

Uppenberg, Kristian; Riess, Armin

Article

Determinants and growth effects of foreign direct investment

EIB Papers

Provided in Cooperation with:

European Investment Bank (EIB), Luxembourg

Suggested Citation: Uppenberg, Kristian; Riess, Armin (2004) : Determinants and growth effects of foreign direct investment, EIB Papers, ISSN 0257-7755, European Investment Bank (EIB), Luxembourg, Vol. 9, Iss. 1, pp. 52-84

This Version is available at:

<https://hdl.handle.net/10419/44833>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

ABSTRACT

Focussing on Europe, this paper starts with reviewing the main determinants of foreign direct investment (FDI); a key observation is that economic policies and non-policy factors contribute equally to the direction of FDI flows. The paper then examines the growth-FDI nexus: while a strong positive correlation between inward FDI and economic growth exists, at least in the more advanced EU-15 economies it is not clear whether the causality runs from FDI to growth or vice versa; in the countries of Central and Eastern Europe (CEE) there is stronger evidence that FDI has boosted growth during the transition period, partly by augmenting domestic investment; that said, evidence of technology spillovers (a potentially important channel for FDI to boost growth) is harder to find in CEE than in developed economies. The paper finally argues that growth-enhancing policies in general are more promising than specific support for FDI.

Kristian Uppenberg (k.uppenberg@eib.org) and **Armin Riess** (a.riess@eib.org) are, respectively, Economist and Deputy Head of the Economic and Financial Studies Division of the EIB. The views expressed are strictly personal.

Determinants and growth effects of foreign direct investment

"I've always had a weakness for foreign affairs".

Mae West, American film actress

1. Introduction

The last decade has seen a pronounced increase in cross-border corporate ownership, as reflected in the rise in foreign direct investment (FDI). While the world inward stock of FDI rose only marginally as a share of GDP between 1980 and 1990, it has more than doubled in the last decade to 22 percent of world GDP in 2002. EU countries have played a central role in this process, both as originators and as recipients of FDI. Excluding intra-EU flows, the EU has accounted for around 40 percent of all FDI outflows in the past decade.

Behind this global expansion lies a combination of technological innovation and a global policy environment that has become increasingly favourable to foreign ownership of productive assets. Countries have also tried to attract FDI through various incentives such as extensive profit tax holidays. The reason host countries have put these policies in place is that they expect tangible economic gains to emerge from the foreign-owned firms. But how justified are these hopes and do the policies make a difference? This paper aims at shedding some light on these issues, with substantial implications for the design of public policy and the use of public funds in this context.

The paper is structured as follows. We will first look at the determinants of FDI, i.e. what are the factors that make FDI take place, and what makes an investor choose a specific geographical location over another. Second, we will assess the empirical evidence regarding the impact of FDI on economic growth. Third, we will discuss the rationale for government support in favour of FDI. The paper will focus primarily on the EU, including its new members from Central and Eastern Europe (CEE).



Kristian Uppenberg



Armin Riess

2. Determinants of FDI

2.1 FDI and the boundaries of the firm

Before discussing the drivers of FDI, it is useful to first recognise that FDI can serve very different purposes. FDI broadly falls into three categories, horizontal, vertical and diversifying, although there tends to be substantial overlapping between them. We summarise these categories briefly below (for a more detailed discussion, see for example Caves 1996).

Horizontal – or market-seeking – FDI aims at serving the host market. Here the transnational corporation (TNC) duplicates plants that already exist in the home country or elsewhere. This form of FDI is a substitute for either exports or licensing.

Vertical – or cost-minimising – FDI aims at the internalisation of the production chain within a TNC. Locating different stages of the vertical production chain in different countries aims at making optimal use of host country comparative advantages for each stage (on the basis of labour cost, resource endowments, etc.). Here, the main purpose

of the production is not to reach the local market, but to export the product either back home or to a world market. Rather than duplicating plants in the home country, the FDI becomes a substitute for home country production.

Diversifying FDI includes investment that is not evidently horizontal or vertical. This entails the risk-reducing internalisation of diverse activities that do not generate visible positive synergies either on the revenue or the cost side. In theory, this does not add value to shareholders, since they have the ability to diversify by holding a portfolio of shares from many different companies. For the company's management and staff, however, the incentive to reduce firm-specific risk may still be very strong. To the extent that managers possess privileged information not available to shareholders, they can sometimes push through diversifying FDI that is in their own interest even if not in the interest of shareholders.

While pure forms of these types of FDI exist, the decision to set up an operation abroad is often motivated by a combination of factors. For example, a given location may offer both a competitive cost level and a sizeable local market.

In all these forms of FDI, the firm's decision to internalise cross-border economic activities and so to become a TNC is driven by the economics of the boundaries of the firm. As suggested by Coase (1937), in principle any economic transaction can be conducted either via *ad hoc* market interaction between economic agents or internalised within a firm. In between these two extremes there are also many hybrid solutions, such as licensing and other forms of strong contractual arrangements between independently owned firms. Which of these solutions is chosen depends on the relative costs of the different alternatives. For example, in the case of repeated and relatively complex transactions, information and coordination problems can incur high transaction costs when conducted via the market. This encourages their internalisation within a firm, where the transaction can be more closely supervised. On the other hand, dispersed hierarchical organisations come with their own information and incentive problems. It may also undermine the incentives for innovation that is normally generated by competition. Effective corporate governance typically becomes more difficult and costly the more distanced the owner is – culturally, functionally and geographically – from the economic activity.

Local knowledge advantage explains why nine-tenth of world production is still under domestic ownership.

The cost-benefit analysis surrounding FDI and the formation of a TNC follows a similar line of reasoning. Other things equal, the foreign investor faces higher costs relative to local competitors because of its lack of familiarity with the host country. This local knowledge advantage explains why nine-tenth of world production is still under domestic ownership and why the bulk of cross-border transactions is conducted via the market rather than internalised within firms. To make it worthwhile for a firm to evolve into a TNC, it must possess some offsetting advantage not available to its host-country competitors. These advantages differ depending on the form of FDI, i.e. whether it is vertical or horizontal (we will not cover the third form, diversifying FDI, in this discussion).

In the case of **horizontally integrated TNCs**, the advantage enjoyed by the TNC primarily stems from its proprietary assets. It could be that the TNC possesses a brand or a production technology that is not available to its local competitors. Since such proprietary assets are typically the product of fixed costs such as research and development (R&D), they tend to be associated with large economies of scale. This gives the investing firm a

strong incentive to spread these fixed costs across as many markets as possible. In some cases this can be achieved through exports, especially in manufacturing. In other cases the transport costs of trade may be prohibitive, for instance in many services. Consequently, the larger the economies of scale in localised production, the greater the incentive to produce in one place and export to the rest of the world. The larger the economies of scale stemming from proprietary assets (such as brand name), the greater the incentive to duplicate production for market-access purposes.

But even after it has been decided that local production is preferred to exports, the decision to engage in a horizontal FDI entails a second step. There is still the choice to be made between licensing out the proprietary asset and the complete internalisation of production within the firm. Licensing allows the economies of scale from proprietary assets to be exploited without FDI. The decisive factor here is whether the costs from the investor's lack of local knowledge under the FDI option outweigh the potential costs from a less than complete control over the proprietary assets under the licensing option. This trade-off depends on the nature of the proprietary assets. There may be limits to the investor's ability to license out his proprietary assets, for example because of weaknesses in host-country property right protection, or because the asset is embedded in the firm's corporate culture and management techniques in a manner that is not easily codified.

In the case of **vertically integrated TNCs**, the cost-benefit analysis is somewhat different from the one above. While the horizontally integrated firm internalises markets for proprietary assets, the vertically integrated firm internalises markets for an intermediate product. This tends to occur when there are imperfections in intermediate product markets. It could for instance be that the local producers of intermediate products do not make identical goods or goods of sufficient quality, or that the producers themselves are too few in number. The high costs of supply disruptions may then give downstream firms an incentive to internalise the vertical supply chain within the TNC itself, instead of developing long-term market-based relationships with their upstream partners. The foreign investor must, however, weigh the costs of supply disruptions against those stemming from his relative lack of local knowledge and the incentive problems that may arise in an integrated firm when there is imperfect information.

While horizontally integrated firms internalise markets for proprietary assets, vertically integrated firms internalise markets for intermediate products.

2.2 Many different factors attract FDI to a country

Once a firm has decided to conduct FDI, the second question is where to go. There is substantial research on the determinants of FDI across countries. These determinants consist of both economic fundamentals and policy variables, the most important of which are listed below (based on the results obtained in various empirical studies on the determinants of FDI, including Nicoletti *et al.* 2003, Campos and Kinoshita 2003, Slaughter 2003, and Martín and Velazquez 1997).

Market size and growth prospects. Existing and future expected host market size is one of the strongest and most unambiguous drivers of FDI inflows, especially horizontal FDI. In this context, regional trade integration (such as that in the EU) can attract more horizontal FDI from the rest of the world by expanding the size of – and access within – the host market. This shifts the economies of scale in favour of local production as an alternative to exports.

Determinants of FDI consist of both economic fundamentals and policy variables.

Natural and human resource endowments. The existence of unique or competitive factors of production, either in the form of raw materials, skilled labour or intermediate goods has also been found to have a strong positive impact on FDI inflows.

Physical, financial and technological infrastructure, together with human capital, represent a broad set of national assets that positively affects inward FDI, primarily by reducing transactions costs and raising the return on investment.

Agglomeration effects reinforce the attraction of economic fundamentals. The profitability of an investment is often enhanced by the existence of a large pool of suitably skilled labour at the investment location, along with spillovers from knowledge and research and development. As a consequence, a location's ability to attract FDI has been found to be positively influenced by the presence of similar activities as those of the investing firm, especially in knowledge-intensive industries.

The institutional, regulatory, and policy framework and policy coherence is closely related to the previous point in that this too, when applied well, reduces uncertainty and the risks of doing business in an economy. Bureaucracy and restrictive administrative practices, coupled with bribery, are found to incur additional transaction costs that impede FDI inflows.

Openness to international trade along with access and distance to international markets are important especially to attract export-oriented (vertical) FDI. To be able to function as a link in an international value added chain, a free and cost-efficient flow of intermediate goods is needed in both directions. The importance of these factors is reflected by the fact that vertical FDI tends to be concentrated to markets relatively close to the investor's host country. Examples include Japanese FDI in East Asia, US FDI in Mexico and EU FDI in Central and Eastern Europe.

Investment protection and promotion. Proper investment protection such as transparent and consistently enforced dispute settlement procedures is a sort of minimum requirement for FDI. Many governments have gone even further to attract FDI through special incentive schemes, such as tax breaks and other financial incentives that affect net profit rates. While on balance research shows that the distribution of FDI across countries is more determined by economic fundamentals and the broad policy environment affecting foreign-owned and indigenous firms alike¹, policies specifically targeting FDI can still affect the location choice of TNCs in the case when underlying economic fundamentals are similar across countries (Blomström and Kokko 2003b).

2.3 Explaining the surge in FDI in the past decade

As discussed in detail by Zimny (this volume), the ratio of FDI flows to GDP at a global level has risen markedly in the past decade. Consequently, also the FDI stocks have risen and cross-border ownership is becoming a predominant feature of the corporate landscape in

1 For example, Nicoletti *et al.* (2003) find in a broad cross-country study that around half of FDI can be explained by economic fundamentals such as the size of, and distance to the host market. The remainder is determined by policy variables, broadly defined.

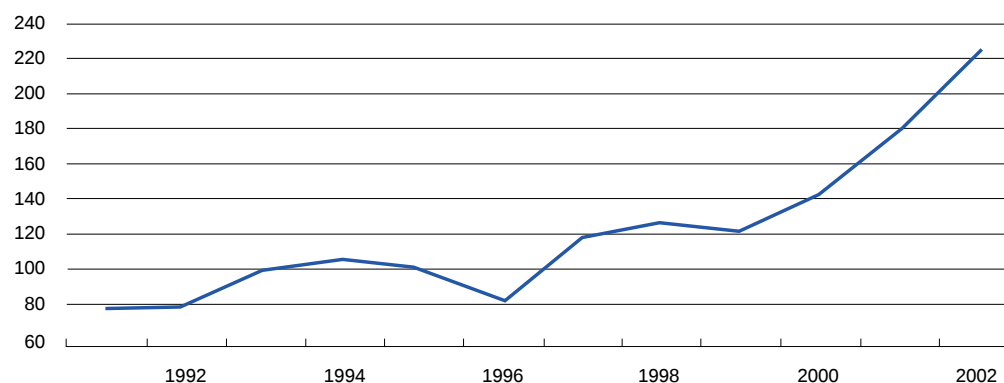
developed and developing countries alike. This suggests that the aforementioned determinants of FDI have not remained constant over time. On the contrary, a combination of technological, economic and regulatory factors have shifted the cost-benefit trade-off in favour of foreign ownership and a cross-border utilisation of proprietary assets. In the context of our earlier discussion, these changes have expanded the boundaries of the firm. Three elements have been particularly important in causing this shift in recent years.

A combination of technological, economic and regulatory factors has shifted the cost-benefit trade-off in favour of foreign ownership.

First, the regulatory and policy environment has become much more favourable to FDI. Barriers to international trade and investment flows have come down steadily in recent years. At first glance, this may not be expected to have a positive impact on FDI flows. Reduced trade barriers should reduce the incentive for “barrier-hopping” horizontal FDI. Yet, the global volume of FDI has tended to rise as trade has become more open. Across countries, trade has also been found to be strongly and positively correlated with FDI. This suggests that, on balance, trade openness encourages vertical FDI even more than it discourages horizontal FDI.

As for barriers affecting FDI directly, more than 90 percent of all regulatory changes that affected FDI in the 1990s were aimed at promoting rather than restricting FDI. As shown in Figure 1, the pace of FDI-friendly regulatory changes has accelerated notably in recent years.

Figure 1. Number of regulatory changes favourable to FDI, globally (net)



Source: UNCTAD (2003).

A second driver of the rise in FDI flows in the 1990s has been technological progress. With more technology-based trade and production, economies of scale tend to become more important both in production and in proprietary assets. Economies of scale in production create an incentive for vertical FDI, a concentration of production of individual components and an internationally integrated production chain. Economies of scale in proprietary assets (such as R&D and brands) encourage horizontal FDI aimed at global market leadership and as geographically dispersed exploitation of the proprietary assets as possible.

At the same time, rapidly falling communication costs – which some have referred to as the “death of distance” – have made it easier and less costly to manage globally dispersed operations, pooling some corporate services globally, and shipping products and components across the globe in search of efficiency. This is particularly relevant for the expansion of FDI in service industries, which are often non-tradable and previously difficult to co-ordinate over large distances. In these industries, geographical expansion through FDI allows for an exploitation of economies of scale in proprietary assets that is not possible through trade alone.

The abovementioned forces have, together, led to increased competition among leading TNCs. In order to survive, TNCs must therefore maximise their economies of scale by contesting all potential markets if their competitors do so. The rise of international production systems has shifted emphasis towards the efficiency of the system as a whole, or as formulated in the 2002 UNCTAD World Investment Report: “Global markets increasingly involve competition between entire production systems, orchestrated by TNCs, rather than between individual factories or firms” (UNCTAD 2002, p. 121).

Factors that contributed to fuel equity prices in the 1990s may also have fuelled a bubble in cross-border mergers and acquisitions.

While these trends have led to a fundamental shift towards the expansion of TNCs, the surge in FDI in the 1990s also seems to have included a temporary element. The unprecedented wave of cross-border mergers and acquisitions (M&As) towards the end of the 1990s was partially a consequence of the equity price bubble. Factors that contributed to fuel equity prices, including easy access to equity capital, excessive profit expectations and possibly a too loose monetary policy, may also have fuelled a bubble in cross-border M&As. Inflated stock prices also raised the price tag of quoted companies, thus raising the M&A amounts. Still, while M&A turnover fell sharply in the aftermath of the bursting of the equity bubble, it remains well above its pre-1990s historical average.

Related to the partially irrational elements that may have given rise to an M&A bubble is the notion among managers that “big is beautiful”. As we mentioned earlier, shareholders do not normally have an incentive to engage in M&A activity that does not increase the joint value of the merged companies. Risk diversification alone should not be a reason for shareholders to engage in M&As, since they have the ability to diversify by holding a portfolio of different stocks. For managers and employees, on the other hand, large, diversified companies can reduce risks specific to them. Technological progress and increased global competition may have made it even more difficult to predict what business activities will be fruitful, strengthening the incentives for managers to push for a more diversified company.

While it is possible that equity bubbles and non-value-maximising strategies have been behind some of the expansion of FDI of the past decade, they are unlikely to be the dominant factors. The extended international production systems of TNCs must sooner or later generate real economic gains, or they should eventually unravel under the pressure of competition from more efficient competitors.² The fact that the foreign-owned share of global production capacity keeps rising suggests that the economic gains are real.

2 It should also be observed here that the forces behind the reorganisation of production at the international level are to some extent shared by similar forces at the national level.

3. The impact of FDI on host-country economic growth

The global shift towards a more FDI-friendly policy and institutional environment observed in the previous section reflects a growing perception – in an ever-larger number of countries – that there are substantial economic benefits from free markets, free trade, private ownership, effective property rights and foreign ownership. This section explores to what extent the empirical evidence supports this perception, i.e. evidence of real economic benefits from FDI for the host economies. We address this question strictly from the point of view of economic growth. While we recognise that FDI may influence other aspects of the host economy – such as income distribution, financial stability, or the environment – establishing a positive impact from FDI on growth can be seen as a minimum requirement, which needs to be satisfied before considering FDI-supporting policies.

3.1 The main channels of transmission from FDI to growth

In theory, FDI can have a positive effect on economic growth through three channels, all of which inevitably generate higher output per worker.

The first channel through which FDI can influence economic growth is by raising the domestic rate of investment. To the extent that a country has a savings-investment gap, as reflected in a current account deficit, a net inflow of FDI can help to raise the domestic investment rate in the host economy. This, in turn, expands the productive capital stock and thus output (unless the investment is entirely unproductive).

The second channel is by raising the efficiency of the acquired firm. Efficiency gains in the acquired or created firm can stem from two different sources: economies of scale – either in production or in proprietary assets – and reduced x-inefficiencies. Economies of scale in proprietary assets arise when they represent a fixed cost that can be shared across different physical locations. For example, R&D that results in new product or process designs are not typically constrained to one geographical location. Other fixed costs that may at least partially be spread across different geographical locations include support services such as finance, IT, and marketing. Economies of scale can also emerge in production at a single geographical location. Regional economic integration such as that in the EU gives rise to a pooling of production to a smaller number of locations. This option is not available to the local competitors. In small countries, the exploitation of economies of scale through domestic M&As is only feasible up to a point, after which it will result in excessive industrial concentration. By contrast, productivity gains from reduced x-inefficiencies are independent of the scale of operations. Instead, they originate in the transfer of best practice to the acquired firm, in the form of new management, knowledge and technology.

Through these different channels, FDI can boost labour productivity even if there is no new fixed investment (e.g. when FDI occurs as a result of an M&A).

A third channel is when the knowledge and technology that the foreign owner transfers to the acquired firm spills over to the surrounding local economy. It could for example be that the firm engages local suppliers (upstream linkages), or sells intermediate goods to local firms (downstream linkages). The presence of a more efficient foreign-owned

FDI can have a positive effect on economic growth through three channels: fixed investment, efficiency gains, and spillovers.

firm may force local competitors to innovate more than they used to in order to stay alive, raising the quality, productivity and product diversity of local producers. It may also set in motion a process of consolidation and increased economies of scale among local competitors. It could also be that staff trained by the foreign owner eventually leaves the foreign-owned firm for a local competitor, taking their new skills with them. Through such positive externalities, productivity can increase also in local firms that do not themselves receive FDI. It should be recognised here, on the other hand, that a strong foreign investor could run less efficient local competitors out of business to the point where competition suffers. This would give the foreign-owned firms increased market power and the ability to price its goods in a monopolistic manner. In this case, while there may still be gains from economies of scale and reduced x-inefficiencies, the gains would be disproportionately captured as rents by the foreign-owned firm rather than by the host economy.

If evidence of positive spillovers can be found, there may be a rationale for public policy support aiming at raising the level of inward FDI towards its social optimum.

While all three channels have a positive impact on economic growth, they are far from equivalent from a policy point of view. In the first two cases – higher growth through increased fixed investment and technology transfer to the acquired firm – the private rate of return is the same as the social rate of return. This means that the investing firm has an incentive to choose a level of FDI that is optimal also from society's point of view. In the case of the third channel, by contrast, positive spillovers to the surrounding economy mean that the social rate of return exceeds the private rate. Here there is a risk that the foreign investor chooses a level of FDI that falls short of what would be optimal from the host country point of view. Thus, if evidence of positive spillovers can be found, there may be a rationale for public policy support aiming at raising the level of inward FDI towards its social optimum.

3.2 Empirical evidence of growth effects from FDI: results from broad cross-country studies

The broader empirical growth literature does not primarily concern itself with the role of FDI, but some conclusions of this literature have tremendous bearing on how we view FDI as a driver of economic growth. In fact, the distinction between the three channels in the previous section has its equivalent in the contrasting schools of neoclassical and new growth theory. It may therefore be worthwhile outlining some of the main empirical observations made by this literature.

Early neoclassical growth theory uses a simple production function consisting only of capital and labour inputs to account for growth. The growth of these two factor inputs could not account for even half of output growth in the early models, leaving a large unexplained “Solow” residual to account for the rest. This residual has later become known as Total Factor Productivity (TFP), with the interpretation that the residual represents efficiency gains in the use of a given combination of factor inputs. Later modified neoclassical models have reduced the unexplained share of economic growth captured by the residual. An empirical study by Mankiw *et al.* (1992), for example, finds that four-fifths of the variation in per capita incomes across countries can be explained by only three variables: population growth and investment in physical and human capital. These results suggest a more limited role for general technological progress in growth, as reflected in the – now smaller – TFP residual. By implication, if these neoclassical studies are correct, the role of FDI to serve as a transmitter of knowledge between countries is also rather limited. Any growth effect from FDI is limited to a pure fixed investment effect.

The idea that FDI also affects growth through cross-border technology transfer and spillovers is more closely associated with the “endogenous growth” school than with neoclassical growth theory. According to these models, new knowledge is at least partially captured by the innovating firm and therefore does not spread automatically between countries. This leaves a role for FDI to serve as a conduit for knowledge transfers and spillovers between countries. This strand of growth theory also has its supporters in the empirical literature. For instance, there are studies that find the underlying assumptions of the neoclassical models overly simplistic. Klenow and Rodríguez-Clare (1997) correct for weaknesses in the data quality of human capital and they find that the three inputs used in Mankiw *et al.* (1992) then account for only half of income differences. This leaves a greater portion of growth to be explained by technological progress rather than the quantity of factor inputs. Some studies in this empirical literature (Klenow and Rodríguez-Clare 1997 and Easterly and Levine 2000) suggest that TFP can account for as much as nine-tenths of the cross-country variation in growth rates.

These observations have profound implications for the relative importance of the three channels through which FDI can affect growth. Also Blomström *et al.* (1996) and Bils and Klenow (1998) find that TFP plays a substantial role in economic growth. They conclude from this observation that if FDI has any substantial impact on economic growth, it has to be through its impact on productivity. In effect, this points to FDI potentially affecting growth through all the three channels mentioned earlier.

Turning now to empirical studies that account for FDI explicitly, this literature finds a strong positive correlation between the level of inward FDI and economic performance. A seminal paper in this field is by Borensztein *et al.* (1998). Using a cross-country regression framework, they investigate FDI flows to developing countries over the past two decades and find these to be positively correlated with growth, and particularly so when the host country has a higher level of human capital (as measured by average school enrolment ratios). They also conclude that a unit of FDI contributes more to growth than a unit of domestic investment does. This suggests that FDI contains an additional growth-enhancing element of technology transfer.

The results obtained in the context of developing countries should not necessarily be extrapolated to other regions, however. In fact, there are large differences across countries and regions, both in terms of the overall size of the growth impact of FDI and in terms of the relative importance of the three channels through which FDI operates. There is also tremendous uncertainty regarding the causality in these relationships. This ambiguity is found in both microeconomic and macroeconomic studies. Countries and firms with higher productivity can generally also attract more FDI than others, which makes it difficult to determine with any precision the extent to which FDI has a causal positive effect on growth. Some studies have attempted to determine the true causality by using lagged data for FDI. Aitken and Harrison (1999) and Carkovic and Levine (2002) then find no significant growth effects of FDI. Rangvid (2001) finds that growth and investment returns are very closely associated. This suggests that anticipations of higher growth should attract increased domestic and foreign investment, rather than the other way around. A more recent paper, by Calderón *et al.* (2004) use a bivariate Vector Autocorrelation Regression (VAR) methodology on a large panel of industrial and developing countries to identify the time precedence of FDI, fixed investment and GDP. They find that both M&A and greenfield

Countries and firms with higher productivity also attract more FDI, which makes it difficult to determine the extent to which FDI causes economic growth.

investment lead domestic fixed investment but are led by GDP growth. They thus conclude that economic growth, as an indicator of the rate of return on investment, serves as an effective “pull” factor for FDI. In turn, FDI helps to raise domestic investment in the future, but neither investment nor FDI has a clear causal impact on GDP growth. This result confirms similar results obtained by Blomström *et al.* (1996) and Attanasio *et al.* (2000). It should be stressed that the causality problem is not unique to FDI, but characterises all investment. Generally speaking, high rates of return on investment attract more of it. Temple (1999) suggests that the higher the rate of return, the bigger the potential causality problem. The very high rates of return observed for FDI compared with other forms of investment could thus imply that also the problems of reverse causality are particularly great in the context of FDI.

These results should not be taken as hard evidence, nevertheless, that no causal link exists from FDI to growth. As Barro and Sala-i-Martin (1995) suggest, economic growth is the result of a multitude of factors that cannot be fully captured by only a few variables. Attempting to explain growth on the basis of FDI and a few other variables may then result in a mismeasurement of the relationship between FDI and growth. For example, it could be that the set of policy measures that boost growth simultaneously attract and operate through FDI. If there are no cases where such policies are in place without also attracting FDI, it becomes very difficult to separate the impact of the policies directly from their impact via FDI. Essentially, if the policy measures (in this example the true drivers of growth) are not directly observable, the only solution is to find some instrumental variable that reveals the relationship between policies and either FDI or growth, while being independent from the other.

Empirical evidence suggests that FDI has a relatively stronger growth impact in middle-income countries than in either high-income or poor countries.

Bearing these econometric problems in mind, empirical evidence suggests that FDI has a relatively stronger growth impact on middle-income countries than in either high-income or poor countries. This group typically has two key characteristics that make for a stronger link between FDI and growth.

First, middle-income countries have on average been receiving large inflows of FDI in net terms (since gross outflows have been dwarfed by gross inflows). To the extent that these inflows have consisted of new investment and not just M&As, they have added directly to the fixed capital stock. This is in line with neoclassical growth theory, which suggests that the smaller initial capital stocks of middle-income countries bring higher rates of return than those in rich countries (other things equal). In small open economies, this higher rate of return can raise the equilibrium investment rate above the domestic saving rate, with the gap between the two being filled by a net inflow of capital from the rest of the world.³

A second feature that helps middle-income countries benefit from FDI, especially in comparison with poorer countries, is that they typically meet certain conditions for

³ In principle, there is no difference between FDI and other capital inflows when viewed simply as a source of financing. Net inflows of loans and portfolio flows by definition finance the current account just as well as net inflows of FDI. But this argument ignores the possibility that an inflow may trigger a corresponding outflow, dampening the actual impact on fixed investment. Empirical studies have found a much stronger link between domestic investment and FDI than what has been found for other inflows. Bosworth and Collins (1999), for example, estimate that each additional dollar of FDI to middle-income countries increases domestic investment by 50-85 cents, whereas the impact from loans and portfolio investment does not exceed 25 cents to the dollar.

technology transfer and spillovers. Specifically, to be able to absorb new technologies and knowledge from FDI, the local economy must have a minimum level of human capital, infrastructure and research and development. This allows not only the receiving firm, but also surrounding indigenous firms, to absorb and benefit from the knowledge that comes into the economy via the foreign investor. Empirically, the World Bank (2001) observes that FDI has the expected positive relationship with productivity where absorptive capacity is high, with East Asia having experienced particularly strong positive consequences from FDI on these grounds. A similar result is reached by Fortanier (2002), who claims that “FDI generally has ‘crowded in’ domestic investment in Asia, while ‘crowding out’ effects dominated in Latin America”.

The link between the stock of human capital and the impact of FDI is demonstrated in Borensztein *et al.* (1998), who find that FDI is more strongly correlated with domestic investment when the host country has a higher level of human capital, as measured by average school enrolment ratios. Blomström and Kokko (2003a) similarly point to the importance of human capital and a competitive environment in facilitating positive growth effects from FDI.

FDI has been found to be more strongly correlated with domestic investment when the host country has a higher level of human capital.

Another factor that seems to strengthen the growth impact of FDI is competitiveness. If the local economy is competitive, local firms have a greater incentive to absorb new technologies and to innovate. Blomström *et al.* (2000) find evidence that the economic impact of FDI on host economies is indeed influenced by the level of competitiveness and technical capability of indigenous firms.

While middle-income countries have on average tended to satisfy both the criteria outlined above (net capital imports and a minimum enabling environment), this is less true in the richest and the poorest countries of the world. The world’s richer countries are characterised by large outflows as well as inflows of FDI. This leaves net flows substantially smaller than gross flows and, on average, FDI has not contributed to raising domestic investment substantially in this group. Poorer countries, by contrast, may have a greater need to augment domestic saving with net inflows of foreign capital. However, they often lack the enabling environment needed to benefit economically from FDI inflows. In this case, FDI is often isolated in contained enclaves with a small contact surface to the local economy. This limits the scope for broad economic benefits even when FDI inflows take place. Positive effects from FDI are particularly hard to detect in raw-material intensive less developed countries.⁴

Having made these general empirical observations, we now turn specifically to the role of FDI in two European country groupings: EU-15 countries and CEE countries.

3.3 Impact of FDI on economic growth in the European Union

We first look at the evidence on the economic impact of FDI in EU-15 countries, keeping the three channels outlined earlier in mind. It should be stressed, however, that even when a link is found between FDI and growth, the empirical literature often does not identify the influence of the three effects separately.

⁴ See Blomström, *et al.* (1994).

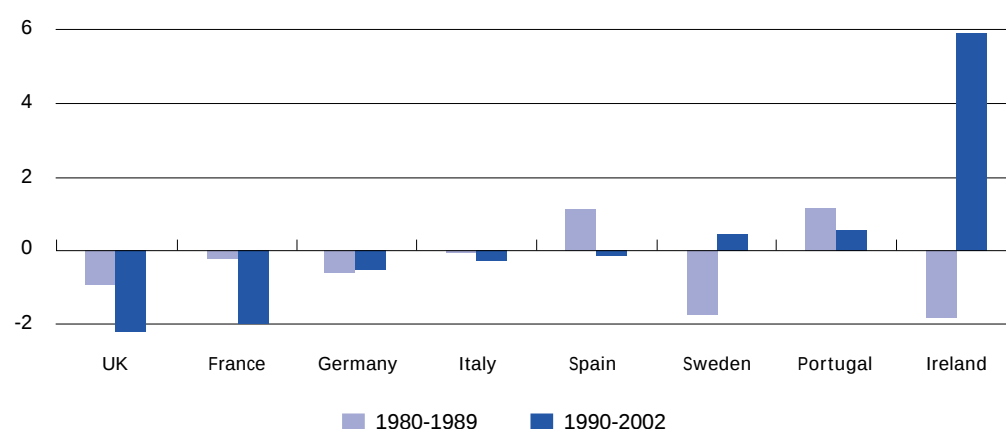
3.3.1 Higher fixed investment

EU countries have, collectively, been net exporters of FDI in the 1990s.

In the EU-15, as in other advanced economies, it is more difficult to argue that there is a general shortage of financing for viable investment projects. With a few exceptions, advanced countries do not systematically have domestic investment above that of their savings, or net inflows of FDI to finance such savings-investment gaps. On the contrary, EU countries have, collectively, been net exporters of FDI to the order of 1 percent of GDP annually in the 1990s. Rather than augmenting domestic saving, FDI flows have thus been a drain in net terms on the resources available for domestic investment.

That the EU-15 as a whole does not have a net inflow of FDI does not exclude individual members from benefiting from such inflows. As Figure 2 illustrates, the four largest EU members all had net outflows of FDI both in the 1980s and the 1990s. But a few other EU members did receive net inflows of FDI. This was especially the case for Spain and Portugal in the 1980s (especially around the time of their EU accession) and Ireland in the 1990s. In these cases, large net FDI inflows contributed directly to raising the level of domestic investment and, probably, to the rate of economic growth.

Figure 2. Net inflows of FDI (in % of GDP)



Source: UNCTAD (2003).

3.3.2 Efficiency gains in foreign-owned firms

The second channel through which FDI can affect economic growth is through efficiency gains in the foreign-owned firm, stemming primarily from the introduction of new or better technology and management techniques by the foreign investor. As the broader growth literature suggests, if technological progress plays an important role in driving economic growth, then one should also expect FDI to affect growth at least partially through the technology-transfer channel.

The empirical literature addresses this question from different directions. One strand of the literature focuses on whether foreign-owned firms have higher productivity growth than indigenous firms. This literature tends to distinguish between unconditional and conditional productivity differences between the two groups. While a natural starting point, measures of the unconditional productivity gap between indigenous and

foreign-owned firms are problematic in that they do not identify whether the gap is due to ownership or to the fact that other characteristics – such as size, staff quality and the level of investment – may also differ across types of firms. In order to observe the causal relationship from ownership, one needs to account explicitly for those other differences, thus obtaining a measure of the conditional productivity gap.

There are a number of studies that find evidence of a conditional productivity gap. A large portion of this literature in the EU context has focused on the United Kingdom, partly because of data availability. Griffith and Simpson (2001) estimate the relationship between ownership and labour productivity for a panel of UK firms between 1973 and 1996, including other firm characteristics such as size and age, to find that both levels and growth rates of labour productivity are higher in foreign-owned firms than in indigenous firms. These results are broadly similar to those of Davies and Lyons (1991), who also look at the UK case.

But the focus on labour productivity in these studies means they cannot separate between productivity gains stemming from better management and technology and those resulting from differences in investment and human capital stocks across the different groups of firms. Two studies therefore focus on total factor productivity (TFP) instead of labour productivity: Griffith (1999) for the United Kingdom and Benfratello and Sembenelli (2002) for Italy. In both cases, foreign-owned firms are more productive than local ones. Similarly, Barrell and Pain (1997) focus on manufacturing in Germany and the United Kingdom and find that a 1 percent increase in the FDI stock raises TFP by 0.27 percent in Germany and 0.26 percent in the United Kingdom. They also find that one-third of productivity growth in UK manufacturing since 1985 can be attributed to inward FDI. Similarly, using panel data from UK manufacturing, Haskel *et al.* (2002) find that firms in industries with a larger share of foreign ownership also display higher TFP growth.⁵

Foreign-owned firms tend to have higher productivity than indigenous firms.

Also studies on Ireland point towards substantial productivity gains from FDI. In Ireland massive FDI inflows have coincided with very high TFP growth in the past decade. At least some of this seems to reflect causality from the former to the latter. Barrell and Pain (1999) focus on the Irish manufacturing sector to find a significant relationship between the stock of FDI and overall productivity growth. They point to the strong link between inward FDI and Ireland's above-average growth in R&D spending to conclude that foreign-owned firms – accounting for around 60 percent of gross output in Irish manufacturing – play an instrumental role in generating the exceptionally high rate of growth in total factor productivity.

Of course, a statistical correlation between ownership and productivity is not in itself proof of causality from the former to the latter. Several recent studies (including Griffith 1999, Harris and Robinson 2003, and Benfratello and Sembenelli 2002) try to address this in various ways – for instance by using instrumental variables. They find that the productivity effects of foreign ownership are then smaller and sometimes even insignificant.

⁵ Studies focusing on other economies broadly support the conclusion that foreign-owned firms are more productive than local firms. In the case of the United States and Canada, this includes Globerman *et al.* (1994) and Doms and Jensen (1998). For developing countries, support for this conclusion is found in Blomström and Wolff (1994), Sjöholm (1999), Kokko *et al.* (2001) and Haddad and Harrison (1993).

To summarise the productivity-gap literature, while foreign-owned firms are consistently more productive than indigenous firms, it is not clear whether this is because of the ownership *per se* or whether inherently more productive firms simply attract more foreign buyers.

A second strand of the literature approaches the issue of FDI and productivity in a rather different manner, exploring whether merger events introduce a trend break in the profitability of the involved firms. Since the bulk of FDI in developed countries – including the EU – is the direct result of M&As, the question of gains from FDI overlaps substantially with whether there are gains from M&As.

As reported by Fortanier (2002), the efficiency of merged firms can be measured using two methods. The first method is known as “event studies”. This uses stock market valuations before and after a merger takes place to see if the market expects profitability to improve by this event. This method typically compares merged firms either with their historical performance or with other firms serving as a control group. Tichy (2000) reviews 32 event studies to conclude that mergers in the manufacturing industry tend to increase the value of the acquired firm but erodes that of the acquiring firm. Another review of this literature is conducted by Schenk (2002), who similarly finds a negative link between the merger event and the evolution of share prices in three-quarters of the cases. On average, this literature finds that acquiring firms lose between 5 and 10 percent of their market value within five years of the merger.⁶

“Event-studies” tend to find that mergers and acquisitions reduce the market value of acquiring firms.

The second method of studying the efficiency of M&As is used by the “outcome studies”. These do not use market data but instead use data from the annual reports of companies. While such data are typically considered more reliable as an indication of true firm performance than the share price, comparability across countries faces significant problems. Still, outcome studies broadly confirm the negative conclusions of event studies. As reported by Schenk (1998), on average, outcome studies have indicated approximately 65-85 percent of all large-firm M&As do not lead to an increase in profitability.⁷

Since M&As on average result in increased concentration, it is unlikely that the absence of profitability gains is the result of increased competition. Instead, this literature concludes that it reflects a relative absence of gains also at the society level. This conclusion is supported by a lack of evidence that M&As on average bring gains in terms of increased R&D spending or innovativeness of merged firms.⁸ In essence, the combined firm is no more efficient than its predecessors.

Together, these two strands of the empirical literature raise serious questions as to what scope there really is for productivity gains from FDI in industries and economies that are operating relatively close to best practice. Unlike developing countries, where local firms may operate far below the efficiency frontier and so can make large strides thanks to an injection of new management and technology, this seems to be less commonplace in

6 See also Jensen and Ruback (1983) and Agrawal *et al.* (1992) for other surveys on this topic.

7 For other studies on the subject, which mostly reach similar conclusions, see Rhoades (1998), Simon *et al.* (1996) and Schenk (2002).

8 See Fortanier (2002) for a further discussion on these issues.

developed economies where strong local competition encourages innovation and the adoption of best practice also without the influx of foreign capital. While foreign-owned firms are on average more productive than indigenous firms, there is little conclusive evidence that the causality runs from ownership to productivity, rather than the other way around.

3.3.3 Externalities to indigenous firms

Beyond the direct impact that the foreign investor has on the acquired firm, there may also be positive externalities to the surrounding local economy. However, the empirical literature has long had great difficulty producing convincing evidence of such spillover effects. This literature was initially dominated by cross-section studies (which have no time dimension), mostly based on sector-level data. Many of these studies have found mostly positive spillover effects (i.e. a positive impact on productivity), both in developed and developing countries, but these results have been somewhat undermined by methodological questions.

With the availability of larger data sets and new econometric techniques, there has been a partial shift over time towards panel-data studies. Panel data studies are less prone to biased estimates as they allow for the observation of firms over time, which is particularly important if there are lagged effects. They also allow for the control for unobservable factors that may affect both ownership and performance. In sharp contrast to cross-section studies, panel-data studies only rarely find strong evidence of a positive impact on productivity outside the foreign-owned firms themselves.⁹ Görg and Greenaway (2001) investigate the evidence of possible spillovers in a broad survey of the literature covering developing, developed and transition economies. They look for evidence of spillovers in terms of productivity, wages and exports but find little robust empirical support for their existence.

Panel-data studies only rarely find strong evidence of a positive impact of FDI on productivity outside the foreign-owned firms themselves.

One notable exception in the EU context is the United Kingdom, for which several studies – also panel studies – have found evidence of positive spillovers. For example, Haskel *et al.* (2002) find that total factor productivity growth is higher in sectors that have a larger presence of foreign-owned firms. This is the case also for firms that themselves are not foreign-owned. A 10 percent increase in foreign presence in a UK industry raises TFP in indigenous firms by 0.5 percent, an observation that is consistent with the presence of positive spillovers. Also Liu *et al.* (2000) find that UK-owned firms enjoyed productivity gains in FDI-receiving sectors. These results are supported by another firm-level panel study by Griffith *et al.* (2003). They observe that TNCs constitute a large share of the firms that are on the technology frontier. More importantly, they find that increased foreign presence raises the speed of convergence by all firms towards the frontier. These positive conclusions for the United Kingdom are somewhat qualified by a string of studies by Girma and his co-authors. Using firm-level data, Girma *et al.* (2001) and Girma and Wakelin (2000, 2001) find evidence of spillovers only in skill-intensive industries. They find that local firms benefit less from the presence of foreign-owned firms the further they themselves are from the technology frontier.

⁹ Comprehensive surveys of this literature are provided by Görg and Greenaway (2001, 2002) and Barba Navaretti and Venables (2004).

As opposed to the literature on the United Kingdom, there are only a few studies that look at these issues for other EU countries. Barrios and Strobl (2002) find no persuasive evidence for spillovers in the case of Spain, while Dimelis and Louri (2001) do find such evidence in the case of Greece. Some studies observe that spillovers vary across sectors.

Barry *et al.* (2003) find evidence from US firms in Ireland that externalities arise from FDI in the form of agglomeration effects. These occur both because the presence of foreign-owned firms at a location generates efficiency benefits for other foreign-owned firms at the same location and because existing firms send signals to new investors on the reliability and attractiveness of the host country. Furthermore, Görg and Strobl (2001, 2002) show that the presence of foreign companies has a positive impact on the survival probability of indigenous firms in high-tech industries. Similarly, Sembenelli and Siotis (2003) find evidence in the case of Spain that spillovers to local firms are greater in R&D-intensive sectors. These observations support earlier observations made with respect to developing countries (for instance in Blomström *et al.* 1994, Kokko *et al.* 1996, and Kathuria 1998, 2000 and 2001) that the level of technological development and human capital of the local economy influences positively the size of positive spillovers from FDI.

Castellani and Zanfei (2001) reach similarly mixed conclusions in a manufacturing panel data study on France, Italy and Spain. Of the three countries, a significant positive impact of foreign ownership on domestic productivity was only found for Italy. In this context, Italy does provide some evidence of the importance of an enabling environment for FDI to have a broader growth impact. Imbriani and Reganati (1999) use regional and cross-section data from Italy to show that, although productivity levels are higher in sectors where TNCs have a greater presence, evidence of such spillovers is less apparent in the southern parts of the country.

The difficulty of finding strong evidence of spillovers between foreign-owned and same-sector indigenous firms does not exclude the possibility that spillovers exist across sectors. Smarzynska (2002) proposes that the empirical literature may be looking for spillovers in the wrong place. She suggests that TNCs have a stronger incentive to prevent spillovers to same-sector competitors than to local suppliers in other sectors, i.e. to firms that are not in direct competition with the foreign investor. Spillovers from FDI could then be more likely to occur through backward linkages to suppliers. Studies focusing on same-sector spillovers will not capture these. There is some empirical support for this view. For example, in a study of FDI in Taiwan, Markusen and Venables (1997) find evidence that initial foreign investments created demand for local suppliers, raising quality, productivity and product diversity.

While not providing direct evidence, an indirect indication that FDI is associated with positive spillovers is the fact that it tends to be concentrated in sectors where agglomeration effects and positive spillovers tend to be more common. For example, Barba Navaretti *et al.* (2002) report that while non-EU subsidiaries account for 11 percent of total EU manufacturing turnover, their share rises to above 20 percent in pharmaceuticals and in communication equipment. In office equipment their share is 40 percent. These are all research-intensive industries that have been found to be associated with the presence of technology spillovers.

Another indirect effect of FDI may be through its influence on local competition. Ahn (2002) reviews a large number of empirical studies and observe a positive and robust positive relationship between product market competition and productivity growth. Whether FDI results in positive spillovers may thus depend on its impact on competition. The empirical literature seems to suggest that this is the case when local firms have attained a minimum level of technology, but that FDI actually crowds out competition when local firms are too far below the technology frontier to compete effectively. For example, Cantwell (1989) found that the entry of US manufacturing firms into Europe had a positive effect on competition when local firms had some traditional technological strength.

Through increased competition, FDI can also serve as a catalyst for sector-wide consolidation, generating economies of scale and contributing to the formation of agglomerations. This issue is closely linked to regional trade integration. Once firms are able to serve the larger regional market from one or a few production sites, there is a strong incentive for a pooling of production and R&D functions to a smaller number of locations, thus allowing for greater economies of scale. By implication, this means that economic integration leads primarily to vertical rather than horizontal FDI.

As shown by Zimny (this volume) there is strong evidence that each EU enlargement has increased FDI inflows to accession countries around the time of joining the EU, both in absolute terms and in comparison with the average for all EU countries. This has tended to be true both for intra-EU flows and for flows from outside the EU. This suggests that economic integration does indeed spur larger FDI flows. Yannopoulos (1990) observes that FDI into Ireland accelerated sharply in the 1970s. A similar development has been observed preceding the Iberian accessions of the 1980s (see Buckley and Artisien 1987, Döhrn 1996) and in the case of Sweden and Austria. Brenton (1996) observes that FDI increased within Europe already in the late 1980s in anticipation of the 1992 Single Market.

Each EU enlargement has increased FDI inflows to accession countries around the time of joining the EU.

To sum up, the empirical literature for the EU and other developed countries broadly supports the notion of a positive correlation between inward FDI and economic performance. At the same time, with a few exceptions (notably the UK) it has not typically been possible to find an unambiguous causal influence of FDI on economic growth. Also the size of any such positive link has been contested. Judging especially from the valuation of merged firms, the efficiency gains of M&As tend to be small. Perhaps this should not come as a surprise. Firms operating in a competitive local environment face strong incentives to innovate and adopt best practice also without the influx of foreign capital. This reduces the scope for substantial additional efficiency gains from M&As. By contrast, such a high level of efficiency is less likely to characterise the operation of firms in developing and transition economies. This suggests that the productivity gains from FDI could be substantially larger in those countries. To test this hypothesis, we now move to Central and Eastern Europe.

3.4 Impact of FDI on economic growth in Central and Eastern Europe

The basic mechanisms through which FDI has affected economic growth in other countries are likely to be present also in the CEE countries, i.e. through fixed investment, technology transfers and spillovers. But the manner in which FDI has affected growth through these

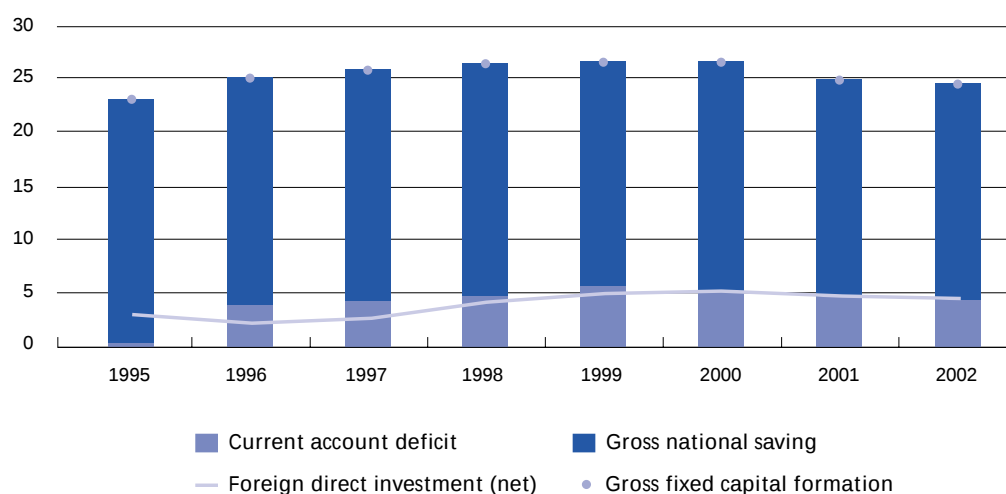
channels also contain some elements that are unique to transition economies. Specifically, FDI seems to have served as a catalyst for structural change in Central and Eastern Europe and so resulted in greater productivity gains from new investment than is typically the case in either developing or developed economies.¹⁰

3.4.1 Higher fixed investment

In Central and Eastern Europe, FDI helped to facilitate a higher level of investment than would have been possible through national saving alone.

After more than a decade of transition, one of the main observations that can be made with respect to economic growth is that the region has relied heavily on foreign saving to fund the gap between national saving and investment. Between 1994 and 2002, the current account deficits (or foreign saving) of the CEE-10 averaged 4 percent of GDP (Figure 3). Net FDI inflows contributed significantly to the financing of the region's current account deficit. In fact, net FDI inflows and external deficits were of a similar size. In this sense, and as the chart suggests, FDI helped to facilitate a higher level of investment than would have been possible through national saving alone.

Figure 3. Gross national saving and investment in CEE (in % of GDP)



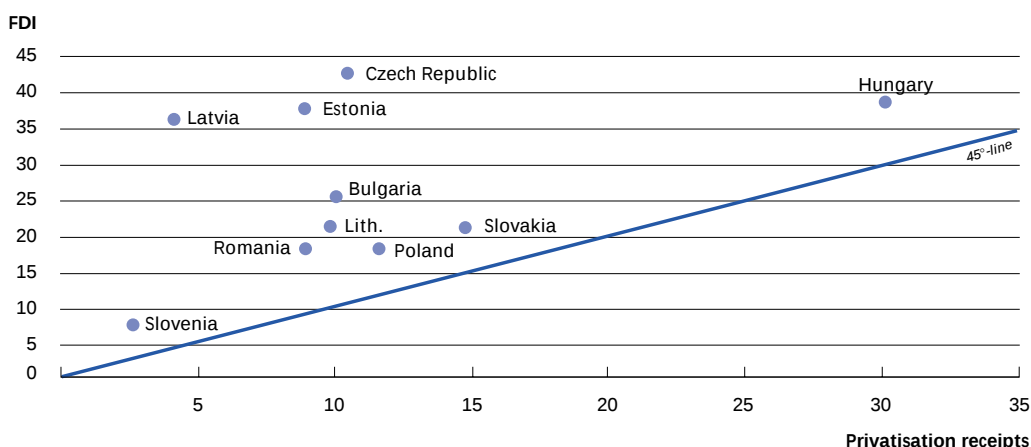
Source: EBRD (2003) and own calculations.

Of course, FDI to these countries partially consisted of M&As (driven by the privatisation of state assets). In this sense there is no immediate one-to-one link between FDI and domestic investment. Nevertheless, as suggested by Figure 4, cumulative FDI inflows to CEE countries have on average been more than double that of privatisation receipts, so there has also been a substantial element of new (i.e. greenfield and brownfield) investment. This is consistent with the results of Calderón *et al.* (2004), who find that cross-border

¹⁰ As discussed in Temple (1999), an important limitation of large cross-country growth regressions is that countries do not lend themselves comfortably to generalised conclusions regarding the drivers of growth. Specifically, there are likely large differences in the drivers of growth between countries that are technology leaders and those that are trying to catch up. This observation is key to the issue of FDI when we compare the EU-15 members with the new EU members. Specifically, one would expect, *ex ante*, that technology transfer and the adoption of best practice plays a much greater role in CEE countries than in the EU-15. Furthermore, the fixed investment gap may be greater in the CEE countries.

M&As tend to generate new additional investment of a similar order of magnitude. This observation is also supported by data reported in the 2000 UNCTAD World Investment Report: in the period 1997-99, cross-border M&As accounted for four-fifths of FDI inflows in developed countries, but only two-fifths in CEE (UNCTAD 2000). Given the shortage of domestic saving and investment in CEE countries, FDI has thus contributed directly to a higher investment ratio during transition.

Figure 4. Cumulative FDI and privatisation receipts 1992-2000 (in % of GDP)



Source: EBRD (2003).

3.4.2 Efficiency gains in foreign-owned firms

The second channel through which FDI can affect economic growth in CEE is by facilitating a more efficient use of existing resources through foreign-owned firms closer to best practice. Similar to the literature for developed countries, the predominant method to measure this is to compare the productivity of foreign-owned firms with that of indigenous firms. Djankov and Hoekman (2000) analyse firm-level data of over 170 foreign-owned firms – joint ventures and FDI – in the Czech Republic for 1992-96. They find that TFP growth is higher in firms with foreign participation than in purely indigenous firms. In some cases, this superior performance of foreign ownership could stem from flaws in domestic mass privatisation schemes that made domestic ownership too dispersed for effective governance. For example, Kocenda and Svejnar (2003) analyse the effect of ownership following large-scale privatisation in the Czech Republic. They find that concentrated foreign ownership improves economic performance, whereas domestic private ownership does not, relative to state-owned firms. They find large differences in how the different owners have managed their firms. Foreign-owned firms engage in strategic restructuring, resulting in increased profits and sales, while indigenous firms focused on cost cutting without increasing profit. One reason for these differences in ownership behaviour could be differences in owner concentration. The authors find that ownership concentration is associated with superior performance. To the extent that foreign owners have been able to gain a greater controlling share in their firms than is typically the case for domestic owners, their corporate governance may be more effective.

FDI can also affect economic growth by facilitating a more efficient use of existing resources.

Konings (2001) looks at FDI in Bulgaria, Romania and Poland. He finds that foreign-owned firms are on average more productive than indigenous firms. Foreign firms have also grown faster in terms of output and employment, pointing to the crowding out of indigenous competitors. This was particularly the case in sectors where indigenous firms had little exposure to the world market prior to transition. However, as stressed by Fortanier (2002), the crowding out of indigenous firms is not necessarily negative for society as a whole if one foreign firm is more productive than many indigenous firms. It becomes a problem only if the crowding out goes so far that competition is undermined. This risk is smaller in industries open to trade since markets can then be contested by foreign competitors.

