CEES

The Political-Economy of
Foreign Direct Investment Incentives
in Transition

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Abstract

The paper analyses the determinants and performance of foreign direct investment (FDI) inflows to the Czech Republic. The work develops from the research and primary data collected by the Czech authors in the Czech Republic. It provides an overview of specific factors related to FDI determinants and their relationship to the current government's FDI attraction policy. The policy is evaluated from the viewpoint that the subsidies involved in offering specific incentive schemes to foreign investors should be mirrored by social benefits of at least a similar size. The paper shows that this objective can be very hard to fulfill by establishing ex-ante criteria to investors who are promised subsidies. First of all, the incentive program does not appear to have quantitatively crowded-in additional investments. A simple cost-benefit calculation suggests that under a worst-case scenario with maximum tax holiday relief to foreign investors the social cost is 10,000 CZK per job created. Hence only opportunity cost such as unemployment benefits, or positive spillover effects on Czech firms can outweigh this social loss. The qualitative analysis demonstrates that the National Incentive Scheme has had a positive effect on the portfolio of FDI projects mainly as regards duration since many subsidized projects are follow-up investments. Furthermore, investment incentives may have been effective in shifting the FDI profile towards strategic industries with dynamic comparative advantage. The latter is supported mainly by the secondary data presented in the study.

1. Introduction

Before 1989 FDI in Central and Eastern Europe (CEE) was limited to a few joint ventures with the former state-owned enterprises (SOEs). At the beginning of the liberalization process, some countries managed to open their economies to foreign direct investment (FDI), while others continued to impose restrictions on foreign firms. It has been suggested that under the current turbulent world economy, transition countries should aim for equity capital inflows of the sustainable kind if they want economic growth to last, after shifting from a centrally planned economic system (UNCTAD, 1996). Because no other mechanism of international technology transfer appears to offer the same number of benefits.

The time series for FDI flows into transition countries are not yet long enough to draw strong conclusions about the relationship between FDI and growth in transition since the flows started to intensify only by the middle of the 1990s. At the same time there is until now very limited evidence on the presence of technology spillovers from foreign to domestic firms in the transition countries. (See for example Bosco, 2001 on the case of Hungary or Zemplinerova and Jarolím, 2001 on the case of the Czech Republic.) Furthermore, FDI as an alternative to other channels of international technology transfer may also implicate some long-run costs. The latter issues place in doubt the virtues of the recent wave of expensive incentive schemes launched by CEE governments.

The question whether FDI incentives are effective as an instrument of development or industrial policy in host countries is also an issue of general interest in the global economy (Narula and Dunning, 2000, Oman, 2000, Lall, 1996). This paper takes the case of the Czech Republic to evaluate whether the present incentive scheme provided by the Czech government to foreign investors (the National Incentive Scheme) has succeeded in attracting the right kind of investors relevant to a scenario of virtuous circles of international technology transfer, indigenous learning and economic growth. Even though some issues may be particular to that of a transition country such as the Czech Republic seeking membership of the EU, the case reflects general mantling of a well-intended incentive scheme (the Investment Incentive Act, 72/2000 Coll.) relevant to most of the transition or developing countries currently engaging in combined liberalization and upgrading efforts.

The attempt is to offer both a quantitative and qualitative assessment of the investment policies pursued by the Czech government. In order to understand what attracts FDI to the recipient

countries, we need to look at the channels through which FDI emerge. Therefore, this paper tries to identify those factors that were most influential on foreign firms decision to invest in the Czech Republic. The study also tries to look at whether the foreign firms in the sample plan to remain in the country by reinvesting within a near future. Finally, the data allows us to control for the effect of the Czech investment program whereby investment projects with and without state subsidies can be compared. Thus it is possible to analyze whether the National Incentive Scheme has had any effect not only on the quantity but also on the quality of FDI attracted after 1999.

Section 2 introduces some further contextual issues related to the general relevance of the problems dealt with in this paper by explaining the political-economy of FDI in CEE in terms of three particular phases in the run-up period to EU membership. Section 3 gives some theoretical basis for distinguishing between good and bad FDI in a host country perspective. Sections 4-6 then approach the primary and secondary data collected for this paper to make a distinctive evaluation of FDI received within and beyond the National Incentive Scheme as recently launched by the Czech government in 1999. Methodological issues are dealt with in Section 4, followed by quantitative and qualitative evaluation in Sections 5 and 6 respectively. Section 7 discusses the overall findings and offers some general policy recommendations towards formulation of FDI policies in transition countries.

2. The political-economy of FDI in Eastern Europe

The political-economy of FDI during transition can be analyzed in the perspective of various phases related to the transition process. These periods may be more or less overlapping in time depending on the policies of individual countries. The first period relates to the general transition processes of liberalization, stabilization and structural reforms since it also included opening up the economy to foreign direct investment flows and deciding on a set of new laws and institutions to regulate FDI based on EU principles of non-discrimination. All countries followed a more or less similar set of policies during this phase though opening up took place at variable speed and with very variable success resulting from inherited fortunes and misfortunes associated with geography, natural endowments, created assets (human capital) and institutional adaptability to a market-economy including emerging problems with corruption.

The second period relates to the privatization process in CEE, where there is a set of very particular political-economy aspects related to the trade off between firm efficiency and national sovereignty,

domestic capital constraints and public perception of equity and fairness (Sinn and Weichenrieder, 1997). FDI associated with this second period concerns exclusively the question about whether firms as capital assets should be offered to sale among foreign investors (acquisition FDI). Hence the second period is not only about opening up to outside capital flows but also concerns difficult and complex decisions related to the distribution of social assets inherited from the former economic system. No other aspect of FDI in CEE has divided the governments more - from East Germany's and Hungary's 'fire sales' attitude to a very cautious opening up by the Baltic, Czech, Slovak and Slovenian governments, and with the Polish and Estonian policies somewhere in between due to the shifting attitudes towards FDI among their various post-socialist governments. Choice of privatization method in combination with political attitudes turned out in the end to matter the most, where a range of direct sales policies (as pursued by the Estonian, Hungarian, Latvian, Slovak and Polish governments as primary method, EBRD, 2001) resulted in much more FDI than the socially oriented ones emphasizing the giving-away of assets to the population. However, countries using a mass privatization program as primary privatization method, such as the Czech Republic, has in principle postponed rather than fully rejected the question about increasing participation of foreign capital in the old socialist firms that have survived the transition process.

Figure 1 – *Inflows of FDI to the Baltic Countries and Central Europe, 1989-2001*

The third period relates to competition for FDI and especially in the second part of the transition period (from 1999 onwards in the Czech case) preceding full membership to the EU around 2010-2015. Opposed to the second period, this third period concerns a regional and apparently rather aggressive battle to attract the largest number of new investments (Greenfield FDI) and with an awareness that EU membership will reduce opportunities to use such type of beggar thy neighbor policies in the near future (EBRD, 2001, WB, 2002b). The aggressiveness with which these programs are conducted is hence proportional to the perceived importance of receiving more FDI than your neighbors at this stage. Since the amount and concentration of FDI either regionally and/or by industry can be decisive to the emergence of CEE centers of excellence within a future enlarged EU. As opposed to the first period the third period is by no means constructed to live up to ideals of non-discrimination, even though policies are often advanced under such pretence. Hence they pose a special dilemma to the introduction of EU competition policy in the region.

In practice the discriminated firms will be domestic investors who do not have access to the international capital and technology resources desired by their governments. CEE governments appear to lack awareness that they could be participating in a game similar to a prisoners' dilemma

whereby resources are invested in the socially least optimal way (Bergsman, 1999, Morisset and Pirnia, 2000, Mitra and Stern, 2002). Even though the policies are offered under different guises in different countries, actual incentives offered such as tax holidays are rather similar across the Baltic and Central European countries rendering low and converging tax rates in the region (Hirvensalo, 2000, Mitra and Stern, 2002). Some recent research suggest that Czech policies were effective in shifting FDI flows away from neighboring competing locations such as Poland and Hungary after 1999 (Sedmihradsky and Klazar, 2001). However, Beyer (2002) finds oppositely that incentive programs are an insignificant factor towards explaining the ability of individual CEE countries to attract FDI during the 1990s. But results of the cross-country studies appear to be very sensitive to the exact assumptions and methodology used.

Despite the possible beggar thy neighbor dimensions associated with policies of investment incentives in CEE, this paper concentrates on evaluation in a purely internal host country perspective.

The flow of FDI to one country rather than another in CEE was based on what benefits an individual country had to offer, and also the progress these countries had made to transform themselves from centrally planned to market economy (EBRD, 1998). For example, the change of heart by Czech government to sell strategic and lucrative assets to foreigners contributed significantly to its total FDI share. (See Figure 5 for total privatization revenue and foreign/local investors share.)

FDI still remains an important aspect of the transition process of the CEE countries, but as worldwide competition for FDI is increasing, it is getting more difficult for these countries to secure their share. In other words, the share of FDI pertaining to a particular location is determined not only by its own characteristics, but also by the characteristics of competing locations (see also Caves, 1971).

Meyer (1995) suggests that the main factor that attracted FDI in CEE countries was the local market. However, his study did not find production costs advantages to be one of the main reasons for foreign investors decision to move their operations to CEE countries. Another study by Lankes and Venables (1996) established that closeness to consumers motivated foreign investors to move their operations to CEE countries, especially for those FDI that were oriented on distribution and gaining local markets. On the other hand, they found that factor costs advantages of these countries were the main motive for FDI with an export orientation.

