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WORKER MOBILITY, KNOWLEDGE TRANSFER AND SPILLOVERS

DOCTORAL DISSERTATION

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WORKER MOBILITY, KNOWLEDGE TRANSFER AND SPILLOVERS

SUMMARY

This doctoral dissertation aims to shed light on the role of worker mobility for knowledge and technology transfer into the host economy and its dispersion among incumbent firms. We conduct our research using a linked employer-employee dataset, encompassing the whole population of Slovenian firms for the period from 2002 to 2010.

In the first paper of this thesis our goal is to analyse the causal relationship between skilled foreign worker mobility and knowledge transfer into the host economy. We try to establish whether foreign firms employing skilled foreign workers perform better in terms of TFP growth then their domestic and foreign owned counterparts. There are two possible explanations as to why foreign workers could positively impact TFP growth of foreign owned firms. Firstly, they could facilitate the knowledge transfer process between the mother company and the foreign affiliate stationed in the host country and secondly, they could be carriers of knowledge which is complementary to that of domestic workers (Lazear, 1999; Malchow-Møller, Munch, & Skaksen, 2011). In order to reach our goal, we needed to define causal effects of multiple treatments, i.e. inward FDI and inward FDI combined with skilled migrant worker employment. Since the selection into the two treatments mentioned is very likely not random, we decided to follow the approach by Arnold & Javorcik (2009) and combine propensity score matching with the difference-in-differences method. We constructed a multinomial treatment model, which was subsequently transformed into a series of binomial models. We then compared the outcomes for firms where inward FDI is combined with employment of skilled migrant workers to the outcomes where inward FDI is not combined with the employment of skilled foreign workers and with outcomes of domestic firms employing solely domestic skilled workers. The outcomes for firms where inward FDI is not combined with the employment of skilled foreign workers were finally compared to the outcomes of domestic firms employing solely domestic skilled workers. The analysis includes three types of skilled foreign workers: foreign managers, foreign experts and parent country national managers. Our results suggest, that inward FDI combined with employment of foreign skilled workers (especially PCN managers) results in a temporary increase in TFP growth, which is in turn translated into a higher TFP level. They are therefore very much in line with the findings by Inzelt (2008) who suggested in her study of Hungary that the initial temporary mobility of foreign managers (1 to 2 years after the FDI entry) led to "one-off" transfer of knowledge to the local affiliate.

The second paper of this dissertation further analyses what factors influence the decision by the multinational on whether to employ a host country national (HCN) manager or a parent country national (PCN) manager. The existing studies dealing with this topic are more or less based on samples or populations of foreign firms and therefore focus on firm and country specific factors influencing the staffing decision. The advantage of our dataset

is that it includes the entire population of firms operating in Slovenia, domestic as well as foreign. This enables us to test the impact industry specific factors have on the likelihood to hire a foreign manager. To our knowledge this aspect has not yet been researched. Our analysis provides robust evidence suggesting that firm size and export propensity have a positive impact on the likelihood that a foreign manager will be appointed to a foreign owned firm. Our results also suggest, that average industry TFP of domestic firms has a negative effect on the probability of a foreign manager being appointed. We further find robust evidence indicating that the absolute distance in the Hofstede's Power Distance dimension between the host country and the FDI country of origin, has a negative effect on the likelihood that a foreign manager will be appointed. Finally, when it comes to regions of inward FDI origin, we used the old EU member states (EU15) as a benchmark for our analysis. After controlling for absolute distances in terms of Hofstede's cultural dimensions between Slovenia and countries of inward FDI origin, our results show that the owners coming from the Former Soviet Union and from the Middle East are more likely to appoint a foreign manager than the owners coming from the old EU member states (EU15).

When knowledge and technology are successfully transferred from the mother company to the host country affiliate, they may spread further to incumbent firms. These are the so called FDI spillover effects. They can occur through many different channels, one of them being worker mobility. The third paper of this dissertation therefore aims at establishing whether worker mobility functions as a channel of productivity spillovers in the case of Slovenia. FDI spillovers have already been documented for Slovenian manufacturing firms, however, to our knowledge, the aspect of worker mobility has not yet been explored. We also contribute to the existing literature by conducting a separate analysis for manufacturing and service firms. The study provides robust evidence in support of the existence of FDI spillovers through skilled foreign worker mobility for service firms in Slovenia.

The three papers bear important policy implications. Since foreign skilled workers seem to be an important factor for successful knowledge transfer to the host economy, liberalisation of the skilled immigration regime may be a good point to start. Further, in light of evidence for spillovers through worker mobility taking place in Slovenia, it might be beneficial to consider actions aimed at making the Slovenian labour market more flexible. Namely, the current legislation in Slovenia offers strong protection to employees with permanent work contracts making it too difficult for firms to lay off workers. Consequently, employers consider every new employment very carefully. From a job seekers' perspective that makes it harder to get a new job. If the job market was more flexible, more people would consider leaving the safety of their current job and moving to another employer, potentially enabling knowledge spillovers.

Key words: FDI, skilled worker mobility, TFP, knowledge transfer, Spillover effect

MOBILNOST DELOVNE SILE, PRENOS ZNANJA IN UČINKI PRELIVANJA

POVZETEK

Cilj doktorske disertacije je osvetliti vlogo mobilnosti delovne sile pri procesu prenosa znanja in tehnologije v državo gostiteljico ter pri njuni razpršitvi med domača podjetja. Raziskavo smo izvedli s pomočjo baze podatkov, ki povezuje zaposlene in delodajalce ter pokriva celotno populacijo slovenskih podjetij v obdobju od leta 2002 do 2010.

Namen prvega članka disertacije je analizirati vzročno povezanost med mobilnostjo izobražene tuje delovne sile in prenosom znanja v državo gostiteljico. Ugotoviti smo poskušali, ali pri tujih podjetjih, ki zaposlujejo izobražene tuje delavce, skupna faktorska produktivnost (SFP) raste hitreje kot pri drugih domačih in tujih podjetjih. Obstajata dve možni razlagi za potencialen pozitivni vpliv tujih izobraženih delavcev na rast SFP pri tujih podjetjih: i) izobraženi tujci lahko izboljšajo učinkovitost prenosa znanja med matično družbo in podružnico ii) s seboj lahko prinesejo znanje, ki je komplementarno obstoječemu znanju v podružnici (Lazear, 1999; Malchow-Møller et al., 2011). Za dosego raziskovalnega cilja je bilo potrebno definirati vzročne učinke polinominalnih poskusov (angl. multinomial treatments) - vhodne tuje investicije ter vhodne tuje investicije v kombinaciji z zaposlitvijo tujega izobraženega delavca. Glede na to, da izbira v omenjena poskusa po vsej verjetnosti ni slučajna, smo se odločili slediti pristopu Arnolda in Javorcikove (2009) ter združili metodi iskanja parov po načelu stopnje verjetnosti (angl. propensity score matching) ter razlike v razlikah (angl. difference-in-differences). Oblikovali smo model polinominalnih poskusov (angl. multinomial treatment model), ki je bil nato preoblikovan v serijo binarnih modelov. V naslednjem koraku smo primerjali rezultate podjetij, pri katerih je vhodna TNI (tuja neposredna investicija) združena z zaposlitvijo tujega izobraženega delavca, z rezultati podjetij, kjer vhodna TNI ni kombinirana z zaposlitvijo tujega izobraženega delavca ter z rezultati domačih podjetij, ki zaposlujejo izključno domače izobražene delavce. Rezultate podjetij, kjer vhodna TNI ni kombinirana z zaposlitvijo tujega izobraženega delavca smo nato primerjali še z rezultati domačih podjetij, ki zaposlujejo izključno domače izobražene delavce. V analizi so bili obravnavani trije različni tipi izobraženih tujcev: tuji menedžerji, tuji strokovnjaki ter menedžerji iz države izvora tuje neposredne investicije. Naši rezultati kažejo, da vhodna TNI v kombinaciji z zaposlitvijo tujega izobraženega delavca (še posebej menedžerja iz države izvora TNI) povzroči začasen dvig rasti SFP, kar se kasneje pokaže v obliki višje ravni SFP. Rezultati se tako v precejšnji meri skladajo ugotovitvami Inzeltove (2008), ki je v svoji raziskavi prišla do zaključka, da začetna začasna mobilnost tujih menedžerjev verjetno vodi do enkratnega prenosa znanja v lokalno podružnico.

Cilj drugega članka je ugotoviti, kateri dejavniki vplivajo na odločitev multinacionalnega podjetja, ali bo za vodenje podružnice zaposlilo domačega ali tujega managerja (oziroma managerja iz države izvora TNI). Obstoječe študije, ki se ukvarjajo s to tematiko, so bolj ali manj narejene na vzorcih ali populacijah podjetij s tujim lastništvom ter se zato

osredotočajo predvsem na dejavnike, ki vplivajo na odločitev o zaposlitvi, vezane na podjetja in države. Prednost naše baze podatkov je predvsem v tem, da vključuje celotno populacijo slovenskih podjetij, tako tujih kot domačih. To nam je omogočilo analizirati učinke dejavnikov, ki vplivajo na verjetnost zaposlitve tujega menedžerja, vezanih na panogo v kateri podjetje deluje. Po nam znanih informacijah ta vidik še ni bil raziskan. Naša raziskava prinaša robustne rezultate, ki kažejo, da imata velikost podjetja v tuji lasti ter njegova izvozna usmerjenost, pozitivne učinke na verjetnost izbire tujega menedžerja. Naši rezultati ravno tako nakazujejo, da ima povprečna panožna SFP domačih podjetij negativen vpliv na verjetnost zaposlitve tujega menedžerja. Našli smo tudi robustne rezultate, ki potrjujejo, da ima absolutna razdalja v Hofstedovi dimenziji Power Distance med državo gostiteljico in državo izvora TNI, negativen učinek na verjetnost izbire tujega menedžerja. Pri analizi vpliva regij izvora TNI smo kot osnovo za primerjavo uporabili EU15 oziroma stare članice EU. Po tem, ko smo upoštevali vpliv absolutnih razdalj med Slovenijo in državami izvora TNI z vidika Hofstedovih kulturnih dimenzij, smo ugotovili, da je verjetnost zaposlitve tujega menedžerja pri lastnikih, ki prihajajo iz nekdanje Sovjetske zveze in iz Bližnjega vzhoda, večja kot pri lastnikih iz EU15.

Ko sta znanje in tehnologija uspešno prenesena iz matičnega podjetja na podružnico v državi gostiteljici, se lahko razširita tudi na obstoječa domača podjetja. Gre za tako imenovane učinke prelivanja (angl. spillover effects). Do slednjih lahko pride preko več različnih kanalov. Eden izmed njih je mobilnost delovne sile. Cilj tretjega članka te disertacije je ugotoviti, ali mobilnost delovne sile v primeru slovenskega gospodarstva v resnici deluje kot kanal preko katerega prihaja do učinkov prelivanja. Učinki prelivanja so bili že dokumentirani za slovenski proizvodni sektor, vendar pa po nam znanih podatkih vidik mobilnosti delovne sile še ni bil raziskan. Naša raziskava k obstoječi literaturi prispeva tudi z ločenima analizama za proizvodna in storitvena podjetja. Rezultati študije potrjujejo obstoj učinkov prelivanja slovenskem storitvenem sektorju, do katerih pride preko mobilnosti visokoizobraženih delavcev.

Vsi trije članki prinašajo pomembne implikacije za ukrepe in politike države. Glede na to, da se zdi, da so izobraženi tuji delavci ključni za prenos znanja in tehnologije v državo gostiteljico, je morda vredno razmisliti o politiki spodbujanja imigracije za izobraženo tujo delovno silo. V luči obstoja učinkov prelivanja preko mobilnosti delovne sile v Sloveniji, bi bilo morda smiselno oblikovati tudi ukrepe, ki bi povečali fleksibilnost trga dela v Sloveniji. Trenutno namreč slovenska zakonodaja močno ščiti delavce, ki so zaposleni na podlagi pogodbe za nedoločen čas. Delodajalci imajo tako velike težave pri odpuščanju zaposlenih in zato temeljito premislijo preden zaposlijo novega delavca. Z vidika iskalca zaposlitve to pomeni, da je težko dobiti novo delo. V primeru, da bi bil trg delovne sile bolj fleksibilen, bi si morda več ljudi upalo zapustiti trenutnega delodajalca in si poiskati novo zaposlitev, pri čemer bi potencialno lahko povzročili učinke prelivanja.

Ključne besede: TNI, mobilnost izobražene delovne sile, skupna faktorska produktivnost, prenos znanja, učinki prelivanja

TABLE OF CONTENTS

LIST OF TABLES

INTRODUCTION

We live in a globalised world, where survival of the fittest is the name of the game. Possession of superior knowledge and technology is one of the main elements that separates the winners and the losers between companies and between countries. Knowledge can be developed internally, within a country or within a firm, however, that may take a long time. And time is money. The other option is to "import" knowledge. Nowadays most countries are trying to attract foreign direct investment (Bah, Kefan, & Izuchukwu, 2015), competing among themselves through implementation of various FDI promotion policies. Governments may, for example, offer very low corporate tax rates, preferential tariff rates, they may make attempts at reducing bureaucracy, increase government investment in infrastructure or they may adopt educational measures (OECD, 2003). One of the major reasons for this behaviour is the assumption, that knowledge and technology are transferred to the host economy as a by-product of FDI. Namely, according to economic theory, multinational enterprises, who decide to enter a foreign market through foreign direct investment, must have a certain firm-specific advantage compared to domestic firms, since they have to compensate for their lack of knowledge about the host environment (Bellak, 2004; Caves, 1971; Dunning, 1979; Koutsoyiannis, 1982; Markusen, 1995). The superior knowledge and technology possessed by the multinational should be transferred to the affiliate in the host country. One of the possible channels through which this can occur is worker mobility[1]. Consequently, the foreign affiliate should become more productive than its incumbent peers. Empirical evidence for this prediction was found in several previous studies, e.g. Arnold & Javorcik (2009) and Damijan, Kostevc, & Rojec (2015) recently. These findings are also in line with the summary statistics for domestic and foreign owned firms in Slovenia presented in Table 2 of this dissertation. Namely, the figures show, that the average total factor productivity of foreign owned firms in Slovenia is significantly larger than the average total factor productivity of domestic firms. However, studies analysing the causal relationship between foreign ownership and firm productivity provide mixed results (Barba Navaretti & Venables, 2004), i.e. they show that foreign ownership does not always result in higher productivity. Very little is known about the reasons for this ambiguity. Could skilled worker mobility explain the effectiveness of technology transfer from the mother company to a host-country affiliate? This is the central question dealt with in the first paper of this dissertation. Its aim is to find out whether foreign owned firms employing skilled foreign workers perform better in terms of TFP growth than their domestic and foreign owned peers. There are two possible explanations for better performance of foreign owned firms using foreign skilled labour: (i) foreign skilled workers may enhance the technology transfer from the mother company to the host country affiliate,

[1] see e.g. Belderbos & Heijltjes (2005)

(ii) these workers may bring knowledge which is complementary to that of domestic workers (Lazear, 1999; Malchow-Møller et al., 2011).

To identify the role of worker mobility for knowledge transfer from abroad, we need to identify causal effects of multiple treatments (i.e. inward FDI and inward FDI combined with skilled migrant worker employment). To deal with the likely non-randomness of the two treatments we follow the approach by Arnold & Javorcik (2009) based on a combination of propensity score matching and difference-in-differences methods and extend it to multiple treatments. Building on the idea by Lechner (2001), we transform average treatment effects for multiple treatments into a series of binary comparisons, i.e. the outcomes for firms where inward FDI is combined with employment of skilled migrant workers are compared to the outcomes where inward FDI is not combined with the employment of skilled foreign workers and with outcomes of domestic firms employing solely domestic skilled workers. To our knowledge, no research has yet been done comparing these types of outcomes.

Further, the aim of the second paper of this dissertation is to establish what factors influence a multinational's decision on whether to employ a host country national (HCN) manager. Existing studies that analysed this issue were more or less conducted on samples or populations of foreign firms. Therefore, they mainly focus on firm and country specific factors affecting the propensity to hire a foreign manager. The main advantage of our study is the availability of data not only for the population of foreign firms but all firms operating in Slovenia. This enabled us to analyse the impact of industry specific factors on the likelihood of hiring a foreign manager. To our knowledge, this specific aspect has not yet been analysed in this context. As far as methodology is concerned, we applied probit and heteroscedastic probit models to pooled panel data in addition to using the Heckman selection model with cross section data.

The topics of the first two papers of this dissertation are connected to important implications for FDI promotion policy. Namely, knowledge and technology transfer is seen as a major benefit the host countries may gain from inward FDI and foreign skilled workers may influence the amount of knowledge "imported" into the host country leading to welfare gains from FDI. If foreign skilled workers have a crucial role in the knowledge transfer process, then governments trying to attract FDI may want to consider making their skilled immigration policies more open and friendlier as a part of their FDI promotion policy mix. Skilled immigration policies may have an impact on a MNE's decision on whether to employ a host country national or a foreign worker and, in addition to that, it may also influence the location decision of a MNE on where to establish a subsidiary to start with (De Smet, 2013). The restrictiveness of skilled immigration regimes for 93 economies worldwide was analysed by De Smet (2013). In order to provide comparable information with respect to this area of country regulations, he developed the Employing Skilled Expatriates index (ESE). This index is based on five components of ESE indicators: i) the existence of immigration quotas, (ii) the amount of time it takes to obtain a work permit, (iii) whether there is a possibility to obtain

permanent residency, (iv) whether there is a possibility to obtain citizenship, (v) whether work permits for spouses are available. De Smet (2013) finds important differences between countries' skilled immigration regimes. An extreme example is Honduras, where it on average takes 22 weeks to obtain a temporary work permit for an Information Technology specialist. The company trying to employ a foreign expert must first obtain a certificate of compliance with the quota requirements. After that it must apply, on behalf of its future employee, for a special stay permit. When the immigrant receives the stay permit, they are required to register with the National Foreign Register, before they can apply for a temporary work permit. All these steps, of course, need to be taken with different institutions. However, this is not yet the end. Before obtaining a temporary work permit, the company trying to hire the immigrant receives a visit from migration officers, which must verify compliance with the quota requirements. Finally, the application is reviewed and granted. Singapore's policy is on the other side of the spectrum. There, it takes only 10 days to get a work permit on average. The future employer of the migrant worker must apply for an Employment Pass at the Ministry of Manpower. In the next step the latter issues an in-principle approval letter. After arriving to Singapore, the foreign worker must follow the instructions listed in the in-principle approval letter. Upon compliance, the immigrant obtains the employment pass. Unfortunately, Slovenia was not included in the study, so we do not have a direct comparison in this regard. However, a new law regulating employment of foreigners (Employment, Self-Employment and Work of Foreigners Act) was passed in Slovenia recently (in June 2015). The main aim of the regulators was to harmonize the Slovenian legislation in the field of employment and work of third country nationals (i.e., workers other than EU, EEA or Swiss citizens) with the EU regulations. A major step towards the simplification of the immigration regime, brought by the new law, was the implementation of the "one-stop-shop" principle. This change meant that third country immigrants no longer needed to apply for the work permit and residence permit separately (and at two different authorities), but were able to apply only once, for a single permit (Schoenherr, 2015). The first single permit can be issued for up to one year. After that it can be prolonged, but not for more than two years (ZRSZ, n.d.-a). If a firm operating in Slovenia wishes to employ a third country national with at least higher education, they have to prove that there are no registered unemployed Slovenian citizens who would be appropriate for the job. However, the employer need not prove that it is actively doing business, as is the case when firms wish to employ workers having lower degree of education (DATA, n.d.). Very different rules, on the other hand, apply for workers coming from EU, EEA or Switzerland. When it comes to this group, the free movement of people principle is applied, meaning, that they do not need a work permit and can apply for jobs in Slovenia under the same conditions as Slovenian citizens. A few exceptions exist only with regard to certain public services. EU, EEA and Swiss citizens are also entitled to freely move to Slovenia in order to look for a job or work here. This right also extends to their family members (European Commission, n.d.). However, although Croatia joined the European Union on the 1st of July 2013, the free movement of people does not yet apply to Croatian job seekers in Slovenia. Namely, transitional provisions were put into place that limit their free access to the Slovenian job market. The current set of provisions will be valid until 30.6.2018, but can

potentially be prolonged until 30.6.2020. In the meantime, Croatian citizens require a work permit in order to become employed in Slovenia (EURES, n.d.; ZRSZ, n.d.-b).

A relatively recent study by Burger, Rojec, & Jaklič (2012) analysed the effectiveness of the "FDI co-financing Grant scheme", the main instrument of Slovenian FDI promotion policy, based on data for the period from 2000-2009. When comparing the performance of foreign firms obtaining the grant with domestic firms and foreign firms who did not get the grant, they found no evidence of any breakthroughs in technological intensity, human resource development or productivity being achieved through the subsidy mechanism. They even concluded, that as far as technology and skills are concerned, the subsidised foreign firms remained on more or less the same level as average Slovenian firms. This failure by the main instrument of Slovenian FDI promotion policy to increase the productivity of foreign affiliates operating in Slovenia might perhaps be turned into a success by including a policy aiming at simplifying and promoting skilled immigration to Slovenia into the FDI promotion policy mix.

Once knowledge and technology is successfully transferred from the mother company to the affiliate operating in the host country, it can be spread further to the incumbent firms. These are the so called FDI spillover effects. The latter can occur in different ways, such as: i) backward and forward linkages between foreign owned and domestic firms, ii) demonstration effects, where domestic firms learn by imitating the technology of multinational corporations, iii) worker mobility in the case where former employees of multinational corporations start working for a domestic firm and thus bring the knowledge they gained at the MNE with them, iv) the competition effect, where MNE's force domestic firms to become more productive in order to keep their market shares (Blomström & Kokko, 1998). A large body of literature studying spillover effects empirically already exist, however, the results are mixed. The existence of positive productivity spillovers from MNEs has also been documented for Slovenia (e.g. Zajc Kejžar (2011) and Damijan et al. (2003)), however, their existence has not yet been tested for Slovenian service firms. The worldwide research of spillover effects through worker mobility is, on the other hand, relatively scarce due to the recent emergence of linked employer-employee databases. The aim of the third paper of this dissertation is therefore to establish, whether spillovers through worker mobility exist in case of Slovenia. To my knowledge no such research has yet been done on Slovenian data. Furthermore, research on spillover effects for Slovenia in general has only been done for the manufacturing firms, whereas I conduct my analysis for the manufacturing and service sectors separately. Due to the dynamic nature of the empirical model, a large number of firms and a relatively small time dimension, I decided to use the system GMM estimator developed by Arellano & Bover (1995) and Blundell & Bond (1998) to obtain my estimates.

The aim of this doctoral dissertation is therefore to shed light on the role of worker mobility for the knowledge transfer into the host economy and in turn for its dispersion throughout incumbent firms as well as on the factors influencing worker mobility itself.

Research pertaining to this doctoral dissertation was conducted using four different databases. The first is a linked employer-employee database obtained from the Slovenian Statistical Office (SORS). It contains data on the economically active population in Slovenia. Among other things, it provides information about a person's education, their occupation according to the Standard Classification of Occupations, identification of their employer (by months), their post in the company, etc. Two further databases were provided by the Bank of Slovenia. One of them contains data on all firms with more than 10% foreign ownership. The current state of FDI is given for each company by year. The other database contains firms operating in Slovenia having outward FDI. The three databases mentioned were merged with Slovenian firms' financial data provided by AJPES (The Agency of the Republic of Slovenia for Public Legal Records and Related Services) using firm identifiers. The full combined database contains roughly 30000 firms, on average, for each year investigated. Firms simultaneously having negative capital and zero employees were identified as inactive and excluded. The final database enables us to calculate a firm's total factor productivity, to determine the characteristics of its workers, their professional histories, the origin of its FDI (if any), yearly number of new employments by different categories of workers etc.

The dissertation is organised into three chapters, each devoted to one of the three papers discussed in the introduction. It ends with the section containing concluding remarks.

1 THE ROLE OF SKILLED MIGRANT WORKERS IN THE PROCESS OF MNEs' TECHNOLOGY TRANSFER TO THE HOST ECONOMY

Abstract

In this paper, we try to analyse the causal link between skilled worker mobility and knowledge transfer to the host country, i.e., to establish whether firms experiencing inward FDI combined with foreign skilled worker employment perform better in terms of productivity growth than firms who experience inward FDI only and their domestic peers employing solely domestic skilled workers. Namely, skilled foreign workers could positively influence a foreign affiliate's productivity growth by either facilitating the knowledge transfer process between the mother company and the subsidiary or by bringing knowledge complementary to that of domestic workers (Lazear, 1999; Malchow-Møller et al., 2011). The study is done on Slovenian firm level data for the 2002 to 2010 period, employing a combination of propensity score matching and difference-in-differences approach. Our results suggest that inward FDI combined with employment of foreign skilled workers (especially PCN managers) results in a temporary increase in TFP growth, which is in turn translated into a higher TFP level. They are therefore very much in line with the findings by Inzelt (2008) who suggested in her study of Hungary that the initial temporary mobility of foreign managers (1 to 2 years after the FDI entry) led to a "one-off" transfer of knowledge to the local affiliate.

1.1 Introduction

The possession of knowledge and technology is one of the key elements that distinguish successful companies from less successful ones and developed countries from developing ones. Nowadays most countries are actively trying to attract inward foreign direct investment (FDI) (Bah et al., 2015). One of the main reasons for that is the belief that foreign firm entry is accompanied by technology and knowledge transfer to the host economy. Economic theory states that multinational enterprises (MNEs) which decide to enter a foreign market via FDI should possess a firm-specific advantage vis-a-vis domestic firms (advanced technology, superior managerial practices) since they have to compensate for their lesser knowledge of local markets (Bellak, 2004; Caves, 1971; Dunning, 1979; Koutsoyiannis, 1982; Markusen, 1995). The knowledge and technology transfer to the host economy as a by-product of FDI happens in the context of the so called direct effects of FDI. The knowledge and technology are transferred from the mother company to a foreign affiliate stationed in the host country. This in turn results in a higher productivity of the foreign affiliate compared to domestic firms. This process can occur in many different ways. The possible channels include worker mobility[2]. A multinational company may send workers originating from the company headquarters or existing affiliates to the new subsidiary in order to train the local workers or otherwise facilitate the knowledge transfer process. There is, however, another way in which knowledge can be brought to the host economy, namely through skilled worker immigration in general. Hiring skilled foreign workers per se, may increase a firm's productivity if the migrant workers possess knowledge complementary to that of host country workers (Lazear, 1999; Malchow-Møller et al., 2011). Evidence in support of this claim was for example found by Verner (1999), Markusen & Trofimenko (2009), Malchow-Møller et al. (2011) and Ghosh, Mayda, & Ortega (2014).

A large body of empirical literature supports the theoretical prediction that foreign owned firms are more productive than domestic firms (Barba Navaretti & Venables, 2004). Doms & Jensen (1998) for example found that foreign owned manufacturing firms in the United States performed better in terms of total factor productivity and labour productivity compared to domestic plants. Their results also suggest that it is not foreign ownership per se that is important but rather the fact that the plants with superior operating characteristics were owned by MNEs. Girma, Greenaway & Wakelin (2001) conducted research on the UK data and concluded that labour productivity in foreign firms was almost 10% higher than in domestic firms, whereas total factor productivity was about 5% higher.

[2] see e.g. Belderbos & Heijltjes (2005)

Although these studies confirm the statistical correlation between foreign ownership and productivity, they do not analyse the causal relationship between the two (Barba Navaretti & Venables, 2004). This means that they do not account for the possibility of selection bias. Namely, the foreign investors may be inclined to acquire only the best performing firms. This may in turn lead to researchers overestimating the impact of a foreign takeover on productivity (Salis, 2008). Studies that address this question give results that point to a much vaguer picture. Reported differences in productivity between foreign and domestic firms are smaller than in earlier estimations and often insignificant (Barba Navaretti & Venables, 2004). On one hand, Arnold & Javorcik (2009) find for Indonesian manufacturing firms that foreign acquisitions lead to significant improvements in terms of productivity for the acquired firms. Three years after the acquisition the latter enjoyed a 13.5% higher productivity than the control group. Damijan et al. (2015) focused on 7 of the new EU member states: Czech Republic, Poland, Bulgaria, Estonia, Romania, Slovenia, and Slovakia. They concluded that the performance of the acquired plants improved after the acquisition. Moreover, they reported that the increase in productivity was achieved through increased efficiency in the use of labour and capital rather than through a reduction in the number of workers. Benfratello & Sembenelli (2006), on the other hand, analysed a large sample of Italian firms and found that foreign ownership has no effect on firm productivity, after controlling for input simultaneity, unobserved heterogeneity, and measurement errors. Salis (2008) studied the impact of foreign acquisition on the productivity of Slovenian manufacturing firms similarly as Oražem & Vodopivec (2009) but neither found evidence of a positive effect.

Little is known about the reasons for the ambiguous results on the productivity advantage of foreign-owned firms compared to their domestic peers. Could skilled worker mobility explain the effectiveness of the technology transfer from the mother company to a host-country affiliate? Are foreign firms hiring migrant skilled workers more productive than those which do not? Several reasons supporting the expectation that attempts to move knowledge are more effective when accompanied by the movement of people are found in the literature. Firstly, individuals are able to adapt knowledge to new contexts (Allen as cited in Argote & Ingram, 2000). Secondly, they are able to transfer explicit knowledge as well as tacit knowledge (Argote & Ingram, 2000; Berry & Broadbent, 1984, 1987), which seems to be a crucial advantage of skilled expat workers coming from within the MNE organization itself. As argued by Kerr (2008), the effectiveness of adoption (imitation) of inventions depends upon the codified and tacit innovation-specific knowledge. Thirdly, externally sourced foreign experts or managers who do not carry the MNE specific knowledge may still have certain knowledge and experience that helps facilitate the knowledge transfer process. They can for example have acquisition experience. According to Daniliuc & Jang (2014) prior experience with acquisitions may facilitate integration of the acquired firm. Moreover, foreign workers may bring knowledge and competences complementary to those possessed by the host country workers not necessarily connected to the process of knowledge transfer between the mother company and the affiliate. As singled out by Malchow-Møller et al. (2011) one rather straightforward possibility is that foreign experts possess knowledge related to the export

destination of the firm (e.g., knowledge about the local culture, market, language), consequently positively impacting export activities.

Empirical studies in the field of international economics mostly deal with the impact of skilled migrant workers, predominantly experts, on firm performance in general, not in the context of FDI. Markusen & Trofimenko (2009) tested their theoretical model using plant level Colombian data and concluded that foreign experts have a substantial positive effect on wages of local workers and value added per worker, although this effect is not always immediate. Malchow-Møller, Munch, & Skaksen (2011), on the other hand, analyzed Danish matched employer-employee data and constructed a simple theoretical model. The model suggests that firms using foreign experts are more productive and consequently pay higher wages. The results of the empirical part of their research further showed, that Danish firms employing foreign experts indeed pay higher wages, which is a strong indication that they also achieve higher levels of productivity. Ghosh et al. (2014) conducted their research using U.S. data for publicly traded firms matched with data on H-1B visa applications. They concluded that loosening the restriction on the number of visas issued for skilled foreign workers would result in higher labor productivity, firm size, and profits for a subgroup of firms. Trax, Brunow, & Suedekum (2012), on the other hand, concluded that the share of foreign workers in the establishment does not affect productivity based on their analysis of German data.

The second strain of the literature, mostly survey based, studies the role of expatriates for the technology transfer directly, and not through examination of the affiliate performance. Using Mexican plant-level data Santacreu-Vasut & Teshima (2011) found that expatriates are associated with higher amounts of technology transfer measured by expenditure on technology transfer from abroad over sales. They also came to the conclusion that not all subsidiaries employ expatriates. Based on her analysis of survey-based data for Hungary Inzelt (2008) suggested that the initial temporary mobility of foreign skilled workers (1 to 2 years after the FDI entry) led to a "one-off" transfer of knowledge to the local affiliate.

The third strain of literature, the closest to our study, links foreign workers (in some cases expatriates) to the performance of local affiliates. An early study by Verner (1999) done using data from Zimbabwe has shown evidence that the number of expatriates in metal firms was positively correlated with firm-level labour productivity. Hahn, Hayakawa, & Ito (2013) further examined the trade-off between hiring home country national managers and parent country national managers in MNEs' affiliates using a Korean origin FDI dataset. Their results suggest that the home country national manager ratio is positively correlated with productivity improvement in developing countries but not in developed countries. The same positive correlation was established for less R&D intensive industries. Cho (2014) also confirmed that managers transferred from the MNE headquarters to the affiliates facilitated firm specific knowledge transfer and were positively related to labour productivity for Korean

multinational foreign affiliates. The main advantage of the dataset he used is that it enables tracking of employee transfers within multinationals.

Evidently, the economics literature dealing with intra-firm knowledge transfer via skilled migrant workers and the effects of employing skilled migrant workers on firm productivity in general is relatively scarce. Hence, in this paper we aim to establish whether worker mobility indeed functions as a channel of knowledge transfer from mother companies to host country affiliates in cases when skilled migrant workers are employed at the affiliate shortly after inward FDI takes place.

To identify the role of worker mobility for the knowledge transfer from abroad, we need to identify causal effects of multiple treatments (i.e., inward FDI and inward FDI combined with skilled migrant worker employment). To deal with the likely non-randomness of the two treatments we follow the approach by Arnold & Javorcik (2009) based on a combination of propensity score matching and difference-in-differences methods and extend it to multiple treatments. Building on the idea by Lechner (2001), we transform average treatment effects for multiple treatments into a series of binary comparisons, i.e. the outcomes for firms where inward FDI is combined with employment of skilled migrant workers are compared to the outcomes where inward FDI is not combined with the employment of skilled foreign workers and with outcomes of domestic firms employing solely domestic skilled workers. To our knowledge, no research has yet been done comparing those sets of outcomes. We conduct our analysis using matched employer-employee data for the population of Slovenian firms merged with firms' financial and FDI data covering the period from 2002 to 2010. The data set allows us to differentiate employees based on both their education level and occupation. Hence, we are able to analyse the effects of interaction between worker and capital (FDI) mobility for different categories of skilled migrant workers. Since experts and managers are most frequently associated with the effectiveness of technology transfer in the literature we focus on foreign managers, foreign experts, and parent country national managers (PCN managers).

The rest of the paper is structured as follows: data and methodology are presented in section 2, whereas baseline as well as robustness check results are given in section 3. The paper ends with concluding remarks in section 4.

1.2. Data and methodology

1.2.1. Empirical approach

The main aim of this paper is to analyse the causal link between worker mobility and knowledge transfer to the host country. Specifically, we seek to establish whether firms experiencing inward FDI combined with employment of skilled foreign workers perform

better in terms of productivity growth than firms undergoing inward FDI alone or their domestic peers employing solely domestic skilled workers. The foreign direct investment decision as well as the decision to hire a skilled foreign worker are most likely non-random. To address the issue of possible endogeneity of these decisions we follow Arnold & Javorcik (2009) and combine propensity score matching[3] and difference-in-differences methods. The basic idea behind propensity score matching estimators is to find a large group of units not subjected to a treatment who are similar to those treated in all relevant pre-treatment characteristics and compare their outcomes (Caliendo & Kopeinig, 2005). In the next step, difference-in-differences method eliminates the initial existing differences between the pairs in order to get a more accurate estimate of the true treatment effects.

Our goal was to identify causal effects of multiple treatments on firm total factor productivity growth, since we were interested in the effects of two different treatments: inward FDI and inward FDI combined with employment of a foreign skilled worker. The baseline group of our multinomial treatment model contains firms identified as domestic and employing solely host country national managers/experts throughout the studied period. The first treatment level encompasses firms that received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new foreign manager/foreign expert/PCN manager in the year of FDI or the year after. In addition to that, the first treatment level also includes firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100% in a certain year during the studied period, whereas the companies in question had no foreign managers/foreign experts/PCN managers in the year after the year of inward FDI. The second treatment level encompasses firms who received initial FDI during the period analysed and where inward FDI was followed by employment of a new foreign manager/foreign expert/PCN manager in the year of initial FDI or the year after. It also contains firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100% in a certain year during the studied period, whereas the companies in question had at least one foreign manager/foreign expert/PCN manager one year after the year of inward FDI.

Three different multinomial treatment model specifications were constructed. The first included employment of foreign managers, the second, employment of foreign experts, and, the third, employment of parent country national managers. The categories of managers and experts were defined according to the Standard classification of occupations. We, however, slightly adapted the category of experts. In the Standard classification of occupations, the category of experts includes artists and religious workers, which we excluded. Initially, our

[3] Caliendo & Kopeinig (2005) use the term propensity score matching for all matching algorithms which are based on propensity scores, including nearest neighbour, caliper, radius, stratification & interval, kernel, local linear and weighting matching algorithms.

plan was to also construct a model including employment of parent country national experts, however, due to their low representation in the dataset, we abandoned the idea.

Building on the idea by Lechner (2001) we further transformed the multinomial treatment models into a series of binary comparisons. We started by isolating three different subpopulations of firms pertaining to each multinomial treatment model. The first subpopulation, in each case, consists of the baseline group of firms and firms pertaining to the first treatment level. The second subpopulation, encompasses the baseline group of firms and those pertaining to the second treatment level. Finally, the third subpopulation consists of firms in the first and second treatment level groups. In the remainder of the paper, the group of firms pertaining to the baseline treatment level in the multinomial setting will also be referred to as group 0, the group of firms belonging to the first treatment level as group 1, and the set of firms pertaining to the second treatment level will be referred to as group 2.

In the next step, we applied the classical binary Rosenbaum & Rubin (1983) approach to each of the subpopulations. In case of the first two subpopulations, the first and the second treatment level pertaining to the multinomial treatment model were transformed into the first treatment level of the binomial setting. The baseline level remained the baseline level. In case of the last subpopulation, the first treatment level pertaining to the multinomial treatment model became the new baseline level and the second treatment level was deemed the new first treatment level.

In binomial setting, using the potential outcome approach, the propensity score matching estimator for average treatment effects on the treated (ATT) can be written in general as (Caliendo & Kopeinig, 2005):

$$\tau_{ATT}^{PSM} = E_{P(X)|D=1}\{E[Y(1)|D=1, P(X)] - E[Y(0)|D=0, P(X)]\} \quad (1)$$

where D is the treatment indicator, in our case denoting whether a firm receives treatment (D=1) or not (D=0), $Y(D)$ being potential outcomes and $P(X)$ denoting the propensity score i.e. the probability of a firm to participate in a treatment given its observed covariates X.

To sum up, in our set of binary comparisons, we measure the outcomes affected by inward FDI combined with employment of skilled migrant workers against the outcomes where inward FDI is not accompanied by employment of skilled foreign workers and against the outcomes of domestic firms employing solely domestic skilled workers. Further, the outcomes where inward FDI is not accompanied by employment of skilled foreign workers are also compared to outcomes of domestic firms employing solely domestic skilled workers.

Crucial for the identification of τ_{ATT}^{PSM} is the conditional independence assumption (CIA). This requires that treatment assignment is independent of the potential non-treatment outcome, conditional on a set of covariates (Lechner, 2001). The CIA can be formalized as (Lechner, 2001):

$$Y(0) \coprod D \mid X=x, \forall x \in \chi \tag{2}$$

If the CIA is valid for X it is also valid for the propensity score P(X), being a function of X, which is used as the basis of propensity score matching (Lechner, 2001):

$$Y(0) \coprod D \mid P(X)=p(x), \forall x \in \chi \tag{3}$$

In order to satisfy the CIA, we had to choose a proper set of covariates, which affect both the outcome as well as selection into treatments, however, are themselves not affected by treatments. Our chosen list of covariates contains the following variables: natural logarithms of firm age (lnage), number of employees (lnemp) and TFP (lnTFP), TFP growth (TFPGr), share of highly educated workers (ShHEemp), export share (exp_share), ebitda (ebitda), years, and industry sector dummies (1-digit Nace rev. 2 classification). The values of the covariates were measured one year before inward FDI took place (lagged values were used for firms with domestic ownership throughout the studied period).

In addition to the described set of binary models we estimated two more sets of models, where the original specification was altered by raising the foreign capital increase benchmark from 100% to 150% and 200%. We conducted our analysis in Stata using the built-in propensity score matching command *teffects psmatch* and a user written *diff* command, combining kernel matching and difference-in-differences methods. As opposed to propensity score matching performed under *teffects psmatch*, kernel matching uses weighted averages of all units in the control group in order to construct the counterfactual outcome. Since it uses more information it achieves lower variance, which is a major advantage of this estimator. A downside to kernel matching method is the possibility that bad matches will be used (Caliendo & Kopeinig, 2005). When applying kernel matching, we had to choose the kernel function and the bandwidth parameter. We used the default epanechnikov function as the kernel function. Our choice of bandwidth was made manually and separately for each binomial comparison, with the goal of achieving the best covariate balance possible. Estimations produced using kernel

as well as propensity score matching[4] were done on common support. Further, a logit model was used as the basis for both kernel and propensity score matching. The latter was, however, only conducted for the 200% foreign capital increase benchmark cases. The outcome (TFP growth) was measured in the year following the year of inward FDI.

All three sets of binary models (for 100%, 150% and 200% foreign capital increase benchmarks) estimated using the combination of kernel matching and difference-in-differences methods were also estimated including an additional covariate, debt to asset, defined as the ratio between a firm's financial liabilities and its assets. This covariate was used to help us compare firms of similar financial well being. Since the results obtained were similar to the results of the core analysis, they are not discussed in the results section, but can be found in Appendix A.

As a first robustness check, we redefined the baseline models by changing the time frames in which employments of foreign skilled workers were accounted for as well as the point in time at which the outcome was measured. This time the natural logarithm of TFP was considered as the output instead of TFP growth. Estimations were only done for the 200% foreign capital increase benchmark cases.

The baseline group of the multinomial models pertaining to the first robustness check therefore still contains firms identified as domestic and employing solely host country national managers/experts throughout the studied period. The first treatment level further encompasses firms that received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new foreign manager/foreign expert/PCN manager in the year of initial FDI or the two years after. In addition, the first treatment level also includes firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, whereas the companies in question had no foreign managers/foreign experts/PCN managers in the second year after the year of inward FDI. The second treatment level encompasses firms who received initial FDI during the period analysed and where inward FDI was followed by employment of a new foreign manager/foreign expert/PCN manager in the year of initial FDI or the two years after. It also contains firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, and the companies in question had at least one foreign manager/foreign expert/PCN manager in the second year after the year of inward FDI. The outcome (this time the natural log of TFP) was measured in the second year after the year of inward FDI.

[4] In the rest of the paper the term propensity score matching will be used in the narrower sense, reffering to the matching algorithm implemented under Stata teffects psmatch command

The set of binary models pertaining to the first robustness check was also estimated considering TFP growth as the outcome variable (instead of lnTFP). The treatment effects, however, turned out to be largely insignificant. Therefore, this set of estimations was excluded from the results section[5].

For the purpose of the second robustness check, we altered the specification of the models used in the core analysis by redefining the group of firms who experienced inward FDI. In the core analysis models, the latter were defined as firms who experienced initial FDI entry during the studied period as well as firms, where foreign capital amount increased by at least 100%, 150% or 200% in a certain year of the 2002 to 2010 period. In the case of the second robustness check, the firms experiencing inward FDI were defined as companies where a foreign owner gained a controlling share of the company (at least 51%) in a certain year during the studied period.

The baseline group of the multinomial models pertaining to the second robustness check again contains firms identified as domestic and employing solely host country national managers/experts throughout the studied period. The first treatment level encompasses firms where a foreign owner gained a controlling share of the company during the studied period, but inward FDI was not followed by employment of a new foreign manager/foreign expert/PCN manager in the year of inward FDI or the year after. Finally, the second treatment level includes firms where a foreign owner gained a controlling share of the company during the studied period and inward FDI was followed by employment of a new foreign manager/foreign expert/PCN manager in the year of inward FDI or the year after. The outcome (TFP growth) was measured in the year following the year of inward FDI.

The robustness check analyses were also done by implementing a combination of kernel matching and difference-in-differences methods (using the user written *diff* command in Stata). Estimations were done on common support and a logit model was used as the basis for kernel matching.

As already indicated, our chosen measure of productivity is total factor productivity (TFP). Marschak & Andrews noted in 1944, that there exists a simultaneity problem when it comes to production function estimation. Namely firms' choices about the input quantities they will use in the production process depend on "output (or deflated sales) per unit of inputs consumed, or their productivity" (Olley & Pakes, 1996). Hence, in the case of productivity shocks observed or predicted by the firm but not observable to the econometrician, a simultaneity issue arises (Ackerberg, Caves, & Frazer, 2015). Levinsohn & Petrin (2003)

[5] The results can be viewed upon request.

propose introducing an intermediate input proxy for conditioning out serially correlated unobserved shocks to the production technology as opposed to investment proxy previously suggested by Olley & Pakes (1996). Levinsohn & Petrin (2003) argue that an investment proxy may not account for the entire productivity shock. As they explain, the transmitted component of error consists of a predictable and non-predictable part. The firm will adapt to the predictable part of the shock. Better firms, aware of their superiority, may for example choose their capital stocks accordingly. Since capital has already accounted for the predictable part of the shock, investment will only respond to the unpredictable part, not accounting for the entire shock. Thus, the simultaneity problem remains. Further, the non-transmitted component of the error will not affect expectations about the future, therefore investment will not respond to it. However, it will influence the chosen amount of freely variable factors. Hence, the investment proxy will not entirely eliminate the correlation between the error and the inputs. The intermediate input proxy will, on the other hand, account for the entire productivity shock. The second advantage they mention is that their proxy provides a simpler link between the estimation strategy and economic theory. The third advantage, according to them, is data related. Namely, investment proxy is only useable for firms with non-zero investment. Ackerberg, Caves & Frazer (2015) further argue that the techniques suggested by Olley & Pakes (1996) and especially by Levinsohn & Petrin (2003) suffer from collinearity issues. Building on the ideas in these two papers, they develop an alternative algorithm, which no longer suffers from these problems.

In order to account for the simultaneity problem when estimating TFP, we therefore use the procedure suggested by Ackerberg et al. (2015). We chose fixed assets as a proxy for capital, the number of workers with higher education was used as a proxy for white collar labour, the number of workers without higher education was used as a proxy for blue collar labour, whereas the material costs were used as a proxy for intermediate inputs. We estimated TFP separately for manufacturing sector and for service sector. The value-added version of the production function was used. Since fixed assets, the number of workers with and without higher education as well as material costs enter TFP estimation algorithm in logarithmic form, firms with either zero physical capital, zero employees with higher education, zero employees without higher education or zero material costs were de facto excluded from further analysis.

1.2.2. Data and descriptive statistics

In order to conduct our empirical research, we combined three different databases. The first is a matched employer-employee database obtained from the Slovenian Statistical Office. It provides information on the economically active population, including data on a person's employer, their position in the firm, and their nationality, amongst other attributes. The second is a database containing information on inward foreign direct investment provided by the Bank of Slovenia. It includes firms with at least 10% foreign ownership (referred to as foreign owned firms in the reminder of the paper). Further, the third is the Slovenian firms'

financial data provided by AJPES (The Agency of the Republic of Slovenia for Public Legal Records and Related Services). All three databases were merged using firm identifiers. The final full merged database contains roughly 28000 firms on average per year, covering the period from 2002 to 2010. It provides us with yearly firm level information such as the number of employees, foreign capital stock, it enables us to calculate firm age, capital intensity, export share, total factor productivity, the yearly number of new employments by different categories of workers, the share of highly educated workers as well as shares of different categories of foreign workers, such as foreign managers, foreign experts and parent country national managers. Firms simultaneously having negative capital and zero employees were identified as inactive and excluded from the database.

Table 1 presents the number of firms included in the database by year. It can be observed that the number of firms rose steadily during the period, from 23727 in 2002 to 31871 in 2010.

Table 1: Number of firms by year

Year	No. of firms
2002	23,727
2003	24,468
2004	25,237
2005	26,293
2006	27,243
2007	28,974
2008	30,670
2009	31,369
2010	31,871

Source: Own calculations

Table 2 shows basic summary statistics for domestic firms and foreign owned firms. As can be seen from the table, on average, domestic firms tend to be slightly older than foreign owned firms. The average export share of domestic firms is 8.06% as opposed to the much greater average export share of foreign owned firms which amounts to 32.36%. The average number of employees in domestic firms is 9.87, whereas with foreign owned firms, which tend to be larger, it is 31.62. On average, capital intensity of foreign owned firms is more than four times the capital intensity of domestic firms, whereas the average TFP of foreign owned firms is about 60% higher than the average TFP of domestic firms. The average share of employees with higher education stands at 23.98% for domestic firms and at 32.61 % for foreign owned firms, which is significantly higher. As expected, the average shares of foreigner managers and experts are higher for foreign owned firms than for domestic firms.

Also important for our further analysis is the average share of parent country national managers and experts. It can be seen from the table, that, on average, 61.81% of foreign managers come from the parent country. On the other hand, less than a quarter of foreign experts seem to be parent country nationals.

Table 2: Descriptive statistics

	Domestic firms			Foreign owned firms		
Variable	No. obs.	Mean	s.d.	No. obs.	Mean	s.d.
Age	381,467	9.14	6.71	20,993	8.04	6.48
Employment	328,258	9.87	95.93	18,469	31.62	144.16
Capital intensity (EUR)	244,846	125,785	4,501,342	13,905	540,555	1.71e+07
Export share (%)	335,456	8.06	22.03	17,827	32.36	39.74
TFP	83,216	10,458	12,999	8,611	16,711	32,430
Share of highly educated employees (%)	303,022	23.98	34.52	15,626	32.61	34.02
Share of foreigners between managers (%)	126,975	5.65	22.64	10,100	11.71	30.02
Share of foreigners between experts (%)	75,543	2.16	12.64	6,521	4.84	18.44
Share of parent country nationals in foreign managers (%)	0	0	0	1,817	61.81	47.73
Share of parent country nationals in foreign experts (%)	0	0	0	949	22.58	41.18

Source: Own calculations

1.3. Empirical results

In this section, we present our empirical results obtained using propensity score matching and a combination of kernel matching and difference-in-differences estimators. In subsection 3.1 we describe the results for binomial models pertaining to the employment of foreign managers. We first present the baseline results and then proceed with the results of the robustness checks. This is followed by subsection 3.2 where results for binomial models considering the employment of foreign experts are shown. Finally, in subsection 3.3 we present results for binomial models pertaining to the employment of parent country national managers. Balancing tests checking covariate balance for each of the model specifications can be found in Appendix A.

1.3.1 Foreign managers

1.3.1.1. Baseline results for binomial models considering the employment of foreign managers

Table 3 shows our baseline results pertaining to the set of binomial comparisons considering employment of foreign managers. The outcomes for the following groups of firms are compared:

- Group 0: -firms identified as domestic and employing solely host country national managers throughout the studied period

- Group 1: -firms, who received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new foreign manager in the year of FDI or the year after

  - firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100%/150%/200% in a certain year during the studied period, whereas the companies in question had no foreign managers in the year after the year of inward FDI.

- Group 2: -firms who received initial FDI during the period analysed and where inward FDI was followed by employment of a new foreign manager in the year of FDI or the year after.

  -firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100%/150%/200% in a certain year during the studied period, whereas the companies in question had at least one foreign manager in the year after the year of inward FDI.

The second column of Table 3 gives propensity score matching results considering 200% foreign capital increase benchmark, while in the columns 3-5 we present results for kernel matching and difference-in-differences pertaining to 100%, 150%, and 200% foreign capital increase benchmarks respectively.

It can be observed from the table, that the ATT coefficient for the comparison of groups 1 and 0 is negative and significant for the 100% and 150% foreign capital increase benchmark cases pertaining to kernel matching. Further, ATT net the initial differences in TFP growth is only significant (and negative) for the 100% foreign capital increase benchmark case pertaining to kernel matching. The results therefore imply, that inward FDI alone, not combined with employment of a foreign manager, has no significant positive effect on firm TFP growth.

Results obtained by comparing groups 2 and 0 show that average treatment effects on the treated are positive and significant for the 150% and 200% foreign capital increase benchmark cases pertaining to kernel matching. After the initial differences in TFP growth are taken into account, the average treatment effects on the treated only remain significant for the 200% foreign capital increase benchmark case. The results therefore provide some faint evidence to support the hypothesis that firms who experience inward FDI combined with employment of a foreign manager perform better in terms of TFP growth than their domestic peers, however, this can only be observed as the foreign capital increase benchmark increases. We do, however, have to take into account, that according to the balancing tests, the covariates were not ideally balanced after the kernel matching procedure.

Table 3: Matching and difference in differences results for the series of binomial comparisons pertaining to the baseline multinomial models considering employment of foreign managers

	PS Matching	**Kernel matching and Diff - in - Diff**		
	200% foreign capital increase benchmark	100% foreign capital increase benchmark	150% foreign capital increase benchmark	200% foreign capital increase benchmark
Binomial comparison between group 1 and group 0				
Baseline				
Control		-0.059	0.068	-0.058
Treated		0.037	0.032	0.025
Diff (1-0)		0.096 (0.077)	-0.035 (0.084)	0.083 (0.082)
Follow up				
Control		0.133	0.144	0.067
Treated		-0.037	-0.049	-0.041
Diff (1-0)	0.088 (0.056)	-0.170* (0.088)	-0.193** (0.086)	-0.108 (0.092)
Diff - in - Diff		-0.266 **(0.117)	-0.157 (0.120)	-0.191 (0.123)
No. of observ.	33,974	434	404	390
Balancing tests	All covariates balanced	3/18 covariates unbalanced	3/18 covariates unbalanced	3/18 covariates unbalanced

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	PS Matching	Kernel matching and Diff - in - Diff		
	200% foreign capital increase benchmark	100% foreign capital increase benchmark	150% foreign capital increase benchmark	200% foreign capital increase benchmark
Binomial comparison between group 2 and group 0				
Baseline				
Control		0.019	-0.153	0.003
Treated		0.057	0.017	0.040
Diff (2-0)		0.038 (0.172)	0.170 (0.200)	0.037 (0.099)
Follow up				
Control		0.106	-0.222	-0.049
Treated		0.242	0.237	0.241
Diff (2-0)	0.183 (0.213)	0.136 (0.176)	0.459** (0.194)	0.290*** (0.097)
Diff - in - Diff		0.098 (0.246)	0.289 (0.278)	0.253* (0.139)
No. of observ.	24,928	226	184	552
Balancing tests	All covariates balanced	3/18 covariates unbalanced	5/18 covariates unbalanced	4/18 covariates unbalanced
Binomial comparison between group 2 and group 1				
Baseline				
Control		0.165	0.028	0.148
Treated		0.057	0.030	0.084
Diff (2-1)		-0.108 (0.114)	0.003 (0.085)	-0.064 (0.109)
Follow up				
Control		-0.035	-0.030	-0.053
Treated		0.279	0.225	0.225
Diff (2-1)	0.593*** (0.219)	0.314***(0.119)	0.255*** (0.088)	0.278** (0.113)
Diff - in - Diff		0.423** (0.165)	0.252** (0.123)	0.342** (0.157)
No. of observ.	166	196	312	208
Balancing tests	All covariates balanced	1/18 covariates unbalanced	All covariates balanced	1/18 covariates unbalanced
Control variables: lnage, lnemp, ebitda, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)				

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

When it comes to the comparison of groups 2 and 1, ATT as well as ATT net the initial differences in TFP growth are positive and significant for all model versions. The results at hand therefore imply that firms where inward FDI is combined with employment of a foreign manager perform better in terms of TFP growth than firms who experience inward FDI only.

1.3.1.2. First robustness check results for binomial models considering the employment of foreign managers

Presented in Table 4 are the first robustness check results pertaining to binomial models considering employment of foreign managers. The outcomes for the following groups of firms are compared:

- Group 0: -firms identified as domestic and employing solely host country national managers throughout the studied period

- Group 1: -firms, who received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new foreign manager in the year of FDI or the two years after

  - firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, whereas the companies in question had no foreign managers in the second year after the year of inward FDI.

- Group 2: -firms who received initial FDI during the period analysed and where inward FDI was followed by employment of a new foreign manager in the year of FDI or the two years after.

  -firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, whereas the companies in question had at least one foreign manager in the second year after the year of inward FDI .

As already mentioned, the output was measured in the second year after the year of inward FDI. This time natural logarithm of TFP (lnTFP) was considered as output instead of TFP growth.

As can be seen from Table 4, the ATT as well as diff-in-diff coefficients pertaining to the comparison of groups 1 and 0 are statistically insignificant. The latter implies that inward FDI alone, not combined with employment of a foreign manager, has no statistically significant positive effects on firm TFP, which is in line with our baseline results.

Further, when it comes to the comparison of groups 2 and 0, the ATT coefficient is positive and statistically significant at 1%. However, once the initial differences in lnTFP are taken

into account, the average treatment effects on the treated become statistically insignificant. The baseline results provided faint evidence in favour of the claim that firms experiencing inward FDI combined with employment of a foreign manager perform better in terms of TFP growth than their domestic peers employing solely domestic managers. The latter is, however, seemingly not translated into a productivity advantage of firms experiencing inward FDI combined with employment of a foreign manager over their domestic peers as the model specification is altered and the outcome is measured at a later point in time.

Finally, the comparison of groups 2 and 1 yielded a positive and statistically significant ATT coefficient, however, once the initial differences in lnTFP were taken into account the average treatment effects on the treated again turned insignificant. It therefore seems that the advantage of firms experiencing inward FDI combined with employment of a foreign manager over firms experiencing inward FDI only in terms of TFP growth was not translated into an advantage in terms of TFP as the model specification was changed and the output measured at a later point in time.

Table 4: Matching and difference in differences results for the series of binomial comparisons pertaining to the first robustness check multinomial model considering employment of foreign managers

	ln TFP		
	1 (T) vs. 0 (C)	2 (T) vs. 0 (C)	2 (T) vs. 1 (C)
Baseline			
Control	9.014	8.916	9.148
Treated	9.164	9.306	9.242
Diff (T-C)	0.151	0.390*	0.094
	(0.155)	(0.217)	(0.135)
Follow up			
Control	9.066	8.768	9.323
Treated	9.304	9.522	9.617
Diff (T-C)	0.238	0.754***	0.294*
	(0.165)	(0.223)	(0.149)
Diff - in - Diff	0.087	0.364	0.200
	(0.226)	(0.312)	(0.201)
Total number of observations	358	256	207
Balancing tests	4/17 covariates unbalanced	3/17 covariates unbalanced	1/17covariates unbalanced
Control variables: lnage, lnemp, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively

Source: Own calculations

1.3.1.3. Second robustness check results for binomial models considering the employment of foreign managers

The results for the second robustness check binomial comparisons considering employment of foreign managers are presented in Table 5. As described in the subsection 2.1, the baseline model specifications were changed for the purpose of the second robustness check by redefining the group of firms who experienced inward FDI. Hence, in case of the second robustness check, firms experiencing inward FDI were defined as companies where a foreign owner gained a controlling share of the company (at least 51%) during the studied period. TFP growth is again considered as the outcome measured.

In this subsection, the outcomes for the following groups of firms are compared:

- Group 0: -firms identified as domestic and employing solely host country national managers throughout the studied period

- Group 1: - firms, where a foreign owner gained a controlling share of the company (51% or more) during the studied period, however, inward FDI was not followed by employment of a new foreign manager in the year of inward FDI or the year after

- Group 2: - firms, where a foreign owner gained a controlling share of the company (51% or more) during the studied period and inward FDI was followed by employment of a new foreign manager in the year of inward FDI or the year after

ATT as well as the diff-in-diff coefficient are statistically insignificant for the comparison of groups 1 and 0, indicating that inward FDI alone has no significant positive effects on firm TFP growth, which is in line with our baseline as well as first robustness check results. Further, the comparison of groups 2 and 0 also yielded statistically insignificant ATT and diff-in-diff coefficients. The same is true for the comparison of groups 2 and 1.

We can therefore conclude, that evidence in favour of the hypothesis that firms who experience inward FDI combined with foreign manager employment perform better in terms of TFP growth than firms experiencing inward FDI only, is not robust. The same is true for the evidence supporting the prediction that firms experiencing inward FDI combined with employment of a foreign manager perform better in terms of TFP growth than domestic firms employing solely domestic managers.

Table 5: Matching and difference in differences results for the series of binomial comparisons pertaining to the second robustness check multinomial model considering employment of foreign managers

	TFP growth		
	1 (T) vs. 0 (C)	2 (T) vs. 0 (C)	2 (T) vs. 1 (C)
Baseline			
Control	0.150	0.079	0.308
Treated	0.112	0.283	0.289
Diff (T-C)	-0.038	0.204	-0.019
	(0.109)	(0.210)	(0.135)
Follow up			
Control	0.022	0.268	-0.058
Treated	0.008	0.193	0.136
Diff (T-C)	-0.015	-0.075	0.194
	(0.142)	(0.217)	(0.138)
Diff - in - Diff	0.024	-0.279	0.213
	(0.179)	(0.302)	(0.193)
Total number of observations	1159	167	219
Balancing tests	3/18 covariates unbalanced	5/18 covariates unbalanced	2/18 covariates unbalanced
Control variables: lnage, lnemp, ebitda, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

1.3.2 Foreign experts

1.3.2.1. Baseline results for binomial models considering the employment of foreign experts

In this subsection, we present our baseline results for the set of binomial comparisons considering the employment of foreign experts. We compare the outcomes for the following groups of firms:

- Group 0: -firms identified as domestic and employing solely host country national experts throughout the studied period

- Group 1: -firms, who received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new foreign expert in the year of FDI or the year after

  - firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100%/150%/200% in a certain year during the studied period, whereas the companies in question had no foreign experts in the year after the year of inward FDI.

- Group 2: -firms who received initial FDI during the period analysed and where inward FDI was followed by employment of a new foreign expert in the year of FDI or the year after

  -firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100%/150%/200% in a certain year during the studied period, whereas the companies in question had at least one foreign expert in the year after the year of inward FDI.

As can be seen from Table 6, ATT and diff-in-diff coefficients are insignificant for all model specifications pertaining to the comparison of groups 1 and 0. This result indicates that inward FDI alone has no statistically significant effect on firm TFP growth.

The same is true for the ATT and diff-in-diff coefficients obtained when comparing groups 2 and 0, indicating that there are no statistically significant differences in TFP growth performance between firms experiencing inward FDI combined with employment of a foreign expert and domestic firms employing solely domestic experts.

Finally, all three diff-in-diff coefficients for the comparison of groups 2 and 1 turn out to be positive and statistically significant. This result supports the hypothesis that firms experiencing inward FDI combined with employment of a foreign expert perform better in terms of TFP growth than firms receiving inward FDI alone.

Table 6: Matching and difference in differences results for the series of binomial comparisons pertaining to the baseline multinomial model considering employment of foreign experts

	PS Matching	**Kernel matching and Diff - in - Diff**		
	200% FDI increase benchmark	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 1 and group 0				
Baseline				
Control		0.022	0.082	0.029
Treated		0.065	0.050	0.043
Diff (1-0)		0.043 (0.076)	-0.032 (0.076)	0.015 (0.081)
Follow up				
Control		0.066	-0.073	0.107
Treated		-0.027	-0.029	-0.022
Diff (1-0)	-0.021 (0.053)	-0.092 (0.084)	0.044 (0.085)	-0.129 (0.090)
Diff - in - Diff		-0.136 (0.114)	0.076 (0.114)	-0.144 (0.121)
No. of observ.	32,396	445	417	378
Balancing tests	All covariates balanced	3/18 covariates unbalanced	4/18 covariates unbalanced	3/18 covariates unbalanced
Binomial comparison between group 2 and group 0				
Baseline				
Control		0.038	-0.053	0.054
Treated		-0.085	-0.088	-0.071
Diff (2-0)		-0.123 (0.105)	-0.035 (0.087)	-0.124 (0.090)
Follow up				
Control		0.072	-0.111	0.013
Treated		0.128	0.042	0.071
Diff (2-0)	0.174 (0.192)	0.056 (0.113)	0.153 (0.093)	0.058 (0.098)
Diff - in - Diff		0.179 (0.154)	0.188 (0.127)	0.182 (0.133)
No. of observ.	24,973	172	202	219
Balancing tests	All covariates balanced	4/18 covariates unbalanced	2/18 covariates unbalanced	3/18 covariates unbalanced

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	PS Matching	Kernel matching and Diff - in - Diff		
	200% FDI increase benchmark	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 2 and group 1				
Baseline				
Control		0.004	-0.009	-0.033
Treated		-0.047	-0.108	-0.132
Diff (2-1)		-0.051 (0.097)	-0.099 (0.081)	-0.099 (0.095)
Follow up				
Control		-0.095	-0.101	-0.100
Treated		0.133	0.036	0.087
Diff (2-1)	0.429*** (0.089)	0.228** (0.101)	0.137 (0.084)	0.187* (0.100)
Diff - in - Diff		0.279** (0.140)	0.236** (0.117)	0.286** (0.138)
No. of observ.	161	167	221	171
Balancing tests	All covariates balanced	All covariates balanced	All covariates balanced	All covariates balanced
Control variables: lnage, lnemp, ebitda, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)				

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

1.3.2.2. First robustness check results for binomial models considering the employment of foreign experts

Presented in Table 7 are the first robustness check results pertaining to binomial models considering employment of foreign experts. The outcomes for the following groups of firms are compared:

- Group 0: -firms identified as domestic and employing solely host country national experts throughout the studied period

- Group 1: -firms, who received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new foreign expert in the year of FDI or the two years after

  - firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, whereas the companies in question had no foreign experts in the second year after the year of inward FDI.

- Group 2: -firms who received initial FDI entry during the period analysed and where inward FDI was followed by employment of a new foreign expert in the year of FDI entry or the two years after.

  -firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, whereas the companies in question had at least one foreign expert in the second year after the year of inward FDI.

The output was measured in the second year after the year of inward FDI and lnTFP was considered as output instead of TFP growth.

The ATT as well as diff-in-diff coefficients pertaining to the comparison of groups 1 and 0 are statistically insignificant (Table 7). This implies that inward FDI alone, not combined with employment of a foreign expert, has no statistically significant positive effects on firm TFP, which is in line with our baseline results.

Further, when it comes to the comparison of groups 2 and 0, the ATT as well as the diff-in-diff coefficient are positive and statistically significant. Our baseline results suggest that there are no statistically significant differences in TFP growth performance between the firms experiencing inward FDI combined with employment of a foreign expert and domestic firms employing solely domestic experts. However, the results of the first robustness check provide evidence indicating that firms experiencing inward FDI combined with employment of a foreign expert enjoy higher TFP than their domestic peers.

Finally, the comparison of groups 2 and 1 also yielded positive and statistically significant ATT and diff-in-diff coefficients. It therefore seems that the advantage of firms experiencing inward FDI combined with employment of a foreign expert over firms experiencing inward FDI only in terms of TFP growth was also translated into an advantage in terms of TFP as the model specification was changed and the output measured at a later point in time.

Table 7: Matching and difference in differences results for the series of binomial comparisons pertaining to the first robustness check multinomial model considering employment of foreign experts

	ln TFP		
	1 (T) vs. 0 (C)	2 (T) vs. 0 (C)	2 (T) vs. 1 (C)
Baseline			
Control	9.099	9.068	9.115
Treated	9.196	9.175	9.195
Diff (T-C)	0.097	0.107	0.080
	(0.148)	(0.143)	(0.140)
Follow up			
Control	9.299	9.191	9.342
Treated	9.282	9.757	9.778
Diff (T-C)	-0.017	0.566***	0.436***
	(0.168)	(0.148)	(0.149)
Diff - in - Diff	-0.114	0.458**	0.356*
	(0.224)	(0.206)	(0.205)
Total number of observations	360	216	249
Balancing tests	4/17 covariates unbalanced	2/17 covariates unbalanced	All covariates balanced
Control variables: lnage, lnemp, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively

Source: Own calculations

1.3.2.3. Second robustness check results for binomial models considering the employment of foreign experts

Table 8 shows results for the second robustness check binomial comparisons considering employment of foreign experts. Again, the baseline model specifications were changed by redefining the group of firms who experienced inward FDI. Hence, in case of the second robustness check, firms experiencing inward FDI were defined as companies where a foreign owner gained control share of the company (at least 51%) during the studied period. TFP growth is again considered as the outcome measured.

Hence, in this subsection, the outcomes for the following groups of firms are compared:

- Group 0: -firms identified as domestic and employing solely host country national experts throughout the studied period

- Group 1: - firms, where a foreign owner gained a controlling share of the company (51% or more) during the studied period, however, inward FDI was not followed by employment of a new foreign expert in the year of inward FDI or the year after.

- Group 2: - firms, where a foreign owner gained a controlling share of the company (51% or more) during the studied period and inward FDI was followed by employment of a new foreign expert in the year of inward FDI or the year after.

As can be seen from Table 8, the diff-in-diff coefficient is statistically insignificant for the comparison of groups 1 and 0, which is in line with our baseline as well as first robustness check results.

The diff-in-diff coefficient is also statistically insignificant for the comparison of groups 2 and 0, which is again in line with our baseline results. This finding suggests that there are no statistically significant differences in TFP growth performance between the firms experiencing inward FDI combined with employment of a foreign expert and domestic firms employing solely domestic experts. However, the results of the first robustness check provide evidence suggesting that firms experiencing inward FDI combined with employment of a foreign expert nevertheless enjoy a statistically significant higher TFP level than their domestic peers.

Further, contrary to our baseline results, ATT and diff-in-diff coefficients are also insignificant when it comes to comparison of groups 2 and 1. However, the results of the first robustness check, support the baseline results, showing that firms combining inward FDI with employment of a foreign expert achieve a higher TFP than firms receiving inward FDI only.

Table 8: Matching and difference in differences results for the series of binomial comparisons pertaining to the second robustness check multinomial model considering employment of foreign experts

	TFP growth		
	1 (T) vs. 0 (C)	2 (T) vs. 0 (C)	2 (T) vs. 1 (C)
Baseline			
Control	-0.215	0.192	0.187
Treated	0.106	0.406	0.392
Diff (T-C)	0.320	0.213*	0.205*
	(0.327)	(0.123)	(0.116)
Follow up			
Control	-0.061	-0.053	0.010
Treated	0.016	0.019	-0.005
Diff (T-C)	0.077	0.072	-0.015
	(0.327)	(0.135)	(0.120)
Diff - in - Diff	-0.243	-0.142	-0.219
	(0.462)	(0.183)	(0.166)
Total number of observations	1133	218	205
Balancing tests	2/18 covariates unbalanced	3/18 covariates unbalanced	2/18 covariates unbalanced
Control variables: lnage, lnemp, ebitda, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

1.3.3. Parent country national managers

1.3.3.1. Baseline results for binomial models considering the employment of parent country national managers

Table 9 reports our baseline results pertaining to the set of binomial comparisons considering the employment of parent country national managers (PCN managers). We compare the outcomes for the following groups of firms:

- Group 0: -firms identified as domestic and employing solely host country national managers throughout the studied period

- Group 1: -firms, who received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new PCN manager in the year of FDI or the year after

  - firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100%/150%/200% in a certain year during the studied period, whereas the companies in question had no PCN managers in the year after the year of inward FDI.

- Group 2: -firms who received initial FDI during the period analysed and where inward FDI was followed by employment of a new PCN manager in the year of FDI or the year after.

  - firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 100%/150%/200% in a certain year during the studied period, whereas the companies in question had at least one PCN manager in the year after the year of inward FDI.

Bonache & Brewster (2001), citing works by Torbiörn (1982), Naumann (1992), and Mayrhofer & Brewster (1996), state that expatriates are mainly recruited from the home country operations of the company. Therefore, parent country nationals are much more likely to be sent to the affiliate in the host country from within the multinational company than foreigners in general.

As can be observed from Table 9, diff-in-diff coefficients for the comparison of groups 1 and 0 pertaining to the 150% and 200% foreign capital increase benchmarks are statistically insignificant, whereas the diff-in-diff coefficient for the 100% foreign capital increase benchmark is negative and statistically significant. The latter therefore implies, that inward FDI alone, not accompanied by employment of a PCN manager, has no statistically significant positive impact on firm TFP growth. However, we have to take into account, that according to the balancing tests, the covariates were not ideally balanced after the kernel matching procedure (especially in the 100% foreign capital increase benchmark case).

Further, when it comes to the comparison of groups 2 and 0, all three ATT coefficients pertaining to kernel matching are positive and statistically significant. The same is true for all three diff-in-diff coefficients, suggesting that firms who experience inward FDI combined with employment of a PCN manager perform better in terms of TFP growth than domestic firms employing solely host country national managers.

Finally, the results obtained by comparing groups 2 and 1 show that ATT as well as diff-in-diff coefficients are positive and statistically significant for all model specifications, indicating that firms who experience inward FDI combined with employment of a PCN manager perform better in terms of TFP growth than firms experiencing inward FDI only.

Table 9: Matching and difference in differences results for the series of binomial comparisons pertaining to the baseline multinomial model considering employment of parent country national managers

	PS Matching	**Kernel matching and Diff - in - Diff**		
	200% foreign capital increase benchmark	100% foreign capital increase benchmark	150% foreign capital increase benchmark	200% foreign capital increase benchmark
Binomial comparison between group 1 and group 0				
Baseline				
Control		0.046	0.087	-0.094
Treated		0.059	0.036	0.035
Diff (1-0)		0.013 (0.086)	-0.051 (0.073)	0.129 (0.083)
Follow up				
Control		0.179	0.044	-0.029
Treated		-0.034	-0.048	-0.044
Diff (1-0)	0.022 (0.053)	-0.213** (0.093)	-0.092 (0.082)	-0.015 (0.099)
Diff - in - Diff		-0.226* (0.127)	-0.040 (0.110)	-0.144 (0.129)
No. of observ.	33,984	485	472	419
Balancing tests	All covariates balanced	5/18 covariates unbalanced	4/18 covariates unbalanced	4/18 covariates unbalanced
Binomial comparison between group 2 and group 0				
Baseline				
Control		0.011	0.022	0.059
Treated		0.055	0.047	0.149
Diff (2-0)		0.044 (0.135)	0.025 (0.136)	0.090 (0.138)
Follow up				
Control		0.041	0.054	0.071
Treated		0.500	0.411	0.510
Diff (2-0)	0.995 (0.409)	0.459*** (0.142)	0.358** (0.147)	0.439*** (0.153)
Diff - in - Diff		0.415** (0.196)	0.333* (0.200)	0.349* (0.206)
No. of observ.	23,196	220	228	224
Balancing tests	All covariates balanced	3/18 covariates unbalanced	2/18 covariates unbalanced	2/18 covariates unbalanced

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	PS Matching	Kernel matching and Diff - in - Diff		
	200% foreign capital increase benchmark	100% foreign capital increase benchmark	150% foreign capital increase benchmark	200% foreign capital increase benchmark
Binomial comparison between group 2 and group 1				
Baseline				
Control		-0.015	-0.018	-0.002
Treated		0.055	0.047	0.023
Diff (2-1)		0.070 (0.116)	0.065 (0.114)	0.025 (0.133)
Follow up				
Control		-0.011	-0.044	-0.049
Treated		0.500	0.411	0.519
Diff (2-1)	0.450** (0.227)	0.511*** (0.122)	0.455*** (0.119)	0.568*** (0.140)
Diff - in - Diff		0.440*** (0.168)	0.391** (0.165)	0.543*** (0.193)
No. of observ.	166	234	248	210
Balancing tests	Convergence was not achieved	All covariates balanced	All covariates balanced	All covariates balanced
Control variables: lnage, lnemp, ebitda, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)				

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

1.3.3.2. First robustness check results for binomial models considering the employment of parent country national managers

The first robustness check results pertaining to binomial models considering employment of PCN managers are presented in Table 10. The outcomes for the following groups of firms are compared:

- Group 0: -firms identified as domestic and employing solely host country national managers throughout the studied period
- Group 1: -firms, who received initial FDI during the period analysed, however, inward FDI was not followed by employment of a new PCN manager in the year of FDI or the two years after

- firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, whereas the companies in question had no PCN managers in the second year after the year of inward FDI.

- Group 2: -firms who received initial FDI during the period analysed and where inward FDI was followed by employment of a new PCN manager in the year of FDI or the two years after.

  -firms who had foreign capital throughout the studied period, however, the amount of foreign capital increased by at least 200% in a certain year during the studied period, whereas the companies in question had at least one PCN manager in the second year after the year of inward FDI .

In the case of the first robustness check, the output was measured in the second year after the year of inward FDI. Further, the natural logarithm of TFP (lnTFP) was considered as output instead of TFP growth.

As shown in Table 10, the diff-in-diff coefficient for the comparison of groups 1 and 0 is statistically insignificant, which is in line with our baseline results.

Further, the comparison of groups 2 and 0 yielded a positive and statistically significant diff-in-diff coefficient. The latter indicates that the advantage of firms experiencing inward FDI combined with employment of a PCN manager over their domestic peers in terms of TFP growth was also translated into an advantage in terms of TFP as the model specification was changed and the output was measured at a later point in time.

Finally, the diff-in-diff coefficient for the comparison of groups 2 and 1 is also positive and statistically significant. It therefore seems that the advantage of firms experiencing inward FDI combined with employment of a PCN manager over firms experiencing inward FDI only in terms of TFP growth was also translated into an advantage in terms of TFP as the model specification was changed and the output was measured at a later point in time.

Table 10: Matching and difference in differences results for the series of binomial comparisons pertaining to the first robustness check multinomial model considering employment of parent country national managers

	ln TFP		
	1 (T) vs. 0 (C)	2 (T) vs. 0 (C)	2 (T) vs. 1 (C)
Baseline			
Control	8.984	9.126	9.384
Treated	9.166	9.198	9.062
Diff (T-C)	0.182**	0.072	-0.322**
	(0.083)	(0.127)	(0.142)
Follow up			
Control	9.111	9.201	9.348
Treated	9.329	9.609	9.523
Diff (T-C)	0.217**	0.408***	0.175
	(0.093)	(0.147)	(0.183)
Diff - in - Diff	0.035	0.336*	0.496**
	(0.124)	(0.195)	(0.232)
Total number of observations	712	186	189
Balancing tests	4/17 covariates unbalanced	4/17 covariates unbalanced	1/17 covariates unbalanced
Control variables: lnage, lnemp, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

1.3.3.3. Second robustness check results for binomial models considering the employment of parent country national managers

In Table 11 the second robustness check results pertaining to the set of binomial comparisons considering employment of parent country national managers are presented.

The outcomes for the following groups of firms are compared:

- Group 0: -firms identified as domestic and employing solely host country national managers throughout the studied period

Group 1: - firms, where a foreign owner gained a controlling share of the company (51% or more) during the studied period, however, inward

FDI was not followed by employment of a new PCN manager in the year of inward FDI or the year after.

Group 2: - firms, where a foreign owner gained a controlling share of the company (51% or more) during the studied period and inward FDI was followed by employment of a new PCN manager in the year of inward FDI or the year after.

The results depicted in the table show that the diff-in-diff coefficient obtained by comparing groups 1 and 0 is statistically insignificant, which is in line with our baseline as well as robustness check results. However, since the matching procedure left the covariates rather poorly balanced, we have to treat this result with some scepticism.

Table 11: Matching and difference in differences results for the series of binomial comparisons pertaining to the second robustness check multinomial model considering employment of parent country national managers

	TFP growth		
	1 (T) vs. 0 (C)	2 (T) vs. 0 (C)	2 (T) vs. 1 (C)
Baseline			
Control	0.005	0.056	0.102
Treated	0.119	0.165	0.165
Diff (T-C)	0.114	0.110	0.063
	(0.090)	(0.152)	(0.118)
Follow up			
Control	0.080	-0.014	-0.038
Treated	0.002	0.546	0.546
Diff (T-C)	-0.078	0.560***	0.583***
	(0.095)	(0.164)	(0.121)
Diff - in - Diff	-0.192	0.450**	0.520***
	(0.131)	(0.224)	(0.169)
Total number of observations	1213	156	214
Balancing tests	5/18 covariates unbalanced	4/18 covariates unbalanced	1/18 covariates unbalanced
Control variables: lnage, lnemp, ebitda, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively

Source: Own calculations

Comparing groups 2 and 0, the ATT and diff-in-diff coefficient proved to be positive and statistically significant, confirming that firms who experience inward FDI combined with employment of a PCN manager perform better in terms of TFP growth than domestic firms employing solely host country national managers. We, however, again have to take into account that the matching procedure failed to ideally balance the covariates.

Finally, when it comes to the comparison of groups 2 and 1 the ATT as well as diff-in-diff coefficient are positive and statistically significant at 1%, which is in line with our baseline results, reaffirming that firms who experience inward FDI combined with employment of a PCN manager perform better in terms of TFP growth than firms receiving inward FDI only.

1.4. Concluding remarks

The main aim of this paper was to analyse the causal link between skilled worker mobility and knowledge transfer to the host country, i.e., to establish whether firms experiencing inward FDI combined with foreign skilled worker employment perform better in terms of productivity growth than firms who experience inward FDI only and their domestic peers employing solely domestic skilled workers. If that is proven true, there are two possible explanations. One, it is possible that skilled foreign workers appointed to the host country affiliate increase the effectiveness of technology transfer from the mother company to the affiliate. Two, foreign workers may bring knowledge complementary to that possessed by the host country firm (Lazear, 1999; Malchow-Møller et al., 2011). In order to analyse the role of skilled worker mobility for knowledge transfer into the host economy, we need to define causal effects of multiple treatments i.e. inward FDI and inward FDI combined with employment of a skilled foreign worker. In order to address the likely non-randomness of the two treatments we follow the approach by Arnold & Javorcik (2009) and combine propensity score matching and difference-in-differences methods. Building on the idea by Lechner (2001) we transform the multinomial treatment models into a series of binary models. We then compare the outcomes for firms where inward FDI is combined with employment of skilled migrant workers to the outcomes of firms where inward FDI is not combined with the employment of skilled foreign workers and with outcomes of domestic firms employing solely domestic skilled workers. Since experts and managers are most frequently associated with the effectiveness of technology transfer in the literature, we focus on these categories of foreign skilled workers, i.e. foreign managers, foreign experts and parent country national managers (PCN managers). To our knowledge, no research has yet been done, that would make such a set of comparisons.

The results of our analysis provide robust evidence indicating that inward FDI alone, not combined with employment of foreign skilled workers, has no statistically significant positive effects on firm TFP growth.

We further found slight evidence suggesting that firms where inward FDI is combined with employment of foreign managers in general perform better in terms of TFP growth than domestic firms employing solely domestic managers. However, these findings are not robust. In contrast, we found robust evidence supporting the claim that firms were inward FDI is accompanied by employment of PCN managers perform better in terms of TFP growth than their domestic peers. Although this advantage in terms of TFP growth turned insignificant as TFP growth was measured one year later in time, our results show that the advantage in terms of TFP level remained statistically significant.

We also found evidence suggesting that firms where inward FDI is combined with employment of foreign managers in general, perform better in terms of TFP growth than firms experiencing inward FDI alone. Again, the evidence is not robust. However, we do find robust evidence suggesting that firms where inward FDI is accompanied by employment of PCN managers perform better in terms of TFP growth than firms experiencing inward FDI alone. Again the advantage in terms of TFP growth became insignificant as TFP growth was measured one year later in time, however, the advantage in terms of TFP level remained statistically significant.

A possible explanation for the upper results is that skilled foreign workers indeed function as a channel of knowledge transfer between the mother company and the affiliate in the host country. Namely, the main difference between foreign managers in general and parent country national managers is, that the latter are more likely to be appointed from the company headquarters to the host country affiliate in order to facilitate the knowledge transfer process between the two. Bonache & Brewster (2001), citing Torbiörn (1982), Naumann (1992) and Mayrhofer & Brewster (1996), explain that expatriates are mainly recruited from the home country operations of the company.

Further, we also found evidence suggesting that firms where inward FDI is combined with employment of foreign experts perform better in terms of TFP growth than firms undergoing inward FDI only. As was the case with model specifications considering employment of PCN managers, the advantage in terms of TFP growth turned insignificant as TFP growth was measured one year later in time. However, the advantage in terms of TFP level, again remained statistically significant.

Our results suggest that inward FDI combined with employment of foreign skilled workers (especially PCN managers) results in a temporary increase in TFP growth, which is in turn translated into a higher TFP level. They are therefore very much in line with the study by Inzelt (2008) who suggested that initial temporary mobility of foreign skilled workers (1 to 2 years after the FDI entry) led to "one-off" transfer of knowledge to the local affiliate.

2 PARENT VERSUS HOST COUNTRY NATIONAL MANAGER APPOINTMENT AND TECHNOLOGY TRANSFER TO MNEs' AFFILIATES

Abstract

The main goal of our paper is to identify the factors influencing the decision of a multinational firm on whether to employ a host country national (HCN) manager or a foreign (PCN) manager. Empirical evidence shows, that expatriate managers have an important role in the process of knowledge transfer between the mother company and the affiliate in the host country. Since knowledge and technology transfer is considered a major benefit from inward FDI for the host countries, the decision studied also bears important policy implications. Our analysis provides robust evidence suggesting that firm size and export propensity have a positive impact on the likelihood that a foreign manager will be appointed to a foreign owned firm. Our results also suggest that the average industry TFP of domestic firms has a negative effect on the probability of a foreign manager being appointed. We further find robust evidence indicating that the absolute distance in the Hofstede's Power Distance dimension between the host country and the FDI country of origin, has a negative effect on the likelihood that a foreign manager will be appointed. Finally, when it comes to regions of inward FDI origin, we used the old EU member states (EU15) as a benchmark for our analysis. After controlling for absolute distances in terms of Hofstede's cultural dimensions between Slovenia and countries of inward FDI origin, our results show that the owners coming from the Former Soviet Union and from the Middle East are more likely to appoint a foreign manager than the owners coming from the old EU member states (EU15).

2.1. Introduction

The dilemma as to whether an expatriate or a local manager should run a foreign affiliate is an attractive topic in management research (Belderbos & Heijltjes, 2005). Moreover, since technology transfer from the mother company to the foreign affiliate and further, from the foreign affiliate to incumbent firms is considered a major source of welfare gains for the host country form inward FDI, PCN (parent country national) versus HCN (host country national) manager appointment decision should be an important consideration also in the context of FDI promotion policy. The empirical evidence[6], points to the important role of the skilled migrant workers for the technology transfer from the mother company to the local affiliate (which has also been indicated by the results of the first paper of this thesis for the case of Slovenia). The skilled immigration regime in the host country is important because of two main reasons: (i) it may affect the decision on employing a foreign expert/manger in local affiliates and in turn technology transfer, whereas the latter has a direct impact on the welfare of the host economy; and (ii) it may affect the location decision of the MNEs on where to establish an affiliate to start with (De Smet, 2013).

The restrictiveness of the skilled immigration regimes can be defined based on the Employing Skilled Expatriates index (ESE) developed by De Smet (2013). It is based on five components of ESE indicators: i) the existence of immigration quotas (ii) the amount of time it takes to obtain a work permit (iii) whether there is a possibility for permanent residency (iv) whether there is a possibility to obtain citizenship (v) whether work permits for spouses are available. According to De Smet (2013) there is a significant variation in terms of skilled immigration regimes. In Singapore and the Republic of Korea the average processing time to obtain a temporary work permit is 10 days, whereas in Honduras it can take as long as 22 weeks. Worldwide, the average time it takes to obtain a temporary work permit is 8 weeks. At 5 weeks, the waiting time is the shortest in East Asia and the Pacific region. The process is, on the other hand, the slowest in the Middle East and North Africa, where it takes 11 weeks. Further, the analysis by De Smet (2013) confirms the existence of a positive correlation between Employing Skilled Expatriates index and foreign direct investment inflows. Unfortunately, Slovenia was not included in this survey, so there is no direct comparison in this regard. However, in Slovenia, a new law regarding employment of foreigners (Employment, Self-Employment and Work of Foreigners Act) was adopted recently, in June 2015. Its main aim was to align the existing Slovenian legislation with the EU legislation in the field of employment and work of third country nationals (non-EU citizens). A major simplification brought by the new law is the implementation of the "one-stop shop" principle.

[6] See the first paper for the review of the studies on the role of skilled migrant workers for the technology transfer within MNEs.

Thanks to the latter, third country nationals need to apply only once and obtain a single permit in order to be able to work and live in Slovenia. Namely, previously, they were required to apply for a work permit and a residence permit separately and with two different authorities (Schoenherr, 2015). The first single permit is issued for up to one year, but can be prolonged, however, not for more than two years (ZRSZ, n.d.-a). Citizens of EU member states, European Economic Area states, and Swiss citizens, on the other hand, have no limitations with respect to entering the Slovenian job market. They are able to apply for jobs in Slovenia under the same conditions as Slovenian citizens. Although Croatia joined the EU on July 1st 2013, transitional provisions were put into place, restricting the free movement of job seekers from Croatia. After two years, the transitional period was prolonged and will last at least until 30.6.2018, but not longer than until 30.6.2020. In the meantime, Croatian citizens require a work permit in order to be able to work in Slovenia (EURES, n.d.; ZRSZ, n.d.-b).

Generally, however, certain fears exist that skilled immigration has adverse effects on the host countries as well. For example (De Smet, 2013): (i) decreasing the motivation for natives to seek higher skills, (ii) crowding out of domestic students from the best schools, (iii) barriers in terms of language and culture between native and immigrant high-skilled workers (iv) technology transfers to potentially unfriendly economies.

What we aim for in this paper is to establish empirically what major factors or drivers are behind an MNEs' decision to employ foreign nationals (PCN) in managing positions in foreign affiliates located in Slovenia. As summarized by Hahn, Hayakawa, & Ito (2013), HCN (host country national) managers have advantages in terms of easier access to local knowledge and in terms of building local networks. A firm can also reduce its labour costs by replacing expatriate managers with HCN managers. Namely, the appointment of PCN managers is usually much more costly. On the other hand, PCN managers are regarded as valuable assets for a firm. They are more efficient at transferring firm specific technology and knowledge from the parent to the affiliates than HCN managers. As pointed put by Inzelt (2008) another reason for employing an expatriate in the top management position of a newly acquired company or of a green-field investment (besides the technology transfer) is to develop absorptive capacity in the new corporate investment through homophony.

As summed up by Belderbos & Heijltjes (2005), referring to the study by Delios & Björkman (2000), two strands of literature are examining the reasons for expatriation decision. One strand of literature uses a control and coordination framework to explain the choice between hiring a PCN manager or HCN manager, based on the assumption that the use of expatriates is a way of controlling operations in an affiliate and to align affiliate and parent company objectives. The level of goal incongruence and information asymmetry between parent and affiliate are found to be crucial factors of PCN vs. HCN choice within the agency theory (Belderbos & Heijltjes, 2005; Kren & Liao, 1988; Zajac, 1990). Using a PCN manager to directly monitor the foreign affiliate behaviour can, to a certain extent, reduce goal incongruence and information asymmetry. However, when the activities of the subsidiary

become too specialised and the amount of information needed to properly supervise the affiliate too extensive, direct monitoring ceases to be a viable option. Instead control needs to be exerted through measuring outcomes. The decision making process becomes less centralised and the subsidiary is given more autonomy with respect to local market activities (Belderbos & Heijltjes, 2005; Egelhoff, 1988). This makes the assignment of an HCN as managing director more appropriate. The other strand of literature focuses on the perspective of knowledge creation and learning. It builds on the presumption that the organisation and the expatriate are both "bases of knowledge" developing the competitive position of the company through learning (Belderbos & Heijltjes, 2005), i.e., assignment of a PCN as a means of knowledge transfer. According to this view, the main goal the parent company seeks to achieve through the assignment of a PCN as a managing director is to develop the organization in such a way that a knowledge network is created by means of expatriation (Belderbos & Heijltjes, 2005; Bonache & Cerviño, 1997; Edström & Galbraith, 1977a, 1977b; Scullion, 1991). The PCN becomes a knowledge carrier that is capable of transferring intellectual capital between the parent and the affiliates (Belderbos & Heijltjes, 2005; Bird, 1996). The extent of the actual transfer of knowledge and the learning depends upon absorptive capacity. Two types of knowledge flows can arise: i) flow of MNE specific knowledge from the parent to the subsidiary, and ii) flow of market-country specific knowledge from the subsidiary to the parent. The amount of actual knowledge transfer is correlated to the absorptive capacity of the parent and affiliates (Belderbos & Heijltjes, 2005).

A few models have been developed to motivate empirical studies on the foreign (expatriate) manager or expert decisions in (multinational) firms. Markusen and Trofimenko (2009) developed a model where workers learn from foreign experts and learning is embodied in the workers rather than in the firm. The model predicts that workers in a firm that uses a foreign expert will have a lower during-expert-period wage and a higher after-expert-period wage, while such a firm is characterized with both higher during and after-expert productivity in terms of value added per worker. Empirical results based on plant-level data for Colombia are in line with the model's prediction that foreign experts have substantial and persistent positive effects on the wages of local workers and on the value added per worker. Using a data set on Korean multinational foreign affiliates Cho (2014) found that transferring mangers from parent firm to the affiliate is a major source of benefit from FDI to foreign affiliates since managers transfer firm-specific knowledge. He further found that most of the foreign affiliates have managers transferred from their parent, while almost half are isolated from the parent in terms of physical trade. He concluded that the transferred managers are positively associated with labour productivity. Based on this evidence, Cho (2014) developed a partial equilibrium model dealing with the choice of managers for a foreign affiliate, where a positive productivity effect of expatriate manager might result from two options: (1) PCN managers are simply more efficient than native ones; and (2) they provide firm-specific knowledge that increases the productivity of all inputs. Model predictions suggest substantial welfare gains from FDI. Santacreu-Vasut & Teshima (2011) constructed another theoretical model of MNCs entry decision and their choice regarding the appointment of the affiliate CEO. MNEs

can choose between an expatriate, who has an advantage when it comes to adopting the MNE specific technology and a local manager who can better deal with the local conditions and uncertainty. The model predicts that MNCs employing expatriates engage in more technological transfer, which is even more emphasized with technology intensive firms. On the other hand, when local uncertainty is high MNEs tend to rely less on expatriates due to their lack of local knowledge.

As for the empirical evidence on the trade-off between hiring parent country nationals and host country nationals, the majority of empirical studies are carried out based on Asian MNEs' data, predominantly of Japanese affiliates. Belderbos and Heijltjes (2005) examined Japanese manufacturing affiliates operating in Asia in 1995 and found that strategic dependence of the parent on the subsidiary increases the likelihood that an expatriate will be appointed, whereas localisation of the subsidiary reduces it. Further, organisational experience in the country increases the propensity to appoint host country nationals. Ando & Endo (2013) used a sample of 1,067 foreign subsidiaries of Japanese service firms and found that for the latter, human capital intensity has a positive effect on the ratio of parent country nationals to foreign affiliate employees. Further, according to them, the institutional distance between the host country and the home country is negatively correlated to the ratio of parent country nationals. Additionally, the positive effect of human capital intensity on the ratio of parent country nationals becomes weaker with the increase in institutional distance. Peng & Beamish (2014) confirmed their hypothesis of a U-shaped correlation between the size of a subsidiary and expatriate staffing level based on their sample of 11,754 Japanese overseas subsidiaries. They also confirmed that the U-shaped correlation is moderated by mother company size, the equity exposure of the parent company towards the subsidiary and subsidiary age. Ando & Paik (2013) conducted their analysis using a sample of 2,980 foreign subsidiaries of Japanese parent companies. They found, that the share of parent country national managers is negatively associated with institutional distance, however, the absolute number of parent country nationals appointed to the foreign affiliate increases with larger institutional distance. They also conclude that firms with more overseas experience are more likely to use a parent country national in case of greater cultural distance. Ando, Rhee, & Park (2008), tested their hypotheses on management staffing policies for foreign affiliates based on survey data for 103 Japanese affiliates in Korea. They find that the level of global integration and the degree of centralization of decision-making have a positive impact on the likelihood of parent country national being appointed to executive manager position in a foreign affiliate. They further discover that the impact of global integration and centralization on staffing decisions are moderated by the affiliates' host country experience.

On the other hand, Bebenroth, Li & Sekiguchi (2008) followed an inward FDI perspective and conducted their analysis on a sample of 3,241 foreign companies in Japan. They concluded that subsidiary size and high ownership share have a positive correlation with the number of parent country nationals in top management and board positions. They also found that affiliate age had no impact on the choice between a parent country national or host country national manager. Their results also showed that two cultural variables related to

parent countries, Uncertainty Avoidance and Power Distance were correlated with the decision to appoint a parent country manager. On top of that, their findings show that, Asian countries are most likely to appoint parent country nationals to top management and board positions, English speaking countries least likely, with European countries in between.

As far as other Asian MNE's are concerned, Hahn et al. (2013) conducted their research on Korean origin FDIs and found that HCN manager ratio has a positive impact on productivity when it comes to uncertain business environments but not in case of stable and predictable business environments. Further, the positive effect of HCN manager ratio on productivity is limited to less R&D intensive industries. Fayol-Song (2011) studied the recent practice of management localization in MNEs located in China. Her analysis indicates five categories of reasons behind this behaviour: cost cutting, exploiting local competences, the shortage of appropriate expatriates, developing and retaining local talents, and maintaining good relations with the local government. Finally, Dörrenbächer, Gammelgaard, McDonald, Stephan, & Tüselmann (2013) studied the connection between the decision on whether to hire a PCN or HCN manager and various attributes pertaining to foreign subsidiaries. Their analysis was conducted based on a sample of 528 subsidiaries in Denmark, Germany, and the UK. They find subsidiaries that employ HCN managers are more embedded in the host country market and are more autonomous when it comes to decisions that are related to market issues, strategic decisions on financial control, R&D and new product development as well as with respect to the local institutional environment. According to them, affiliates with HCN top manager perform much better than those headed by PCN managers in terms of sales growth, productivity and innovation.

In our paper, we empirically test for the factors that influence the decision by a multinational company to employ a host country manager or a foreign (PCN) manager. The issue is studied from the perspective of a host country considering the decisions and operations of all foreign-owned firms registered in Slovenia in the 2002 to 2010 period. The main advantage of our study compared to the ones previously mentioned is the fact that we are able to consider the whole population of firms in Slovenia, instead of just a sample of foreign firms. That enables us to test the effects that market structure characteristics have on firm staffing decision.

The rest of the paper is structured as follows. Data and descriptive statistics are presented in section 2. This is followed by a description of methodological approach in section 3. Results are further presented in section 4, and the paper ends with concluding remarks in section 5.

2.2. Data and descriptive statistics

2.2.1. Data

For the purpose of our analysis we combined four different databases. The first is a matched employer-employee database, SRDAP, which was provided by the Slovenian Statistical office. It contains detailed information on the economically active population, such as a person's level of education, their nationality, identification of their employer and their post in the firm. The second and the third database were provided by the Bank of Slovenia. One database includes all firms operating in Slovenia with at least 10% foreign ownership. It also provides information on inward FDI countries of origin. The other database contains firms operating in Slovenia having outward FDI. The three databases mentioned were merged with the fourth database, which contains financial data on Slovenian firms and was provided by AJPES (The Agency of the Republic of Slovenia for Public Legal Records and Related Services). The final full merged database contains roughly 28000 firms on average per year, covering the period from 2002 to 2010. Firms simultaneously having negative capital and zero employees were excluded from the database.

2.2.2 Descriptive statistics

Table 12 presents basic descriptive statistics for three categories of foreign owned firms: the ones who only employ home country national (HCN) managers, those who employ at least one foreign manager, and foreign owned firms employing at least one PCN manager.

As can be observed from the table, the average age for firms in all three groups is quite similar, significant differences, however, exist when it comes to their size. Foreign owned firms managed by home country nationals are the smallest, on average employing 36.26 workers. Companies using foreign managers are, on the other hand, the largest, with their average number of employees reaching 91.94 people. