Anna Soci
[Dept. of Economics, University of Bologna]

FDI: the current state of play

November 2002

Keywords: F210, F150
JEL classification: Foreign Direct Investment, Industrial Location, European Integration

Abstract: Economic theory has not been delving extensively and systematically into the strictly related phenomena of Foreign Direct Investment (FDI) and Multinational Enterprise (MNE) until the 1980s.[1] Two distinct circumstances have been favouring this recent renewed interest: a big surge in the former and a new space for the latter in the mainstream economic theory. FDI – the main way through which MNEs act – has been growing recently at an impressive rate (more than world trade), and that this growth has had the puzzling feature of concerning particularly the industrialised countries, which have been reciprocally engaged in such capital movements. The emergence of a new body of trade and location theory made it possible to enhance the understanding of this phenomenon.

The overall theme is on the frontier of the research in international trade and applied industrial economics, and it is complex and unsettled. The subject of this paper is just to fix up ideas about some selected topics. Section I briefly reviews the general theoretical setting from the appearance of the OLI paradigm in the late '70s to what has been evolving through the subsequent two decades. Section II surveys the main effects of FDI on the home and the host countries respectively. Section III focuses on European economic geography with the interest in the effects of European economic integration on MNEs' activity in the form of FDI. Some concluding remarks close the paper.

(*) This paper was presented at the 2002 EAEPE (European Association for Evolutionary Political Economy) Conference in Aix-en-Provence, and a shorter version of it was presented at the 2002 EEFS (European Economics and Finance Society) Conference in Crete. The author wishes to thank the participants at the Conferences for their helpful comments. The paper is also part of the research project "Infrastructure, competitiveness and governance" financed by the Italian Ministry of Scientific Research, which is gratefully acknowledged. The usual disclaimers apply.

[1] As far as MNEs are concerned: "My informal estimate is that the stock of literature…appearing since 1982 is roughly as large as that published between the birth of Christ and 1982" [Caves (1996), p. IX]. Hirsch speaks of his paper as "a contribution to the emerging theory of the multinational firm" [Hirsch (1976), p. 258]. Vernon (1994) explicitly attributes this feature to the structural theoretical inability of neoclassical economics to deal with such a concept of the firm and to all the "imperfections" which accompany it.

I. The evolution of the theory

The conceptual framework used until very recently was the one proposed by Dunning,[2] which is generally referred to as the "OLI paradigm", the acronym for Ownership, Location, Internalisation. Three conditions have to be fulfilled in order for a firm to become a multinational: the ownership (O) advantages must be such as to make it profitable for the firm to relocate abroad its own production (or at least part of it); there must be some localisation (L) advantage, typically linked to the host country's specific characteristics; it must be more convenient the firm to manage its advantages internally (I) rather than trade them through the market.

The ownership advantages are mainly nested in the so-called proprietary "intangible" assets or knowledge-capital assets (such as firm-specific technical knowledge or human capital, particular properties like trade marks and other characteristics able to differentiate the product, brand reputation included, or simply the firm's ability to innovate frequently) which "take on the quality of public goods, that is their marginal usage cost is zero or minimal……and, although their *origin* may be partly determined by the industry or country characteristics of enterprises, they can be used anywhere" [Dunning (1977), p. 401), italics in original]. In other words, they can be spread over more than one plant, thus generating the so-called firm-economies of scale.[3] The ownership advantages must exist in order to offset the transaction costs incurred by the firm in expanding abroad, typically those related to learning "how to do things" in foreign countries (*i.e.*, foreign culture and legal system, often foreign language). The location advantages can originate from barriers to trade or from greater proximity to final markets, and they can also be country-specific, such as those related to the availability of inputs at cheaper prices. Thirdly, there must be an incentive to keep under the same "head" (the internalisation advantage) the control of the geographically dispersed production instead of resorting to trade-arrangements like licensing, franchising and some others in the same category. In order to give rise to MNEs, ownership, location, and internalisation advantages obviously must be such as to render foreign production more profitable than trade.

The "OLI paradigm" appeared to be a very useful framework for gathering together different features of firms' opportunities to become multinationals, and it has helped in the

---

[2] Mainly Dunning (1977), and, *inter alia*, Dunning (1981).

[3] Or economies of multi-plant production, or multi-plant economies of scale.

empirical assessment of the phenomenon.[4] Like all taxonomies nevertheless, it turns out to be consistent with more than one behavioural model.[5] A more solid theoretical assessment soon became urgent.

From the theoretical point of view, the traditional trade theory was certainly not the right place to deal with firms facing such a complex decision problem as to become multinationals. As Helpman and Krugman point out: "In the perfectly competitive, constant return world of traditional theory there are no visible firms and thus no way to discuss issues hinging on the scope of activities carried out within firms. Again, in reality much international trade consists of intrafirms transactions rather than arms' length dealings between unrelated parties, and multinational firms are a prominent part of the international landscape".[6]

In the early 80s a "new" trade theory emerged mainly to account for two pieces of strong empirical evidence: nearly half the world's trade consists of trade between industrial countries that are fairly similar in their relative factor endowment, and there exists a substantial[7] amount of intra-industry trade, *i.e.* two-way trade in the differentiated goods of the same industry, which are very likely to have similar factor intensity. These facts barely (if at all) conformed the conventional theory, which was explaining trade *entirely* by differences among countries.

The new trade theory of the 1980s allowed for (static) internal economies of scale due to increasing returns, and consequent imperfect competition as a market structure (mainly Cournot oligopoly and monopolistic competition).[8] In such a framework the endogenous setting up of firms as multinationals can be theoretically investigated [Helpman - Krugman (1985), Ch. 12 and 13)] even though "the relationship between increasing returns, intra-firm trade and direct foreign investment is more indirect" [Helpman - Krugman (1985), p. 4)]

In fact, this is a particularly complex topic, which probably needs a multidisciplinary approach (business economics, operative industrial organisation, economic geography, probably also a little bit of social-anthropology in so far as the culture of the firm is concerned) and certainly cannot be satisfactorily treated within the neo-classical perspective alone, which is still very prominent in the new trade theory.

---

4 See Caves (1996) for a detailed assessment of the empirical research based on the OLI framework.

5 For a critical overview of the OLI paradigm, see for instance Graham (1996), pp.186-191.

6 Helpman - Krugman (1985), p. 3. However, Markusen (1995), (1998) will raise this same critique to the "new trade theory". See *fn*. 27 below.

7 The intra-industry trade is estimated as roughly as one third of world trade.

8 See – as a *summa* of the new trade theory – Helpman - Krugman (1985), where the originally developed theoretical setting is clearly defined in Ch. 2.

In 1984, two models – very similar and yet different at the same time – appeared, destined to become the origins of two strands of research, which eventually partly joined together. The first one [Helpman (1984)] was subsequently enlarged and incorporated in Helpman – Krugman (1985), with upstream activities (headquarter services or intermediate goods) highly specific to downstream activity, all being subject to economies of scale. In this kind of situation it is likely that an integrated firm will arise in order to avoid bilateral monopolies considered to be a source of various inefficiencies. The firm is either a single-product one, in the case where its highly specialised inputs such as management and product-specific R&D are in a location which is geographically separate from the serviced plants, or it has production facilities in more than one country in the case of the intermediates, becoming vertically integrated. A sort of implicit two-step decision process is at work: increasing returns give firms incentives to integrate, thus becoming multinationals, and cost considerations suggest to them where to locate.[9] Here the true novelty is given by the explicit modelling of increasing returns, whilst location follows the traditional theories. In this setting, which is still in harmony with the Heckscher/Ohlin context insofar as different factor costs given by differences in endowment across countries are concerned, intra-industry trade can take place, but there is no room for trade between similar, equally developed, countries (where factor-prices should be equal).

The second model [Markusen (1984)] bears more on Dunning's original insight and related industrial organisation literature,[10] and pushes further the implications given by the presence of "intangibles", using explicitly the concept of economies of multi-plant operation: management or R&D – the same services invoked by Helpman's model – work here as a joint input giving a single two-plant firm a cost efficiency over two single-plant firms.[11] In order to avoid any kind of Heckscher/Ohlin effect[12] the countries under consideration are *equal* in every respect, above all their factor endowment. Exclusively because of multi-plant economies of scale, the multinational enterprise sets up production facilities in both countries,

---

[9] "This feature brings about the emergence of multinational corporations as a response to tendencies of factor rewards to differ across countries. Here the emphasis is on one source of pressure on relative factor rewards: differences in relative factor endowment". Helpman-Krugman (1985), p. 228.

[10] "…the general equilibrium literature on factor movements is of little use and a theory of the firm approach may be more useful". *Ibid.,* p. 206.

[11] "By "economies of multi-plant operation" we will mean technical or pecuniary advantages possessed by a single owner of two or more production facilities over an industry in which there are independent owners of the same production facilities". *Ibid.,* p. 205-206.

[12] "The model should not rely on factor movements or factor price differences insofar as the MNE literature stresses that the MNE often provides for much of its needs from local factor markets". *Ibid.*, p. 206.

so becoming a *horizontally* integrated firm: plants in different locations (countries) produce the same product.

Alongside the proper new trade theory and by the hand of one of its fathers, another close but slightly less orthodox strand of research has come into the picture and has evolved through time into what is now called the "new economic geography".[13] In this broad and highly fertile approach - which goes well beyond the issue under consideration here[14] - the main focus is on industry-localisation. Picking up the Marshallian tradition of external economies, Hirschman's idea of backward and forward linkages, Myrdal's (and Kaldor's) suggestion of circular (and cumulative) causation, and letting these pieces of theories interact in models of monopolistic competition of the Dixit-Stiglitz type with increasing returns,[15] location choices become endogenous variables. In particular, they appear to be very sensitive to some key variables, transport-costs above all, with which they have a non-monotonic relationship. We will return to transport costs very soon.

Still on the new economic geography approach,[16] multiple equilibria are generally present: in fact, many outcomes are possible depending on the specific assumptions of the models and on the values of the parameters as well. Complete polarisation of industry in an (industrial)-core-(agricultural)-periphery shaped world, multiple clusters (*i.e.* agglomerations of firms in narrowly defined sectors of activity and geographically scattered), and dispersion of firms can occur as well. Broadly speaking, *intra-industry* trade and *inter-industry* trade are expected when there is, respectively, industry-dispersion (at sector-level) and, on the contrary, industry-concentration. The mobility of factors of production (both labour and capital, *i.e.* firms) in response to a changing context contributes to endogenising the pattern of location, which can mutate through time. Thus so far the main body of the literature.