According to Bevan and Estrin (2000), political and economic factors as well as the EU enlargement process has influenced significantly the FDI inflows to CEE countries, mainly those that are in the first wave. Also other studies have revealed that foreign firms invested in transition economies in search of cheap labor (see also Agarwal, 1996) that has proven to be of high level of skills, flexible and adaptable to high technology developed elsewhere (Mallya, 2001). A study by Resmini (2000) shows that industry differences are a significant factor towards explaining prevalence of quite heterogeneous motives in CEE. Also, in confirmation of the first study on motives by Meyer (1995) a more recent survey undertaking by the EBRD (2000) shows that the market-seeking motive is leading and accounts to up for 88% of all FDI in CEE while the search for cheap labor is only taken into consideration by 38% of investors.

3. What characterizes good and bad FDI?

The attempt here is to discuss within a simple, but theory-based framework that value of different types of FDI projects to the host country. Different types of FDI projects are evaluated, with emphasis on the resource-based view of the firm and organizational learning (Dunning, 1993, Cantwell, 1997) also drawing on past experiences from transition or developing countries. The discussion departs from the most project-specific aspects such as motive and entry-mode ending in broader societal issues of project duration and spillovers.

Even though the title of this section suggests that there exists good and bad FDI for a host country we will generally point to a benchmark investment that could be viewed as neutral since in few cases would there be cause to say that FDI is directly bad, e.g. a neutral foreign investment would offer the same size in labor remuneration and taxation as a domestic investment. Assuming that only foreign capital is employed in FDI projects this direct remuneration effect can be ignored. While, for example, acquisition of comparative advantage may also spill over on factor remuneration in domestic firms. The main point is that FDI must be much more than neutral in order to merit investment incentives e.g by providing increasing returns to learning through spillover effects (Caves, 1982, Haddad and Harrison, 1994).

Investment incentives under evaluation can be far from small sums of money in the transition context. For example, a typical investment incentive could range in the order of 30-60% of the investment sum plus foregone taxes by regional and national government in up to 20 years. The present value of the social losses associated with an investment project worth 1 million EURO

could then easily amount to 1 million EURO of foregone capital by the host country government. An investment that only offers a neutral effect on the economy would then be evaluated as bad FDI if investment incentives were involved. Relevant quantitative indicators are ability to attract FDI with and without incentives in combination with comparative domestic factor remuneration.

In the following focus is on particular qualitative characteristics and attributes of individual FDI projects whereby it is possible to indicate whether an individual project should merit investment incentives or not. The viewpoint being that it is often not enough in practice to look at one factor in isolation in order to give general recommendations. A theoretical assumption taken from the literature on organizational learning affecting these observations is that unassisted or less assisted learning by an indigenous firm requires some prior knowledge, whereas assisted learning through foreign owned subsidiaries is necessary if there is lack of any fundamental domestic knowledge base (Cohen and Levinthal, 1989, Bell and Pavitt, 1993, Cantwell, 1997).

Motivations for undertaking FDI and type of industry
One of the important characteristics of an FDI project is according to Dunning's eclectic theory (Dunning, 1981) the motivation underlying the investment decision. Only with this information including information about the trade effects (as discussed further in combination with motives below) is it possible to evaluate the likely impact of any given project.

Dunning (1993) distinguishes between four basic types of motives: natural resource-seeking, market-seeking, efficiency-seeking and strategic asset-seeking investments. While the natural resource-seeking and market-seeking investments typically are more likely to be of the asset exploiting rather than exploring type (hence with lesser potential spillover effects on the domestic knowledge base), it is very difficult to give general conclusions about the likely effect of efficiency-seeking FDI, since it can evolve both ways to the advantage or the disadvantage of the development of learning and deployment of new knowledge in the host country. Efficiency-seeking FDI is typically associated with follow-up investment decisions rather than initial investments, for example, related to changes in multinational strategies associated with environmental changes such as accession to the EU. Strategic asset-seeking is the most likely to be beneficial, but also the least likely type of investment to occur in lesser developed markets.

But in combination with information about motive, the type of industry is also crucial and especially in less developed markets with little indigenously developed technology since access to

frontier technology will be more crucial in under-developed industries with potential endowment possibilities (Ozawa, 1992). For example, pure exploitation strategies are less likely to render positive results towards emergence of new comparative advantages in industries were the indigenous firm already is exploring such location advantages. However, in industries where there are potential but unexplored endowment opportunities (e.g. in industries related to human capital already accumulated in CEE) combined with lack of firm-specific assets an immediate strategy of exploitation (e.g. market-seeking) could potentially evolve over time to emergence of dynamic comparative advantage (e.g. by exports to regional markets first and world markets later on) and eventually to strategies of technology exploration.

Hence while efficiency-seeking and strategic asset-seeking motives as potential explorative strategies may hold greater potential, so are more traditional motives related to exploitation of existing resources and markets also interesting to the extend that they offer real expansion of the indigenous knowledge-base (Dunning, 1994) on the basis of which future comparative advantage can be based. However, more indication hereof can also be obtained on the basis of knowledge about likely trade effects of the investment project.

International trade effects

In combination with motive expected trade effects are important. In the short run attention should focus on the willingness of the foreign subsidiary to shift from foreign to domestic suppliers whenever this is feasible. Hence there is a strong relationship between potential linkages and expected positive trade effects. Host governments often argue that foreign direct investment boosts exports but forgetting to look on the import coefficients of the projects and hence to evaluate the overall effect for the trade balance. Related to trade effects projects drawing on a broader indigenous skill and knowledge base rather than merely assembly and very simple skills are likely to be more beneficial to the host economy (Lall, 1999). Industries with greatest potential for dynamic comparative advantage in view to trends in world demand and in combination with domestic location advantages should be favored.

Entry mode

In relation to the FDI literature is emerging a discussion as to whether it is more socially desirable to have FDI in connection with either greenfield or acquisition (privatization-related) types of investments (UNCTAD, 2000). The general perspective offered in the transition literature on firm performance is that new firms are more conducive to growth (WB, 2002a), hence greenfield

investments are also viewed as highly desirable by host governments. However, this ignores potential costly strategies of giving up accumulated firm-specific assets in the SOEs that cannot be saved without FDI. Also, some recent studies suggest that acquisition FDI may render greater potential to transition economies, e.g. through achieving higher total factor productivity (Zemplinerova and Jarolím, 2001) and offering greater potential and scope for spillovers (Wes and Lankes, 2001).

Furthermore, much of investment policy practice in developing countries indicate that cooperative modes such as joint ventures may be desirable even though there are also strong inherent problems associated with incentives for technology transfer and stability of the joint venture. No strong generalizations are available from the existing literature. Sometimes one entry mode could be favored over another (UNCTAD, 2000). Probably where acquisitions should be viewed as very desirable in the transition context would be in relation to industries where there is some pre-existing knowledge base, combined with obvious endowment advantages (such as human capital specific to some industries) but where survival of former SOEs would be near unthinkable without participation of multinational actors.

There is an obvious trade off associated with entry modes in the host country perspective as mentioned above. For instance, cooperative modes such as joint ventures and also acquisitions where the government is strongly involved during the initial phases of the project may hold much greater potential for technology spillovers to the rest of the economy (Blomström et al., 2001), however, this potential may also reduce actual technology exploited in the framework of the host country investment project. Hence cooperative modes would appear more attractive either into mature industries where there is need for quick infusion of knowledge into an already established domestic knowledge base or in relation to foreign acquisition of social assets, if there is no other avenue for exploiting these in the absence of assisted learning and access to outside knowledge.

Nationality of management and staff
Concerning nationality of the staff there are both advantages and disadvantages associated with presence of expatriate staff in the foreign owned subsidiaries. On the one hand may expatriate staff reflect better access to parent knowledge and hence faster learning in the subsidiary. On the other hand will the presence of domestic top management reflect increasing autonomy of the subsidiary whereby it starts to embark on a more indigenous learning process and in combination herewith access to outside learning through spillovers to other domestic managers since domestic managers

are more likely to socialize and share knowledge. Hence the virtue of different nationals as managers should reflect a combined evaluation of domestic managers' lack of prior knowledge in the specific technology domain, the necessity for assisted learning and the time horizon of the investment. In general the hiring of domestic managers should be viewed as a positive factor reflecting the willingness to delegate knowledge and respect for indigenous learning processes by the foreign parent. However, in certain state-of-the-art technology domains, lack of expatriate staff may also reflect exclusion from central parent knowledge.

Size of investment

Concerning size of investment there is a natural tendency among host governments to think in dimensions of 'bigger is better'. Based on theory and past experiences there appears to be little support for this type of thinking. Large investment projects also receive proportionately larger incentive packages and may therefore be just as expensive as several smaller projects. Also, larger projects potentially involve much greater risk if there is uncertainty about other aspects of the investment. Hence, large investments should only be preferred over small investments in combination with the presence of other positive attributes such as motives, international trade effects and spillover effects (see below).

