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Multinational growth, innovation strategies and technology spillovers

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Abstract

It will be argued that the nature and characteristics of international production are changing and new opportunities for technological spillovers to host economies are associated to this change. However the available evidence on the actual impact of the ongoing globalisation is shaky and contradictory. This seems to have led to a sort of deadlock in the current debate, which is much too often blocked in a sterile juxtaposition between pro-global and anti-global views based on rather weak empirical grounds. The fact that there is limited uncontroversial evidence of positive effects of international production may have to do with the lack of institutional tools available to govern the globalisation process. In other words, what is missing is a set of rules and institutions enabling the economies involved in international production activities to capture and share the potential benefits associated to it. From this perspective, the paper singles out the areas wherein new institutions are needed, and provides a few insights on some of the issues these institutions should address.

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1. Introduction

This paper will focus on a specific, albeit crucial, aspect of globalisation, namely the growing role of transnational corporations as key actors in the international organisation of production and innovation. I shall argue that the nature and characteristics of international production are changing and new technological opportunities to both multinationals and host economies are associated to this change. However the available evidence on the actual impact of the ongoing globalisation, especially when technology spillovers are examined, is shaky and contradictory. This seems to have led to a sort of deadlock in the existing literature, which is much too often blocked in a sterile juxtaposition between pro-global and anti-global views based on rather weak empirical grounds.

The fact that there is limited uncontroversial evidence of positive effects of international production may have to do with the lack of institutional tools available to govern the globalisation process. Neither the laissez-faire recipe, consisting in the removal of constraints to the free working of market forces on an international scale, nor the adoption of purely defensive policies in opposition to globalisation, are enough. Indeed, the challenges and opportunities of globalisation must be addressed while the internationalisation of production is going on. It is not possible to interrupt the process, create the appropriate institutions, and then restart the process in a way that is more congenial with the development of the industrial systems involved. In other words, what is missing is a set of rules and institutions enabling the economies involved in international production activities to capture and share the potential benefits associated to it. From this perspective, I shall try to single out the areas wherein new institutions are needed, and to provide a few insights on some of the issues these institutions should address.

2. Changing views on multinational growth

Foreign direct investments (FDIs) and the activities of transnational companies (TNCs) have constituted one of the most dynamic components of the internationalisation processes in the last few decades. While the flows of inward and outward foreign direct investments still represent a limited share of the gross world product (less than 5%, as compared with the 40% represented by the sum of import/export), it is also true that, in the last decade, they have grown at a rate more than double that of world trade (UNCTAD, 2002). FDI stocks as a percentage of GDP[3] stood at 21.46% in 2001, up from just 6.79% in 1982. Furthermore, TNCs engage in considerable intra- and inter-firm trade, and about a third of world trade is undertaken by TNCs. The contribution of TNCs to global production and commercialisation of goods and services appears to be even greater if one considers total sales of foreign affiliates, which have grown three times as fast as exports of foreign affiliates and even faster as compared to world trade. In addition to this, the multinational companies are the absolute leaders in high technology production, as witnessed by the fact that more than one third of the top 100 multinational companies classified by the *World Investment Report* operates in the electronics and chemical-pharmaceutical industries, i.e. the most R&D intensive industries.

Therefore, it is not surprising that increased attention is being given to these processes and to the potential represented by multinational companies as the key agents of knowledge transfer and world economic growth. This is matched by a fundamental change in how both the scholars and the governments of the host countries perceive the role and the effects of the multinational activities. As recently noted by Markusen and Venables (1999: 336): “In the 1970s, many host country governments and some economists viewed multinational investment as detrimental to host-economies’ welfare and development, creating monopoly situations that exploited those economies and stifled competition. The view in the 1990s is considerably different and more optimistic, suggesting that multinationals have important complementarities with local industry and may stimulate development in host economies”

To illustrate this more benign attitude of host governments *vis a vis* multinational activities, UNCTAD (2002) provides evidence of 1393 cases in which there has been a change in policy regarding the selection and control of inward FDIs between 1991 and 2001. Over 95% of these cases resulted to be more favourable for foreign investors, including subsidies and more liberal admission rules.