Nevertheless, many important and non-trivial corollaries can be added, each of them representing a strand of fertile ongoing research. The likelihood of any change (and its pace as well) in the landscape of the industrial pattern of an area depends *inter alia* on the initial conditions and on the evolution of the process up to then: the *history matters* and the *path-dependence* issues[17] – with the possible and unpleasant consequence of lock-in-type situations

---

[13] The obvious starting reference is Krugman (1991b).

[14] See for instance, the most recent outcomes in Fujita-Krugman-Venables (1999). For a new direction of research, see Krugman (1996).

[15] See Krugman (1991c).

[16] For a survey of the new economic geography, see Ottaviano-Puga (1998).

[17] The usual basic references are Arthur (1988), (1989) and David (1985). See also Krugman (1991a).

– start to be thought of as essential ingredients of the story. Thus, institutions can have a prominent role in framing the economic environment, and they cease to be just in the background.

The changing trend of industrial location is in turn highly responsible for the convergent (or divergent) pattern across areas (states, regions), which is today one of the main concerns with regard to European integration, and to the world development process in general. The standard measures of convergence - mostly related to the rate of growth of aggregate production – can be no longer a good indicator of similarity, in so far as they might be hiding high concentration of different industries in different areas, with clustering of unemployment (on the hypothesis that different industries require different types of labour and on the evidence for Europe that labour is quite immobile) following the clustering of firms. This concern leads directly to the income distribution issue facing an integration process: income disparities across the regions of the EU are wide, and there is some evidence of a rise in the degree of inequalities between European regions over the past decade.[18]

These topics are not yet covered consistently in the main literature, and the overall theoretical assessment lags far behind a full comprehension of the many forces at work; the empirical evidence is still spotty and not even consistent within itself. Nevertheless, these issues are starting to be accepted and seen as important themes in relation to how complex systems evolve, even though economic theory generally does not like, and is reluctant to accept, multiple results, which would make the organisation of economic activity quite unpredictable.

Let us go back to the parting of the new economic geography from the more traditional new trade theory but still keep our main focus on multinational enterprises. Two aspects are worth stressing.

For firms that move geographically in order to maximise profits, the choice of location is a strategic variable and makes space a priority. Notwithstanding this new perspective, these firms are still integrated production units producing one product in one location, and this unique production facility represents a theoretical setting not so suitable for studying the emergence of an MNE, which is by definition a multi-plant firm [Markusen (1995), p. 169 and Markusen (1998), p. 11]. In fact, the increasing returns here are nested at the plant level, thus implying cost efficiency of centralised production, a feature that leads to geographical

[18] See, for instance, Puga (1999).

concentration instead of multi-location dispersion. Moreover, there seems to be an inherent contradiction between the existence of imperfect competition and market power on the one side, and the absence of multinational enterprises, which develop just in that type of market structure, on the other.[19]

The second noticeable feature relates to the new and striking role of transport costs, which in the traditional theory did nothing except reduce slightly the gains from trade, whereas now they play a substantial role in the allocation of economic activity.

Transport costs were already present at least in Horstmann-Markusen (1987), where they contributed substantially to the outcome in as much as branch-plant production depended, *inter alia*, on their existence. More precisely, in the above contribution a horizontal MNE arises in equilibrium "if firm specific and export costs are large relative to plant scale economies" [Horstmann-Markusen (1987), p. 110]. In other words, transport costs represent here, in a world of "equal" countries, the logical correspondence of factor endowment in a world of "different countries": the potentiality of multi-plant economies of scale here (the plant economies of scale, there) give firms incentives to integrate, thus becoming multinationals, and transport or export cost considerations here (factor costs, there), suggest to them where to locate.

The prominent role in the new economic geography approach rendered transport costs a very important variable unavoidable from then onward, despite of its likely ambiguous effect. In fact, besides the theoretical non-monotonicity of the relation between transport costs and industrial concentration referred to above, they could affect MNEs' activity in an opposite way depending on whether firm-integration was vertical or horizontal: an increase in transport costs induces horizontal integration but works against the vertical one, in a *ceteris paribus* situation.

The emphasis on the strong linkages between industrial location and the geographical characteristics of the market (both size and closeness), which is one of the main features of the new economic geography approach, suggested also a "new" way of looking at that MNEs' activity consisting of displacing production abroad instead of exporting. At the beginning of the 1990s some key elements – common to the most cited papers[20] throughout – consolidated

---

[19] This is a well-known point of argument coming back to Hymer's contribution, which even precedes Dunning's insight as far as the ownership element is concerned. See Cohen *et al*. (eds.), (1979), Introduction, Dunning himself (1977), p. 397, and more recently Cantwell (2000), p. 13.

[20] Brainard (1993a) and (1993b), Horstmann-Markusen (1992), Markusen-Venables (1996), Markusen-Venables (1995). The chronological order in which the last two have been published does not respect the

the theoretical background in what we could call an "eclectic" model: some firm-level activity with the "jointness" feature, plant-level economies of scale, transport (or tariff, or export) costs. The type of product, whether differentiated or homogeneous, does not seem to have any dramatic importance.[21] The interplay of these elements allows the market structure to be determined endogenously as the outcome of the plant location decision by firms. Thus, in this generation of models, horizontal MNEs arise when – broadly speaking – the cost structure is larger than plant-level scale economies, and when the countries are similar, in size and relative factor endowment, thus matching the main elements of the empirical evidence. In Brainard (1993a) and (1993b), for instance, countries are similar in size and factor endowment, and firms' decision whether to export or to produce in the foreign countries is based upon a trade-off between the advantages of local concentration versus proximity to final markets, in what has become famous as the proximity-concentration hypothesis. Firms must balance the benefits of exploiting plant economies of scale with the costs of transport and trade; roughly speaking, the higher the latter and firm-economies of scale are relatively to plant-economies of scale, the more FDI will take place, serving horizontal MNEs. While Ekholm (1998) finds just *some* empirical support for the proximity-concentration trade-off hypothesis, [22] Brainard (1993b) finds *qualified* empirical support, and Brainard (1993c) adds further proof rejecting a pure factor proportions explanation of multinational activity.

In the theoretical setting recalled above, vertical MNEs, too, can arise, of course, even though the main theoretical interest (led by the need to be in tune with the empirical evidence) tends towards the horizontal type.

In Markusen-Venables (1995) and (1996), special attention is paid to the size of the countries: a dynamic simulation is performed, and the result is the emergence of multinationals (over national firms) as countries become more similar (in size, technology, and relative factor endowment) in what since has been called the "convergence" hypothesis. The intuition is, in one of the authors' words, that " the single-plant firms derive their advantage from the fact that their production is concentrated in the country in which sales are larger, factor costs are lower, and/or real factor productivity is higher. When the countries are quite different, the multinationals derive their disadvantage from having to locate costly

---

order in which they have been written. The last one is a refined and enlarged version of the pre-last one. See Markusen-Venables (1995), p. 3, *fn*. 2.

21 "..the rich results obtained below demonstrate that product differentiation is not required to produce such results." Markusen-Venables (1996), p. 188, fn. 3.

22 It should not be forgotten that Ekholm uses Swedish data while Brainard works on US data.

additional capacity in the small and/or costly market" [Markusen (1995), p. 180)]. This challenging hypothesis has found some empirical support in Ekholm [1998], and very recently also in Barrios *et al.*, (2001), that specifically aimed at verifying it.

In Markusen *et al.* (1996) the three models present in the literature – all having in common increasing returns to scale and imperfect competition – arise from a unique root, as special cases for some set of parameter values. The three models are: (i) a "new trade theory"-based one (a single-plant, national firm); (ii) one with a horizontal multinational which chooses between serving a foreign market by exports and by building a branch plant; and (iii) one with a vertical multinational. In this contribution and in Markusen (1998) – which overlaps as far as these aspects are concerned – the theoretical taxonomy gives us an answer (sometimes more, sometimes less convincing) as to how and when horizontal, vertical MNEs, and national firms prevail over each other, due to the interplay of transport costs, size of countries, firms' (and countries') factor intensity, firm-level and plant-level economies of scale [Markusen (1998), pp. 19-24]. Once again, transport costs turn out to be a crucial variable: more specifically, given firm and plant scale economies, the same transport costs regime has opposite effects depending on the difference or the similarity between countries. High transport costs support horizontal MNEs between countries which are similar (in size and factor endowment),[23] but they favour concentration the larger one country is than the other, for a given factor intensity. In fact, national firms with headquarters in the larger country do not have any incentive to become MNEs and to make a fixed-cost investment to serve a small market, while export costs would be tolerable even with high transport costs because there is not much output to be shipped to the small country. Nor is there any reason why vertical MNEs should arise, given the similarity in factor endowment and the high transport costs regime. On the other side, low transport costs mean that the country size ceases to be an advantage and depresses MNEs' activity, both horizontal and (with similar country-endowment) vertical.

This generation of eclectic models copes with the first two elements of the OLI paradigm: ownership and localisation. In fact, the "firm-specific" asset with the "jointness" characteristic, which gives rise to multi-plant economies of scale, involves many elements: *inter alia*, superior technological knowledge, organisational and managerial skills pertaining to the human capital of the firm, patents, trade marks or particular design that can render

[23] As in Brainard (1993a) and (1993b).

unique the product of the firm; all these constitute the so-called "intangibles", which are the essence of the ownership advantage. The technical component of the production facilities (the plant economies of scale), together with the physical characteristics of both home and host countries (size, factor endowment, proximity) and the policies as well (trade and transport costs), make it possible to debate about location. What is not yet covered in the "pure" economic literature is the internalisation issue: why should a firm behave as a self-sufficient unit instead of collaborating with foreign firms through various types of commercial agreements? That is to say, why do firms choose direct investment instead of licensing? With the noticeable exception of Ethier (1986) and Horstman-Markusen (1987), there are virtually no contributions which explicitly deal with this issue in the new upsurge in the theory of trade of the '80s:[24] internalisation is taken as a matter of course. The former includes in the model firm-specific assets such as research effort and product quality, while the second includes firm's reputation for quality; both papers basically found that direct investment prevails over licence when there is imperfect information in the product market. The numerous and varied kinds of information-asymmetries are concisely reviewed by Markusen [(1995), pp. 81-84] and more extensively by Caves [(1996), Ch. 7].

Unlike international trade literature, business and industrial organisation economics has plenty of studies on this specific aspect of multinational activity. The results are not clear-cut, given the many facets of the issue, but nevertheless they seem to agree on some basic facts: in general, licensing is preferred to direct investment when the size of the market does not allow entry at a sufficient scale, when firms lack experience of foreign markets, when the industry's technology is changing rapidly so that the rents to the intangible asset are short-lived. By contrast, direct investment is the chosen option when licensing is very costly to arrange because of the difficulty of defining the capability to be transferred or of enforcing the agreement, for instance in the new technologies sector.