Duration of the investment

Duration is oppositely along with the last issue of spillover effects one of the very serious issues to be considered by host governments and especially in combination with the time horizon of the incentive package offered. One of the main ideas with incentive packages is that cost incurred by the host government in a present value perspective are expected quite small in comparison with a much longer expected horizon for returns in terms of future tax and wage payments. In view to aspects of learning and knowledge accumulation it is also clear that investments with a relatively short horizon are strictly undesirable in a host country perspective. In combination with particular natural resource seeking motives e.g. of exploiting wage differentials between host and home countries it is therefore necessary for host governments to proceed with caution. No project with a relatively short horizon in combination with a motive singularly related to exploitation, within industries where the host country already has considerable knowledge base of its own and with poor trade effect should be offered incentives. Past experiences among developing countries suggest that some traditional industries with prior accumulated indigenous knowledge and existing comparative advantage in fact could experience a hollowing out of the domestic knowledge base as was the case in the Mexican textile industry under NAFTA (Hanson, 1996). Subsequent to the hollowing out

there is the further danger of relocation anew whereby remaining advantages associated with wages and taxes are lost. Even though the losing of comparative advantage in some industries should not be avoided it would appear that provision of investment incentives towards such type of projects could pose unnecessary high structural cost on the host country subsequently.

Spillover effects on related firms

Projects with potential positive knowledge externalities or spillovers on domestic firms should always be favored by government incentive programs since they are much more likely to render increasing returns on the initial investment. In principle there are various types of spillovers ranging from pure diffusion of knowledge and demonstration effects to knowledge spillovers in the vertical and horizontal linkages established between firms in their market relations. As mentioned above such linkages are very beneficial since they will also affect trade effects and increase the host country's value added share in any given project. Spillovers of the pure non-pecuniary type are more likely to be beneficial in traditional industries where domestic firms have the necessary absorptive capacity to explore potential spillover effects from foreign firms (Blomström et al., 2001). Oppositely are spillovers of the pecuniary type more likely to generate tangible results in general, and especially in industries with large technology gaps and necessity for assisted learning in domestic firms. As the projects with potential large vertical or horizontal linkage effects are more likely to produce positive results for domestic firms they should be prioritized by host governments. And especially in combination with value added chains offering unexplored potential for acquisition of comparative advantage.

Figure 2 summarizes some of the most important issues related to distinguishing good from bad FDI projects including a list of the issues that should be more or less prioritized when identifying projects that would merit subsidies.

Figure 2 - *A simple framework towards evaluating FDI projects that merit incentives*

4. Methodology

Besides collection of secondary data a questionnaire is used because it is considered capable of collecting the desired qualitative information. Two forms of questioning techniques were applied in this study. The first set of semi-structured interviews (pilot study) has two types of questions giving the respondents freedom to express their opinion and feelings concerning the subject at hand. Secondly, scaled items were used in the questionnaire where respondents are required to identify

their views with statements of pre-determined responses. The questionnaire was enclosed to the contact e-mail explaining the objectives of the study and firms were guaranteed that the information they provide would not be made public. Second option of the questionnaire was offered an on-line Internet application. See also the appendix where the questionnaire is reproduced. Both sets of questions were developed in Czech and English languages. The investors, who did not reply the first e-mail, were contacted in the second wave. Then, the Czech authors personally contacted them in the third wave.

Table 1 – *Sample characteristics, by number of projects*

The questionnaire was addressed to 341 affiliates of major foreign investors in the country. The number of total respondents is lower as other firms were affiliated. The returned questionnaires were 60, which statistically is a fairly good response rate (about 20%). Half of the respondents are foreign managers and the rest are local managers of the foreign subsidiaries. Because of missing observations the number of observations was further reduced to 55 in the final data reported here. Out of these 55 firms, 12 firms receive incentives mirroring well the number of firms in the entire population receiving incentives. More information on comparison of population and sample is given in Table 1. The sample is largely a mirror of the overall population except in regard to industry structure where there are significant biases in the sample, e.g. firms in 'other manufacturing' and service industries are over-represented whereas chemical and electronic firms are under-represented. In other aspects the sample is not very biased.

Interviews were conducted personally with some of the managers of foreign firms. However, this technique turned out to be difficult to use during the study, for example, some of the respondents did not have much time to be interviewed. Therefore, face-to-face interviews were conducted with 10 managers. Interviews are used to extract opinion, capture the feeling and motives related to FDI and the government policy. The purpose of using the interview schedule was to enable the researchers to get more information directly and clarification of some questions or arguments. Archival data was also used to distil out relevant information to this study.

The questionnaire survey was used to obtain information on qualitative aspects of FDI in the Czech Republic. Based on this a number of variables are constructed for the descriptive and statistical analysis in section 6. Appendix Table A3 also provides an overview and exact description of these variables. The first variable concerns the information based on which the firm decided to invest in the Czech Republic, where a dummy of 1 is assigned to firms relying on local networks *LOCNET*.

Three dummy variables are used for entry-mode: Co-operative *COOP*, Greenfield *GREEN* and Expansion *FOLUP* projects. Firms are discriminated on size according to their number of employees as captured with the variable *SIZE*. Further there is one dummy included for export market orientation *EXP* covering firms that not only cater to the domestic or regional CEE markets. Also a dummy reflects whether firms have a long-term orientation towards operating in the Czech Republic namely when answering whether they plan to reinvest in the future *REINV*. Additional dummies reflect whether firms applied for incentives *APINC* and a dummy for motives: purely cost-oriented firms are classified under the variable *COST*. The *AGE* of the subsidiary is adopted as numerical variable. Finally, a dummy variable is adopted to discriminate firms in terms of nationality of their management team where a value of 1 is assigned to firms with a local Czech team *LOCAL*.

5. Quantitative evaluation of the Czech investment program

The Czech Republic is one of the most successful transition economies in attracting foreign direct investment. According to the data provided in Figure 3, the Czech Republic has by the end of 2001 managed to attract more FDI per capita than any other country in CEE. This confirms the high attractiveness of the country for foreign investors due to its open investment climate and positive economic fundamentals (Czech Invest, 2002). Related hereto it might be perceived that the National Investment Scheme has been an important factor in these developments, as after its introduction annual FDI inflows have more than doubled compared to their previous levels in the early 1990s. This section will go further into the nature of the Czech investment program related to these arguments and question whether the National Incentive Scheme in itself has made any real difference towards the Czech Republic's ability to attract FDI. The section is rounded of with a purely quantitative cost-benefit analysis of the program leading up to the qualitative evaluation in section 6.

Figure 3 – *FDI stock per capita as of 2001, in USD*

Figure 4 – *Inflow of foreign direct investment to the Czech Republic, 1993-2003, millions USD*

The Czech Republic as from 1999 has been offering an incentives package that has stimulated a massive inflow of FDI into both greenfield and acquisition projects. Enterprises enjoy corporate tax relief for up to 10 years, import duty free and pay no VAT on new machinery. Companies may also deduct 10-15% of the cost of new machinery and technologies from their tax base provided they are

the first owners or leaseholders. Also offered are job creation grants ranging from CZK 80,000 to CZK 200,000 per employee and re-training grants covering up to 35 percent of training costs per employee. The lowest levels of support (CZK 80,000 per employee) is offered in those areas where the unemployment rate is 1-25% above the national average, while the highest levels of support, CZK 200,000 per employee, is available in the areas where the unemployment rate is 50% or more above the national average. The size of grants depends also on factors such as the availability of funds at the local Labor Office (MPO, 2002; Czech Invest, 2002). Land and designated infrastructure at less-than-commercial prices is also part of the investment incentives offered to investors. Investors who do not qualify for the National Incentives Scheme may still apply for support directly with local authorities (Czech Invest, 2002).

Figure 5 – *Revenue from sales of property by nationality, 1991-2001, billions of CZK*

The inflows of FDI into the Czech Republic in 1999 almost doubled from $3.7 billion in 1998 to $6.3 billion (see Figure 4). However, coinciding with this, there was a turnaround in privatization policies that discriminated foreigners from taking part in the process. Before 1999, to get around certain legal restrictions on property ownership, and reduce start-up costs, many foreign investors preferred going into joint venture with local partners rather than greenfield investment (ILO, 1995). But as shown with Figure 5 an overwhelming share of new privatizations have taken place with participation of foreign capital either as brownfield investments or international acquisitions. Table 1 in Section 4 supports this observation as a rising share of new investment projects take place under these categories of entry-modes (A/JV in Table 1). A lot of recent investment projects are also so-called expansion projects. Of the firms surveyed by Czech Invest (2002), 30 percent of investors intend to expand production in a new location in the Czech Republic by the end of 2002 and 76 percent of them intend to expand production in their existing Czech location.

A special feature of the Czech investment program is that it has tended not to favor particular types of investment projects regarding entry mode (see Table 1 above), and even there has been an emphasis on encouraging existing investors to venture into new projects. This would appear to be a strictly positive feature of the Czech program over other similar programs in other countries (Mudambi, 1998), however, further discussion hereof is given when testing the sample data since all follow-up projects in our sample receive incentives. Typical investment incentive programs are constructed mainly to cater to new greenfield investors. However, in other aspects the Czech program is traditional e.g. catering mainly to projects in manufacturing. This shows that often such

programs support the materialistic view of production, while in reality it may be questioned why projects in services should not also merit incentives?

Estimates from Zemplinerova and Rajdlova (2000) show that FDI projects render a social multiplier (taken as the percentage additional income earned by labor in foreign compared to domestic projects) of twice the size in almost every type of service activity. However, a traditional problem with services is that they are more difficult to export and often export activities are emphasized in order to get access to incentive packages.