Of course, there still remain sound reasons of concern for market monopolising effects of multinationals (Hymer, 1960), especially where local economies are weak and lack absorptive capacity (Durham, 2004). And even when local firms are able to capture technology being voluntarily or involuntarily transferred by multinationals, one can expect that TNCs may react to the threat of imitation and leapfrogging by using their market power or by affecting the pace and direction of technical change (Thoenig and Verdier, 2003). However, the economic literature has increasingly highlighted a number of reasons why multinational presence can have positive effects on host economies, as opposed to these market monopolising effects. In particular, important

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[3] Strictly speaking, the two numbers are not comparable, because GDP is a flow figure. Nonetheless, it is generally accepted that FDI stock is a monotonic function of value added, so the change in this ratio gives a general idea of how the significance of FDI activities has changed.

knowledge transmission and development mechanisms have been pointed out. TNCs may positively affect local technology and productivity by training workers and managers who may move or spin off from foreign owned firms and become available to domestic enterprises (Fosfuri et al., 2001); by demonstrating the feasibility of new technologies, providing technical assistance, transferring patented knowledge, and generating opportunities for imitation of technological, organisational and managerial practices (Mansfield and Romeo, 1980, Dunning 1993); by creating demand for local inputs, increasing the specialisation and efficiency of upstream and downstream activities and generating positive externalities for local industries (Hirschman, 1958; Rodriguez-Clare, 1996; Markusen and Venables, 1999); and by exerting competitive pressures to improve the static and dynamic efficiency of domestic firms (Caves, 1974; Cantwell, 1989).

Whether these positive effects will eventually outbalance negative (monopolistic) effects will depend on at least three circumstances. First it will depend on the sectoral characteristics of multinational activities – with industries based on complex technologies being more likely to involve the creation of linkages with local suppliers of specialised skills and applications abilities (Dunning, 1993). Second it will depend on the quality of human capital available locally, which will determine the variety of inputs supplied by indigenous firms: if this variety is at least comparable to that of the foreign company's country of origin, TNCs will have no incentive to import inputs, they will rely on foreign suppliers otherwise (Rodriguez-Clare,1996). Third it will depend on the type of FDI, with acquisitions being frequently associated with organisational tensions, job losses and efficiency losses at least in the short run (UNCTAD, 2001).

3. A historical shift in the organisation of innovation across national borders

Is there a historical trend leading to increasing positive spillovers from international production, as Markusen and Venables (1999) seem to suggest? Some authors provide a partial answer to this question by highlighting a fundamental change of the role played by multinational companies in the generation and transmission of knowledge. As we shall argue, this changing role is in fact providing new growth opportunities for host economies.

A number of contributions have suggested that a "historical shift" has taken place in the past three decades, towards new modes of organising innovative activities both within and outside the boundaries of TNCs. Without pretension of a full review, one may cite Dunning (1995) for an evaluation of TNC's increasing recourse to inter-firm alliances since the 1970's, and Hagedoorn (2002) for a more specific and empirically grounded focus on the growing recourse to international technical alliances; Dunning (1994) and Zander (1999) for recent longitudinal studies of the process of geographical dispersion of TNCs' technological competencies; Ghoshal and Bartlett (1995) and Malnight (1996) for the analysis of the ongoing transition towards intra-firm network-like organisation, and Hedlund (1994) for a more detailed consideration of the emerging, heterarchical modes of organising internal knowledge networks.

Most of these studies also share the view that dynamic forces have emerged in the recent economic history, and are still at work today, leading to fundamental shifts in the strategies and structure of TNCs. There seems to be a wide agreement on the very general statement that changes have occurred in the "competitive environment". The underlying forces can be identified with the fastening pace and widening scope of *technical change* in a number of sectors, and with the *increasing number and heterogeneity of markets* firms have to deal with in a globalising economy. The *combination* of technical determinants (raising fixed costs, increasing interdependencies, reduction of product life cycles), with the *diversity of demand* induced by globalisation, is increasingly forcing firms to be more dynamically competitive, and has caused firms - and particularly large hierarchies - to reconsider both the scope and the organisation of their value added activities (Dunning, 1995: 468-470).

What should be stated more explicitly is that demand diversity is only part of the variety TNCs have to deal with. The evolution of consumer behaviour and demand differentiation can be considered as one of the likely effects of a more general evolution of local contexts. Local contexts can be considered as increasingly differentiated sets of cultural values, institutions and norms that are partly tacit and influence the behaviour of economic agents, their competencies and their ultimate performances. It is this variety, and not only demand diversity, that, combining and interacting with technical change, generates ever new pressures for TNCs' organisational transformation.