It appears evident that this approach is more fruitful for studying the problem of internalisation, which undoubtedly has a strong connection with – if not dependence on – the way a firm is structured and organised. Even traditional trade theorists like Ethier, Markusen and Horstmann have dealt recently with the problem of internalisation. Ethier-Markusen (1996) treated the specific point of the possible dissipation of intellectual property: in order to

[24] "Internalisation is the only one of the three key elements not already incorporated into trade theory. [……] Internalisation is one of our critical "black boxes" always appealed but never explained". Ethier (1986), pp. 805-806.

prevent this, firms choose to transfer the knowledge capital internally. The theoretical setting combines elements typical of the "new trade theory" with features of the industrial organisation theory, specifically considering the firm's inability to enforce contracts. Moreover, it allows a complex interplay of location and internalisation aspects insofar as foreigners learn faster how to produce the goods when they are produced in their country rather than when they are imported. The results depend heavily on the parameters; nevertheless, the main suggestion is "that similarities in relative factor endowment may promote direct investment when account is taken of the desire to protect knowledge-based capital" [Ethier-Markusen (1996), p. 24].[25] More recently, Horstmann-Markusen (1996) investigated the costs of gathering information about new markets, setting up a model which predicts "that a contractual arrangement is more likely when markets are on average small and investment mistakes are very costly ….., and conversion from a contractual arrangement to owned sales operation can be achieved quickly" [Horstmann-Markusen (1996), p. 3]. These findings seem to be confirmed by empirical evidence from studies on survey data relating to Australian firms in East Asia and Japanese firms in Australia, which the authors quote.

As for the internalisation aspect, and still with few noticeable exceptions,[26] for a long time economic theory mentioned only the movement of capital – the FDI - leaving MNEs to the field of business economics on the silent assumption that MNEs and FDI are coincident concepts. On the contrary, even though they are the two sides of the same coin – the internationalisation of production – they are different sides, FDI being just one aspect of the MNEs' broader activity. Since there was no room in economic theory to explain MNEs' behaviour, and since FDI has been relatively moderate in size till very recently, the main scholarly interest was a simple overall assessment of their effect either on the home country - specifically on trade - or on the host country. Given that FDI used to go traditionally to countries with cheap factor-prices and large natural resources, i.e. underdeveloped countries in general, the host-country effect of FDI was something confined to the issues of development, and the main task remained one of assessing the relationship between FDI and trade. By the 1970s, however, the traditional pattern of capital flowing from "North" to "South" turned into a flow from "North" to "North", and MNEs started to be investigated as

[25] Ethier-Markusen (1996), p. 24. This article was previously an NBER WP dating to 1993, and it is very often quoted as such, for instance in Markusen (1995), which contains a simplified version of it.

[26] Hirsch (1976) and Horst's wide production on this theme, quoted by Caves (1996).

an important actor in trade theory, as we just sew. Thus, many new questions arose about the effects of their main activity – the FDI – on both the host and home countries.

In what follows we will just sketch the main directions of the literature, and the most robust results.

II. The effects of FDI: home-country effect

II.1 FDI and trade

The usual example of an early investigation of the relationship between FDI and trade, still in a general equilibrium framework of the standard Hecksher-Ohlin type, is Mundell's (1957) contribution. The policy questions, which Mundell thought his paper could address, were related to the effects of trade protection (for instance in North America in the late nineteenth century and in Britain in the twentieth) on factor movements. The well-known answers offered by him were "that an increase in trade impediments stimulates factor movements and that an increase in restrictions to factor movements stimulates trade" [Mundell (1957), p. 321].[27] Following this theoretical substitution effect, trade policies in favour of tariffs and export costs could be pursued in order to gain from the local production stimulated by these impediments to trade.

There are many studies that confirm the substitutability and stress the importance of tariffs in stimulating FDI, relating to both industrialised countries and underdeveloped ones.[28] The case of Europe, which experienced an upsurge in the inflows from outside even though the set of trade barriers against imports from the rest of the world had not changed, is commonly thought of as pertaining to another cause: the fact that the abolition of *internal* trade barriers gave rise to a very large market whose size was a major source of attraction for foreigner producers. We will come back to this aspect later on.

The Mundell substitutability result, however, is not shared by all the theoretical contributions to this topic. Markusen (1983), for instance, develops a model, which in a sense goes behind the Hecksher-Ohlin world insofar as it reaches the different factor endowment situation – which is the starting point there – as a result of trade in factors. Thus, beginning with equally endowed countries, factors move (because of differences in production

[27] Mundell however was well aware of the fact that his analysis "is remote from reality" and that "any policy considerations would have to take them into account" where *them* are the presence in the real world of a plurality of factors, goods and countries, the existence of monopolistic competition and differences in production functions, and the fact that his model is nonmonetary and static. Mundell (1957), p. 335.

technology, and various types of distortions), and this "factor mobility creates a factor proportions basis to reinforce the other basis for trade" [Markusen (1983), p. 355].

Notwithstanding the theoretical peculiarity of this model, one of its predictions – the complementary linkage between FDI and trade – soon proved to be supported by data.[29] In fact, between the traditional and the "new" trade theory, MNEs started to become an object of interest, probably representing one if not *the* main motive for the relative decline of the "old" theory as such a powerful theoretical setting, as we have recalled above. Already in the late 1970s it was explicitly admitted that international direct investment is not consistent with some of the more restrictive assumptions of the current theory, and that, moreover, it will not take place even relaxing the international factor mobility assumption or the constant return to scale one. "International direct investment takes place only in a world which admits revenue-producing factors which are firm specific on the one hand, and information, communication, and transaction costs, which increase with economic distance, on the other" [Hirsch (1976), p. 258-259].

If the tariff-jump argument – which was basically Mundell's argument – is always valid and provides a basis for FDI being a substitute for trade, the presence of MNEs well explains their complementary nature as well due, for instance, to increased trade in differentiated production, which calls for FDI in order to accompany market penetration. Thus, trade and FDI turn out to be probably both substitutes and complements, as they already appeared to be in Krugman (1983), which contains in a nutshell the main elements subsequently present in the literature, and where it is clearly stated and theoretically demonstrated that the relation depends on the kind of integration (horizontal or vertical). With a "product differentiation" model, a substitution-type relation arises: "..countries want to trade because they have acquired different technologies, taking the form of the knowledge of how to produce different products. They can trade this knowledge either directly, through technology transfer within multinational firms (or by licensing, except that we have ruled this out); or they can trade it indirectly, through trade in commodities embodying their special technological advantages. The choice of method depends on the costs: transport costs encourage direct technology transfer, costs of multinational operation promote trade. The product differentiation model suggests then an interpretation of multinational enterprises as vehicles for trade in information. Trade and multinational enterprise are substitutes just as trade and factor

---

[28] Reviewed in Caves (1996), pp. 34-36.

mobility are substitutes in the Heckscher-Ohlin model" [Krugman (1983), p. 64].[30] With a (particular) model of vertical integration (due to monopsony), "trade and multinational enterprise will be complements rather than substitutes" [*ibid.*].

Leaving aside the peculiarity of a specific theoretical model, once intermediate goods and different stages of production are explicitly taken into account, the negative relationship easily turns into a positive one. Vertical FDI will lead to increased exports if the foreign affiliates are solely engaged in assembly or sale of goods produced by their parent-firms. The same outcome would still be expected when the foreign affiliates' activity is mainly marketing-oriented or is concentrated in the retail sector just in order to increase their parents' exports. Moreover, some vertical integration is often present also in the horizontal FDI, in so far as foreign affiliates process semi-final goods imported from the home country in order to make them suitable for the foreign market.

The models in the new trade theory showed relatively little concern with the effects of FDI on the balance of trade, both because they aimed at investigating a wider set of different issues, like the market structure and the choices of locations, and because the intra-industry trade between similar countries leads in itself to fewer worries about pure trade-balance considerations. Nevertheless, the connections between FDI and trade are still around, coming out mainly as a by-product of the equilibrium solutions of theoretical models. For instance, Markusen-Venables (1996) reaches the conclusion of a negative relation between the two, showing that the prominent role of MNEs in converging areas would crowd out trade. Markusen-Venables (1995), however, predict a non-monotonic relationship: a convergence in country characteristics at first leads to an increase and then to a reduction in the volume of trade as MNEs begin to displace national firms. Brainard (1993a) too suggests that the effect would be negative, even though she is primarily concerned with the relationship between exports and foreign affiliates sales rather than FDI.

On the purely empirical side, the structural lack of coherent data on multinational activity for the majority of countries mostly resulted in studies concerning some selected areas, particularly USA and Sweden. In any case, the debate over the trade effects of investment abroad has no simple resolution. Caves (1996) accurately reviews the main

---

[29] Still quoted in Caves (1996), pp. 30-34.

[30] Transportation costs and tariffs are the costs of producing at home, while the costs of overseas production may be due to "unfamiliarity with language, customs or legal system, or difficulty of controlling at a distance" Krugman (1983), p. 63.

contributions, and he reaches the conclusion that "..exports and horizontal foreign investment *should* be substitutes for one another" [p. 36, italics added]. Hufbauer *et al.* (1994) find country-dependent results: in Japan and Sweden FDI tends to promote imports more than exports, while in the United States it seems to increase exports more than imports. Moreover, he surveys in a Table ten major studies that have examined the relationship between outward FDI flows and home country exports. These studies agree – with some exceptions – about the existence of a positive relation and thus support the complementary thesis.[31] The same conclusions are offered by analogous and only marginally overlapping Table reported by Falzoni (1993).[32] More recently, Blomstrom-Kokko (1994) for Sweden, Thomsen – Nicolaides (1991) and Morikawa (1998) for Japan (Japan's share of world FDI stock jumped from 4% in the 1980 to 12% by 1990 even though the quota of its overseas production was only 6% at the beginning of the 1990s), Wilamoski – Tinkler (1999) for USA/Mexico, all confirmed the positive relationship both between FDI and exports and FDI and current-account balance. Graham (1994) reports a study of his and Bergsten for similar results for overall US foreign activity, and of Pearce for a general study on a big sample of the world's largest industrial MNEs,[33] concluding that "the international evidence thus largely supports the conclusion that DIA (*i.e.*, FDI) and exports are complementary rather than substitutes" [Graham (1994), p. 46]. Nevertheless, some doubts as far as Sweden is concerned are recently raised by Braunerhjelm (1998); a negative relationship is found in Barrell– Pain (1997) for UK, Germany, France and Sweden,[34] and the same result is confirmed more strongly in a later contribution of theirs [Barrell – Pain (1999)]. With new panel data studies, there is "evidence of a statistically significant negative relationship between net outward investment and export performance for many European countries and the US….. In contrast, there was evidence of a positive long-term relationship between outward investment and exports for Japan" [*ibid.*, p. 38]. As a possible explanation for the sharp difference in results with many early studies, like

[31] The studies are: Reddaway *et al.* (1967), Hufbauer and Adler (1968), Bergsten *et al*. (1978), Swedenborg (1979) and (1982), Lipsey and Weiss (1981) and (1984), Blomstrom *et al*. (1988), and Bergsten and Graham (1994). Exceptions are Svensson (1993) which uses firm-level data for Swedish MNEs, and Braunerhjelm (1991), still on Sweden. The third exception is the 1982 first edition of Caves' book, whose conclusions I think can be reasonably replaced by those of the last edition. All quotations come from Hufbauer *et al.* (1994).