The literature observing that foreign-owned firms are on average more productive is complemented by a macroeconomic literature showing that TFP has accounted for a large portion of economic growth in CEE. Dobrinsky (2001), for example, concludes that TFP can explain more than three-quarters of the CEE countries' growth in the second half of the 1990s. This pattern of economic growth strongly resembles that seen in Western Europe after World War II. While not direct evidence of a role of FDI as a conduit for technology transfer, this observation is at least consistent with such a view.

It is also noteworthy that the acceleration in TFP growth in the second half of the 1990s coincided with a notable increase in net FDI inflows. While other factors than FDI (for example the level of human capital or research and development) could in theory account for this acceleration in TFP growth, Tondl and Vuksic (2003) show that in practice these sources were of secondary importance to the transfer of knowledge and technology from abroad. They also find that it was in particular FDI, and not capital accumulation as such, which was the main driving factor behind regional growth.

On balance, the unusually large growth benefits from FDI that many observers have found in CEE countries likely reflect the particular characteristics of this region. First, the potential for generating productivity gains at the outset of transition was high because of the initially inefficient use of resources. Both within firms and across sectors, there was thus ample room for quickly reducing so-called "x-inefficiencies". A second factor was that, while the management and existing capital stock may have been poor at the outset, the region had a fairly developed human capital stock. These two factors, combined, allowed foreign investors to more quickly reap productivity gains from the application of new management, new processes and new capital than what is normally observed in either developing or developed countries. To some extent, such transition-related productivity gains would have materialised also without FDI, but the technology transfer from abroad accelerated the process.

3.4.3 Spillovers to indigenous firms

Even if it is true that a large portion of economic growth in CEE countries has consisted of TFP growth, this is not in itself evidence of spillovers. It is perfectly feasible that TFP stems entirely of efficiency gains within the foreign-owned firms themselves. As we observed earlier in the case of the United Kingdom, technology spillovers require that also firms which do not receive FDI themselves benefit from the inflow of new knowledge.

The unusually large growth benefits from FDI found in Central and Eastern European countries likely reflect the particular characteristics of this region.

A number of panel data studies have recently been conducted on spillovers in individual CEE countries. Djankov and Hoekman (2000) and Kinoshita (2001) focus on the Czech Republic; Bosco (2001) on Hungary; and Konings (2001) on Bulgaria, Poland and Romania. None of these studies find evidence of positive spillovers from FDI. Damijan *et al.* (2001) study FDI in eight CEE countries, finding evidence of positive spillovers only in the case of Romania. Görg and Greenaway (2001) demonstrate that transition economies have no greater tendency to benefit from spillover effects from FDI than other countries. A similar conclusion is reached by the UN Economic Commission for Europe (UNECE 2001), which observes that expected spillover benefits to purely indigenous enterprises are found to be few and far between, and indeed often appear to have been negative rather than positive. This suggests that CEE countries are not immune to the emergence of isolated, foreign-owned, technologically advanced sectors that have limited positive impact on the surrounding local economy.

This lack of evidence for spillovers could be the result of the very large volumes of FDI flowing into the region in recent years, with the market shares and technology levels of foreign-owned firms being so high that the remaining indigenous firms become sidelined. The combination of typically narrow technology sectors, underdeveloped domestic capital markets and mass privatisation allowed foreign-owned firms to take over much larger shares of the mostly exporting, high-technology industries in CEE countries than in other regions, leaving little in terms of an advanced indigenous industry to which spillovers can occur. Also, a very large portion of privately financed research and development in CEE takes place in foreign-owned firms. This is very different from most advanced countries, where indigenous firms are active also in high-technology sectors and conduct enough research and development to be receptive to technology spillovers from advanced foreign-owned firms. From this point of view, one can argue that it is the large scale of FDI in CEE countries that has prevented evidence of spillovers from emerging.

One can argue that it is the large scale of FDI in Central and Eastern European countries that has prevented productivity gains outside the foreign-owned firms themselves.

It is worth comparing these observations with evidence from other developing countries, where the evidence is much more mixed. For example, of the 15 studies of spillovers in developing countries that are surveyed in Barba Navaretti and Venables (2004), nine reach positive conclusions regarding the presence of spillovers.

Another possible explanation for the lack of evidence on spillovers is that the domestic financial sector has not developed to the point where domestic entrepreneurs can take advantage of spillovers. Drawing on a broader sample of developing countries, Alfaro *et al.* (2003) find evidence that countries with well-developed financial markets derive significant economic benefits from FDI, while countries without developed financial markets do not. This points to a possible weakness of relying too heavily on FDI as a source of investment finance and technology. Without a more pronounced shift towards more developed financial sectors and indigenous technology generation, the economic gains from FDI in CEE countries may continue to be internalised by the foreign-owned firms themselves, with limited spillovers to the surrounding economies.

Of course, the lack of evidence on spillovers does not revert the result that FDI has likely had a large impact on economic growth in CEE countries, even if most of these gains have taken place within the foreign-owned firms themselves.

4. To promote or not to promote FDI and, if yes, how?

The positive impact that FDI can have on economic growth in host countries – at least in developing and transition economies – seems to suggest a compelling case in favour of FDI promotion policies, including fiscal incentives (e.g. tax holidays), financial incentives (e.g. investment subsidies), and other enticements (e.g. the supply of infrastructure services at preferential charges). But on closer inspection, the case for FDI incentives is far from straightforward.

It is not the growth-enhancing impact of FDI per se that may merit a government intervention, but an acceleration of economic growth that results from externalities such as knowledge spillovers.

To begin with, from an economic policy viewpoint, it is not the growth-enhancing impact of FDI *per se* that may merit a government intervention. Rather, it is the acceleration of economic growth that results from externalities such as knowledge spillovers and the stimulation of competition in the host-country economy. In other words, the justification for FDI promotion policies needs to rest on the failure of markets to fully reward foreign investors for the benefits they generate. And if that is the case, the purpose of economic policy is to align private returns with social returns and, thus, make FDI and the associated TNC activities reach their welfare-maximising level.

But as in other economic policy areas, acknowledging the possibility of market failures is not sufficient to justify government intervention. Clearly, a fundamental question in the context of FDI is whether the presence of TNCs indeed generates such positive externalities. As we have argued above, the empirical evidence is mixed, and a key finding of the empirical literature is that the scope for externalities may vary across industries – even firms – and, more important, very much depends on whether or not economic conditions in host countries provide an environment that enables indigenous firms to learn from and positively respond to the presence of foreign-owned firms (Blomström and Kokko 2003a, 2003b).

The existence of positive externalities from FDI does not mean that they are evenly distributed across countries or regions. This has important implications for allocative efficiency. As shown by Fumagalli (2002), the TNC's preferred location on the basis of private returns may be socially suboptimal if the FDI would bring larger positive externalities in another region. In this case, a subsidy can increase aggregate welfare if it succeeds in changing the location choice of the TNC towards the higher-externality location, so long as the size of the subsidy required to achieve this goal does not exceed the externality gain. As suggested by Barba Navaretti and Venables (2004), and elaborated in detail in the footnote below,¹¹ this may be true even if countries compete strategically for FDI through the use of subsidies. Specifically, if each country were to offer subsidies to TNCs up to the point where the subsidies equal their externalities, then countries with

11 In perfect markets (perfect except for the externality considered here), FDI incentive competition among countries ensures an internationally efficient allocation of resources. To illustrate, suppose a foreign investor can choose between two countries, with the investment in country 1 and country 2 yielding private profits of P_1 and P_2 , respectively; assume further that $P_1 > P_2$ and that the investment would generate the same external benefit in both countries ($B_1 = B_2$); in these circumstances, FDI in country 1 implies an internationally efficient allocation of resources given that the total return to FDI (i.e. the sum of private profits and external benefits) is larger in country 1 than in country 2 ($P_1 + B_1 > P_2 + B_2$). If the governments of both countries are ignorant about the external benefits and offer

larger externalities would in equilibrium offer larger subsidies, possibly changing the location choice of the TNC in their favour. In equilibrium, the allocation of FDI across countries would be more efficient than in the case where no subsidies are offered and TNCs allocate FDI only on the basis of private returns.

There is a caveat to this logic, however. Whereas it may be true that the non-cooperative solution is optimal from an allocative efficiency point of view, these gains accrue to the TNCs as a result of countries trying to outbid each other. For the winning host country, the externalities may be completely offset by the costs of the subsidy. A complete dissipation of the external benefits to foreign investors could be avoided if countries cooperate and commit themselves to cap the incentives they offer to potential foreign investors in such a way that the locational choice of the TNC does not change compared to the non-cooperative outcome. This suggests a need for multilateral coordination.

While theory clearly points to a case for FDI incentives that improve allocative efficiency, the practical obstacles to such cooperative solutions are formidable. As Kokko and Gustavsson (this volume) and UNCTAD (2003) observe, multilateral agreements have so far not reached far in setting common rules for how countries should compete for FDI. That said, more explicit limits on FDI incentives are part of regional integration agreements like the EU and NAFTA.

One reason cooperative solutions may be hard to attain is that the size of externalities are hard to measure. A country may thus claim to enjoy larger externalities than is really true and offer larger subsidies than its permitted limit. Positive externalities are also likely to result only from some FDI. Incentives would therefore have to be selective in order to avoid subsidising FDI that bring no extra benefits to society at large. Obviously, the margin of error and the scope for being too generous is large.

There is ample evidence that this is a real problem. As reported by Blomström and Kokko (2003b), FDI incentives have proliferated across the world, with more than 100 countries offering various FDI incentives in the mid-1990s. In industrialised countries, the subsidies offered often amount to tens of thousands of US dollars per FDI-related job created. To take a few examples from the European automotive industry in the 1980-90s: FDI incentives are estimated to have ranged from USD 54,000 per job in the case of a Nissan plant in the United Kingdom to USD 300,000 for a General Motors plant in Hungary (Oxelheim and Ghauri 2004). Another striking example is FDI support equivalent to USD 800,000 per job for production facilities of Dow Chemical in Germany. It seems questionable whether incentives of this size are really worth it from an externality point of view.

FDI incentives have proliferated across the world, with more than 100 countries offering various FDI incentives in the mid-1990s.

11 (continued)

no incentives, the investor chooses country 1 (because $P_1 > P_2$), thereby allocating resources to the country with the highest total return ($P_1 + B_1$). Let us now assume that country 2 offers FDI incentives equivalent to half of the external benefit accruing to it and that $P_2 + 0.5B_2 > P_1$. The foreign investor now chooses country 2. While this would be beneficial to country 2 and the foreign investor, it would result in an inefficient allocation of resources, not to mention the foregone benefit to country 1.

But country 1 is likely to react and to offer FDI incentives too. It can easily be shown that competition between welfare-maximising governments would entice both governments to offer FDI incentives of $B_1 = B_2$ and, as a result, the foreign investor would opt for country 1, thereby ensuring an internationally efficient allocation of resources.

But overestimating the external benefits of FDI in a world of imperfect information is only one reason why governments may end up being too generous in offering incentives. A more fundamental concern is that governments may not be welfare-maximising, but that they respond to lobbying and rent seeking (Barba Navaretti and Venables 2004). Obviously, given that even welfare-reducing policies raise the income of those that directly benefit from them, they are hard to avoid in real-world economies.

On balance, these problems are likely to make many cooperative solutions unfeasible. It may then be tempting for countries instead to reach agreements that substantially limit FDI incentives in order to avoid the non-cooperative solution that leaves the TNCs with all the allocative efficiency gains.

But a complete ban on subsidies for FDI may also be unsatisfactory given that externalities do seem to exist at least in some industries. There have been proposals that address some of the problems of ex ante estimating externalities, resulting in policy proposals that are both workable and pareto superior to the no-subsidy option. Starting with policies that directly affect public finances (either through expenditure or foregone tax revenues) Blomström and Kokko (2003b) have come up with the sensible proposal that incentives should not be given upfront, i.e. prior to investment, but linked to certain activities of the TNCs such as R&D, training and education, and the linkages they establish with indigenous firms. Furthermore, they point out that whether positive externalities indeed materialise (i.e. whether or not social returns to FDI exceed private ones not only *ex ante* but also *ex post*) depends very much on the capacity of indigenous firms to absorb foreign technology and skills. This suggests a strong case for subsidising R&D, training and education expenditures of indigenous firms too – an approach that would also avoid creating distortions between foreign and indigenous firms. In a similar vein, the authors highlight the need for putting in place a modern infrastructure and for investment in human capital. But what we then have is essentially a policy that generally creates an enabling environment that helps countries to attract and benefit from FDI rather than FDI specific incentives.

A complete ban on subsidies for FDI may also be unsatisfactory given that externalities do seem to exist at least in some industries.

But there is also scope for policies that are costless in the sense of having no immediate budgetary implications, namely the reduction if not removal of remaining impediments to FDI. Analysing the period 1980-2000, the OECD has estimated that border barriers and labour market arrangements account for almost half of the differences in bilateral outward FDI positions between OECD members (OECD 2003). Restrictions on FDI flows account for some 45 percent of the difference that is due to border barriers. While FDI restrictions have been reduced considerably in recent years, obstacles remain, notably obligatory screening and approval procedures and limits on the share that foreign investors can hold in domestic enterprises.

In this context, it is worth considering barriers to cross-border M&As. We have pointed out above that the transfer of best management practice from home to host countries can reduce “x-inefficiencies” and thus increase welfare. Clearly, to the extent that mergers also lead to economies of scale and scope – which is, in fact, their main but often unfulfilled promise – there could be further efficiency gains. In the EU, cross-border M&As are currently difficult, in some member states they are not legal except through a rather cumbersome transformation process. Against this background, work on a take-over

directive aimed at liberalising cross-border mergers has been in the making for a long time.¹² In 2001, a far-reaching proposal by the European Commission reached deadlock for a variety of reasons, including concerns that mergers could be a means of circumventing national regulations on worker participation. A new proposal, less ambitious than the previous one, is currently under consideration by the Council of Ministers and the European Parliament. Under this proposal, the merged company may have to apply the worker participation laws of the country where they are most extensive, potentially hindering mergers of and with firms in countries like Germany.

The other important impediment to FDI emphasised by the OECD are labour market arrangements, which explain about one-quarter of the differences in FDI positions between OECD members. Looking more closely at specific arrangements, it turns out that the labour tax wedge (in essence the difference between the cost of labour to the firm and workers take-home pay) accounts for most of the effect of labour market arrangements on bilateral FDI positions; by contrast, employment protection legislation, although not irrelevant has less of an influence on FDI flows. All this suggests that structural reforms in labour markets could contribute to increasing FDI flows and ultimately higher welfare.

Structural reforms in labour markets could contribute to increasing FDI flows and ultimately higher welfare.

To conclude, while specific FDI incentives can be justified in principle, the many pitfalls in designing and implementing them in practice suggest that it may be better not to offer them. Instead, government support for firms – whether foreign-owned or indigenous – aimed at generally raising economic productivity appears to be more promising. In addition, one can argue that reducing remaining impediments to FDI, whether of direct or indirect nature, should get priority over measures that have budgetary implications.

5. Conclusions

The empirical literature on the growth impact of FDI suggests a strong positive relationship between the two. Yet, the lack of evidence of a clear causality from FDI to growth impedes our ability to firmly conclude that FDI inflows are a driver and not just a consequence of higher economic growth. Just as a higher return on investment typically attracts more fixed investment, it should be no surprise that it also attracts more foreign investors.

Having said that, we need to acknowledge that the difficulty of finding unambiguous evidence of causality from FDI to growth does not refute the notion that such a relationship nevertheless exists. As the growth literature suggests, many different factors combine to create an environment conducive to higher economic growth. Proper policies and institutions have been found to be particularly important over longer periods of time. In this context, we need to view FDI from a broader perspective than its direct and immediate impact on growth itself. Could it not be the case, for example, that foreign investors are more demanding than indigenous firms as regards a stable and favourable policy environment, good infrastructure and an appropriate human capital stock?

¹² http://europa.eu.int/comm/internal_market/en/company/company/mergers/mergers_en.htm

If governments introduce policies and create institutions with the purpose of attracting FDI, they may create an environment more generally favourable to growth, even though some of this growth is not the result of FDI *per se*.

The evidence is stronger that FDI has been boosting growth directly in CEE than in the EU-15. The reason, as we have argued, is that while these countries needed to bridge the technology gap to the more advanced countries, they nevertheless met some key conditions – especially in terms of human capital – which helped them bridge this gap more quickly with the help of FDI. In addition, the sheer magnitude of net FDI inflows helped sustain a higher level of domestic investment than would have been possible on the basis of domestic saving and debt-creating capital inflows alone.

While FDI is expected to continue to contribute to economic growth in the CEE countries that have joined the EU, it is less clear whether the economic gains from FDI will be as high as during the transition from plan to market. The more the new EU members come to resemble EU-15 countries in terms of inward FDI stocks as a share of GDP, productivity, efficiency and level of technology, the less likely it is that FDI will have a positive influence on economic growth beyond what is observed in more advanced market economies. That said, FDI and the associated activities of transnational corporations will undoubtedly remain an important welfare-enhancing force – both inside and outside an enlarged European Union.

References

- Agrawal, A., Jaffe, J. and Mandelker, G. (1992). "The post-merger performance of acquiring firms: a re-examination of an anomaly". *Journal of Finance*, (9:4), pp. 1605-1620.
- Ahn, S. (2002). "Competition, innovation and productivity growth: a review of theory and evidence". OECD Economic Working Paper No. 317.
- Aitken, B.J. and Harrison, A.E. (1999). "Do domestic firms benefit from direct foreign investment?". *American Economic Review*, (89:3), pp. 605-618.
- Alfaro, L., Chanda, A., Kalemli-Ozcan, S. and Sayek, S. (2003). "FDI spillovers, financial markets and economic development". IMF Working Paper No. 03/186.
- Attanasio, O., Picci, L. and Scrocu, A. (2000). "Saving, growth and investment: a macroeconomic analysis using a panel of countries". *Review of Economics and Statistics*, (82:2), pp. 182-211.
- Barba Navaretti, G., Haaland, J. and Venables, A. (2002). "Multinational corporations and global production networks: the implications for trade policy". Report by CEPR prepared for the European Commission Directorate for General Trade.
- Barba Navaretti, G. and Venables, A., eds. (2004). *Multinational firms in the world economy*, Princeton University Press, Princeton, USA.
- Barrell, R. and Pain, N. (1997). "Foreign direct investment, technological change, and economic growth within Europe". *Economic Journal*, (107), pp. 1770-1786.
- Barrell, R. and Pain, N. (1999). "Domestic institutions, agglomerations and foreign direct investment in Europe". *European Economic Review*, (43), pp. 925-934.
- Barrios S. and Strobl, E. (2002). "FDI spillovers in Spain". *Weltwirtschaftliches Archiv*, (138), pp. 459-481.
- Barro, R.J. and Sala-i-Martin, X. (1995). *Economic Growth*. McGraw-Hill, United States.
- Barry, F., Görg, H. and Strobl, E. (2003). "Foreign direct investment, agglomerations and demonstration effects: an empirical investigation". *Weltwirtschaftliches Archiv*, (139:4), pp. 583-600.
- Benfratello, L. and Sembenelli, A. (2002). "Foreign ownership and productivity: is the direction of causality so obvious?". Centro Studi d'Agliano Working Papers No. 166.
- Bils, M. and Klenow, P. (1998). "Does schooling cause growth or the other way around?". NBER Working Paper 6393.
- Blomström, M., Globerman, S. and Kokko, A. (2000). "The determinants of host country spillovers from foreign direct investment". CEPR Discussion Paper, No. 2350.
- Blomström, M. and Kokko, A. (2003a). "Human capital and inward FDI". CEPR Discussion Paper No. 3762.
- Blomström, M. and Kokko, A. (2003b). "The economics of foreign direct investment incentives", in Herrmann, H. and Lipsey, R. (eds.), *Foreign direct investment in the real and financial sector of industrial countries*. Springer, Berlin, Germany.
- Blomström, M., Kokko, A. and Zejan, M. (1994). "Host country competition and technology transfer by multinationals". *Weltwirtschaftliches Archiv*, (130), pp. 521-533.

- Blomström, M., Lipsey, R., and Zejan, M. (1996). "Is fixed investment the key to economic growth?". *Quarterly Journal of Economics* (111:1), pp. 269–276.
- Blomström, M. and Wolff, E. (1994), "Multinational corporations and productivity convergence in Mexico", in Baumol, W., Nelson, R. and Wolff, E. eds. (1994). *Convergence of productivity: cross-national studies and historical evidence*, Oxford University Press, Oxford, UK.
- Borensztein, E., De Gregorio, J. and Lee, J-W (1998). "How does foreign direct investment affect growth?". *Journal of International Economics*, (45:1), pp. 115–135.
- Bosco, M. (2001). "Does FDI contribute to technological spillovers and growth? A panel data analysis of Hungarian firms". *Transnational Corporations*, (10), pp. 43-68.
- Bosworth, B. and Collins, S. (1999). "Capital inflows, investment and growth", *Brookings Papers on Economic Activity*, (1), pp. 143-180.
- Brenton, P. (1996). "The impact of the single market on foreign direct investment in the EU". Report for DGII, European Commission, Brussels, Belgium.
- Buckley, P. and Artisien, P. (1987). "Policy issues of intra-EC direct investment: British, French and German multinationals in Greece, Portugal and Spain, with special reference to employment effects," *Journal of Common Market Studies*, (26:2), pp. 207-230.
- Calderón, C., Loayza, N. and Servén, L. (2004). "Greenfield foreign direct investment and mergers and acquisitions: feedback and macroeconomic effects". World Bank Policy Research Working Paper 3192.
- Campos, N.F. and Kinoshita, Y. (2003). "Why does FDI go where it goes? New evidence from the transitional economies". CEPR Discussion Paper No. 3984.
- Cantwell, J. (1989). *Technical innovation and multinational corporations*, Basil Blackwell, Oxford, UK.
- Carkovic, M. and Levine, R. (2002). "Does foreign direct investment accelerate economic growth?". Mimeo. University of Minnesota.
- Castellani, D. and Zanfei, A. (2001). "Technology gaps, absorptive capacity and the impact of inward investments on productivity of European firms", Working Paper, ISE-Università di Urbino.
- Caves, R.E. (1996). *Multinational enterprise and economic analysis*, Cambridge University Press, Cambridge, UK.
- Coase, R. (1937). "The nature of the firm", *Economica*, (4), pp. 386-405.
- Damijan, J., Majcen, B., Knell, M. and Rojec, M. (2001). "The role of FDI, absorptive capacity and trade in transferring technology to transition countries: evidence from firm panel data for eight transition countries", mimeo, UN Economic Commission for Europe.
- Davies, S. and Lyons, B. (1991). "Characterising relative performance: the productivity advantage of foreign owned firms in the UK". *Oxford Economic Papers*, (43), pp. 584-595.
- Dimelis, S. and Louri, H. (2001). "Foreign direct investment and efficiency benefits: a conditional quantile analysis". CEPR Discussion Paper 2868.
- Djankov, S., and Hoekman, B. (2000). "Foreign investment and productivity growth in Czech enterprises". *World Bank Economic Review*, (14:1), pp. 49-64.