The combination of technical change with the evolution of local contexts has implications on the process through which knowledge is generated and diffused across national boundaries. On the one hand, TNCs increasingly resort to applications abilities localised in host economies to complement their knowledge bases. By interacting with local firms and institutions they are enabled to rapidly and effectively 'contextualize' the available technology, i.e. to extract economic value from it. On the other hand, some of the application abilities available locally, once "de-contextualised", can widen and enrich the knowledge base which can be used by TNCs in different markets (Becattini e Rullani, 1993; Vaccà, 1997). This process of use and fertilisation of technology requires that TNCs set up extensive 'internal networks' of subsidiaries to increase their ability to absorb foreign knowledge and transfer it within the transnational complex. Furthermore, it implies the development of 'external networks' with local counterparts, to actually gain access to local technology sources, and to jointly develop new knowledge with firms and institutions active in the host economies (Zanfei, 2000 b).

This view of the transnational corporations as an evolving actor in the generation and use of knowledge is by and large consistent with the expanding literature on the so-called 'home base augmenting' (HBA) investment strategies, as opposed to more traditional 'home base exploiting' (HBE) FDIs (Dunning and Narula, 1995; Kuemmerle, 1997; Patel and Vega, 1999). According to this stream of literature, the latter strategies correspond to the TNCs' need to apply and utilize assets already available, which basically reflect the superior knowledge base of the company's home country. On the contrary, HBA strategies reflect the need to complement existing knowledge with locally available assets. While empirical studies show that HBE still outweigh HBA investment activities (Patel and Vega, 1999), there is also increasing evidence that the latter are growing in number and significance as cross-border technology strategies (Le Bas and Sierra, 2002)[4].

There are several reasons why the changing role and organization of TNC innovative activities may affect host economies. First, TNCs being interested in gaining access to local knowledge, are likely to be also prone to transfer valuable technology on a reciprocal basis. Second, by getting involved in collaborative networks with indigenous counterparts, foreign subsidiaries are more likely to create backward and forward linkages, and to generate efficiency effects in upstream and downstream local industries. Third, through cooperation with local firms and institutions, multinationals can get more and more embedded in host economies, and can be expected to conform their managerial and technical practices to local needs, hence increasing the appropriateness of technology being produced and transferred. Fourth, host country governments are likely to perceive that the possibility of attracting value added activities from abroad largely depends on the ability of the local economy to supply high quality infrastructures and human capital, thus driving national efforts in the direction of high potential investments.

4. Multinationals and growth: a fragile relationship

Transnational companies therefore play a potentially important role in the generation and diffusion of knowledge in host economies. Having said this, we must stress the fragility of the mechanisms

[4] Although the HBE-HBA terminology clearly dominates in the literature, it is worth observing that this classification scheme is less accurate, and holds to a very traditional view of the MNE as centred in a dominant home-base. In fact, by emphasising the role of home bases, the HBA-HBE jargon cannot be easily made consistent with the possibility that firms are evolving towards network structures, hence reducing the importance of a single home and, by the same token, expanding the number of countries wherein the firm ends up being based. For a discussion on this issue, see Narula and Zanfei (2004)

which permit the multinational companies to become a catalyst of innovation, and hence a vehicle for economic development. Market forces alone cannot be relied upon to ensure that such an outcome occurs. Should the host economy – government, domestic firms and other institutions - and foreign firms not assume a co-operative attitude, there is no assurance that the multinationals would fully exercise their role as a vehicle for economic growth. It may be useful to clarify the reasons which might cause the virtuous mechanism of transnational development to enter into gridlock.

As discussed in previous works (Zanfei, 2000a), in the absence of explicit and conscious efforts to design co-operative solutions between the companies and the host countries, the risk would be the predominance of less than optimal solutions, characterised by low local investment in human capital, low foreign investment in value added activities and low spill-over. The situation may be depicted as the typical 'prisoner's dilemma' in which the multinational company may choose to delocalise at a high value added (or come to important agreements with the local companies) or choose not to delocalise (or not coming to agreements); while the host country may choose between investing and not investing in human capital and infrastructures. It is true that in the case where both invest (respectively in the interaction with the local contexts in the case of the multinational, and in the development of human capital in the case of the host country), the expected advantages are decidedly higher for both sides involved. However, it is also true that both sides sustain greater costs in the case of the more demanding option and, if only one side invests, it sustains elevated costs even though it must share the advantages with the non-investing side. Under these circumstances, the outcome of failed or ineffective negotiations between the multinational companies and the local institutions is that neither of the sides invests, even though this leads to minor advantages with respect to the case in which both invest.

The likelihood that, in the case of no explicit negotiations, the less than ideal equilibrium will prevail, is made evident by the fact that the option to invest (respectively in delocalising the value added activities or in local human capital) is particularly onerous for both sides. On the one hand, the international business literature has underlined the difficulties a TNC will run in the re-organisation of production and innovation, and has highlighted the need to undergo costly changes in coordination modes in particular (Zanfei, 2000b). On the other hand, the host country Governments must completely redefine the economic policy tools to be used. In order to favour and direct the creation of linkages and spillovers, the Governments of the host countries must basically give up the recourse to protectionist measures and local content requirements in favour of measures for improving and enriching the local human capital. In fact, an expanding literature points out that protectionist tools prove to be detrimental to the host economy because they discourage incoming investments with an elevated added value, they stimulate vertical integration of foreign companies and, to the extent to which they force the multinational company to resort to inefficient local suppliers, they compromise dynamism and reduce the possibility of positive spillovers on the host economy (Battat et. al., 1996).

This does not mean that governments should merely compete for foreign direct investments in terms of fiscal policies. As Olsen and Osmundsen (2003) show, in the presence of asymmetric information on efficiency of firms, tax competition may induce excessive investments in countries where positive spillover effects are low. Policies cannot be limited to functional and general interventions, like the realisation of an efficient public information system either. As underlined by Bell and Pavitt (1993: 201-202), the accumulation of technological and technical skills requires a country to adopt a wider set of industrial policies which also aim to develop training, at a company level, in the various activities of planning, production engineering, quality control and R&D. Moreover, the policies for developing human capital must proceed in parallel with monitoring and foreign investment selection activity which, in any case, is a knowledge intensive endeavour. From this standpoint, Rodriguez-Claire (1996: 867) also suggests that the selection efforts must be oriented towards transnational activities which use intermediate goods more intensively, because they are more prone to generating linkages. Furthermore, the choice of the areas in which the foreign company facilities are to be located seems to be extremely significant in order to favour interaction with the local human capital.

Summing up: despite the mutual advantages for the multinational companies and the host countries of engaging in long term investment programs – with the former investing in the delocalisation of value added activities and in the creation of linkages, and the latter in the development of qualified human capital – it is highly probable that the “virtuous” mechanism which leads to the international diffusion of knowledge and development opportunities will deadlock. *Without unequivocal negotiations between the two parties,* it is entirely plausible that neither a network re-organisation of the multinationals’ innovative activities based on “intelligent hubs” or “listening posts” installed in various national contexts, nor the conversion of the host countries’ policies towards the creation of qualified human capital and a more favourable environment for the multinational installations will take place. In fact, the costs which the two parties must sustain are too high without the benefit of a contractual framework which limits them to convergent goals and congruent behaviours [5].

[5] As discussed elsewhere (Zanfei, 2000a), the problems of a non co-operative solution is accentuated by the fact that numerous multinational companies as well as various institutions may be present in a country, and this increases the risk of less than ideal choices being made.

The co-operative solution between multinationals, local companies and institution may also be problematic due to the existence of asymmetric information and bounded rationality of the involved parties. The first condition (asymmetric information) makes both the initial starting conditions as well as the effective implementation of the contracts between the sides susceptible to opportunistic behaviour. This is particularly true when considering the difficulty of measuring the effects of the actions taken by both the multinationals, as well as the Governments, especially in terms of developing human capital. Instead, the second condition (bounded rationality), even in the absence of opportunistic attitudes, leads to the adoption of less than optimal choices, thus giving rise to possible conflicts due to the diverse expectations generated on the basis of the contracts (in any case, incomplete) which are stipulated.

5. The inconclusive evidence on spillovers

The arguments put forward so far have important implications for the research on the impact of internationalisation on economic and industrial development. For our purposes, it is sufficient to point out two such implications. The first one concerns the ‘short circuit’, which seems to emerge in the literature between the abundance of presumed positive effects of TNCs on host economies, and the scarcity of empirical evidence regarding the same. The second set of implications concerns the public policy ‘recipes’ which aim to enhance the virtuous mechanisms of transnational development.