[32] The studies are: Lipsey and Weiss (1981) and (1984), Blomstrom *et al.* (1988), Buiges and Jacquemin (1992), Blomstrom and Lipsey (1989), Kravis and Lipsey (1992), all quoted in Falzoni (1993).

[33] These quotations are Bergsten-Graham (1994), and Pearce (1990). See directly Graham (1994).

[34] The authors quote a study by Svensson (1966) on Sweden and a study by Blake and Pain (1994) on UK for analogous results.

those quoted above, the authors suggest – rightly in our opinion – that the effects of FDI on trade depend on the maturity and accumulation of investments over time.

An interesting result coming from a slightly different perspective is given in Petri (1994): focussing on large world regions, he shows that investment and trade intensities[35] across various pairs of them are positively associated, and that, moreover, the highest intensities are generally intra-regional. A disproportionate share of countries' FDI and trade is conducted intra-regionally, and although FDI and trade distributions are significantly correlated, investment is less bound to an investor's home region than international trade is [Petri (1994), pp. 20-23)]. Distance – which often means culture and perhaps politics – creates obstacles to inter-bloc trade and facilitates FDI in order to overcome it.

Thus, it appears clear once more that the linkages between FDI and trade are extremely complex, and we completely agree with those who argue that: "Yet we have a poor understanding of the ways in which direct foreign investment is just a simple substitute for trade, and the ways in which it is something quite different [Markusen-Venables (1999), p. 336].

The sign of the correlation closely depends at least on the typology of the specific industrial sector and on the nature of the investment as well. Resource seeking and trade facilitating investments tend to be complementary to trade and to increase it: while the latter is such by its own nature, the former acts in a more complex way, causing imports in the short run, and export only in the long-run after having hopefully improved the competitiveness of the country. The market-oriented investments can have a mixed role with a final outcome difficult to forecast: they can displace exports, thus tending to be a substitute for trade, but they can also create trade through new exports from the parent or other national firms to the affiliates or to other foreign firms in goods complementary to those supplied by the affiliates. Last but not least, the so called "strategic" investment (those performed in order to modify rivalry oligopolistic relations) can have dubious effects as well, depending on whether or not the affiliates would assume an "autonomous" role in the horizontal integration process. If they would become differentiated production units, exports to the home country will be created (as well as imports from other affiliates in other countries).

[35] Here intensity is measured by a gravity index.

Very few studies are present in the economic literature that aim at testing these firm-decisions. Recently, Thomsen-Nicolaides (1991) – reviewing questionnaire - based surveys[36] for a miscellaneous of countries – and Mutinelli-Piscitello (1997) with the same methodology for Italy *vis-à-vis* the CEECs, they both find that market seeking is the answer in the majority of cases.

II.2 FDI and labour and capital markets

A very common worry about FDI is its impact on factor markets. Still the assessment of these effects is a difficult task.[37]

As far as the labour market is concerned, the main question is: does FDI export jobs? The question is complex, being not just related to job destruction, but also to the *lack* of job creation.[38] In the category of job destruction, the negative effect on employment can result from a reduction in domestic output or it can originate from the existence of rigidities (poor mobility or excessive segmentation) in the labour market itself, which come into play when there is a shift in the composition of output. The first of the two cases emerges depending on when, in what way, and how far FDI and trade are substitutes. As was evident from the discussion in the preceding section, there is no clear answer to this question. The second case is a more complicated one and it too does not have a unique answer. In fact, it requires that FDI and trade be complementary, and that the domestic sectors activated by the increase in the international production cannot react positively because of the presence of rigidities. Any mismatch can be expected in the future either to diminish, with the increase in education which should give more flexibility to the labour market, or to become even more acute, along with the increase in skill-specialisation. We will briefly come back to the "rigidity" (relative immobility of labour) later on.

---

[36] More precisely, Thomsen – Nicolaides (1991) report six different surveys.

[37] "There is still considerable divergence in views among economists about the employment effects of foreign direct investment [……]. It appears that we need more case studies of the actual investment experiences of various firms and industries in different countries before we can make substantial progress in better understanding the employment effects of foreign direct investment" [Baldwin (1995), p. 49].

[38] It is unavoidable the quotation from Graham – Krugman [(1995), p. 60]: "..we regard an emphasis on job creation or destruction as fundamentally mistaken". As a matter of fact, it is widely recognised that employment in the US is determined by supply, not demand, as the authors add further. Thus, "*the net impact of FDI on US employment is approximately zero*". [*Ibid*., p.62], italics in original.

In the lack-of-job-creation category, the impact on the labour market is likely to come through the effects of FDI on real domestic capital. What would entrepreneurs have done as an alternative to overseas production or investment? The job content of an FDI would have occurred in the source country instead of the receiving country, and more jobs could have perhaps been created in an upstream/downstream chain. This statement is true whether FDI takes the form of a green-field investment or of a merger or an acquisition, in so far as a unit of investment abroad displaces investment at home. This is a well known and controversial topic in the recent literature on capital movements, mainly due to a seminal quantitative study by Feldstein (1994), whose result is that "each dollar of outbound FDI reduces domestic investment by approximately one dollar" [Feldstein (1994), p. 16]. A similar conclusion was reached in a previous study by Stevens – Lipsey (1992), which analyses exclusively the financial side of this investment decision, finding that more investment in one location (for instance, abroad) is likely to raise the total debt of the firm or its debt/equity ratio, thus increasing its cost of financing and inducing the firm to reduce investment in another location (for instance, at home). A critical view, shared by several scholars is, for instance, that of Graham (1994) who questions the validity of approaches based on national accounting à-là-Feldstein, and of statements like the one that the outflow of direct investment reduces domestic savings needed to finance domestic investment, which is the implicit view in the Stevens-Lipsey contribution. He adds evidence of an opposite relationship for Canada[39] and, moreover and more interestingly, he puts the discussion into the general context of the economic geography approach: "to the extent that direct investment goes to new clusters it will be associated with growing activities and hence with increased domestic investment in these activities" [Graham (1994), p. 146].

As far as the quality and composition of the labour force is concerned, there is some evidence that changes are called for in countries where MNEs play a substantial role, as in Sweden for instance, where there appears to have been a shift in labour demand favouring white collar jobs at the expense of blue collar ones [Blomström – Kokko (1994)], even though this relationship has become weaker over time [Blomstrom – Fors – Lipsey (1997)]. Several other studies support this evidence, thus creating wider agreement about this effect of FDI on the labour market [Gunderson-Verma (1994), **p…**]. Still Blomstrom – Fors – Lipsey (1997) have another interesting result concerning the relationship between the employment of the

[39] Quoting a study by Rao-Lagault-Ahmad (1994).

MNE and the employment of its affiliates. While Swedish firms employ more labour at home when they produce more abroad, US firms do the exact opposite: larger foreign production is associated with smaller parent employment when the variable for foreign production is split into developed and developing countries. They attribute this result to the US firms giving the labour-intensive portion of their production to affiliates in low-wage countries because of the high price of unskilled labour in the US, whereas this does not happen in Sweden, whose foreign production is mainly directed towards high-income countries (USA and Europe). The result as far as the USA is concerned is consistent with that of Brainard – Riker (1997), who found that, on aggregate, substitution between labour employed by parents and affiliates abroad is low. A more recent contribution [Braconier – Ekholm (2001)] appears to challenge the above result for Sweden, though it is in line with the main argument: when Swedish MNEs data are used to analyse the expansion towards the CEEs (low-wages countries), the employment in the affiliates located in other European low-wage countries declines, and some effect spreads also to the home country.

Last but not least, there can be some political concern about the existence of a further and subtler effect of FDI on the labour market: changes in the way it is regulated and functions are likely to be implemented either to retrain the outbound and to foster the inbound flows.

II. The effects of FDI: host-country effect

The host-market effect, that is how the destination-countries' economies perform after FDI inflows, is the other main concern – coupled with the home-market effect – of the literature on the consequences of the FDI.

This is a wide topic mainly covered in the literature on Development Economics where the role of MNEs was initially investigated. As we have already recalled, the MNEs' activity across industrialised countries is a fairly recent phenomenon, while in the past decades the role of the MNEs has been prominent mainly vis-à-vis the underdeveloped countries, something that made the concern about the degree of exploitation of those economies one of the central issues of left-wing political and economic thought. Many studies examined the effects of foreign capital on the domestic rate of growth, and on the increased ability to export both through rising competition in the local market and via specific trade agreements. The relative economic success – sometimes remarkable, like in the case of the so-called Asian

Tigers – of several underdeveloped economies, and the spreading of MNEs activity over industrialised countries lightened the concern about exploitation, and by the 1980s the conventional wisdom was viewing FDI as a suitable means to enhance competitiveness and accelerate growth.[40] The tendency of governments to implement specific economic policies in order to favour FDI reached its zenith in terms of beneficial effects in the Irish case, which in turn provided further grounds to evaluate the effects of FDI. In Ireland a strategic and successful policy was effectively implemented, combining fiscal and financial incentives to firms with large regional investment in infrastructures, aiming to develop efficient export-led manufacturing and tradable services sectors, to increase the raise of new greenfield investment by foreign companies, and to form linkages between foreign and indigenous companies, with the target of creating industrial clusters in certain sub-sectors.[41] We will return to the cluster-issue in the next section.

From the theoretical point of view, the benefits of FDI to the host countries come from several different sources, all gathered together into two main categories: the transfer of technology and the externalities in the form of spillovers, that is, everything else that derives from FDI other than technology transfer [Lipsey (1991), pp. 363-365]; or, in a slightly different and perhaps more precise view, "productivity spillovers" and "market access spillovers" [Blomström – Kokko (1998), pp. 248]. In fact, the technology transfers in a proper sense cannot be other than "direct", that is, transfers to the affiliates for intermediary, capital goods, or specialised equipment to be used by them, R&D-generated knowledge, instruction programs with visits and exchange of personnel, and the like.[42] Nevertheless, once done, they must create spillovers to make the host country benefit from that, and it is commonly understood that the inflows of new technology and working practises from the affiliates create a significant *potential* for spillovers to local firms in the host country.

Still following Blomström – Kokko [(1998), pp. 248], "productivity spillovers" originate when (i) a local firm improves its productivity by copying some technology used by MNC affiliates operating in the local market; (ii) the entry of an affiliate leads to greater

---

[40] Suspects about these beneficial aspects are of course still present among economists, and some of us think that the liberalisation of FDI contributed to enhance too a perverse sort of competitiveness, that is to say the pervasive tendency among underdeveloped countries to compete by lowering social standards in order to maintain their vantage in the production costs. For this view, see for instance Kozul-Wright and Rowthorn (1998), p. 86.

[41] For a general assessment of the Irish experience, see, *inter alia*, Barry – Bradley (1997), Ruane – Görg (1999), Braunerhjelm *et al*., (2000), pp. 59 onward. For the specific aspect of the demonstration effect, see Barry – Görg – Strobl (2001).

competition in the host economy, so that local firms are forced to use existing technology and resources more efficiently; (iii) competition forces local firms to search for new, more efficient technology.[43] "Market access spillovers" occur when local firms become able to manage the complex aspects of internalisation (marketing, distribution and servicing) because of the presence of MNEs. This can happen because local firms are subcontractors or suppliers of the MNE, and learn how to do the job, or simply because they copy what an MNE is doing [*ibid*., pp.253-254].[44]

The circumstances thanks to which all these effects spill over are very numerous and almost impossible to classify. Thus, spillovers are obviously difficult to measure and studies specifically devoted to quantifying them are few.[45] The evidence is spotting: they exist, they seem to be of a substantial amount both within and between industries, but there is no strong evidence on their exact nature; they seem to be very different across countries and industries and highly dependent on local capabilities.[46] Again quoting from Blomström – Kokko (1998), let us just recall the most robust evidence: (I) backward linkages, that is an affiliate's relationship with suppliers, exist and are strengthening, while forward linkages – its contact with customers – are weaker but growing in importance; (II) support for spillovers from training exists and comes mainly from studies on developing countries, which is a plausible result, given their probable weaker educational system.

The results are, on the contrary, fairly ambiguous, for the "demonstration" and competition effects. As far as we know there are two different meanings of the word "demonstration" in the literature. The first indicates a situation where uncertainty about location pushes towards imitative behaviours of other firms' location decisions. Thus, a location becomes "good" and increases the incentives for additional firms to locate there, besides the efficiency of agglomeration. This interpretation of the "demonstration" process is related more to the agglomeration issue – to which we will come back in the next section –

---

42 For an evidence of these transfers, see for instance, Fors (1996).

43 There is substantial econometric evidence of a positive effect of MNEs' presence on total factor productivity of the local firms, in an intra-industry framework. For a discussion of productivity spillovers from FDI, see Blomström (1991).

44 Aitken-Hanson-Harrison (1994) – studying Mexico – provide statistical support for the role of foreign firms as "catalysts" for other exporters, as an evidence of "market-access spillovers". This study is one of the few which treats inter-industry spillovers. On the contrary, under the profile of intra-industry spillovers, and again for Mexico, Blomstrom (1989) finds that foreign investment did not speed up the transfer of any specific technology to Mexico, but the results indicate that the competitive pressure induced by the MNEs may be important.

45 Reviewed in Blomström-Kokko (1998).

46 See Blomström (1991).

and by consequence to the relationship among *foreign* firms.[47] The second interpretation of the "demonstration" effect relates, on the contrary, to the interaction between *foreign* and *local* firms, and indicates the circumstance of *local* firms adopting new technologies because the presence of MNEs has made them known and familiar.[48]

Unfortunately, it is very difficult to quantify it separately[49] from other joint effects, like the competition effect, which is another important source of spillovers coming from the change in the local market structure brought about by the entrance (and presence) of MNEs. Leaving aside the controversial aspect of the direction of causality between FDI and industrial concentration (chickens, eggs, and causality: which came first?), the entrance of MNEs to a market in the form of greenfield investment doubtless increases competition in the short run. The increased competition in one sector could make the local firms of this sector worse off, if they are not able to react positively, or better off, if they evolve and eventually adopt more efficient management and labour practices. At the same time the increased competition of that sector makes other sectors' firms better off through forward and backward linkages, which are the effects referred to under Section I. Both aspects are beneficial: the former effect is likely to reduce prices for customer firms, the latter will generate a new demand for local production, thus increasing the pace at which competing products and processes of domestic origin appear in the local market, or helping in developing proper local markets from the bottom where they do not yet exist.[50] Going back to Blomström – Kokko (1998), "…[MNCs]…initially add to the number of firms in the market. In the long run, MNCs may contribute to some increase in concentration, but efficiency may still benefit…" [p.265]. It must be added that most of the evidence refers to developed countries, and that as far as underdeveloped countries are concerned, "it is not possible to disregard the risk that MNC entry into developing countries replaces local production and forces local firms out of business, rather than forcing them to become more efficient" [*ibid*., p. 265].

---

[47] As far as we know the unique contribution which intends to split between the efficiency of the agglomeration effect and the demonstration effect is the recent Barry – Görg – Strobl (2001).

[48] The case-studies on this point are reviewed in Blomström-Kokko (1998), p. 261.

[49] "One reason is that pure demonstration effect often take place unconsciously: it is seldom documented how and when a firm first learns about a new technology or product that is subsequently adopted" [Blomström-Kokko (1998), p. 261].

[50] See Markuse-Venables (1999), for a theoretical model where the entry of MNEs in the downstream industry acts as a catalyst for local firms. Empirical evidence of the catalyst role of MNEs' activity can be found in Blomström-Wolff (1994) for Mexico, but the hypothesis is rejected by Haddad-Harrison (1993) for Morocco, using plant-level data.

Last but not least, an interesting point is whether the degree of ownership induces any difference in the degree of spillover. Recalling what was already stated before, a firm can choose between exports and some form of more direct participation in the foreign market, can then choose between FDI and licensing (or franchising or other marketing contracts, all pertaining to the category of arm's-length transactions), but can also choose – within an equity-participation – between a majority (of course including full ownership), or a minority partnership, that is, a joint venture. Majority-ownership encourages MNEs to transfer advanced technology in order to maximise profits, but deprives them of strategic local channels to better penetrate the host-country's market. Joint ventures can allow a better awareness of the social and business environment but induce MNEs to transfer only old technology in order to protect themselves from future local competition, thus contributing very little to local development. Strong evidence of a relationship between degree of ownership and "quality" of the spillover is provided for the Swedish case by Blomström–Zejan (1991), who also find that firms with brief experience of foreign production and highly diversified production are the most likely to choose minority ventures, thus giving this form of equity participation a minor role in transferring benefits (which are supposed to be more relevant if coming from well-established and sectorally grounded MNEs). Also for Greece [Dimelis-Louri (2001)], there is evidence of a relationship between the degree of ownership and the efficiency and productivity gains. On the contrary, Blomstrom-Sjoholm [1999] do not find, in their broad study on Indonesian firms, any substantial link between ownership and the degree of local spillover, which in this case is mainly due to the increase in the competitiveness of local firms. Country-specific characteristics – such as regulation for instance – could of course matter for this type of results, which would suggest a comparative approach across different institutional settings.

III. FDI and location

III.1 The European context

The prediction of Krugman's core-periphery model is a clear demarcation between an industrial and an agricultural zone, which fits nicely with the American context of industrial coastal belts and an agricultural South and Midwest. In Europe, however - a fragmented area very far from the American level of integration - borders still exist and borders matter,[51] even

[51] "…and the sheer nuisance presented by the existence of a border….[are] often enough to block the expansion of a successful industrial district beyond its national market" [Krugmanl–Venables (1996), p. 960]

though in an ambiguous way. In fact, on the one hand continuing institutional rigidities or cultural and linguistic barriers could contribute to keeping a country relatively "isolate" even within a process of integration, giving further substance to physical borders. On the other hand, the process of integration in itself could strengthen affinities, giving rise to a kind of neighbouring effect[52] where the re-organisation of economic activity produces a localisation pattern with domestic geographic units (regions, for instance) tied to nearby foreign geographic units. In fact, even though trade and non-trade barriers should disappear with the completion of the internal market program, there is some evidence that border effects extend to smaller units, thus suggesting further reasons for the predominance of local trade over "international" trade.[53] Since "borders" – both geographical and cultural – appear to matter, greater concentration in Europe could equally mean core-periphery-type outcomes *among* countries or groups of countries, *within* countries, and among regions formed by areas belonging to different countries as well, if affinities weigh more than boundaries.[54]

As a final consideration, a more spurious core-periphery landscape could come about just because the forces that trigger agglomeration are relatively powerful *in* some sectors and weak *across* sectors, thus giving rise to agglomeration of each of these sectors.

Europe differs from the US also from another and not trivial point of view: the shortage of (comparable) data. This simple fact has consequences on the choice of the level of aggregation, which in turn has consequences for the results: for instance, the measures of intra-industry trade (IIT) – which is strictly related to specialisation in the new trade/new economic geography theories[55] – change with the level of aggregation, and the higher the latter, the lower the revealed IIT. Another problem related to aggregation is that of the product categories in the international statistics. These categories are not strictly defined in terms of similarity of input requirements, and therefore would not properly measure, again,

---

[52] As it appears to exist in Europe, at least as far as unemployment is concerned: "Unemployment outcomes are so much more homogeneous across neighbours, than across regions in the same member State" [Overman–Puga (1999), p. 26]. On the relevance or irrelevance of borders, the same authors suggest: "…ongoing European integration may mean that national borders are becoming less important in determining regional outcomes. Geographical location may still matter however, though perhaps at levels below the nation state" [*ibidem*, p. 14].

[53] See Chen (2002) for a thorough study on this subject and for the reported literature.

[54] Still on unemployment in Europe: "These clusters do not conform to a standard core-periphery gradient. Instead high and low unemployment clusters have appeared in both the core and the periphery of the EU, often extending across national borders" [Overman – Puga (1999), p. 24].