- Dobrinisky, R. (2001). Convergence in per capita income levels, productivity dynamics and real exchange rates in the candidate countries on the way to EU accession, Interim Report, No. IR-01-038, IIASA – International Institute for Applied Systems Analysis, Laxenburg.
- Döhrn, R. (1996). "EU enlargement and transformation in Eastern Europe: consequences for foreign direct investment in Europe". *Konjunkturpolitik*, (42), pp. 113-154.
- Doms, M.E. and Jensen, J.B. (1998). "Comparing wages, skills, and productivity between domestically and foreign-owned manufacturing establishments in the United States", in Baldwin, R.E., Lipsey, R.E., Richardson, J.D., eds. (1998) *Geography and ownership as bases for economic accounting: NBER studies in income and wealth*, University of Chicago Press, Chicago, USA.
- Easterly, W., and Levine, R. (2000). "It's not factor accumulation: stylized facts and growth models". *World Bank Economic Review*, (15:2), pp. 177-219.
- EBRD (2003). *Transition Report*, EBRD, London, UK.
- Fortanier, F. (2002). "The effects of foreign direct investment on market structure and competition in developing countries: a review of the evidence", in *The costs and benefits of FDI*, OECD, Paris, France.
- Fumagalli, C. (2002) "On the welfare effects of competition for foreign direct investments". *European Economic Review*, (47), pp. 963-983.
- Girma, S., Greenaway, D. and Wakelin, K. (2001). "Who benefits from foreign direct investment in the UK?". *Scottish Journal of Political Economy*, (48:2), pp. 119-133.
- Girma, S. and Wakelin, K. (2000). "Are there regional spillovers from FDI in the UK?". GEP Research Paper No. 2000/16, University of Nottingham, Leverhulme Centre for Research on Globalisation and Economic Policy.
- Girma, S. and Wakelin, K. (2001). "Regional underdevelopment: is FDI the solution? A semiparametric analysis". GEP Research Paper No. 2001/11, University of Nottingham, Leverhulme Centre for Research on Globalisation and Economic Policy.
- Globerman, S., Ries, J. and Vertinsky, I. (1994). "Economic performance of foreign affiliates in Canada". *Canadian Journal of Economics*, (27), pp. 143-156.
- Görg, H. and Greenaway, D. (2001). "Foreign direct investment and intra-industry spillovers: a review of the literature". GEP Research Paper No. 2001/37, University of Nottingham, Leverhulme Centre for Research on Globalisation and Economic Policy.
- Görg, H. and Greenaway, D. (2002). "Much ado about nothing? Do domestic firms really benefit from foreign investment?". CEPR Discussion Paper No. 3485.
- Görg, H. and Strobl, E. (2001). "Multinational companies and productivity spillovers: a meta-analysis". *The Economic Journal*, (111:475), pp. F723-F739.
- Görg, H. and Strobl, E. (2002). "Multinational companies and indigenous development: an empirical analysis". *European Economic Review*, (46:7), pp. 1305-1322.
- Griffith, R. (1999). "Using the ARD establishment level data to look at foreign ownership and productivity in the United Kingdom". *Economic Journal*, (109), pp. 416-442.
- Griffith R. and Simpson, H. (2001). "Characteristics of foreign-owned firms in British manufacturing". The Institute for Fiscal Studies Working Paper No. 01/10.

- Griffith, R., Redding, S. J. and Simpson, H. (2003). "Productivity convergence and foreign ownership at the establishment level". CEPR Discussion Paper No. 3765.
- Haddad, M. and Harrison, A. (1993). "Are there positive spillovers from direct foreign investment? Evidence from panel data for Morocco", *Journal of Development Economics*, (42), pp. 51-74.
- Harris, R. and Robinson, C. (2003). "Foreign ownership and productivity in the United Kingdom: estimates of UK manufacturing using the ARD". *Review of Industrial Organization*, (22), pp. 207-223.
- Haskel, J.E., Pereira, S.C. and Slaughter, M.J. (2002). "Does inward foreign direct investment boost the productivity of domestic firms?". NBER Working Paper No. 8724.
- Imbriani, C. and Reganati, F. (1999). "Productivity spillovers and regional differences: some evidence on the Italian manufacturing sector". Discussion Paper No. 48, Centro di economia del lavoro e di politica economica, Università degli Studi di Salerno.
- Jensen, M. and Ruback, R. (1983). "The market for corporate control: the scientific evidence", *Journal of Financial Economics*, (11:1), pp. 5-50.
- Kathuria, V. (1998). "Technology transfer and spillovers for Indian manufacturing firms". *Development Policy Review*, (16), pp. 73-91.
- Kathuria, V. (2000). "Productivity spillovers from technology transfer to Indian manufacturing firms". *Journal of International Development*, (12), pp. 343-369.
- Kathuria, V. (2001). "Foreign firms, technology transfer and knowledge spillovers to Indian manufacturing firms: a stochastic frontier analysis". *Applied Economics*, (33), pp. 625-642.
- Kinoshita, Y. (2001). "R&D and technology spillovers through FDI: innovation and absorptive capacity". CEPR Discussion Paper 2775.
- Klenow, P.J., and Rodríguez-Clare, A. (1997). "The neoclassical revival in growth economics: has it gone too far?", in NBER Macroeconomics Annual.
- Kocenda, E. and Svejnar, J. (2003). "Ownership and firm performance after large-scale privatization". CEPR Discussion Paper No. 4143.
- Kokko, A., Tansini, R. and Zejan, M. (2001). "Trade regimes and spillover effects of FDI: evidence from Uruguay," *Weltwirtschaftliches Archiv*, (137:1), pp. 124-149.
- Kokko, A., Tansini, R. and Zejan, M. (1996). "Local technological capability and spillovers from FDI in the Uruguayan manufacturing sector", *Journal of Development Studies*, (34), pp. 602-611.
- Konings, J. (2001). "The effects of foreign direct investment on domestic firms: evidence from firm level panel data in emerging economies". CEPR Discussion Paper 2586.
- Liu, X., Siler, P., Wang, C. and Wei, Y. (2000). "Productivity spillovers from foreign direct investment: evidence form UK industry level panel data". *Journal of International Business Studies*, (31:3), pp. 407-425.
- Mankiw, N.G., Romer, D., and Weil, D.N. (1992). "A contribution to the empirics of economic growth," *Quarterly Journal of Economics*, (107:2), pp. 407-437.
- Markusen, J.R. and Venables, A. (1997). "Foreign direct investment as a catalyst for industrial development", *European Economic Review*, (43), pp. 335-56.

- Martín, C. and Velazquez, F.J. (1997) "The determining factors of foreign direct investment in Spain and the rest of the OECD: lessons for CEECs". CEPR Discussion Paper 1637.
- Nicoletti, G., Golub, S., Hajkova, D., Mirza, D. and Yoo, K-Y. (2003). "Policies and international integration: influences on trade and foreign direct investment", OECD Economics Department Working Paper No. 359.
- OECD (2003) *Economic Outlook*, No. 73. OECD, Paris, France.
- Oxelheim, L. and Ghauri, P. (2004). "The race for FDI in the European Union", in Oxelheim, L. and Ghauri, P. (eds), *European Union and the race for foreign direct investment in Europe*, Elsevier, Amsterdam, Netherlands.
- Rangvid, J. (2001). "Predicting returns and changes in real activity in emerging and developed economies". Manuscript, Copenhagen Business School.
- Rhoades, S. (1998). "The efficiency of bank mergers: an overview of case studies of nine mergers", *Journal of Banking and Finance*, (22:3), pp. 273-291.
- Schenk, H. (1998) "Industrial policy implications of competition policy failure in mergers". Erasm Management Report Series no 16-98. Rotterdam School of Management, Erasmus University.
- Schenk, H. (2002). "Economie en strategie van de Megafusie" ("Economics and strategy of the mega-merger"), Elsevier bedrijfsinformatie bv, 's-Gravenhage.
- Sembenelli A. and Siotis, G. (2003). "Foreign direct investment, competitive pressure and spillovers. An empirical analysis on Spanish firm level data". Centro Studi d'Agliano Working Papers 169.
- Simon, J., Mokhtari, M. and Simon, D. (1996). "Are mergers beneficial or detrimental? Evidence from advertising agencies". *International Journal of the Economics of Business*, (3:1), pp. 69-82.
- Sjöholm, F. (1999). "Technology gap, competition and spillovers from direct foreign investment: evidence from establishment data", *Journal of Development Studies*, (36:1), pp. 53-73.
- Slaughter, M.J. (2003). "Host-country determinants of US foreign direct investment into Europe", in Herrmann, H. and Lipsey, R., eds. (2003). *Foreign direct investment in the real and financial sector of industrial countries*, Springer, Berlin, Germany.
- Smarzynska, B. (2002). "Does foreign direct investment increase the productivity of domestic firms? In search of spillovers through backward linkages?" World Bank Working Paper No. 2923.
- Temple, J. (1999). "The new growth evidence", *Journal of Economic Literature*, (38), pp. 112-156.
- Tichy, G. (2000). *Do mergers deliver a benefit?*. Austrian Federal Chamber of Labour, Brussels, Belgium.
- Tondl, G. and Vuksic, G. (2003). "What makes regions in Eastern Europe catching up? The role of foreign investment, human resources and geography". ZEI Working Paper B12.
- UNCTAD (2000). *World Investment Report: Cross-border mergers and acquisitions and development*, United Nations: New York, New York, and Geneva, Switzerland.
- UNCTAD (2002). *World Investment Report: Transnational corporations and export competitiveness*, United Nations: New York, New York, and Geneva, Switzerland.
- UNCTAD (2003). *World Investment Report: FDI policies for development*, United Nations, New York, New York, and Geneva, Switzerland.

UNECE (2001). *Economic Survey of Europe*, No. 1, United Nations Economic Commission for Europe, Geneva, Switzerland.

World Bank (2001). *Global Development Finance: Building coalitions for effective development finance*, World Bank, Washington, D.C., USA.

Yannopoulos, G. (1990). "Foreign direct investment and European integration: the evidence from the formative years of the European Community". *Journal of Common Market Studies*, (28:3), pp. 235-260.