Regarding the first issue, as already stated, while the perception of the potential positive effects of the multinational presence on economic development grows, the results of the empirical research regarding the effects of foreign business activities on host economies is rather scarce and controversial. There is indeed evidence of an aggregate impact of FDIs on economic growth which, in a number of contributions, is explained as the result of the combined presence of foreign capital and human capital in the host countries (cfr. for all: Borenzstein, De Gregorio and Lee, 1998). What seems to be less abundant is the systematic evidence regarding the transmission mechanism from the foreign investments to economic development. Moreover, the evidence is contradictory in terms of the actual distribution, between foreign companies and host economies, of the income created by these investments. A recent study by Gorg and Greenaway (2002), developing a previous work published in the *Economic Journal*, surveyed 33 empirical studies on the spill-over effects of the multinational presence on domestic productivity. Of these, about half reveal positive effects, while the other half report negative or non significant effects. A detail not to be overlooked is the fact that almost all of the works which reveal the positive effects of the multinational presence use methods which the authors judged inappropriate, because they are based on cross-section regressions, mostly at a sectoral aggregate level; this makes it impossible to investigate the effects of the foreign presence on domestic productivity over time, and to control for fixed effects at a company level, which may bias the results (see Castellani and Zanfei, 2003 for a study which adopts a methodology consistent with the concerns expressed by Gorg and Greenaway). Now, it is true that the studies reviewed by Gorg and Greenaway use inadequate indicators of spill-over effects, i.e. total factor or labour productivity of the domestic companies (or industries); it is also true that they are studies which evaluate the effects of intra-sectoral productivity (i.e. they assess the impact that the multinational presence in a given sector has on the productivity of the companies in that sector), thus neglecting the typically inter-sectoral effects that the foreign companies may spark in the territory. Nonetheless, the conclusion which must be drawn is that considerable caution should be used before concluding that a multinational presence generates positive effects on the technological development of the local companies.

The dismal results of empirical studies are absolutely in line with the concern we expressed earlier regarding the co-ordination between multinationals and host Governments. In other words, the absence (or scarcity) of national and supranational institutions capable of negotiating the conditions for local development with the foreign companies may well be one of the fundamental reasons behind the sporadic and contradictory manifestation of the positive effects of internationalisation. This also leads to the additional effort of concentrating the attention of theoretical and empirical research on *policy* variables as fundamental explanatory factors for understanding the multinational spill-over effects. This is no small shift in thought, when we consider that there are very few empirical studies on the effects of globalisation which include an assessment of the impact of national and supranational Governments' policies among the principal explanatory variables; and when they do, they tend to over simplify, using synthetic indicators, often with scarce significance, which barely capture the degree of market openness/protection or to the presence/absence of inward investment incentives. The essential point is that not only the policies (fiscal and commercial) for attracting incoming investments are important; but, as we argued earlier, increasing importance is to be placed on the policies related to structures, infrastructures and *after care* which must be implemented before, but also during and after, the realisation of foreign investment projects, in order to favour the generation of positive effects on the host economy.

6. The problem of governance in globalisation

This last consideration opens the road to some assessment of the second aspect referred to above: the measures aimed to enhance the "virtuous" mechanisms for the development of globalisation. In dealing with the previously highlighted difficulties in negotiations between the involved parties, there are some, like Cozzi and Vaccà (2002), who suggest that some form of "institutionalised confrontation" between host Governments, supranational Organisations and representatives from the transnational companies should be developed. The essential problem is that of guaranteeing and supervising the definition and implementation of the agreements stipulated between multinationals and host countries, especially in the face of consistent information asymmetries and imbalances in the negotiating power of the involved entities. To this regard, a first observation can be made regarding the very delicate question of the legitimisation of the "institutionalised confrontation" hypothesised by the Authors; a problem which becomes more significant and more difficult to solve if this "confrontation" translates into a sort of "directorate" proposed to control the globalisation processes. Let us beware of usual summits (i.e., the G8) which must compensate for a colossal defect: scarce representativeness and a total lack of legitimatisation to decide and act on behalf of the totality of countries and economic systems (De Benedictis and Helg, 2002 and Stiglitz, 2003, for a review of the democratic deficit problems of these institutions). Still and all, the question remains of who, at what level and with what means, should assume the role of *impartial* mediator between petitions which are often contrasting; and, more importantly, the decision as to who sits at the negotiating table to discuss what. Everything leads to the idea that the role of establishing the fundamental rules for negotiations and binding guidelines can be given only to strongly representative supranational Organisations, like the United Nations, which, however, face other difficulties and the problems of *enforcing* the decisions, once made. Whereas, it would be more logical to carry out actual negotiations at a local and regional level, albeit under the supervision and arbitration of supranational Organisations and using guidelines defined by the same.

Even if we assume to be able to solve the thorny problem referred to above, and this is a big assumption, a central question remains regarding the fundamental philosophy which should serve as inspiration for supervising the negotiations between multinationals and host countries. In this respect, it should probably be underlined that every effort to control globalisation must come to grips with the economic value of diversity, i.e. the variety of contexts to be taken advantage of in economic terms, because it increases and enriches the potential for development of scientific and technological know-how. This is a concern that has several important public policy implications which must be clarified. From this perspective, every form of "bad" globalisation which translates into a reduction of diversity (for example a reduction in cultural variety, a reduction in bio-diversity, a reduction in the portfolio of the local stakeholders' rights) should be monitored, pointed out and opposed, not only because it is difficult to manage in a social context; but also because its development is in conflict with that of “good globalisation” - fuelled by that same variety and generating income for both the transnational companies as well as for the local economies. The above also implies that there are probably numerous roles and institutional figures to be established to promote the control of globalisation.

With reference to what we have just emphasised regarding the “value of diversity”, at least three institutional archetypes come to mind. The first regards institutions called upon to *defend* diversity, to protect socio-cultural and environmental resources and the economic-production structures of the various realities, at least (but not only) until the latter can sustain global competition; thus preventing these realities from becoming “victims” solely because they are not yet competitive (although they have the potential to become so). The second regards the *valorisation* of diversity, which consists in identifying the technological and market opportunities that originate from specific contexts, in virtue of their diversity, and exploiting them economically, in a socially tenable manner. The third regards the *knowledge* of the value of diversity, creating institutions capable of monitoring the specific local realities and providing information on them in order to foster wider economic utilisation.

As always, the crucial difficulty is that of moving ahead from the stage of more or less innovative insights to that of true institutional engineering and practical implementation of ideas. These brief remarks are merely an effort to contribute to a reflection on topics of such crucial importance for economic and social development.

References

Battat J., Frank I., Shen X. (1996) *Suppliers to Multinationals. Linkage Programs to Strengthen Local Companies in Developing Countries*, The World Bank, Foreign Investment Advisory Service, Occasional Paper, n.6

Becattini G., Rullani E. (1993) "Sistema locale e mercato globale" *Economia e Politica Industriale*, n.80 (25-48).

Bell M., Pavitt K. (1993) "Technological Accumulation and Industrial Growth: Contrasts between Developed and Developing Countries" *Industrial and Corporate Change*, vo.2, n.2 (157-210)

Borensztein E., De Gregorio J., Lee J.W. (1998) “How Does Foreign Direct Investment Affect Economic Growth”, *Journal of International Economics*, 45, pp.115-135

Cantwell J. (1989) *Technological Innovation and Multinational Corporation*, Basil Blackwell, Oxford

Castellani D., Zanfei A. (2003) “Technology Gaps, Absorptive Capacity and the Impact of Inward Investments on Productivity of European firms”, *Economics of Innovation and New Technology*, vol.12 (6), 555-576.

Caves R. (1974) "Multinational Firms, Competition and Productivity Convergence in Host-Country Markets", *Economica*, May, 176-193.

Cozzi G., Vaccà S. (2002) “Le imprese transnazionali come possibili veicoli di sviluppo economico nell’era della globalizzazione” *Economia e Politica Industriale*, n.113, 5-18

De Benedictis L. e Helg R. (2002) “Globalizzazione” *Rivista di Politica Economica*, n.3-4, vol. 92, 139-209

Dunning J.H. (1958) *American Investment in British Manufacturing Industry*, Allen and Unwin, London

Dunning, J.H. (1993) *Multinational Enterprise and the Global Economy,* Wokingham, Addison Wesley.