Table 2 – *FDI projects with and without subsidies by industry, 1993-2001, million USD*

A final observation on the quantitative impact of the Czech Invest program is shown in Table 2. Here is compared FDI projects with and without subsidies by industry as in Table 1, but instead calculated in terms of size of investment. These data demonstrate that the incentive program appears to have crowded few extra projects in – and especially over time. This is vividly seen by the fact that the ratio between subsidized and total projects goes towards one by 2001. In 2001 there was only 7-8% of total investments going into the country without subsidies attached to them. At the same time the survey suggests that few investors enter the country because they are offered incentives. On the other hand is it difficult to disprove that incentives were a co-determining factor of choosing to invest in the Czech Republic rather than in other similar and neighboring locations. But the analysis so far indicates that it is overall changes in the Czech government's policy and general attitude towards FDI rather than a crowd-in catalyzed by the National Incentive Scheme that has caused the jump in FDI inflows to the Czech Republic after 1998-99. On the other hand does Table 2 also give cause to one observation vouching more positively for the influence of the Czech Invest program. Compared to total FDI projects the statistics on subsidized projects here show that the industry structure is not at all neutral. With subsidized projects there has throughout the period been strong emphasis on firms in branches related to machinery and equipment including all traditional industries involving engineering and technical skills. Also the chemical industry has received increasing shares of investments mainly with the incentive program. This therefore oppositely suggests that the program has been somewhat successful in aiming for agglomeration effects, and capture of dynamic comparative advantage in areas where the Czech Republic may have an obvious potential in terms of accumulated human skills.

As channels for FDI flows, foreign enterprises are normally expected to play a significant role in creating jobs opportunities, upgrading workers' skills and stimulating efficiency and

competitiveness (ILO, 1995). In the Czech Republic foreign enterprises directly employ approximately 300,000 people. Firms with more than 100 employees provide work for more than 25% of the total Czech manufacturing workforce. Foreign firms are also estimated to safeguard 10,000 Czech suppliers in the manufacturing and service sectors and a minimum of 600,000 jobs in local supplier companies, and approximately 12% of the total Czech labor force in employment (Czech Invest, 2002). Also pay and benefits are higher in enterprises with foreign participation compared with those in local private and state-owned enterprises, thus attracting more skilled labor.

According to Czech Invest (2002), 79% of foreign firms analyzed indicated that they are planning to increase their staff levels in the near future. However, this argument holds only if they do not have hidden agenda of exploiting the current available location benefits and later disappears as some of them have done recently. Two major foreign investors have left the south Moravia region and move to neighbor countries of CEE with a significant impact on the labor market and it is hard to predict whether the efforts by the government to recover the incentives provided to some of them will succeed.

Taking into account that foreign firms involvement in the transition economies began from scratch, FDI has undoubtedly contributed to the growth of the workforce in private manufacturing and service enterprises. Zemplinerova and Rajdlova (2001) when comparing performance of domestic and foreign enterprises in the Czech Republic have found that on average foreign firms outperform domestic enterprises. They also found that foreign enterprises have on average twice as high productivity, higher export per sales ratio, invest five times more per employee than domestic enterprises and are more profitable. In terms of export, foreign firms have been the driving forces behind Czech's increasing exports. In 1993, foreign firms were responsible for a very small percentage of Czech's exports. By 1999, they were responsible for producing 65-70% of all manufactured exports and reported strong export growth and plan to increase their total exports turnovers (Czech Invest, 2002). However, many of the exports by these firms are actually intra-firm, since a large share of the firms located in the Czech Republic are subsidiaries of multinational enterprises spanning world-wide production networks.

These observations suggest that there are considerable social benefits associated with the hosting of FDI projects which may merit providing incentive packages. However, such analysis often ignores the cost side of providing incentive programs. In the following a cost-benefit analysis it therefore undertaken, where it is only possible to account for some of these above

mentioned advantages as accruing to domestic society, since gains are split between the investor and the host country. Advantages to the host country come mainly in the form of a social multiplier in terms of extra wages and taxes accruing to society due to the higher efficiency of foreign compared to domestic firms. Furthermore, this cost-benefit analysis does not take into account potential spillover effects from e.g. capture of comparative advantage in specific industries or simply additional and more productive job creation in domestic firms. Also, the analysis is performed under the assumption that there is full employment in the economy. Hence benefits may be higher than suggested with this analysis. Oppositely are some costs also unaccounted for, such as the dynamic impact of rendering tax holidays over a longer time period. The tax holiday effect is entirely absent from the cost side. Other cost left unaccounted for are cost associated with retraining of workers paid by the national government including cost of raising taxes for financing and administration of the incentive program including possible bureaucratic losses associated herewith.

The quantitative analysis is complemented by the qualitative analysis in Section 6, in order to account for some of the benefits and cost that it is difficult to include into the more formal analysis. One should be careful to singularly rely on results of cost-benefit studies since the results are as much a product of the assumptions as of the actual economic situation at hand. This is also the case in the present study since the cost-benefit analysis can only be undertaken making rather strict assumptions.

Appendix Tables A2 and A3 show the calculation of costs and benefits respectively associated directly with the Czech Invest program. Both Tables includes a low and high estimate and furthermore benefits are calculated both as a static benefit and dynamic benefit, where the dynamic benefit assumes a job maintenance rate of 3 years rather than only 1 year.

The low estimate for cost is derived from information on Czech Invest regarding its annual expenses according to the State budget. The high estimate is oppositely calculated as the maximum permissible public support (MPPS) which is 50% of the total investment. It is reasonable to believe that the MPPS estimate is realistic since investment incentives are negotiated with several government bodies. For example, to receive significant incentives in the first place the project must be accepted as a project worth subsidizing by Czech Invest under the National Incentive Scheme. Czech Invest mainly provides finance in investment zones for development of infrastructure. Then the firm may seek additional incentives from the Ministry of Trade and Industry in terms of import tax reductions, with local government in terms of infrastructure improvements, from the Ministry of Finance in terms of tax holidays, and finally, specific retraining grants may also be negotiated with the local Labor Office.

Since it is difficult to obtain data on what all these incentives amounts to in terms of cost (not to mention administrative and bureaucratic loss), it is simply assumed that the extensive negotiation process will exploit the full MPPS.

The low estimate for benefits is derived from the assumption that workers earn wages in the order of 25% above wages in domestic or state owned enterprise. The calculations by Zemplinerova and Rajdlova (2001) suggest that in 2000 wages were 17% above, however, not taking into account differences between foreign SMEs and multinational firms. The wage premium is typically twice as high in the multinational subsidiaries as in the foreign SMEs. Hence on the basis of very recent information on wage differentials the assumption of 25% may be more realistic (CZSO, 2002). Unfortunately a time series herefore is not available so it must be assumed that the premium is the same for the whole period. The difference between the low and high estimate is then simply the assumption about the size of the social multiplier which is set to 1 and 2.25 respectively. Finally, the benefit side of the analysis also makes estimates depending on the assumption about job maintenance rate – e.g. whether jobs are created only for a one year period or whether they are created as more permanent jobs over time. This is the difference between the static and dynamic estimates in Table A2.

Table 3 – *Weighing cost and benefits – worst case scenario*

Table 3 here gives a summary of the cost-benefit calculations. Since the tax holiday effect is entirely absent from the cost side, it is suggested that a worst case scenario (high estimate cost, low estimate benefit) with a very low multiplier is relevant in countries providing lengthy tax holidays either in isolation or in combination with other types of incentives. Finally, as a conservative target we stick to the purely static benefit calculus for job creation in the summarizing analysis since it is unclear at the present time to which extent jobs created through incentive programs are maintained over time. Hereby the results are obtained as shown in Table 3. Depending on the assumption of the analysis there is a social net loss or gain associated with the provision of incentives, the pivotal questions being those of unemployment and spillovers. For example, if there is high unemployment, the provision of net incentives per year of 10,000 CZK per job may be a rather cheap solution compared to unemployment benefits. On the other hand if there is full employment it would be better to invest money in provision of public goods rather than in investment incentives. Since the Czech unemployment rate is relatively low (the national average being 8.8 in 2001 according to the Statistical Yearbook, 2001), the latter is

more likely to be a relevant policy conclusion at present. However, the cost-benefit analysis also suggests that by taking out the tax holidays from the investment incentive package will leave it as overall beneficial to society (hence a combination of high cost-high benefits) and make it more similar to actual investment in provision of public goods that might be beneficial to all types of firms no matter their origin. However, as the result stand in Table 3 it is highly relevant to inquire into more qualitative aspects of projects created through the investment incentive, and on the basis hereof, render it possible to give a fuller evaluation of the relative merits of the Czech National Incentive Scheme.

6. Qualitative evaluation of the Czech investment program

In order to uncover the motives among foreign investors towards placing their investment in the Czech Republic and whether factors like, labor costs, incentives, geographical position, etc. played any significant role in their decision the following questions were delivered to the foreign firms as noted earlier:

The first question was on what were the main motivating factors for investing in Czech Republic. This question tried to find out why foreign investors chose to build their plants in Czech Republic instead of investing anywhere else? The specific answers provided by investors regarding their motivations are reproduced with Figure 6.

The results indicate that 32% of FDI inflow was due to the geographical position of the country. The second most influential factor was the low labor cost (17%) and third factor was the well skilled and educated labor (16%). Low operating cost was rated at 10%. Previous trade relations with Czech Republic 5% and competitors' movement 4% are relatively insignificant motives. Surprisingly governmental investment incentives influenced only 3% of the FDI as shown in Figure 6.

Although the previous question shows that investment incentives were not the main motive for investment, the second question investigated whether investors were interested or received investment incentives. Results show those interested in incentives to be only 38 percent. Those not interested were 62 percent. But all those who indicated not to be interested in the investment incentive scheme are those who invested in the country prior to its introduction in 1999. For those who applied only 22 percent of them did not receive investment incentives, as they did not fulfill the essential criteria for being granted incentives. Hence the crowd-in effect of the investment program appears to be rather low according to these qualitative data as well.

The third question regards duration and in particular whether the foreign subsidiaries plan to reinvest anew in the Czech Republic. This question is very important for analyzing the nature of FDI that currently operate in the Czech economy. It is tantamount to establish whether foreign investors plan to remain in the country in the longer run. It also provides some indication whether investors are satisfied or not with the conditions in country. The survey reveals that an overwhelming majority (71%) has plans for reinvestment, which concurs with the Czech Invest survey mentioned in section 5. Only five percent (5%) do not plan to reinvest in the country and the rest (24%) were yet to decide.

Subsequently we focus our analysis on the distinction between investors with and without incentives to trace any differences between these two sub-samples regarding the crucial factor of duration and other factors, whereby it is possible to verify whether incentives have created better FDI projects in general and referring to the analytical framework set up in Section 3. However, it was not possible to cover all the areas mentioned as important in the analytical framework by means of the survey data.

Table 4 – *Are they better? Comparing projects with and without incentives in the sample*

Some descriptive statistics concerning the sampled firms are shown in Table 4. In several aspects the National Incentive Scheme may have had a neutral effect on the profile of FDI projects according to this sample. This appears to be the case regarding factors such as motives and nationality of management. However, Table 4 also suggests that projects differ from other projects in some regards as expected: there is emphasis on greenfield investors and export-oriented FDI. In other aspects where the part of the sample that receives incentives deviates from the rest of the sample all surrounds the issue of duration. This very much relates to the fact that asides greenfield projects the National Incentive Scheme focuses on subsidizing existing investors through their expansion projects. These facts appear to render positive results both regarding age of investments and future prospects for duration. In exactly this aspect, and since many of the new firms in the 'with incentive' sample are from after 1999, it must be judged that firms with incentives appear to be superior regarding their duration. Another surprising factor is that projects receiving incentives in general are smaller than the other firms. Finally, firms receiving incentives more often rely on local business networks for their decision to invest in the Czech Republic in general or in a particular region.

To investigate whether these descriptive statistics can be supported as significant in a multiple regression framework which among other attempts to take into account correlations between individual project characteristics (see also the Pearson correlation coefficients in Table A4) a probit regression was adopted. The purpose is to test whether particular types of screening procedures have been involved in the selection of projects for incentives. To make a good statistical analysis hereof it will be necessary to test for self-selection, e.g. is there a difference between investors applying for incentives and those that receive incentives.

Even though particular investors may be encouraged to or discouraged from applying for incentives depending on the governments announced screening rules it is also possible that self-selection applies due to practical issues and issues of information. The best results would be obtained by focusing only on the sample after 1999 and then first investigate for firms having applied for incentives and then again using this reduced sample as a control group for the firms having received incentives. But since both procedures would narrow the already small sample of only 55 firms considerably the whole sample has to be used as control group for both types of tests.

TABLE 5 -*Probit regression results*

The probit regression results are shown with Table 5. The first two columns compare the probabilities of receiving incentives and applying for incentives respectively. The relevant explanatory variables had to be adopted by looking to the correlation coefficients (Table A4) since inclusion of all possible relevant variables is problematic due to the effect the reduced degrees of freedom has on the reliability of the statistical tests. All the variables that seemed to be important based on the descriptive statistics were included in the analysis. Only a few of these variables are significant over the two models. In general it appears to be the same factors deciding whether firms apply for or receive incentives. This result may be obtained in part because the control group is less than optimal. However, results indicate that similar factors affect the propensity of firms to apply for and receive incentives. But since coefficients are greater and more significant for these factors in the first column this is not only because of self-selection but also because of screening rules.

This is true both regarding the fact that Greenfield firms and younger firms are more likely both to apply for and receive incentives. There are obvious practical reasons for the age factor to be important since the National Incentive Scheme was only introduced after 1999. But at the same

time it is found that all the follow-up projects in the sample receive incentives (why it is not possible to include the *FOLUP* dummy in the regression analysis). This even tends to moderate the discriminating influence of the age factor on firms with and without incentives. One reason that follow-up projects may be preferred could be because of their local bargaining power over new investors. However, in a host country perspective the normal explanation would be that a survivor's follow-up project should offer longer duration in the standard internationalization perspective of multinational firms (Johanson and Vahlne, 1990, Mudambi, 1998). Hence it may be difficult to interpret the value of this information.

The analysis strongly confirms that Greenfield projects are generally preferred over other types projects.

Contact to the local business network is also important both for firms that apply for and receive incentives. This should not be an important factor in the government screening process, but access to local networks and knowledge may again also increase the likelihood of receiving incentives.

Only in one aspect was there found great difference between the firms applying for and receiving incentives. Firms in services are the most likely to be unsuccessful applicants of incentives. In fact none of the service firms that applied for incentives did get them (why the industry dummy cannot be included in the first column probit regression). The statistical analysis did oppositely not support that firms in technology-intensive industries are more likely to receive incentives. This may be because the sample is biased in the aspect of industry composition.

Since the results support the hypothesis that self-selection is important the attempt was to control for self-selection by running a second round estimation for the probability of receiving incentives, but by exclusion of the variables that appeared to be important to self-selection. This should in principle be done on the reduced sample of only firms having applied for incentives, but since this sample is very small (17 firms) it was necessary to include all observations.

Most other factors that were expected to be involved in government screening such as export orientation, duration and type of industry are positive and increase in significance, however, not sufficiently to support the hypothesis derived from the descriptive statistics. This may be due to the low sample size and the biased composition of the control group in the second round estimations. Only SIZE is slightly significant in these second round results, showing that after self-selection government tends to favor small- and medium-sized projects rather than the largest ones.

Unfortunately, the survey design does not give access to investigating issues of spillovers since this is a very large subject in itself. However, secondary data available from Czech Invest gives some positive indication hereof, for example for each project given incentives in 2000 and 2001 there is provision of information about 5 domestic suppliers per new foreign project. In 2002 this figures goes up to 10 domestic suppliers. Unfortunately this tells us little about actual linkages created and the data does not give access to comparison with firms investing without incentives. Hence we are not able to provide any conclusions regarding the spillover effects of the National Incentive Scheme.

7. Discussion and conclusion

The Czech Republic about to accede to the European Union is probably right to encourage capital inflows through FDI since there are a wealth of benefits associated with these flows both in a micro- and macroeconomic perspective. The emphasis in this paper has been on the microeconomics advantages of hosting FDI. However, local politicians often seem to forget that there are considerable social opportunity costs involved in the provision of these very generous incentive schemes.

It is perhaps true that some of the countries like Czech Republic have managed to attract additional FDI through the provision of these incentive schemes. However, the paper shows that the liberalization of restrictions on foreign investment participation, for instance in the privatization process by the Czech government and market-oriented policy approach, can be argued to be some of the more important factors behind the recent increase in FDI inflows into the country. Therefore, it may be questioned how much of the current FDI flows that are really being crowded-in by the provision of incentives. The survey results show that few investors are attracted specifically because of the provision of incentives.

The aim should rather be to encourage transparent and predictable rules, and provide the necessary infrastructure as discussed under the cost-benefit analysis. Investing in education and increasing incentives for investment in R&D from the current level (0.56% of GDP), in order to maximize long-term FDI benefits should also be given more priority over standard incentive schemes of offering tax holidays. Tax holidays are often quite without development perspective for host countries and especially the competing host country firms. This is supported by our macro-economic cost-benefit analysis of the Czech investment program, which suggests that tax holidays

might be the most important burden that this program passes on to society. However, bearing in mind that results of the cost-benefit analysis are very sensitive to the specific assumptions made.

Concerning results of the analysis and evaluation of the specific performance of the National Incentive Scheme at the project-level the results are only indicative of the general trend mainly because of the small size of the primary data sample. However, in some aspects the firm-level evidence is complemented with support from secondary data covering the whole population of firms.

In some aspects does our analysis indicate that government screening has been quite successful in stimulating increased reception of good FDI projects, but self-selection is also important in all the same aspects. Hence, we must conclude that government screening has in most aspects not been significant to the quality of FDI in the Czech Republic which should be one of the major arguments for providing incentives in the first place. This is not surprising in view to that an increasing proportion of investors receive incentives over time according to the secondary sources used in the study.

Only in one area did we find that selection has mattered. The secondary data clearly reveals that incentives have worked to change the industry composition of FDI toward more technology-intensive industries. Hence the program appears to be designed with the purpose of capture of dynamic comparative advantage or with so-called strategic trade policy aims, even though this is not explicitly mentioned in any government documentation on the investment programme reviewed by the authors. Also, this was not confirmed with the sample of firms surveyed, which only showed a strong bias against service industries as recipients of incentives.

Another positive attribute associated with the National Incentive Scheme is that applicants to and recipients of incentives appear to be stronger embedded in local networks. This may be important to spillover effects, however, due to lack of data we can offer no strong conclusions. The importance of local networks may as much be related to issues of information and bargaining power in the selection process.

Even though incentive programmes tend to favour Greenfield projects of lower age with a much more risky duration profile, it is difficult to argue that the Czech government has gone into the same landmine. It was not possible in the statistical analysis to demonstrate with the low number of

observations available, the interactions there was between entry mode, age and the probability of receiving incentives with follow-up projects. This is because all of the follow-up projects in our sample received incentives! But despite this positive aspect government screening appears to mainly and besides self-selection to encourage new Greenfield investors with the incentive program.

Finally, our statistical analysis confirmed that the incentive program is strongly discriminatory against investors in service activities. Again this could not be demonstrated with the probit regression, since no service industry applicants in our sample to the National Incentive Scheme were granted incentives! Our cost-benefit analysis on the other hand suggests that there could be important gains from inclusion of services into incentive schemes since they provide for a larger social multiplier because of the large productivity gains from FDI in these types of industries. A major drawback in the government screening perspective may be that these projects do not produce tangible exports. However, we were not able to demonstrate that an export orientation was statistically significant to government screening.

Improvement of the general investment climate in the transition countries, in particular by removing the existing barriers that prevent further acceleration of the FDI inflow into the region should be the first priority of their governments. Investment incentives ought to be foremost directed at the reduction in the perception of such barriers among investors. If tax revenues are used to provide the required services by investors, then they will come and pay the taxes, and the productivity and incomes of the whole economy will rise over time. The study shows that a country like the Czech Republic should have ample potential to attract FDI without paying too high a price for it.

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Figures and tables to be inserted in the text

Figure 1 – *Inflows of FDI to the Baltic Countries and Central Europe, 1989-2001, millions USD*
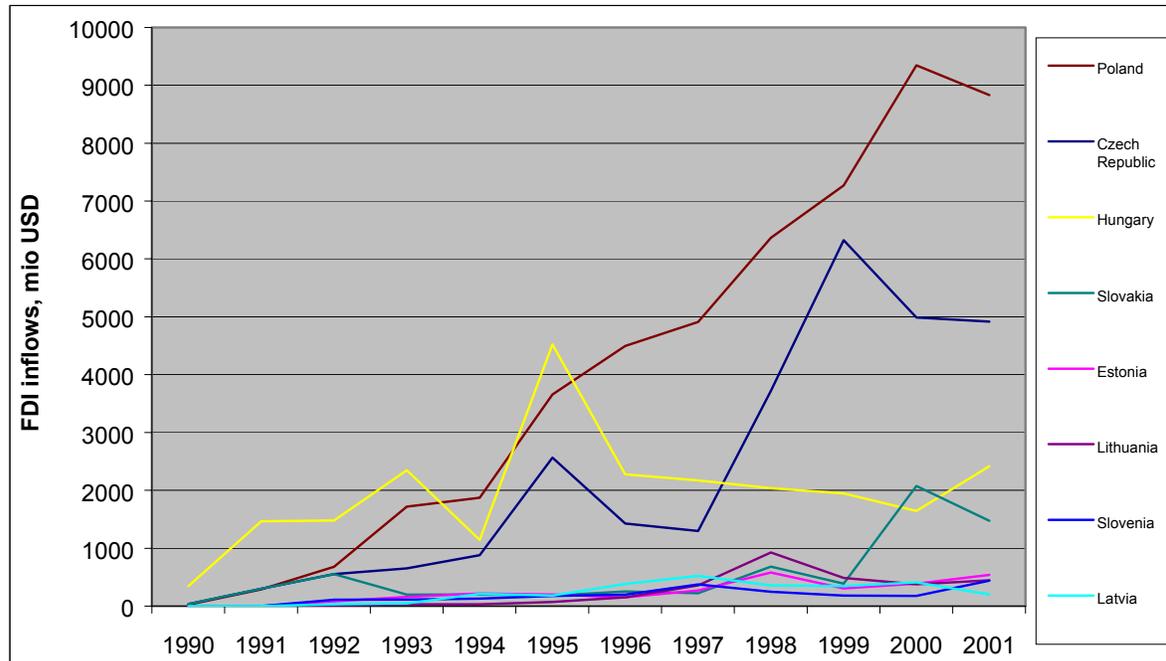
Source: UNCTAD: *World Investment Report*, various issues, United Nations Corporation on Trade and Development: Geneva.

Figure 2 - *A simple framework towards evaluating FDI projects that merit incentives*

Good projects		Bad projects
	1. Spillover effects	
-> Potentially many	↓	-> Potentially few
	2. Duration	
-> Long time horizon	↓	->Short time horizon
	3. Motives	
-> Potentially exploring	↓	-> Purely exploitative
	4. International trade effects	
-> CA based on domestic knowledge base	↓	-> CA based on assembly involving few new skills
	5. Other attributes likely to magnify the positive or negative effects	
-Large investments -Potential for SOE survival		-Large investments -Non-cooperative modes

Table 1 – *Sample compared to population characteristics , number of projects*

1. Industry	SAMPLE characteristics	POPULATION characteristics	Deviation[1]
TOTAL[2]	55	938	
-Food and tobacco	9%	5%	+
-Textiles and apparel	4%	3%	+
-Wood and paper	4%	3%	+
-Chemicals	6%	16%	--
-Nonmetallic products	11%	14%	-
-Machinery and equipment	22%	36%	--
-Electronics	22%	14%	+
-Other manufacturing	9%	2%	++
-Commercial and other services	15%	7%	++
2. Entry mode			
TOTAL	55	390	
-Greenfield	27%	33%	-
-Acquisition/JV	64%	52%	+
-Expansion project	9%	15%	-
3. Project size			
TOTAL	55	697	
-Small firms (L<50)	6%	9%	-
-Medium-sized firms (50<L<250)	47%	40%	+
-Large firms (L>250)	47%	51%	-
4. Year of investment			
TOTAL	53	602	
-1995 or before	43%	49%	-
-1996	8%	5%	+
-1997	9%	7%	+
-1998	8%	8%	no
-1999	11%	8%	+
-2000	8%	7%	+
-2001	11%	11%	no
-2002	2%	5%	-
5. Incentives			
TOTAL	55	974	
-with incentives	22%	19%	+
-without incentives	78%	81%	-

Notes:
1:      'Deviation' marks negative or positive deviation of sample from population characteristics
2:      Total denotes the number of available observations that the characteristics are based upon. The total sample size is 55 and the population size is 974 but observations on some characteristics are missing why totals are not equal across the various characteristics.

Source: Czech Invest (2002) and primary survey data.

Figure 3 – *FDI stock per capita as of 2001, in USD*

Czech Republic	2432
Hungary	2256
Estonia	2238
Slovenia	1508
Croatia	1372
Latvia	1021
Slovakia	1017
Poland	1009
Lithuania	759
Bulgaria	494
Romania	339
Russia	159
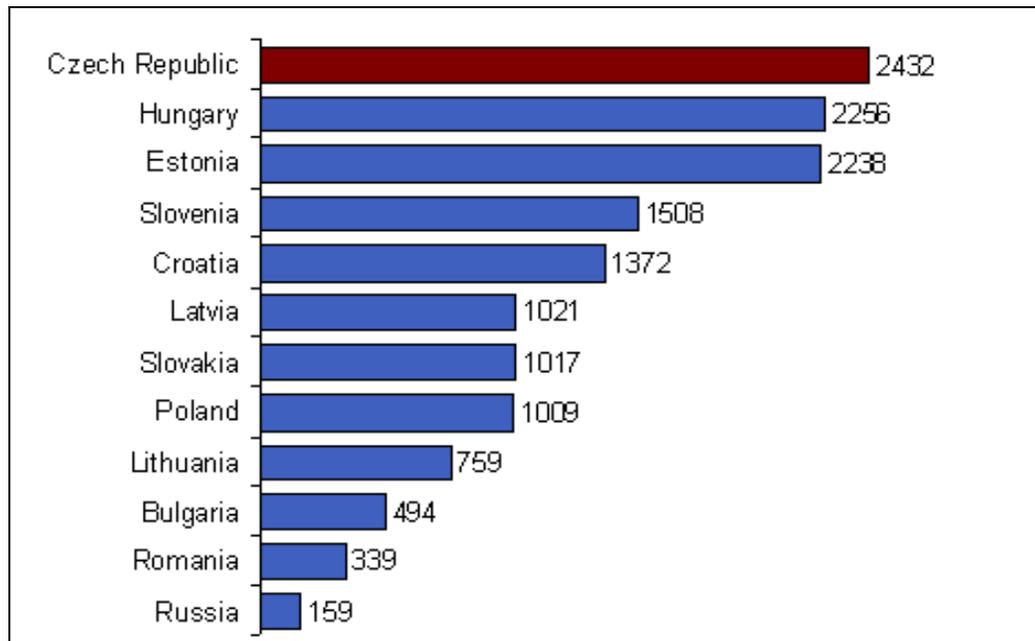
Sources: WIIW – WIFO, The Vienna Institute for Comparative Economics Studies, February 2002

Figure 4 – *Inflow of foreign direct investment to the Czech Republic, 1993-2003*
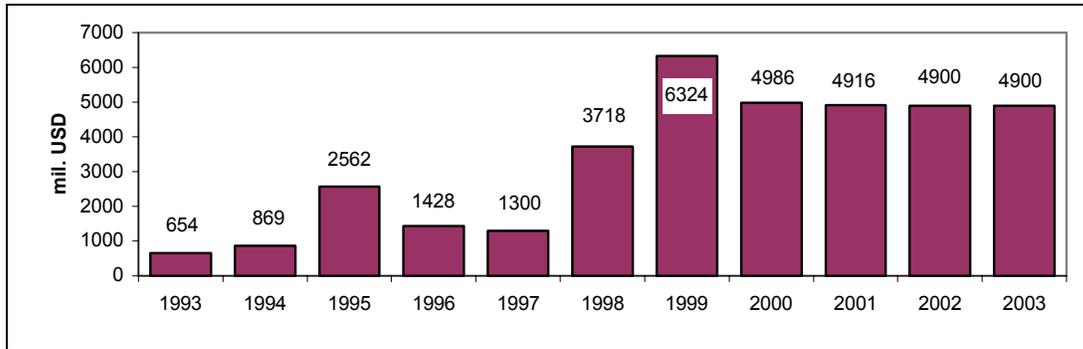
Source: Czech National Bank, May 2002. Forecast for 2002-2003: The Economist
              Intelligence Unit, 2000.

Figure 5 – *Revenue from sales of property by nationality, 1991-2001, billions of CZK*
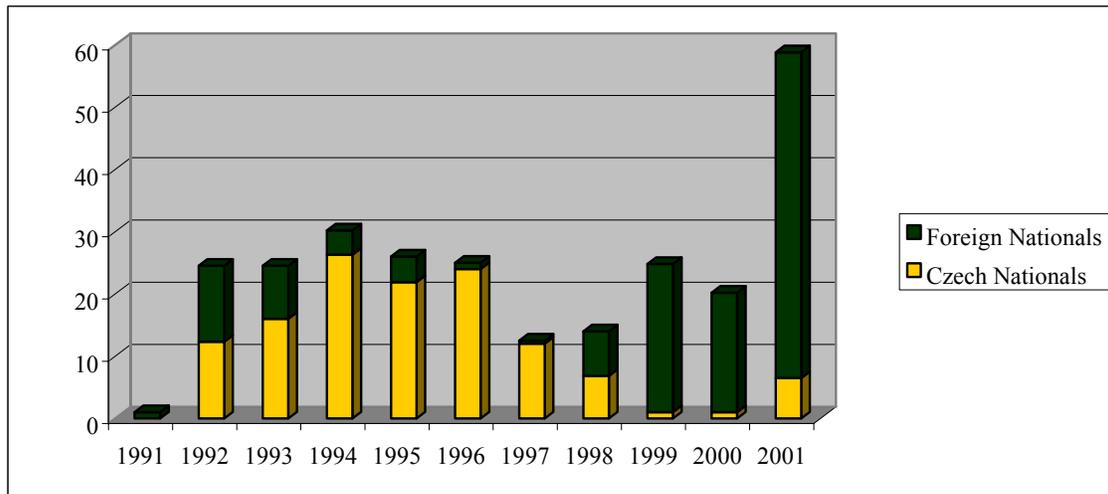
Table 2 – *FDI projects with and without subsidies by industry – Million USD*

	Cumulative FDI End 1998	SP[1]	Inflows 1999	SP	Inflows 2000	SP	Inflows 2001	SP	Cumulative FDI End 2001
Primary sectors	108		255		85		48		496
Service sectors	4,401		4,061		2,851		3,435		16,748
Manufacturing	4,022	692	2,008	525	2,050	1,334	**1,433**	**1,328**	9,513
Hereof in percentage									
-Food and tobacco	18	-	18	-	9	3	6	1	14
-Textiles and apparel	4	**7**	2	**13**	3	1	6	1	4
-Wood and paper	7	-	10	-	3	4	10	4	7
-Chemicals	15	-	20	-	14	13	13	**25**	15
-Nonmetallic prod.	13	-	16	12	6	9	9	7	12
-Basic metals and products	10	-	9	-	12	1	6	3	10
-Machinery and equipment	**30**	**93**	**23**	**75**	**51**	**69**	**48**	**59**	**36**
-Recycling and other n.e.s.	3	-	2	-	2	-	2	-	2

Notes   1: Subsidized projects in million USD for manufacturing FDI and percentage distribution by industry

Source: *The Czech National Bank, May 2002.*

Table 3 – *Weighing cost and benefits – worst case scenario*

	1993	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**Total, PV[3]**
Total cost[1]	6.25	31.31	32.73	70.35	85.14	227.26	208.29	468.27	617.46	185.93	**2,172.83**
Total benefits[2]	10.08	25.37	25.85	42.22	40.57	126.19	121.22	448.42	349.89	214.26	**1,567.58**
Total public Surplus	**3.83**	**-5.94**	**-6.88**	**-28.12**	**-44.57**	**-101.07**	**-87.07**	**-19.84**	**-267.57**	**28.33**	**-605.25**
Public surplus per job	6.71	-4.27	-5.20	-14.10	-24.26	-17.77	-16.53	-1.08	-18.89	3.42	-10.28

Notes:
1: Where as total cost is taken the high estimate
2: Where as total benefit is taken the low estimate
3: Total is calculated as the present value using a discounting rate of 5% p.a.

Source: Table 3 and 4.

Figure 6 – *Main motivating factors for investing in the Czech Republic, sample data, individual responses in percentage of total sample*
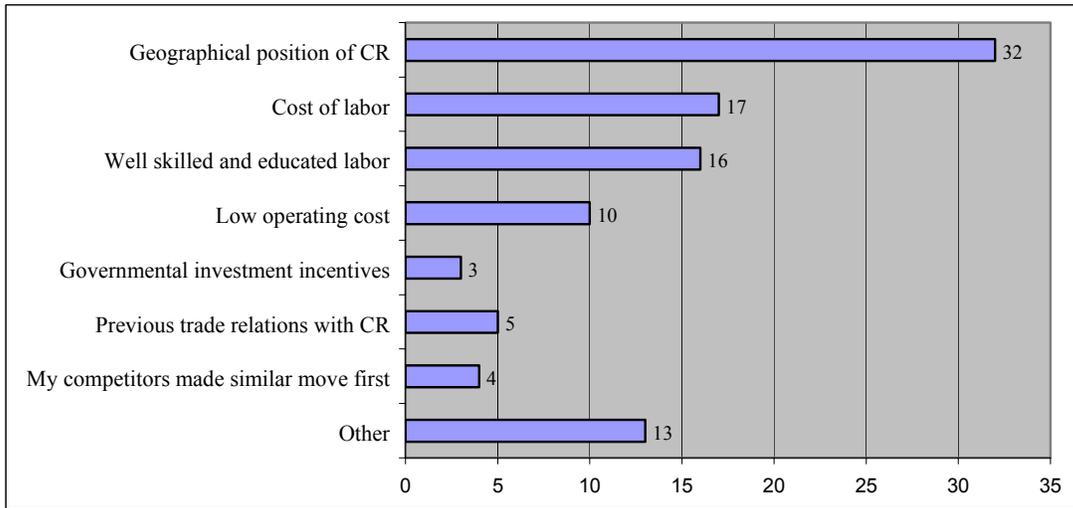
Factor	Value
Geographical position of CR	32
Cost of labor	17
Well skilled and educated labor	16
Low operating cost	10
Governmental investment incentives	3
Previous trade relations with CR	5
My competitors made similar move first	4
Other	13

Source: Primary survey data.

Table 4 – *Are they better? Comparing projects with and without incentives in the sample*[1]

	Projects without incentives	Projects with incentives
	Total 43	Total 12
1. Contacts		
-Local business network	16%	50%
2. Entry mode		
-Co-operative	77%	16%
-Greenfield	23%	42%
-Expansion	0%	42%
3. Size		
-Small	3%	17%
-Medium	29%	50%
-Large	68%	33%
4. Domestic market orientation	37%	8%
5. Plans to reinvest	63%	75%
6. Applied for incentives	19%	100%
7. Motives		
-Cost related	30%	33%
-Non-cost related	70%	67%
8.Age (average)	5.8 years	4.75 years
9. Czech management	35%	33%

Notes:
1: The data in the table reports the percentage no. of firms in the relevant sample population reporting an affirmative type of answer to the individual question or category of questions if not otherwise indicated. For further clarification please consult the questionnaire in the appendix and Appendix Table A3.

Source: Primary survey data.

TABLE 5 -*Probit regression results*
X² -statistics are reported in parenthesis

Dependent variable:	Prob (RECINC=1) (Model 1)	Prob (APINC=1) (Model 2)	Prob (RECINC=1) (Model 3)
Explaining variables:			
INTERCEPT	1.6330 (0.54)	0.8963 (0.26)	0.2140 (0.03)
LOCNET	1.7908** (5.43)	1.2448** (3.88)	-
GREEN	1.5436** (3.88)	1.0830* (2.84)	-
COST	-0.3289 (0.26)	-0.2951 (0.32)	0.3025 (0.45)
Log (SIZE)	-0.3384 (0.99)	-0.2765 (1.21)	-0.3557* (2.67)
Log (AGE)	-1.2891*** (7.97)	-0.9477*** (6.35)	-
EXP	0.4728 (0.25)	0.7247 (1.06)	0.5834 (1.12)
REINV	-0.1726 (0.06)	-0.0611 (0.01)	0.4980 (1.01)
HI-TECH	0.1221 (0.03)	0.7960 (1.65)	0.3960 (0.59)
SERVICES	-	1.8307* (3.05)	-
Log likelihood	-11.8476	-18.7718	-22.2006
Goodness of fit (Pearson X^2)	0.8894	0.4242	0.4709
N	44	45	45

Notes   * The coefficient estimate is significant at the 10 percent level, ** The coefficient estimate is
significant at the 5 percent level, *** The coefficient estimate is significant at the 10 percent level.

Appendix

Table A1 – *Estimated social cost of providing incentives, 1993-prices*

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Total, PV[3]
Low estimate[1] (Mio. CZK)	5.15	7.51	12.02	14.83	19.38	22.92	32.32	51.87	84.92	57.06	349.31
High estimate[2] (Mio. CZK)	6.25	31.31	32.73	70.35	85.14	227.26	208.29	468.27	617.46	185.93	**2,172.83**
No. of jobs created	570	1,392	1,323	1,995	1,837	5,687	5,268	18,358	14,162	8,289	58,881
Cost per job (1,000 of CZK)											
-Low estimate	9.04	5.40	9.09	7.43	10.55	4.03	6.13	2.83	6.00	6.88	5.932
-High estimate	10.96	22.49	24.74	35.26	46.35	39.96	39.54	25.51	43.60	22.43	36.90

Notes:
1: Calculated as the state budget contribution to Czech Invest in current prices and deflated with the GDP-deflator
2: Calculated as the maximum permissible public support (MPPS) which stands at 46-50% of total investment depending on the region, except for the region of Prague where the MPPS is much lower (20%). However, none of the projects given incentives are located in the region of Prague. Since MPPS is similar and close to 50% for all relevant investment projects the figure is simply calculated as 50% of total investments given incentives.
3: Total is calculated as the present value using a discounting rate of 5% p.a.
Source: Czech Invest (2002), EBRD (2001).

Table A2 – *Estimated social benefits of providing incentives, 1993-prices*

	1993	1994	1995	1996	1997	1998	1999	2000	2001[4]	2002[4]	Total, PV[5]
Average real wage rate in manufacturing (CZK per annum)	70,716	72,889	78,158	84,653	88,340	88,755	92,041	97,706	98,825	103,394	-
Social benefit per job (1,000 of CZK)											
-Low estimate[1]	17.68	18.22	19.54	21.16	22.09	22.19	23.01	24.43	24.71	25.85	-
-High estimate[2]	39.78	41.00	43.96	47.62	49.69	49.93	51.77	54.96	55.59	58.16	-
No. of jobs created	570	1,392	1,323	1,995	1,837	5,687	5,268	18,358	14,162	8,289	58,881
Static social benefit (Mio. CZK)											
-Low estimate	10.08	25.37	25.85	42.22	40.57	126.19	121.22	448.42	349.89	214.26	**1,567.58**
-High estimate	22.67	57.07	58.16	95.00	91.28	283.92	272.74	1008.95	787.26	482.08	3,859.67
No. of jobs created and maintained[3]	570	1,962	3,285	4,710	5,155	9,519	12,792	29,313	37,788	40,809	-
Dynamic social benefit (Mio. CZK)											
-Low estimate	10.08	35.75	64.19	99.68	113.85	211.22	294.35	716.01	933.60	1054.85	3,527.05
-High estimate	22.67	80.44	144.42	224.28	256.16	475.23	662.28	1611.03	2100.61	2373.41	8,684.26

Notes:
1: Calculated under the assumption that labor earns 25% higher wages in foreign owned firms, and that the social multiplier is 1. Hence the social benefit per job equals W*0.25.
2: Calculated under the same assumption that labor earns 25% higher wages in foreign owned firms, but now that the social multiplier is 2.25, where 0.25. is paid out by firms as indirect wages or fringe benefits while a share of 1.0 accrues to society as taxes on the extra capital gain from higher labor productivity in foreign owned firms. Hence the social benefit per job equals W*0.25*2.25.
3: Assuming a maintenance rate of 3 years on average per job.
4: Estimated, assuming an annual growth rate of 6% for nominal wages
5: Total is calculated as the present value using a discounting rate of 5% p.a.
Source: CSZO (2002), Czech Invest (2002), EBRD (2001)

Table A3 - *Qualitative data derived from the survey data*

Variable	Description
APINC	Dummy variable for firms having applied for incentives, assuming a value of 1 when the firm applied for incentives.
RECINC	Dummy variable for firms receiving incentives, assuming a value of 1 when the firm receives incentives.
LOCNET	Dummy variable assuming the value of 1 when the first point of contact is related to the local business network in the Czech Republic
GREEN	Dummy variable assuming the value of 1 when the investment is a Greenfield investment.
COOP	Dummy variable assuming the value of 1 when the investment is a joint-venture, acquisition or so-called brownfield investment.
FOLUP	Dummy variable assuming the value of 1 when the investment is a follow-up investment or so-called expansion project.
COST	Dummy variable related to motives, assuming the value of 1 when the firm as motive reports cost-related factors or investment incentives.
SIZE	Size is captured with the number of employees in the firm.
AGE	A cardinal variable reflecting the actual age of the investment, calculated by subtracting the first year of investment from 2002.
LOCALM	Dummy variable for nationality of the top management team, assuming a value of 1 when the firm has a local or Czech top management team.
EXP	Dummy variable for export-oriented firms, assuming a value of 1 when the firm reports its market-orientation to be beyond the domestic and regional (CEE) market.
REINV	Dummy variable for firms planning to invest further in the future, assuming a value of 1 when the firm has plans to invest again.

Questionnaire FOR FOREIGN INVESTORS

1. Point of first contact with Czech Republic?
   - ❑ Local business people
   - ❑ Governmental mission abroad
   - ❑ Czech Invest
   - ❑ Local chamber of commerce
   - ❑ Other:……………………………

2. Main markets for your products?
   - ❑ Czech Republic
   - ❑ Western Europe
   - ❑ Eastern Europe
   - ❑ USA
   - ❑ Others:……………………………

3. Main motivating factor for investing in Czech Republic?
   - ❑ Geographical position of CR
   - ❑ Cost of labour
   - ❑ Well skilled and educated labour
   - ❑ Low operating cost
   - ❑ Governmental investment incentives
   - ❑ Previous trade relations with CR
   - ❑ My competitors made similar move first
   - ❑ Other:……………………………

4. Did you apply for government investment incentives?
   - ❑ Yes
   - ❑ No

5. Did you get government investment incentives?
   - ❑ Yes
   - ❑ No

6. What are the main problems in operating business?
   - ❑ Lack of well skilled and educated labour
   - ❑ Bureaucracy and corruption
   - ❑ Imperfect law
   - ❑ Working culture
   - ❑ Poor infrastructure
   - ❑ Other:…………………………

7. Do you plan to reinvest in Czech Republic?
   - ❑ Yes
   - ❑ No
   - ❑ Not decided yet

8. What do you think about Czech economical and political situation?
   - ❑ Stable
   - ❑ Uncertain

Also available at: http://www.hyperlink.cz/zkukulka/formular/questionnaire.htm

Table A4 - *Pearson Correlation Coefficients*

	RECINC	APINC	LOCNET	COOP	GREEN	FOLUP	COST	SIZE	AGE	LOCALM	EXP	REINV
RECINC	-	**0.72548** (0.0001)	**0.32414** (0.0168)	**-0.51245** (0.0001)	0.16575 (0.2310)	**0.59761** (0.0001)	0.14091 (0.3095)	-0.16204 (0.2876)	**-0.53645** (0.0001)	-0.04100 (0.7685)	0.20728 (0.1326)	0.09449 (0.4967)
APINC		-	**0.25241** (0.0630)	**-0.37143** (0.0052)	0.13116 (0.3398)	**0.41833** (0.0015)	0.14091 (0.3095)	-0.15996 (0.2883)	**-0.57594** (0.0001)	-0.02143 (0.8766)	**0.31071** (0.0210)	0.07226 (0.6001)
LOCNET			-	0.00789 (0.9544)	0.01704 (0.9017)	-0.0396 (0.7741)	0.06076 (0.6594)	-0.14158 (0.3480)	0.02943 (0.8343)	-0.09466 (0.4918)	0.16119 (0.2397)	0.07341 (0.5943)
COOP				-	-0.81009 (0.0001)	-0.41833 (0.0015)	-0.14871 (0.2786)	0.14077 (0.3507)	0.25961 (0.0605)	0.02143 (0.8766)	-0.15174 (0.2688)	-0.23123 (0.0894)
GREEN					-	-0.19365 (0.1566)	0.12047 (0.3810)	-0.07296 (0.6299)	0.01442 (0.9184)	-0.03858 (0.7798)	0.10146 (0.4611)	0.18732 (0.1709)
FOLUP						-	0.06221 (0.6518)	-0.11542 (0.4450)	**-0.45273** (0.0007)	0.02390 (0.8625)	0.09673 (0.4823)	0.09673 (0.4823)
COST							-	-0.12807 (0.3963)	-0.23997 (0.0835)	-0.17845 (0.1924)	**0.32043** (0.0171)	-0.01053 (0.9392)
SIZE								-	-0.06124 (0.6860)	-0.08292 (0.5838)	0.03928 (0.7955)	-0.16225 (0.2813)
AGE									-	-0.14944 (0.2855)	**-0.37680** (0.0054)	-0.15408 (0.2706)
LOCALM										-	-0.00723 (0.9582)	-0.00723 (0.9582)
EXP											-	-0.04532 (0.7425)
REINV												-