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DEPARTAMENTO DE ECONOMIA



DOCUMENTO DE TRABALHO N.º 2002/01

October

**The impacts of the Eurozone's eastward enlargement on
trade and FDI: survey of the literature**

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Resumo/ Abstract:

Palavras-chave/Keyword:

Classificação JEL/JEL Classification:

1. Introduction

Over the past decade, the process of international economic integration has been continuously reinforced. Such phenomenon is especially visible at the regional level, with the increase of Regional Integration Agreements (RIA), such as Mercosur, ASEAN, NAFTA and the process of European Union (EU) Eastern enlargement. These developments have renewed the interest on the economics of regional integration, an area of research firstly investigated by Viner (1950), who introduced the concepts of 'trade creation' and 'trade diversion'. Trade and Foreign Direct Investment (FDI) flows are generally recognised as the two main channels of economic integration. Consequently, the most relevant issues in the debate on RIA relate to trade creation, trade diversion and to the possible reallocation of FDI.

Despite the main roles played by these two aspects of economic integration, a third element - firms' subcontracting strategies - has to be taken into account. Over the last decades, the increasing fragmentation of productive processes and the development of worldwide production and distribution networks have enhanced economic, financial and technological globalisation. Progress in production technologies and in communications has contributed to the segmentation of production processes, leading to the development of subcontracting. As a result, a vast variety of entrepreneurial agreements has emerged. These agreements generate production and exchange networks between firms of different countries, thus contributing to a renewed system of international labour division (ILD). Subcontracting is an alternative to traditional FDI and has remarkable effects upon international trade. Notwithstanding that, it has not been the object of comparable interest on the part of researchers.

Since the beginning of the negotiation process for the Eastern enlargement of the EU, trade and FDI have played an important role in the approximation of member states and applicants. An asymmetric tariff reduction has taken place from the onset, and currently only some 'sensitive products' are protected. Completion of the process on the part of the Central and Eastern European Countries (CEEC) is expected to take place in 2002. CEEC' transition phase to a market economy may now be considered as completed, since the geographical reorientation of trade, away from the former Council for Mutual Economic Assistance (COMECON) countries towards the EU, seems to have reached its limits (Freudenberg and Lemoine, 1999).¹ Industrial recovery and rapidly rising levels of productivity in these countries are likely to induce changes in the sectoral composition of output, which will in turn

¹ This process was faster in the case of Poland due to the 1990 price liberalisation.

influence trade patterns. The flows of FDI to the CEEC, and the establishing of subcontracting agreements with EU industrial firms, have become substantial and are crucial to the restructuring process of industrial production and of international trade.

A vast literature, containing a variety of approaches, has put forward evidence confirming the changes that have occurred in terms of volume and structure of foreign trade and FDI between the EU and the CEEC during the transitional period. This paper attempts to survey the most relevant contributions of such literature and to underline the critical issues. In spite of the strong relationships that exist between trade, FDI and other forms of entrepreneurial alliances, for the sake of clarity, the three issues are analysed separately.

2. Economic Integration and Trade Flows

There are several reasons to study trade effects in processes of economic integration such as that of the Eastward European enlargement. First, expected variations in the intensity and in the composition of trade among the countries involved (members and entrants) may provide information on the nature and size of the impacts upon production structures, and on the magnitude of efficiency gains. Second, the identification of differences in the evolution of trade patterns between developed and less developed countries should help design and later implement intra-EU compensation mechanisms. Finally, the analysis of trade developments in the pre-accession period should provide answers concerning the future evolution (i.e. in the context of an enlarged EU) of the current scenario of structural asymmetry among EU countries.

Economic integration aims at reducing the various barriers to the free flow of goods, services and factors of production, in order to increase potential gains from trade via a more efficient use of resources. Theoretically, both static and dynamic integration effects can be identified. Static effects are usually related to phenomena of trade diversion and trade creation, following reductions of tariff and non-tariff barriers. Dynamic effects are usually associated with the expected increase in competitiveness, scale economies, transformation of trade and investment patterns, or any change on geographical specialisation.

Many studies report changes in terms of volume, composition and nature of trade between EU countries and the CEEC during the process of transition. Different theoretical and empirical approaches have analysed the levels of "potential trade", the evolution of specialisation patterns and their consonance with factor endowments. The determinants of intra-industrial trade (IIT), i.e. exports

and imports of products of the same industry, have also been an object of interest, following the increasing importance of this type of trade between CEEC and EU countries.

Gravity models are usually adopted when modelling the integration process between the CEEC and EU, namely in the assessment of the impact of the enlargement on trade potential. These models are simple specifications that take the form of a linear regression where the dependent variable, in this case bilateral trade flows, is explained by a set of independent factors. Examples of these are country size, factor endowments and transport costs, and other aspects, such as the existence of similar cultures, common borders, different consumer preferences, trade barriers or trade agreements. One advantage of these models is that reliable data is usually available.