Dunning, J.H. (1994) "Multinational Enterprises and the Globalization of Innovatory Capacity" *Research Policy*, 23 (67-89)

Dunning, J.H. (1995) “Re-appraising the Eclectic Paradigm in an Age of Alliance Capitalism” *Journal of International Business Studies*, vol.6, n.3, 461-491

Dunning, J.H. and Narula, R. (1995) The R&D Activities of Foreign Firms in the United States. *International Studies of Management & Organization*, Vol. 25 (1-2), pp. 39-73.

Durham B. (2004) “Absorptive Capacity and the Effects of Foreign Direct Investments and Equity Foreign Portfolio Investments on Economic Growth” *European Economic Review*, 48 (285-306)

Fosfuri A., Motta M., Ronde T. (2001) "Foreign Direct Investment and Spillovers Through Workers' mobility", *Journal of International Economics*, 53, 205-222.

Ghoshal, S. and Bartlett, C.A. (1995) "Building the Entrepreneurial Corporation: New Organisational Processes, New Managerial Tasks" *European Management Journal*, vol. 13, n.2 139-155

Gorg H., Greenaway D. (2002) "Much Ado about Nothing? Do Domestic Firms Really Benefit from Foreign Direct Investment?" Cepr-LdAWorkshop on *Labour Market Effects of European Foreign Direct Investments*, Torino, 10-11 May

Gorg H., Strobl E. (2001) "Multinational Companies and Productivity Spillovers: a Meta-Analysis", *The Economic Journal*, 11, November, F723-F739.

Hagedoorn, J. (2002) 'Inter-Firm R&D Partnerships: An Overview of Patterns and Trends since 1960', *Research Policy*, vol 31, pp. 477-92.

Hedlund, G. (1994) "A Model of Knowledge Management and the N-Form Corporation" *Strategic Management Journal*, vol. 15, 73-90

Hirschman A.O. (1958) *The Strategy of Economic Development*, Yale University, New Haven.

Le Bas, C. and C. Sierra (2002) Location versus Country Advantages' in R&D Activities: Some Further Results on Multinationals' Locational Strategies. *Research Policy*, Vol. 31, pp. 589-609.

Malnight, T. W. (1996) "The Transition from Decentralised to Network-Based MNC Structures: An Evolutionary Perspective" *Journal of International Business Studies*, n.1, 43-65

Mansfield E., Romeo A. (1980) "Technology Transfer to Overseas Subsidiaries by US Based Firms" *Quarterly Journal of Economics,* 95(4) (737-750)

Markusen J.R., Venables A.J. (1999) "Foreign Direct Investment as a Catalyst for Industrial Development" *European Economic Review*, 43 (335-356)

Narula R., Zanfei A. (2004) "Globalisation of Innovation", forthcoming in J.Fagerberg, D.Mowery, R.R. Nelson (eds.) *Handbook of Innovation*, Oxford University Press

Olsen T.E., Osmundsen P. (2003)"Spillovers and International Competition for Investments" *Journal of International Economics*, 59 (211-238)

Patel, P. and Vega, M. (1999) Patterns of internationalisation and corporate technology: location versus home country advantages. *Research Policy*, Vol. 28, pp. 145-55.

Rodriguez-Clare A. (1996) "Multinationals, Linkages, and Economic Development" *The American Economic Review*, Vol. 86 N. 4 (852-873)

Stiglitz J. (2003) "Globalization and the economic role of the state in the new millennium" *Industrial and corporate change*, n. 12 (3-26)

Thonig M., Verdier T. (2003) “A Theory of Defensive Skill Biased Innovation and Globalization” *The American Economic Review*, vol. 93, n.3 (709-728)

UNCTAD (2001) *World Investment Report 2001. Promoting Linkages*, United Nations.

UNCTAD (2002) *World Investment Report 2001. TNCs and Export Competitiveness*, United Nations

Vaccà S. (1997) "Le differenze socio-culturali ed istituzionali nello sviluppo delle imprese: il ruolo del capitale immateriale e del capitale umano " *Economia e politica industriale*, n.94 (5-32)

Zander, I. (1999) How do you mean ‘global’? An empirical investigation of innovation networks in the multinational corporation. *Research Policy*, Vol. 28 (195-213)

Zanfei A.(2000a) “L’impatto delle multinazionali sui Paesi ospiti: il problema della creazione di legami a monte e a valle con le economie locali” *Economia e Politica Industriale* n.105 (133-160)

Zanfei A. (2000b), "Transnational Firms and Changing Organisation of Innovative Activities” *Cambridge Journal of Economics*, vol.24 (515-54)