[55] More precisely, high IIT means a low level of specialisation: IIT will be at the maximum if the propensities to trade are the same across products in the same industry. In the cross-country-region context, high IIT is an indicator of industrial dispersion.

the IIT.[56] The methodology of aggregation is responsible for some striking results common to both the USA and Europe, for instance the fact that some "new" industrial activities, often technology- and scale-intensive, are recorded within "old" statistical categories, thus producing biases in the specialisation measurement.[57]

Moreover, answers about the existence and the relevance of a phenomenon (industrial concentration or dispersion, in this case) can be credible or unreliable depending on the appropriateness of the variable chosen to represent it. This is a common shortcoming, but it is a particularly delicate task for Europe, given the generally poor quality and scarcity of data that force the choice of some variables rather than others. A typical example in this area is the wide use of trade data, readily available at a high level of disaggregation and comparable, instead of production data, whilst it is obvious that the latter is the right one for the evaluation of industrial specialisation and concentration.[58]

Even though the European reality differs from the American one, the US represent a natural - if not the only - benchmark to assess what is going on in Europe after Union has been completed. Since there is evidence [*inter alia*, Kim (1995), Ellison–Glaeser (1997)] of a non-random (*i.e.*, not determined by purely idiosyncratic factors) spatial distribution of industrial activities in the US, and since economic integration is widely reputed to be one of the protagonists of the play,[59] it is generally expected that the completion of European integration would lead to a re-organisation of the productive activity (and to a change in the European economic geography) in so far as it will change the incentives for agglomeration. The single currency and the reduced transaction costs should help firms in exploiting with greater efficiency some of the more intrinsic characteristics of industrial location, such as geography *strictu sensu* (for instance, closeness to transportation hubs) or better availability of endowment (for instance, proximity to research-labs). At the same time, integration should accelerate the process of industrial agglomeration *if* some profitability accrues to the firm through being close to other firms. Since the theory suggests this outcome as a likely one after

---

[56] This is what Gray calls "categorical aggregation": "..such observed intra-industry trade derives simply from the aggregation within a single trade category of goods which are quite different in terms of either input-mix or end-use" [Gray (1979), p. 87].

[57] The high-technology sectors, which are incidentally the most interesting under the profile of the new theories, are “buried in meaningless aggregates” [Krugman (1991b), p. 59]. On this point, see also Brülhart (2000).

[58] For a detailed discussion on this point, see Brülhart (1998a)

[59] The US itself is the outcome of a past process of integration, and the recent formation of NAFTA appears to have influenced the spatial organisation of production [see *inter alia*, Hanson (1998)].

the reduction in trade costs[60] following greater integration, and since there is evidence [Krugman (1991b)] that industrial concentration is greater (a less dispersed and more specialised industrial geography) in the USA than in Europe, agglomeration is expected to increase in the EU as well. Thus, many scholars turned to measuring its current presence in the member countries, and its change through time and across space.

III.2 The empirical evidence

The simple fact of whether foreign capital has indeed been increasingly attracted by the integration in Europe has been the first to be investigated. In fact, it is plausible - as Yannopoulos [1990], for instance, argues - that market expansion, creation of scale-economies, production efficiency and other characteristics of a customs union will promote greater innovative activity, larger R&D, more pervasive spill-overs, thus reinforcing the ownership advantages and giving stimulus to create additional direct investment. As a matter of fact, these kinds of agglomeration advantages (dynamic agglomeration economies) are reputed to be more and more important, while the easy access to inputs and to final markets are of diminishing importance.[61] We will briefly review the main recent results on these two strictly correlated but logically distinct themes, starting from the second one and returning later to the first.[62]

Yannopoulos [1990] gives an overview of the literature about the problem of the relationship between European integration and direct investment till the 1990s. The empirical debate in the late 1960s and early 1970s showed that the locational pattern of total US investment abroad changed significantly subsequent to the formation of the EC, and that the latter definitely had a strong influence on the former. Moreover, it appeared also sufficiently convincing that the process of economic integration had a definite influence on this change. The intra-EC investment too appeared to experience a change: some empirical studies - reviewed in the article - revealed that the formation of a European customs union coincided with a rise in the EC non-domestic production of European Community firms through an increase in the number of foreign subsidiaries of EC firms established in other countries of the

---

[60] Let us quote just one of the many places that enunciate this theoretical point: "..the combination of input-output linkages and imperfect competition generates forces for agglomeration of activity [that] are relatively more powerful at low trade costs" [Venables (1995), p. 299]. This statement does not contradict the one from Krugman -Venables (1990), p. 74, quoted above at p. 3.

[61] See Porter (1996), pp. 86-87 for a quick assessment of this point, and Porter's research in its entirety.

[62] We will not mention what is going on vis-à-vis the CEECs, mainly for space reasons.

Community. The conclusion of this first look at the relationship between the integration process and direct investment is that the latter is very likely to occur following the former, but its intensity and timing will depend on various factors, among which it would be relevant to check which kind of removal (of tariff or non-tariff barriers, respectively) is at work.

Another more recent overview of the same issue [Dunning (1997a) and (1997b)] asserts that the studies about the effect of the Internal Market Program on FDI all agreed about the fact that it was conditional upon the type of investment being considered, since they supported the relationship but they also did not deny the effect of other determinants. Thus, it is evident that the formation of the European Economic Community has stimulated MNEs' activity [Barrell-Pain (1997a), (1997b), (1999a), (1999b), Braunerhjelm *et al.*, (2000)], and that its enlargements appears to have attracted foreign capital either from inside or outside the EC [Yannopoulos (1992, p. 329)].

As far as the first theme is concerned - location and re-location of industry - a comparison of the studies on the "new" European geography" (if any) is not easy because the empirical evidence is still spotty and the results are very dependent on the measures (indices) and on the quality of data; nor are these supported, as we have seen, by well-defined theoretical outcomes that can help in discriminating among the empirical evidence.[63] It is worthwhile stressing that FDI disappear from the scene when industrial location is at issue, as if FDI would not be merely the way in which agglomeration decisions become effective at an international level. As a matter of fact, the tendency towards agglomeration in FDI has not received much attention, because the perspective has been mainly regional and national, instead of international. A notable exception is Braunerhjelm – Svensson (1996), who address specifically this problem and find a positive correlation between overseas operation of Swedish MNEs and the dimension of the industry in the host countries, where firms do not yet have any affiliate production. A subsequent contribution by the same authors [Braunerhjelm – Svensson (1998)] – where they also review the very few studies which tried to fill this gap in the literature – specifies that this pattern of agglomeration is limited to R&D intensive production, in line with the results of the literature on spill-overs

In the static picture, where FDI are behind the scenes, two topics are investigated in the empirical research: whether European countries have become more specialised in their manufacturing production, and whether industries have become more geographically

concentrated in Europe, following the American model. We will give general answers to these questions by extrapolating the results that enjoy the broadest consensus in the scholarly contributions, which are numerically scanty but use a variety of methods and data. None deny that perhaps it is time to pay greater attention to the details of these contributions, since many of us are convinced that a lot of more and more refined empirical work is necessary; nevertheless, here we prefer just to outline the main results in a very concise but updated review, in order to fix the key findings so far relating to the European context.[64]

The answers given by Amiti (1998) and (1999) to the two questions recalled above – using country- and industry-Gini indices based on production data for 27 manufacturing industries – are both positive even though the evidence is mixed. Specialisation in Europe increased, but only six countries out of ten became more specialised between 1968 and 1990, and one did not change its industrial profile. The level of geographical concentration increased over time for seventeen out of twenty-seven industries (thirty out of sixty-five in Amiti [1999]) while six of them (twelve, respectively) experienced a fall in concentration. Without entering into the details, the geographically concentrated industries are those subject to scale economies and that use a high proportion of intermediate inputs, thus "confirming" some of the new economic geography suggestions.[65] These results are consistent with the ones by Brülhart – Torstensson (1996), who use employment and trade data and who add some more evidence: concentration has occurred in central regions - with good market access - rather than in peripheral ones. There are also positive results about the existence of a non-monotonic relationship between intra-EU trade costs and intra-industry trade, but they are less clear-cut.

Brülhart (1998b) – drawing on both trade and production data – again finds that the degree of industrial specialisation among EU countries has increased in the 1980s, that industries characterised by strong internal economies of scale are localised at the EU core and have low IIT; that labour-intensive industries are found to be relatively dispersed over the whole of the EU, and that they have high IIT; and that according to employment data, high-tech industries in the EU are highly localised, but not along a centre-periphery gradient.

---

[63] On the contrary, very often in this literature the empirical findings are taken as a tool to discriminate between theories. See for instance Kim (1995) and Davis – Weinstein (1996) and (1999).

[64] See also Brulhart (1998a) and Overman *et al*. (2001), for a brief account of some of the papers mentioned here.

[65] With the caveats recalled above about the concepts of agglomeration, concentration, location, and the data-problem.

Moreover, the trend concerning these industries came to a halt, whilst there appears to be greater scope for inter-industry specialisation industries which are mainly sensitive to other locational determinants, such as factor costs.

The fact that there is a certain degree of localisation in high-tech sectors emerges also from Guerrieri–Manzocchi (1996), who find different – and persistent – specialisation patterns in the two science-based (bio-chemicals and computers) and the two scale-intensive sectors (motor vehicles and electric/electronic goods) across the four countries considered (France, United Kingdom, Italy and Germany), thus rejecting the hypothesis of structural convergence, *i.e.*, a broadly similar industrial landscape all over Europe. On a careful examination, this scenario could be confirmed also by a "traditional" study of convergence where the main finding is that both σ and β convergence show that "the income dispersion of outer peripheral regions decrease only after 1987; central regions show just an opposite pattern, that is income dispersion decreased until 1987 and then slowly increased." [Rombaldoni, 1998, p. 446]. This outcome could easily be read as the welfare counterpart of the halt in the specialisation process in high-tech industries (centrally located) and the rise of a specialisation process in labour-intensive industries (more peripherally located). However, this first wave of empirical studies does not claim to offer a consistent and comprehensive description of specialisation trends in the EU.

Subsequent studies confirm the lack of a clear scenario, and also admit that there are contrasting results when different data sets are used: for instance, Brülhart (2000) finds that trade data show rising IIT (greater locational dispersion) whilst production data suggest increasing concentration and agglomeration. Again in Brülhart (2000) it appears that there is no clear evidence of agglomeration of manufacturing activities in core EU countries (17 out of 32 industries are concentrated in peripheral rather than central countries), no evidence that market integration in the EU might stimulate a more clustered industrial geography, and no evidence as well that the size of plant-specific scale economies affect significantly the specialisation level of an industry. On scale economies, Henriksen *et al*. (2001) support the view that there are significant differences across industries and industrial clustering regarding the level at which economies of scale – both external and internal – are present. Their conclusion is that external economies of scale, regardless of the source, are considerably less prevalent than are internal economies arising from increasing returns at the level of the

national industry or firm. Thus, positive externalities in Europe appear to be limited in a geographical as well as technological sense.