Most of these studies conclude that, in spite of the great expansion in the EU-CEEC trade relations, the volume of trade will continue to increase due to the expansion of real incomes and to the progress in market reforms (see, for example, Fontagné *et al.* (1999), Boeri and Brücker (2000), and Aussilloux and Pajot (2001)). Nevertheless, most analyses suggest that this tendency will not equally affect all countries.

Both theoretical and empirical analyses emphasise the role of geographical proximity in the intensification of trade relations between the EU and the CEEC, along with historical and cultural factors. In fact, countries like Germany, Austria, Finland and Italy are responsible for two thirds of the EU trade with the CEEC, while the Czech Republic, Hungary and Poland represent about two thirds of the Eastern trade with the EU. On the other hand, some studies (Fontagné *et al.* (1999), and Aussilloux and Pajot (2001)) conclude that, in 1997, countries like Germany and Austria have reached a trade volume with the CEEC that may be considered above the *normal*. Yet, the trade dynamics of these countries has been sustained afterwards.

More recently, general equilibrium models have also been applied (see Egger (2001), Egger and Pfaffermayr (2001), or Lejour *et al.* (2001)). Egger (2001) stresses the importance of adopting a dynamic perspective in the analysis of European integration. Using a general equilibrium model, the author tries to isolate the impact of growth divergence upon bilateral trade and investment, and identifies a positive impact on both exports and FDI. Lejour *et al.* (2001) explore the economic implications of enlargement, concluding that some industrial sectors will suffer a decline, both in the CEEC and in the EU.

Much less research has been performed to assess regional effects and effects upon specific industrial sectors. Some studies (for instance, European Parliament (1999)) suggest that, although

overall positive effects are to be expected from the enlargement process, regional and sectoral unbalances within the EU may also occur.

There are significant differences on trade intensities among regions. It is therefore important to analyse the effects at the regional level. However, due to problems related with data availability at the regional level, existing studies concentrate on some regions on the EU-CEEC borders. The analyses performed by Boeri and Brücker (2000), and Weise *et al.* (2001), indicate that the trade intensity of German regions located in the border with the CEEC doubles the one of other regions.²

Moreover, in recent years, the relative weight of IIT flows and of *Outward Processing Trade* (OPT)³ seem to be stronger among regions with territorial contiguity, indicating also that the ILD is influenced by production cost differentials and low transport costs. Palme (1999) refers that Austrian regions situated closer to Eastern urban centres are better positioned to enjoy potential economies of scale and hence to register significant production growth.

The regional effects of enlargement on trade are related to the specialisation pattern of each region, as well as to the nature of *competition/cooperation* between Eastern and Western firms. It is therefore predictable that the future impact will be stronger in the current EU-CEEC border areas. Either these regions will benefit the most, or they will be the ones suffering the greatest losses, depending on the nature of industrial transformations.

Costs and benefits of the enlargement may also be different at the sectoral level. According to Bachtler *et al.* (1999), Western firms specialised on the production of labour-intensive goods (i.e. textiles, footwear and leather goods) and of capital-intensive goods with low sophistication levels (i.e. primary chemicals, printing, plastics and rubber products) may experience difficulties in a scenario of higher Eastern competition. Consequently, EU countries and regions which are potentially more affected by the enlargement may be the ones with higher dependencies, not only on agriculture, but also on low labour-intensive industrial processes. Regions specialised in chemistry products with low sophistication and in assembly industrial units might also be affected. Furthermore, Lejour *et al.* (2001) conclude that the enlargement will negatively affect the energy-intensive products in the CEEC and the textiles in the Southern EU countries.

² However, even among frontier regions there are considerable asymmetries. For instance, Saxony and Bavaria neighbouring Czech republic exhibit trade intensities with the CEEC of around 20.2% and 8.9%, respectively.

³ *Outward Processing Trade* was a particular form of subcontracting which existed until mid nineties. It was characterised by the fact that the leader firm supplied the subcontracted firm intermediary goods for processing. These were then forwarded to the firm trading the final output.

A sector of particular concern is agriculture. Enlargement will probably affect the primary sector in both the EU and the CEEC. Weise *et al.* (2001) refer that, as the CEEC become part of the Common Agricultural Policy (CAP), gains are expected to overcome the losses. In fact, Eastern countries may benefit from an easier access to Western markets, from technology improvements induced by FDI, and from the privatisation of farms and the introduction of other land reforms.

On the other hand, EU members may benefit from the possibility of exporting to a larger market with lower barriers, especially in the case of CEEC' vicinity. Nevertheless, as the CEEC production is mainly labour-intensive (Cochrane, 2001), and as Eastern countries' prices are significantly lower than Western ones, there are possible negative impacts on present EU members. This is especially important to the Southern countries producing labour-intensive agricultural products. As a result, Con (2001) highlights the necessity of a future PAC reform.

Models of revealed comparative advantages analyse countries' international specialisation on the basis of production cost differences. Hence, in a free trade regime the pattern of comparative advantages should reflect the structure of relative prices in autarky. According to the neo-classical theory of international trade, inspired by the Heckscher-Ohlin-Samuelson model, trade patterns are explained by differences in factor endowments. Therefore, if the EU and the CEEC have different factor endowments, these differences should have an impact on their trade patterns, as countries should specialise on those products that use intensively the relatively more abundant production factors.

In order to identify trade specialisation patterns, different indicators are used. Trade revealed comparative advantages are mostly measured using the indicators suggested by Balassa, and by Grubel and Lloyd.⁴ A different type of index, developed with the objective of normalising the trade structure, is referred in Freudenberg and Lemoine (1999) as *Contribution to the Trade Balance*. These authors use this indicator with data aggregated following the United Nations' Broad Economic Categories (BEC) and conclude that the CEEC have comparative advantages in primary (upstream production) and in consumption goods (downstream production), but comparative disadvantages in intermediate and capital goods. They also identify reciprocal trade of intermediate products as the most dynamic part of CEEC-EU commercial relations. Primary and intermediate goods had a

⁴ The authors focus on the fact that the higher the weight of inter-industry trade, the higher the explanatory power of *comparative advantages*. In this case, differences in country size or factor endowments are determinants of trade patterns. On the other hand, the higher the weight of intra-industry trade, the better imperfect competition explains international trade.

positive impact upon the trade balance, whereas capital and consumption goods registered a negative contribution.

Within this framework, several studies stress the existence of considerable differences on factor endowments in the EU and in the CEEC (see, *inter alia*, European Commission (1994), Dobrinski and Landesmann (1996), and Landesmann (1995, 1996)). Most analyses conclude that the CEEC are specialised in labour-intensive industries, as well as in resource and energy-intensive sectors. On the other hand, they reveal comparative disadvantages in capital, R&D and human capital-intensive industries, where the EU registers important advantages. Furthermore, studies have stressed that there has been an increased diversification of most CEEC' exports towards engineering products (Lemoine (1998)).

Though most trade between the EU and the applicant countries is based on comparative advantages, recent studies uncovered structural changes in the nature of trade, the most unexpected being the rapid increase in IIT. In fact, IIT is usually observed between countries that are similar in terms of income levels, economic structures and size, and geographically proximate. On the contrary, IIT between the EU and applicant countries results mainly from the reorganisation and fragmentation of production processes.⁵

According to Kaminski (2001), the pattern of trade between the EU and the CEEC has evolved during the last decade as a consequence of the 'European Agreements', which reinforced incentives for EU firms to locate production units of the same supply chain in different CEEC, or to outsource other partners. Widgrén (2001) finds that IIT tends to be stronger between neighbouring countries, a result that is consistent with the usual outcomes of gravitational analyses.⁶

The traditional and more used methodology to measure IIT was developed by Grubel and Lloyd (1975)⁷. One important problem of the index suggested by the authors, and of other similar indicators, is related with the level of sectoral and geographical disaggregation (see Fontagné and Freudenberg (1997)). Another limitation is the fact that the indices are not informative in relation to the factors that determine this type of trade.

⁵This issue is analysed in detail in section 3.

⁶This also happens with FDI flows, suggesting that geographical proximity and IIT are positively related and confirming the link between IIT and FDI.

⁷Grubel and Lloyd's index is defined as one minus the ratio of the absolute difference between exports and imports of a given sector and the sum of total imports and exports of the same sector.

Empirical assessments of IIT determinants⁸ suggest that the increasing importance of IIT in the EU-CEEC trade is influenced by factors such as economies of scale, labour intensity of production, product differentiation (Aturupane *et al.* (1997)), economic growth, export performance (Hoekman and Djankov (1996)) and the international segmentation of production processes (Kaminski (2001)).

Some IIT determinants, such as product differentiation, have generated further theoretical developments that try to connect the nature of productive processes of different industries with countries' trade specialisation patterns. For Lassudrie-Duchêne *et al.* (1986) horizontal specialisation should be distinguished from vertical specialisation. The former is defined as the exchange of similar goods that are differentiated by characteristics other than quality and is driven by scale economies and imperfect competition⁹. The latter comprises the exchange of similar goods of different quality and is determined by differences in endowments.

Abd-El-Rahman (1986) developed a methodology that distinguishes between horizontal and vertical specialisation. Using bilateral trade flows, he refined the definition of intra-industry trade at the product level. The author disregarded the concept of IIT, rather adopting the term "two-way trade" either for horizontally or vertically differentiated products. According to Abd-El-Rahman, the concept of product is related to its technical characteristics, which may be captured using disaggregated data. Similarity depends on the product unit value, assuming that differences in prices reflect differences in quality. With this methodology three types of trade may be distinguished: two-way trade in similar products; two-way trade in vertically differentiated products and one-way trade (weak overlap).

Fontagné and Freudenberg (1997) argue that the distinction between varieties and qualities alters the theoretical framework. In fact, the economic distance¹⁰ between countries is still the basis for specialisation of industries, along with comparative advantages. However, economic distance is also the basis for specialisation in different quality ranges. Accordingly, distinct countries trade vertically differentiated products, and similar countries trade horizontally differentiated products.¹¹ In this context, the comparative advantage determinants are compatible with IIT in vertical differentiated products, therefore explaining the evolution of EU-CEEC trade patterns.

⁸Researchers typically estimate an econometric model (usually a logistic model), considering an index of IIT as the dependent variable, determined by a set of explanatory variables.

⁹Krugman (1994), among others, has contributed to the development of new trade theories, stressing the importance of scale economies and imperfect competition.

¹⁰Such as differences in factor endowments, technology levels, etc..

¹¹The approach based on horizontal differentiation, results from the synthesis of Helpman and Krugman (1985). The authors use the concept of "integrated equilibrium" and combine different approaches like the Heckscher-Ohlin model and monopolistic competition.

Freudenberg and Lemoine (1999) find that most IIT between the EU and the CEEC is vertical in nature, and that the CEEC are positioned in quality segments different from those of the EU (even the Southern EU members). In their study, CEEC are generally specialised in middle and down market goods (see also Fontagné *et al.* (1999)).

Aturupane *et al.* (1997) analyse the determinants of IIT patterns between the EU and the CEEC, disaggregating trade flows horizontally and vertically. The results show that eighty to ninety percent of total IIT, and twenty five to forty percent of total EU-CEEC trade is vertical in nature. The authors find a statistically significant positive relationship between vertical IIT and product differentiation, economies of scale, labour intensity of production and FDI. Their analysis suggests that horizontal IIT is positively related to FDI flows, industry concentration and product differentiation, and negatively associated with scale economies and production 's labour intensity.

Given the substantial differences in the values of exported and imported goods, the increasing weight of IIT in the CEEC-EU trade does not result from the equalisation of the traded goods' factorial contents. Thus, the relative decline in inter-industrial trade has coincided with an increasing specialisation in down-market products and in low price market sectors in the CEEC. Boeri and Brücker (2000) consider, therefore, that a scenario of specialisation in processes that are human capital-intensive and labour-intensive may be identified, respectively, in the EU and in the CEEC.

As a consequence, in the Southern EU members, most public debate on the EU enlargement is concerned with fears of delocalisation of industries from these countries to the CEEC¹², which have lower labour costs and where a sharp expansion of domestic markets may be observed. This could be a problem when vertical IIT occurs, as a result of the reorganisation of production processes, given the important implications on FDI and on firms' location.

Widgrén (2001) refers some factors that may determine firms' location and justifies these concerns on the part of Southern members. Two critical issues are the following:

1. Concentration of demand is related to concentration of production. Since the CEEC are similar to Southern European members in terms of income and demand, it would be interesting to analyse whether concentration of production can create competitiveness problems.

¹² See Emerson and Gros (1998), for further details concerning potential effects on Portugal.

2. Comparative advantages have an important influence in the location of firms. In this case, the EU countries with comparative advantages in labour-intensive industries and in resource-intensive sectors may have problems. It is therefore important to identify the sectors in which the CEEC have already generated some kind of competitive advantages.

Helpman and Krugman (1985) refer that when trade liberalisation is accompanied by IIT, adjustment costs are expected to be smaller than with inter-industry trade. This happens because the increase of specialisation implies the abandonment of all industries with comparative disadvantages, and the unemployment of resources or their displacement to a limited number of export-oriented industries.

When analysing the effects of enlargement on trade, it is important to consider the consequences of foreign exchange rate stability. Past experiences may shed some light on this issue. Studies by Artus and Ricoeur-Nicolăi (1999), and by Bénassy-Quéré and Lahrèche-Révil (1999), conclude that Southern countries have benefited from the stabilisation of their currencies. An equivalent advantage from exchange rate stabilisation can be expected in the CEEC, given their similarity with Southern countries in terms of income and economic structures.

In spite of the empirical and theoretical controversy, most studies conclude that exchange rate stability benefits both international trade and FDI. Guérin and Lahrèche-Révil (2001) refer that due to the instability of exchange rates, FDI and trade flows may decrease, as export earnings and the costs of imported inputs are difficult to quantify. McKenzie (1999) finds no clear-cut evidence of a negative relationship between exchange rate volatility and the volume of international trade. However, he suggests the existence of a relationship between exchange rate volatility and FDI.

The distinction between horizontal and vertical IIT may also be important when analysing the effects of foreign exchange rates' stability on trade (Guérin and Lahrèche-Révil (2001)). In fact, when products involved in horizontal IIT have the same or similar prices, any exchange rate volatility must be absorbed by firms' profits and not by prices. On the other hand, with vertical IIT price differences are higher and changes in the exchange rate do not have to be reflected on profits.

It is important to assess the transformations that have already occurred in terms of volume, structure and nature of EU-CEEC trade relationships in bilateral terms. Consequently, an adequate level of data disaggregation, as well as an accurate methodology, has to be used in the examination of trade flows. The main objectives are to analyse the challenges faced by the EU's and the CEEC' industry that result from the enlargement and the subsequent adoption of a common currency, by identifying the

potential areas of conflicting specialisation between the candidate countries and the EU members and the complementarities generated by the fragmentation of production processes.

3. Foreign Direct Investment

Since the beginning of the transition process, the economic authorities in the CEEC have realized the importance of attracting FDI as a major factor for improving the growth potential in countries with almost absent financial markets and commercial banking. First, because of the urgent need for strategic restructuring of firms in these countries. Most CEEC presented obsolete equipment and production methods, and needed an urgent improvement in efficiency in order to compete in the international markets. Foreign firms may provide the necessary know-how and the financial means for industrial restructuring, access to new external markets, and also more efficient corporate governance. In fact, Barrell and Pain (1999) find evidence of higher performance in foreign owned firms. Kaminski (2001) refers that, for example, foreign-owned firms account for around forty percent of Poland's exports and eighty percent of Hungary's exports of manufactures to the EU. Second, because foreign investors are expected to generate positive externalities through a know-how and technology transfer to domestic firms. These two effects could have a significant positive impact on production and on employment.

Some authors, however, alert for the possibility of a third negative effect, if competition from foreign firms induces lower production levels in domestic firms and possible higher average production costs. Contrary to previous findings, Konings (2000), employing firm level panel data to study the net effect of the above factors for three CEEC (Bulgaria, Poland and Romania), finds the first effect only in Poland (perhaps due to time lags) and that the third, negative, effect seems to dominate the second.

By the early nineties, FDI flows to the CEEC were still at very low levels. The turning year was 1995, and since then FDI growth has been significant and continuous, especially in countries like the Czech Republic, Hungary and Poland, three of the most developed economies, which have received around two thirds of the FDI in the group (EBRD, 1999). According to IMF data (IMF, 1999), in 1998 the flows of FDI to the CEEC were ten times their size in 1990. However, in per capita terms, CEEC' values are still much lower than the EU's, with the Czech Republic and Hungary as the only two countries showing comparable figures to those of Western European economies.

The EU is, by far, the main source of FDI in the CEEC, followed by the United States. In general, more than three quarters of the capital flows entering the CEEC come from FDI by firms in the EU member states. German firms, in particular, have traditionally been the main contributors to these flows.

It is important to note that geography plays an important role in the destination of FDI flows from each EU country. The highest concentration of FDI occurs in those countries which are closer to the EU borders: Poland, Hungary and the Czech Republic. It should be stressed that these are also the countries that have been more successful in reforming, deregulating and opening their economies. Nevertheless, even taking these factors into account, geography appears to matter. German firms focus mainly on the Central European nations, Scandinavian countries tend to invest in the nations of the Baltic sea area, Italy seems more interested in the Balkans, and Austria in its neighbours. There are also some differences in the type of firms investing in the CEEC. While the Germans and the French tend to present large-scale deals by large firms, the Italians invest mainly through small and medium-size firms.

An analysis of the structure of FDI in the CEEC reveals that, as a whole, investments are relatively diversified, covering different economic sectors, with an emphasis on technology-intensive areas, such as the car and electrical industries or communications, activities with stable domestic markets, such as agri-foods, and in infrastructures, where examples are the electricity, gas and water sectors. In global terms, the manufacturing sector attracts around two thirds of the funds, far ahead of the retail and wholesale trade, the financial sector, agriculture and mining.

However, the analysis of each country in particular suggests that in some of them (Bulgaria, Latvia, Slovakia and Slovenia) FDI tends to concentrate in a few different sectors, reflecting in some cases diverse privatisation strategies. Furthermore, the distribution of FDI by the different sectors may change according to the country's transition stage. Bellak (1998) argues that at an early stage FDI is directed at existing firms, and later at growing and new industries.

A vast literature has dealt with the identification of FDI determinants. In theoretical terms it is useful to distinguish between horizontal and vertical FDI (see, for instance, Braconier and Ekholm, 2001). Horizontal FDI is a substitute for trade, as the decision to invest abroad seeks to eliminate trade costs associated with exports. Vertical FDI, on the other hand, aims at minimizing production costs by taking advantage of price differences in production factors between countries. Large external markets, high trade costs and large factor cost differences may therefore induce FDI flows.

The traditional theory that tries to explain the geography of FDI and provides a framework to identify its main determinants was developed by Dunning (1977, 1981), and is known in the literature as the 'OLI framework' - OLI standing for Ownership, Location and Internalisation. Producers are supposed to compare ownership, location and internalisation advantages with the costs of locating a production centre abroad and, whenever the former outweighs the latter, FDI rather than exports takes place.

Ownership advantages in relation to local rivals are related to aspects such as a patent, a trade secret or reputation. Location advantages can be due to trade barriers, transport costs, customer access or low factor prices. Internalisation advantages are related to information asymmetries that favour the opening of a production site in a host country rather than servicing that market via licensing, such as the existence of highly skilled workers with a good knowledge of the firm's technological characteristics and secrets.

The disadvantages that have to be weighted against the OLI advantages are the costs involved with the location of production abroad, and include information costs on local tax procedures and regulations, risk of expropriation, foreign exchange rate risk, and other costs related with the placing of personnel abroad whenever such procedure is necessary.

This theory has explanatory power in some scenarios and supplies the tools for the analysis of multinational companies, but it may not explain all the characteristics of current FDI flows, namely those of bilateral horizontal FDI that takes place between developed countries (see among others Di Mauro, 1999).

A more recent body of literature, commonly referred to as the 'New theory of FDI' (see, for instance European Commission, 1996) has focused mainly on refined concepts of ownership and location in the context of general equilibrium trade models. The work of Helpman (1984), Markusen (1984), and Helpman and Krugman (1985) relates the decision of producing abroad to observed differences in relative endowments of production factors across countries. Such framework is useful for the explanation of vertical FDI, i.e. the location of different stages of production in different locations, following relative advantages in factor costs. However, like the former theory, it may not explain flows of horizontal FDI between similar countries.

These aspects are taken into account in the work of Brainard (1993), and Markusen and Venables (1998), according to which the key elements to consider are plant and firm level economies of scale, and tariff and transport costs. Following this approach, multinational production activities are not determined by differences in factor endowments between countries, but by a trade-off between

proximity and concentration advantages. In cases where production is characterised by firm level economies of scale, advantages related to proximity to consumer markets dominate. Concentration in one location is preferred in cases where plant level economies of scale are present. This type of analysis allows for the existence of both vertical and horizontal FDI, as it takes into account two of the critical determinants for investing abroad: market and efficiency seeking motives. Brainard (1997) uses 1989 data on trade flows and multinationals' affiliates sales to examine the proximity-concentration hypothesis, and finds out that affiliate production is directly related to transport costs and foreign trade barriers, and inversely related to foreign investment barriers and plant level scale economies.

Empirical studies of FDI have adopted different approaches. Some analyses are based on standard or modified versions of the neo-classical model, according to which capital should leave areas where it is relatively abundant in search of higher returns in locations of relative scarcity. One example may be found in the work of Zegrebs (1998), who demonstrates the inadequacy of the standard neo-classical model to explain FDI flows to developing countries. In fact, many analyses report that a substantial part of FDI flows, especially horizontal FDI, takes place between countries with similar economic structures (see for instance Markusen and Venables (1998), and Brainard (1997)).

Locational models are based on the theories of international trade and industrial organisation, and also on the chaos theory, whose foundations belong to the fields of physics and mathematics (Resmini, 2000). Spatial agglomeration of firms used to be explained on the basis of the OLI analysis. More recent approaches adopt a dynamic framework, where centripetal and centrifugal forces are confronted. The presence of positive externalities works to concentrate firms, but the competition generated by this type of agglomeration may also work in the opposite direction. The dominance of centripetal or centrifugal forces depends on the existence of plant level or of firm level economies of scale, respectively (again, see Markusen and Venables (1998), and Brainard (1997)).

Gravity models are usually employed to analyse trade, but have also been used in empirical studies of FDI.¹³ Such specification may be used to identify both flows of vertical FDI, which are determined by efficiency seeking motives, and horizontal FDI, driven by market seeking goals. Di Mauro (1999) investigates the determinants of FDI using data on FDI flows to seven developed host countries. She concludes in favour of the 'New theory of FDI', as FDI flows appear to be mainly horizontal and dominated by market seeking objectives. Developing the gravity approach to uncover FDI determinants at the sectoral level, Resmini (2000) finds that in the CEEC, and concerning

¹³ Examples of this utilisation may be found in the work of Brenton (1996), Eaton and Tamura (1996) or Brenton and Di Mauro (1999), among others.

manufacturing activities, horizontal FDI dominates vertical FDI. The consolidation of the restructuring and opening processes appear to be the main determinants of FDI in science based and in capital-intensive sectors. In traditional sectors, wage differentials are the key issue, being the resulting FDI in these activities of a vertical nature. Buch *et al.* (2001) use the gravity approach to investigate the existence of FDI diversion from the EU periphery to the CEEC. The gravity model is employed to derive a benchmark for expected FDI flows and stocks, which are then compared with actual data. The hypothesis of diversion is rejected.

Using a macro general equilibrium model, with a panel data set of eighteen market- and eleven transition-economies, Bevan and Estrin (2000) find out that FDI is mainly determined by labour costs, market size, gravity factors and country risk, with the latter, in turn, being influenced by the private sector share, industrial development, government balance, reserves and corruption. These FDI flows seem to have been directly affected by the different pace in the negotiations for accession and, with a lag, in the country's credit rating, promoting further FDI flows to first wave countries, in a virtuous cycle. Conversely, this may have negative effects on the other CEEC. In fact, Baldwin *et al.* (1997) claim that, for these countries, the main advantage of joining the EU is increased investment, due to lower domestic risk and higher FDI flows.

It seems reasonable to assume that, as the integration process evolves, FDI flows will increase, since foreign investors will feel more secure, due for instance to the future abolition of foreign exchange rate uncertainty, as well as to lower institutional and political risks, and will demand lower risk premia. Previous integration experiences have shown a major inflow of FDI to new member countries, at least for a transitional period - Spain and Portugal are good examples.

It is however more uncertain what the consequences may be for the present EU countries, or even to third countries. There may be, for example, a reduction in the investment potential of some EU members, either due to FDI diversion to the CEEC or to an interest rate increase caused by additional capital demand in the EU.¹⁴

Another possible consequence for EU firms would be a demand shift towards CEEC exports, although empirical evidence suggests the predominance of market over export-oriented investments (Freudenberg and Lemoine, 1999). Almost half of the FDI from the EU is directed to non-tradable sectors such as public utilities and communication, financial intermediation and other services (see

¹⁴ Bartolini and Symansky (1995), for example, present estimates of a half percentage point increase.

Boeri and Brücker , 2000). Only in the textiles and clothing sectors do labour costs seem to influence the reallocation of labour-intensive production.

A further important aspect that should to be also taken into account when analysing the enlargement's effects on FDI is the net impact upon employment. In fact, low wages in the CEEC may have a negative influence on EU employment, either through import competition or as result of the transfer of some firms' production sites to these countries.

4. International Fragmentation of Production and Trade Flows

Growing economic globalisation and the subsequent need for competitiveness improvement among firms has originated a progressive division in production processes that lead to an increase on trade of intermediary goods. In fact, trade contributes to the segmentation of production, as goods are designed, produced and assembled in different locations.

Subcontracting is a special form of entrepreneurial alliance, under which subcontractors may focus on the production procedures while the leader firm is responsible for design, marketing and financing issues. Subcontracting and FDI have been responsible, although not in equal terms, for the consolidation of the division of production processes. A firm's option between these two forms of internationalisation depends heavily on the level of risk of the target market. Under economic and political instability, if investments are not significantly high, subcontracting is preferable, as FDI should be considered a riskier option.

The effects upon international trade will be different according to entrepreneurs' preferences for subcontracting or FDI. Andreff and Bensebaa (2000) state that FDI leads to the development of intra-firm trade, in which the substitution or complementary nature of investment determines the possibility of trade creation. On the other hand, subcontracting involves intermediary and/or final goods flows, leading to trade among independent firms.

The consideration of these organisational aspects of trade in the analysis of international specialisation allows for a better understanding of its pattern and determinants. Gereffi (1999) concludes that some technological upgrading has been occurring essentially in products and activities inside global supply chains. Therefore, the study of trade flows should take into account the importance of the different types of industrial networks, especially the ones involving subcontracting activities.

However, these issues are a source of additional complexity in the analysis of trade determinants. These forms of associated trade, which Radosevic (1999) defines as *non-equity production networks*, have not been considered in the theories of factor endowments, or in transactions costs approaches (related to the internalisation theory of Rugman and Caves). The absence of a unified theory in the literature that deals with global industrial supply networks, has led to the use of international trade and multinationalisation theories in empirical studies.

The emergence of new production and trade patterns, and their relation to the international fragmentation process of production, has promoted the development of theoretical models that aim at combining both features. Deardorff (1998) shows that the segmentation of production processes and their reallocation to a different country may induce comparative advantages for certain goods. Likewise, Jones and Kierzkowski (1997) consider that, due to international fragmentation, a labour-abundant country that is not competitive in the production of a given final product may become specialised in the production of labour-intensive segments included in that product. Consequently, there have been significant changes in the countries' comparative advantage patterns that need to be properly analysed. For an accurate understanding of these changes, it is important to adopt methodologies that use highly disaggregated data.

Subcontracting comprises products' and factors' exchange. In fact, trade flows take place when the subcontracted tasks are completed, representing a flow that associates exports and imports. On the other hand, flows of production factors also exist as know-how (for instance, design and training given by the contractor), and technology transfers may occur. These may have similar effects to those of FDI flows, promoting productive delocalisation.

According to Kaminski and Smarzynska (2001), ILD has been influenced by a worldwide expansion of production and distribution networks, following the technological progress and the improvement on transports and communications. Subcontracting is a part of the international segmentation of production and, therefore, its determinants depend on the factor and technological content of the goods involved. Production is located in low labour cost countries whenever transport costs do not jeopardize the strategy. Thus, firms located in increasing labour cost countries have been able to recover part of their competitiveness, especially on labour-intensive sectors, by means of subcontracting. Nevertheless, Gereffi (1999) argues that, although production costs have been the main determinant of subcontracting, exchange rate variability, trade policies and historical and

cultural factors may also affect the location of activities and the dimension of the subcontracting networks.

The intensity and content of trade flows between the CEEC and the EU have been influenced by subcontracting, which has benefited from cost differentials in labour-intensive production segments, as well as from the economic opening of Eastern economies. Eichengreen and Kohl (1998) claim that, although at the initial phase of the transition process subcontracting between Western and Eastern firms has taken place mainly in sectors such as textile and clothing, metallic products and machinery, more recently FDI flows have been replacing subcontracting in these sectors. The development of subcontracting between Western and Eastern firms has allowed higher competitiveness and flexibility to adjust to market conditions in the EU countries, due to a decline in production costs (especially wages).

Lemoine (1998) refers that industrial exports of subcontracting firms in the CEEC represented around twenty per cent of their global exports. However, trade created by subcontracting activities has been decreasing, especially in the more developed countries, thus suggesting that the internationalisation of production, which is mainly based on low wages, is temporary. On this respect, Radosevic (1999), disregards some negative impacts considering that the CEEC have been following a pattern of international integration which is different from that adopted by the Asian countries. In fact, he stresses that not only did the CEEC register technological upgrading in the nineties, but also the nature of comparative advantages in the two groups of countries is quite different.

Assessments of the impact of subcontracting activities in the CEEC reveal the existence of both positive and negative aspects. For example, Szalavets (1997) concludes that this kind of cooperation with foreign firms has increased the productivity of Hungarian firms, as they benefited from their foreign partners' transfers of technology and equipment. However, following an initial increase in productivity, the productive and technological integration dynamics did not continue, probably as a result of persisting structural barriers.

A particular form of subcontracting, OPT, was common in EU-CEEC trade relations in the nineties and remained so until the complete removal of trade barriers. OPT did not involve the payment of taxes and this encouraged subcontracting activities. Naujoks and Schmidt (1994) consider that this kind of trade creation was highly industry-specific. The existence of low unit value products exchanged within this regime of trade was mainly driven by labour costs differentials. Furthermore,

subcontracted firms presented, in general, low levels of technology (Eichengreen and Kohl (1998)). On the other hand, Pellegrin (1999) considers that OPT represented an opportunity to industrial restructuring in the CEEC, and defended that there was no evidence of destruction of export capacity in subcontracting firms, even after the increase on wage levels and the subsequent disappearance of OPT activities.

5. Concluding Remarks

The CEEC' integration in the EU will promote a broad market liberalisation and a higher level of economic and monetary stability. The new competitive environment will reinforce the role of the market as a mechanism of economic adjustment and of efficient resource allocation. As a consequence, the process of industrial and entrepreneurial restructuring, and the sectoral and geographical reorientation of trade patterns of the countries involved will be reinforced.

In such process, the dynamics of trade flows and of foreign investment, along with the strengthening of other forms of entrepreneurial cooperation, are the most visible channels of economic and technological integration of the two European areas. However, the assessments developed so far suggest that economic benefits have not been evenly distributed at the geographical and the sectoral levels. Hence, the enlargement entails, from the onset, different risks for the several agents involved.

In what relates to trade relationships, profound changes in terms of intensity, composition and nature of flows have been taking place. Theories of economic integration suggest that, in a context of significant differences in countries' factor endowments (both in terms of quality and quantity), the liberalisation of trade and factor movements may contribute to the maintenance of structural asymmetries and of an uneven distribution of benefits and costs. Therefore, it is of major importance for the stability of the integration process, to identify such risks and to take previous action by means of appropriate policy measures.

Most researchers recognise that the enlargement will reinforce CEEC' process of economic transition, thus providing the conditions for the enhancement of the area's attractiveness for FDI flows. Positive effects to the CEEC are expected, as transfers of technology and new methods of management will stimulate an improvement in competitiveness and in the access to international markets. It is not certain, however, that integration in the EU is a crucial determinant in the locational strategies of multinational companies. Consequently, the process of consolidation of CEEC' structural reforms has to be assured.

It has been recognised that CEEC' technological progress and economic openness has contributed to a new ILD, via the implementation of production and distribution networks involving Eastern and Western European firms. These networks have contributed to a stronger integration of Eastern firms in the world economy, in spite of the fact that some forms of entrepreneurial alliance have not generate the upgrade or the technological autonomy of these firms. In the context of the enlargement there is a potential risk of generalization of such non-equity forms of industrial cooperation, therefore contributing to an asymmetric integration of Europe.

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