries– will expand in the years ahead. In addition, this tendency may entail a certain displacement of the direct investment received by Spain.

Lastly, as to the second question of how this shift in investment is likely to affect Spanish trade, the study's findings can be summarised in the following points:

First, it seems safe to say that Spanish direct investment would help to strengthen and consolidate Spain's exports on emerging capitalist markets.

Second, it could be argued that the expected growth in the investment of Spain's more developed EU partners will strengthen the competitive position of former communist countries, not only in the goods where these economies enjoy comparative advantages, but also in other goods –intensive in physical and human capital– where the situation of the CEECs could be appreciably improved as a result of the activity of foreign investors. If –as it seems reasonable to assume– the strategy of foreign investors is not confined to supplying the domestic market but also focuses on taking advantage of the these countries' advantages in labour costs and geographical location, using them as centres of production and exports, then Spanish trade could be jeopardised.

5. Conclusions and final remarks

It is a general methodological principle that any attempt to forecast the future conduct of an economic phenomenon should be based on an adequate knowledge of its performance in the past. Thus, in the area of international economic integration (in which this paper is largely encompassed), it is also a given that any evaluation of the impact on trade of a process of integration –of whatever type– requires a knowledge of the trade relations between the areas involved and their determining factors.

This is the ground covered here. From this standpoint, I believe that the paper adds appreciably to what is known about the nature and determinants of the trade between the former communist countries and the European Union and Spain in particular. However, given the permanent metamorphosis of these economies (and the uncertainty surrounding their process of political and economic transformation), this knowledge does not provide a firm enough basis for predicting with any confidence their future conduct. As a result, I believe that the quantitative forecasts in the paper should be taken only as a reference point.

In any event, the study's findings would seem to provide a helpful indication of the opportunities that the CEECs' integration will open up for the exports and investment of Spanish firms in emerging markets and also the difficulties that the Spanish economy will face in taking advantage of these opportunities.

In this respect, the paper suggests that, despite their unquestionable labour cost advantages, Central and Eastern European countries are not, in themselves, a threat to the Spanish economy, which appears to enjoy competitive advantages in many other factors. Moreover, the results indicate that the Spanish economy is relatively well equipped to set up production centres in these countries, which appears to be the best channel for firms to gain and maintain a foothold in these new markets.

However, what the paper does detect as a danger is the possible displacement of Spanish intra-Community exports by goods from the CEECs, including goods produced by the multinational companies of Spain's more advanced EU partners that use these countries as centres of production and exports to all of Europe, while benefiting from their advantages in labour costs and geographical location.

Nonetheless, in relation to the latter hypothesis, due to the scarcity of data, the study was only able to provide a few signs –to find a firmer body of evidence poses a challenge that I propose to pursue in a longer version of this study.

TABLE 1. OLS, WITHIN and GLS Estimators

$$Lbt_{it} = \beta_0 + \beta_1 Lpopex_{it} + \beta_2 Lgdppex_{it} + \beta_3 Lpopim_{it} + \\ + \beta_4 Lgdppim_{it} + \beta_5 Ldist_i + \varepsilon_{it}$$

	OLS	WITHIN	GLS
β_1	0.80 (24.4)	9.0 (5.1)	0.85 (10.5)
β_2	0.99 (34.1)	1.6 (9.3)	0.75 (11.1)
β_3	0.85 (25.8)	6.5 (3.7)	0.87 (10.8)
β_4	0.95 (32.7)	0.75 (4.3)	0.90 (13.4)
β_5	-1.36 (28.2)	-	-1.4 (12.1)
β_0	2.45 (3.9)	-	2.8 (1.8)
$\overline{R}^2$	0.85	-0.10	0.40
S.E.	0.90	0.35	0.45

Hausman Test 276

$\chi^2(95) = 11.1$

TABLE 2. OLS, WITHIN and GLS Estimators

$$Lbt_{it} = \beta_0 + \beta_1 Lpopex_{it} + \beta_2 Lgdppex_{it} + \beta_3 Lpopim_{it} + \\ + \beta_4 Lgdppim_{it} + \beta_5 Ldist_i + \beta_6 Lrer_{it} + \varepsilon_{it}$$

	OLS	WITHIN	GLS
β_1	0.81 (25.1)	4.52 (2.8)	0.83 (10.9)
β_2	0.97 (34.3)	0.34 (1.6)	0.86 (13.4)
β_3	0.84 (26.0)	7.4 (4.7)	0.9 (11.5)
β_4	0.96 (33.8)	-0.8 (4.1)	0.8 (12.1)
β_5	-1.37 (28.9)	-	-1.4 (12.8)
β_6	-0.66 (6.6)	-0.7 (13.6)	-0.7 (14.9)
β_0	5.58 (7.18)	-	6.1 (4.1)
$\overline{R}^2$	0.86	0.13	0.50
S.E.	0.88	0.31	0.39

Hausman Test 171.8

$\chi^2(95) = 12.6$

TABLE 3. OLS, WITHIN and GLS Estimators

$$Lbt_{it} = \beta_0 + \beta_1 Lpopex_{it} + \beta_2 Lgdppex_{it} + \beta_3 Lpopim_{it} +$$
$$+ \beta_4 Lgdppim_{it} + \beta_5 Ldist_i + \beta_6 Lgdppmrer_{it} + \varepsilon_{it}$$

	OLS	WITHIN	GLS
β_1	0.81 (25.4)	3.7 (2.3)	0.82 (11.4)
β_2	0.97 (34.7)	0.58 (2.8)	0.93 (15.3)
β_3	0.85 (26.6)	3.19 (2.1)	0.86 (12.1)
β_4	3.07 (12.0)	2.08 (12.0)	2.96 (24.3)
β_5	-1.36 (29.2)	-	-1.39 (13.3)
β_6	-0.46 (8.4)	-0.44 (15.5)	-0.46 (19.5)
β_0	2.41 (3.9)	-	2.64 (1.9)
$\overline{R}^2$	0.86	0.18	0.56
S.E.	0.87	0.30	0.36

Hausman Test 62.7

$\chi^2(95) = 12.6$

TABLE 4. OLS, WITHIN and GLS Estimators

$$Lbt_{it} = \beta_0 + \beta_1 Lpopex_{it} + \beta_2 Lgdppex_{it} + \beta_3 Lpopim_{it} + \beta_4 Lgdppim_{it} + \beta_5 Ldist_i + \beta_6 Lgdppmrer_{it} + \beta_7 DEU_i + \beta_8 DCEEC_i + \varepsilon_{it}$$

	OLS	WITHIN	GLS
β_1	0.83 (32.2)	3.67 (2.3)	0.83 (15.2)
β_2	0.89 (15.2)	0.58 (2.8)	0.83 (7.5)
β_3	0.91 (35.6)	3.18 (2.0)	0.92 (16.7)
β_4	2.23 (10.7)	2.08 (12.0)	2.40 (18.6)
β_5	-1.2 (31.8)	-	-1.27 (15.2)
β_6	-0.41 (9.4)	-0.44 (15.5)	-0.46 (18.7)
DUE	2.15 (23.4)	-	2.24 (11.9)
DCEEU	1.33 (9.2)	-	1.27 (4.5)
β_0	0.86 (1.6)	-	0.99 (0.87)
$\overline{R}^2$	0.91	0.17	0.70
S.E.	0.69	0.30	0.35

Hausman Test 12.8

$\chi^2(95) = 15.5$

TABLE 5. MEDIUM-TERM PROJECTION OF TRADE WITH THE CEEC's
(Lesser integration scenario)

	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
REAL SITUATION IN 1992			
European Union (11)	0.44	0.39	0.05
Spain	0.08	0.12	-0.04
	Cumulative annual rate		
	Exports	Imports	Trade balance
MEDIUM-TERM PROJECTION Alternative assumptions on real exchange rate trends:			
a) NO GROWTH			
EU (11)	-0.04	1.68	–
Spain	4.10	4.78	–
	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
EU (11)	0.21	0.29	-0.08
Spain	0.10	0.18	-0.08
	Cumulative annual rate		
	Exports	Imports	Trade balance
b) Δ 25%			
EU (11)	0.51	0.23	–
Spain	4.66	3.46	–
	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
EU (11)	0.24	0.20	0.04
Spain	0.11	0.13	-0.02
	Cumulative annual rate		
	Exports	Imports	Trade balance
c) Δ 50 %			
EU (11)	0.96	-0.93	–
Spain	5.13	2.40	–
	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
EU (11)	0.27	0.15	0.12
Spain	0.13	0.10	0.03

TABLE 6. MEDIUM-TERM PROJECTION OF TRADE WITH THE CEEC's
(Greater integration scenario)

	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
REAL SITUATION IN 1992			
European Union (11)	0.44	0.39	0.05
Spain	0.08	0.12	-0.04

	Cumulative annual rate		
	Exports	Imports	Trade balance
MEDIUM-TERM PROJECTION Alternative assumptions on real exchange rate trends:			
a) NO GROWTH			
EU (11)	7.24	3.67	–
Spain	11.69	6.83	–
	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
EU (11)	1.20	0.46	0.74
Spain	0.57	0.29	0.28
	Cumulative annual rate		
	Exports	Imports	Trade balance
b) Δ 25%			
EU (11)	7.83	2.19	–
Spain	12.29	5.49	–
	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
EU (11)	1.38	0.32	1.06
Spain	0.65	0.21	0.44
	Cumulative annual rate		
	Exports	Imports	Trade balance
c) Δ 50 %			
EU (11)	8.32	1.01	–
Spain	12.78	4.41	–
	% of GDP in real 1990 terms		
	Exports	Imports	Trade balance
EU (11)	1.54	0.24	1.30
Spain	0.73	0.16	0.57

APPENDIX

DATA USED TO ESTIMATE THE GRAVITY MODEL

The bilateral trade flows (COM), which are specified in the equation from the viewpoint of the export country, were nonetheless constructed from information on the import country, due to the greater reliability of these data. In the case of Spain, the data were those of the Spanish Customs Authorities of the Economy Ministry; for the other member countries of the European Union, the source was Eurostat, and, lastly, the figures for the bilateral relations of the CEECs between themselves were drawn from the International Monetary Fund's "Direction of Trade Statistics Yearbook".

The trade figures in the equation are expressed in 1990 ECUs. The deflation of the monetary aggregates was based on unit value indices, using in the case of Spain the figures of the Directorate-General for Economic and Financial Affairs; the statistical appendix of the journal European Economy for the other members of the Union and, lastly, the OECD's recently published "Short-term Economic Statistics: Central and Eastern Europe" for the CEECs. As to exchange rates, which had to be used to specify all amounts in ECUs, for Spain the official rates (annual average) of the Bank of Spain were used, and those published in the IMF's "International Financial Statistics" in the case of the former communist countries. It should be noted that, as usual, monetary aggregates were deflated in terms of the values expressed in national currencies and then translated into ECUs.

As to the variables of population and GDP per capita, the main statistical sources were: for Spain, the National Statistics Office, for the EU(11) the aforementioned journal European Economy, and for the CEECs the latest report of the World Bank. Naturally, the GDP per capita of the countries are also expressed in 1990 ECUs.

In relation to the real exchange rate, note should be had that it was constructed for each pair of countries, specified in the following way: price index of the export country vis-à-vis the domestic prices of the import country.

Lastly, the distance variable between each pair of countries, reflecting the most direct distance by air, was estimated from the data of the PC Globe programme kindly provided by R. Baldwin.

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