This is a very interesting result that deserves a further investigation since it appears to contradict recent findings from a review aimed at seeing "whether this superficial impression is confirmed upon closer examination of the literature" [Hanson (2000), p.1]. The "superficial impression" is the existence of evidence in support of the economies of scale being an explanation for spatial agglomeration. After a careful examination of the main (non-European) literature in the light of the key estimation issues, Hanson's conclusion is that "the body of empirical results suggest that location-specific externalities exist and influence the spatial distribution of economic activity" [*ibidem*, p. 28].

Lastly, Midelfart-Knarvik *et al*. (2000) - in a large report prepared for the European Commission - provide many results. The most noteworthy of these are that many European countries had a significantly similar industrial structure in the 1970s, but that this trend was reversed starting in the early 1980s (a result consistent with Guerrieri-Manzocchi (1996)); that European industrial structure is diverging, showing that a concentration process is under way; that approximately one half of high-tech industries – which are relatively concentrated industries – are moving back towards spreading over more peripheral countries; that some unskilled labour-intensive industries experienced a relative contraction and a spatial concentration in peripheral low-wage economies (these two results are consistent with Brülhart–Torstensson (1996)); that services are still more dispersed than manufacturing.

Concluding remarks

This paper focused on FDI and MNEs, the two distinct sides of the same coin: the internationalisation of production. There as been a renewed interest on both, given the impressive upsurge of the former and the appearance of a new suitable theoretical setting for the latter. We discussed the main turning points in the evolution of the theory of trade and economic geography, which produced a model able to stylise the MNEs' endogenous formation and activity. We then looked at the main empirical results about FDI and trade, labour and capital market in the home country, and those about the specific effects of FDI on the host countries through spillovers. We turned subsequently to the assessment of the effects of the European economic integration process on MNEs' activity in the form of FDI, reviewing the main empirical studies.

The overall conclusion is that there are not clear-cut empirical results on the main issues related to FDI, even on the most traditional ones: there is strong empirical support for both substitutability and complementary nature of FDI and trade and there is no robust aggregate result on the relationship between FDI and the labour/capital markets; spillovers exist and seem to be of substantial amount, but very different across countries and industries. As far as industrial re-location is concerned, a precise understanding on what is going on in Europe is far from being available. It appears that agglomeration forces are at work in Europe, and have attracted FDI; industrial structure at country level seems divergent; concentration occurred in central regions more than in peripheral ones, high-tech industries are highly localised but not along a centre-periphery gradient, and an inversion in this tendency seems to arise. However, no doubts that much more work has to be done.

References

Amiti Mary (1998), New trade theories and industrial location in the EU: a survey of the evidence, Oxford Review of Economic Policy, vol. 14, no. 2, pp.45-53

Amiti Mary (1999), Specialisation patterns in Europe, Weltwirtschaftliches Archiv, vol. 135, no. 4, pp. 573-593 (formerly Centre for Economic Performance Discussion Paper no. 363, London School of Economics, Sept. 1997)

Aitken Brian – Hanson Gordon H. – Harrison Ann E. (1994), Spillovers, foreign investment and export behaviour, NBER WP no. 4967

Arthur Brian (1988), Self-reinforcing mechanisms in economics, in Anderson Philip W. – Arrow Kenneth J. – Pines David (eds.), The economy as an evolving complex system, Studies in the Science of complexity, Reading, Addison Wesley, pp. 9-27

Arthur Brian (1989), Competing technologies, increasing returns, and lock-in by historical events, Economic Journal, 99, pp. 116-131

Baldwin Robert E. (1995), The effect of trade and foreign direct investment on employment and relative wages, NBER, WP no. 5037

Barrell Ray – Pain Nigel (1997a), Foreign direct investment, technological change and economic growth within Europe, Economic Journal, vol. 107, p. 1770-1786

Barrell Ray – Pain Nigel (1997b), The growth of FDI in Europe, National Institute Economic Review, no. 160, pp. 63-75

Barrell Ray – Pain Nigel (1999a), Domestic institutions, agglomerations and foreign direct investment in Europe, European Economic Review, no. 43, pp. 925-934

Barrell Ray – Pain Nigel (1999b), The growth of FDI in Europe, in Ray Barrell – Nigel Pain (eds.), Innovation, investment, and the diffusion of technology in Europe, Cambridge University Press, Cambridge, pp. 19-44

Barry Frank – Bradley John (1997), FDI and trade: the Irish host-country experience, Economic Journal, vol. 107, pp. 1798-1811

Barrios Salvador – Görg Holger – Strobl Eric (2001), Multinational enterprises and new trade theory: evidence for the convergence hypothesis, CEPR WP no. 2827

Barry Frank – Görg Holger – Strobl Eric (2001), Foreign direct investment, agglomerations and demonstration effects: an empirical investigation, CEPR WP no. 2907

Blomström Magnus (1989), Foreign investment and spillovers, Routledge

Blomström Magnus (1991), Host country benefits of foreign direct investment, in Donald G., McFetridge Foreign investment, technology and economic growth, University of Calgary Press, Calgary, pp. 93-110

Blomström Magnus – Kokko Ari (1994), Home country effects of foreign direct investment: evidence from Sweden, in S. Globerman (ed.), Canadian-based multinationals, Calgary University Press, Calgary, pp. 341-364 (formerly NBER WP no. 4639, February 1994)

Blomström Magnus – Kokko Ari (1997), Regional integration and FDI, NBER WP no. 6019 (and also CEPR DP no. 1659, June 1997)

Blomström Magnus – Kokko Ari (1998), Multinational corporation and spillovers, Journal of Economic Surveys, vol. 12, no. 3, pp. 247-277

Blomström Magnus – Sjoholm Fredrik (1999), Technology transfer and spillovers: does local participation with multinationals matter?, European Economic Review, no. 43, pp. 915-923

Blomström Magnus – Wolff Edward N. (1994), Multinational corporation and productivity convergence in Mexico, in William J. Baumol – Richard R. Nelson – Edward N. Wolff

(eds.), Convergence of productivity: cross- national studies and historical evidence, Oxford University Press, pp. 263-284

Blomström Magnus – Zejan Mario (1991), Why do multinational firms seek out joint ventures? Journal of International Development, vol. 3, no.1, pp. 53-63

Brainard Lael S. (1993a), A simple theory of multinational corporations and trade with a trade-off between proximity and concentration, NBER WP no. 4269

Brainard Lael S. (1993b), An empirical assessment of the factor proportions explanation of multinational sales, NBER WP no. 4583

Brainard Lael S. (1997), An empirical assessment of the proximity-concentration trade-off between multinational sales and trade, American Economic Review, vol. 87, no.4, pp. 520-544 (formerly NBER WP no. 4580, 1993)

Braunerhjelm Pontus, Organization of the firm, foreign production and trade, in Pontus Braunerhjelm – Karolina Ekholm (eds.), The geography of multinational firms, Kluwer, 1998, pp. 77-97

Braunerhjelm Pontus – Faini Riccardo – Norman Victor D. – Ruane Frances – Seabright Paul (2000), Integration and the regions of Europe: how the right policies can prevent polarisation. CEPR, Monitoring European Integration no. 10

Braunerhjelm Pontus – Svensson Roger (1996), Host country characteristics and agglomeration in foreign direct investment, Applied Economics, vol. 28, pp. 833-840

Braunerhjelm Pontus – Svensson Roger (1998), Agglomeration in the geographical location of Swedish MNEs, in Pontus Braunerhjelm – Karolina Ekholm (eds.), The geography of multinational firms, Kluwer, pp. 99-115

Brülhart Marius (1998a), Economic geography, industry location and trade: the evidence, World Economy, vol. 21, no. 6, pp. 775-801

Brülhart Marius (1998b), Trading places: industrial specialization in the European Union, Journal of Common Market Studies, vol. 36, no. 3, pp. 319-346

Brülhart Marius (2000), Evolving geographical specialisation of European manufacturing industries, *mimeo*

Brülhart Marius – Torstensson John (1996), Regional integration, scale economies and industry location in the European Union, CEPR DP no. 1435

Cantwell John C. (2000), A survey of theories of international production, in Pitelis Christos N. – Sugden Roger (eds.), The nature of the transnational firm, Routledge, 2nd ed., pp. 10-56

Caves Richard E. (1996), Multinational enterprise and economic analysis, 2nd ed., Cambridge, Cambridge University Press

Chen Natalie (2002), Intra-national versus international trade in the European Union: why do national borders matter?, CEPR WP no. 3407

Cohen Robert B. – Felton Nadine – Nkosi Morley – van Liere Jaap (eds.), The Multinational corporation: a radical approach. Papers by Stephen H. Hymer, Cambridge University Press, 1979

David Paul A. (1985), Clio and the economics of QWERTY, American Economic Review, Paper and Proceedings, 75, no. 2, pp. 332-337

Davis Donald R. – Weinstein David E. (1996), Does economic geography matter for international specialization?, NBER WP no. 5706

Davis Donald R. – Weinstein David E. (1999), Economic geography and regional production structure: an empirical investigation, European Economic Review, vol. 43, pp. 379-407

Dunning John H. (1977), Trade, location of economic activity and the MNE: a search for an eclectic approach, in Ohlin Bent – Hesselborn Per-Oven – Wijkman Per Magnus (eds.), The international allocation of economic activity, London, McMillan, pp. 395-418

Dunning John H. (1981), International production and the multinational enterprise, London, Allen & Unwin

Dunning John H., (1997a), The European internal market programme and inbound foreign direct investment, Part I, Journal of Common Market Studies, vol. 35, no. 1, pp.1-30

Dunning John H., (1997b), The European internal market programme and inbound foreign direct investment, Part II, Journal of Common Market Studies, vol. 35, no. 2, pp.189-223

Duranton Gilles – Overman Henry (2002), Testing for localisation using micro-geographic data, CEPR WP no. 3379

Ellison Glenn – Glaeser Edward L. (1997), Geographic concentration in US manufacturing industries: a dartboard approach, Journal of Political Economy, vol. 105, no. 5, pp. 889-927

Ekholm Karolina, Proximity Advantages, Scale Economies, and the location of production, in Pontus Braunerhjelm – Karolina Ekholm (eds.), The geography of multinational firms, Kluwer, 1998, pp. 59-76

Ethier Wilfred J. (1986), The multinational firm, Quarterly Journal of Economics, vol. CI, no. 4, November, pp. 805-833.

Ethier Wilfred J. – Markusen James R. (1996), Multinational firms, technology diffusion and trade, Journal of International Economics, vol. 41, pp. 1-28 (formerly NBER WP no. 3825, 1993)

Falzoni Anna M. (1993), Investimenti diretti e commercio internazionale: complementi o sostituti?, CESPRI, WP n. 65, Bocconi University

Fors Gunnar (1996), Technology transfer to foreign affiliates by multinational enterprises, Stockholm, The Industrial Institute for Economic and Social Research, WP no. 456,

Fujita Masahisa – Krugman Paul R. – Venables Anthony J. (1999), The spatial economy, Cambridge Ma., MIT Press

Fujita Masahisa – Thisse Jacques-François (1996), Economics of agglomeration, Journal of the Japanese and International Economics, vol. 10, pp. 339-378

Graham Edward M. (1994), Canadian direct investment abroad and the Canadian economy: some theoretical and empirical consideration, in Steven Globerman (ed.), Canadian-based multinationals, Calgary University Press, Calgary, pp. 127-150

Graham E. M. (1996), The (not wholly) satisfactory state of the theory of foreign direct investment and the multinational enterprise, Journal of International and Comparative Economics, vol. 20, pp. 183-206

Graham Edward M. – Krugman Paul R. (1995), Foreign direct investment in the USA, Institute for International Economics, Washington

Gray Peter H. (1979), Intra-industry trade: the effects of different levels of data aggregation, in Herbert Giersch (ed.), On the economics of intra-industry trade, J.C.B.Mohr, Tubingen, pp. 87-110

Guerrieri Paolo – Manzocchi Stefano (1996), Patterns of trade and foreign direct investment in European manufacturing: "convergence" or "polarisation", Rivista Italiana degli Economisti, Anno I, n. 2, pp. 213-231

Gunderson Morley – Verma Savita (1994), Labour-market implications of outward foreign direct investment, in Steven Globerman (ed.), Canadian-based multinationals, Calgary University Press, Calgary 1994, pp. 179-213

Haddad Mona – Harrison Ann E. (1993), Are there positive spillovers from FDI? Evidence from panel data for Morocco, Journal of Development Economics, no. 42, pp. 51-74

Hanson Gordon H. (1998), North American economic integration and industry location, Oxford Review of Economic Policy, vol. 14, no.2, pp. 30-44

Hanson Gordon H. (2000), Scale economies and the geographic concentration of industry, NBER WP no. 8013

Helpman Elhanan (1984), A simple theory of international trade with multinational corporations, Journal of Political Economy, vol. 92, pp. 451-471

Helpman Elhanan – Krugman Paul R. (1985), Market structure and foreign trade, Cambridge Ma., MIT Press

Henriksen Espen – Midelfart-Knarvick Karen H. – Steen Frode (2001), Economies of scale in European manufacturing revisited, CEPR DP no. 2896

Hirsch Seev (1976), An international trade and investment theory of the firm, Oxford Economic Papers, vol. 28, no. 2, pp. 258-270

Horstmann Ignatius J. – Markusen J. R. (1987), Strategic investment and the development of multinationals, International Economic Review, vol. 28, no. 1, February, pp. 109-121

Horstmann Ignatius J. – Markusen James R. (1987), Licensing versus direct investment: a model of internalisation by the multinational enterprise, Canadian Journal of Economics, vol. XX, no. 3, pp. 464-481

Horstmann Ignatius J. – Markusen J. R. (1992), Endogenous market structures in international trade (natura facit saltum), Journal of International Economics, vol. 32, February, pp. 109-129

Horstmannn Ignatius J. – Markusen James R. (1996), Exploring new markets: direct investment, contractual relations and the multinational enterprise, International Economic Review, vol. 37, no. 1, pp. 1-19

Hufbauer Gary – Lakdawalla Darius – Malani Anup (1994), Determinants of direct foreign investment and its connection to trade, UNCTAD Review, pp. 39-51

Kim Sukkoo (1995), Expansion of markets and the geographic distribution of economic activities: the trends in U.S. regional manufacturing structure, 1860-1987, Quarterly Journal of Economics, vol. CX, pp. 881-908

Kozul-Wright Richard – Rowthorn Robert (1998), Spoilt for choice? Multinational corporations and the geography of international production, Oxford Review of Economic Policy, vol.14, no. 2, pp. 74-92

Krugman Paul R. (1983), The "new theories" of international trade and the multinational enterprise, in Kindleberger Charles P. – Audretsch David B. (eds.), The multinational corporations in the 1980s, Boston, MIT Press, pp. 57-73

Krugman Paul R. (1991a), History versus expectations, Quarterly Journal of Economics, vol. 106, pp. 651-67

Krugman Paul R. (1991b), Geography and trade, Cambridge Ma., MIT Press

Krugman Paul R. (1991c), Increasing returns and economic geography, Journal of Political Economy, vol. 99, pp. 483-499

Krugman Paul R. (1995), Development, geography, and economic theory, MIT Press

Krugman Paul R. (1996), The self-organizing economy, Oxford, Blackwell

Krugman Paul R. (1998), What's new about the new economic geography?, Oxford Review of Economic Policy, vol. 14, no. 2, pp. 7-17

Krugman Paul – Venables Anthony J. (1990), Integration and the competitiveness of peripheral industry, in Christofer Bliss – Jorge Braga de Macedo (eds.), Unity with diversity in the European Community, Cambridge University Press, pp. 56-75

Krugman Paul – Venables Anthony J. (1996), Integration, specialisation and adjustment, European Economic Review, vol. 40, pp. 959-67

Lipsey Richard G. (1991), Rapporteur's comments, in Donald G. McFetridge, Foreign investment, technology and economic growth, University of Calgary Press, Calgary, pp. 361-387

Magrini Stefano (1999), The evolution of income disparities among the regions of the European Union, Regional Science and Urban Economics, vol. 29, pp. 257-281

Markusen James R. (1983), Factor movements and commodity trade as complements, Journal of International Economics, vol. 14, pp. 341-356

Markusen James R. (1984), Multinationals, multiplant economies and the gains from trade, Journal of International Economics, vol. 16, pp. 205-226

Markusen James R. (1995), The boundaries of multinational firms and the theory of international trade, Journal of Economic Perspectives, vol. 9, pp. 169-189

Markusen James R. (1998), Multinational enterprises and the theories and trade and location, in Braunerhjelm Pontus – Ekholm Karolina (eds.), The geography of multinational firms, Kluwer, pp. 9-32

Markusen James R. – Venables Anthony J. (1995), Multinational firms and the new trade theory, NBER WP no. 5036

Markusen James R. – Venables Anthony J. (1996), The increased importance of direct investment in North Atlantic economic relationships: a convergence hypothesis, in Canzoneri Matthew W. – Ethier Wilfred J. – Grilli Vittorio (eds.), The new transatlantic economy, Cambridge, Cambridge University Press, pp. 169-189

Markusen James R. – Venables Anthony J. (1999), Foreign direct investment as a catalyst for industrial development, European Economic Review, Special Issue on Trade and Geography, 43, pp. 335-356

Markusen James R. – Venables Anthony J. – Konan Denise E. – Zhang Kevin H. (1996), A unified treatment of horizontal direct investment, vertical direct investment and the pattern of trade in goods and services, NBER WP no. 5696

Midelfart-Knarvik Karen H. – Overman Henry G. – Redding Stephen. J. – Venables Anthony J. (2000), The location of European industry, Report prepared for the Directorate General for Economic and Financial Affairs, European Commission, *mimeo*

Morikawa K. (1988), Impact of Japanese FDI on Japanese trade surplus, Journal of Policy Modelling, vol. 20, no. 4, pp. 427-460

Mundell Robert A. (1957), International trade and factor mobility, American Economic Review, vol. XLVII, no. 1, March, pp. 321-335

Mutinelli Marco – Piscitello Lucia (1997), Tipologie e determinanti degli investimenti diretti industriali italiani nei paesi dell'Europa centrale e orientale, L'Industria, a. XVIII, no. 1, pp. 89-118

Ottaviano Gianmarco I. P. – Puga Diego (1998), Agglomeration in the global economy: a survey of the new economic geography, World Economy, vol. 21, pp. 707-731

Overman Henry G. – Puga Diego (1999), Unemployment clusters across European regions and countries, CEPR DP no. 434

Overman Henry G. – Redding Stephen – Venables Anthony J. (2001), The economic geography of trade, production and income: a survey of the empirics, CEPR DP no. 2978

Petri Peter A. (1994), "The regional clustering of foreign direct investment and trade", Transnational Corporation, vol. 3, no. 3, pp. 1-24

Porter Michael E. (1996), Competitive advantage, agglomeration economies and regional policies, International Regional Science Review, vol. 19, pp. 85-94

Puga Diego (1999), The rise and fall of income inequalities, European Economic Review, 43, pp. 303-334

Rombaldoni Rosalba (1998), Core and periphery patterns of regional convergence in Europe, Rivista Italiana degli Economisti, a. III, n. 3, pp. 419-457

Ruane France – Görg Holger, (1999), Irish FDI policy and investment from the EU, in Ray Barrell – Nigel Pain (eds.), Innovation, investment, and the diffusion of technology in Europe, Cambridge University Press, Cambridge, pp. 44-67

Stevens Guy V.G. – Lipsey Robert E. (1992), Interactions between domestic and foreign investment, Journal of International Money and Finance, 11, pp. 40-62

Thomsen Stephen – Nicolaides Phedon (1991), The evolution of Japanese direct investment in Europe, Harvester Wheatsheaf

Venables Anthony J. (1995), Economic integration and the location of firms, American Economic Review, vol. 85, no. 2, Papers and Proceedings, pp. 296-300

Venables Anthony J. (1996), Localization of industry and trade performance, Oxford Review of Economic Policy, vol. 12, no. 3, pp. 52-60

Vernon Raymond (1994), The economist's role in research on transnational corporations: or why the dogs have barked so softly, Transnational Corporations, vol. 3, no. 3, pp. 81-89

Wilamoski Peter – Tinkler Sarah (1999), The trade balance effects of U.S. FDI in Mexico, Atlantic Economic Journal, vol. 27, no. 1, pp. 24-37

Yannopoulos George N. (1990), Foreign direct investment and European integration: the evidence from the formative years of the European Community, Journal of Common Market Studies, vol. XXVIII, no. 3, pp. 235-259

Yannopoulos George N., (1992), Multinational Corporations and the single European Market, in John Cantwell (ed.), Multinational investment in modern Europe: strategic interaction in the integrated Community, Edward Elgar, Aldershot, UK, pp. 329-348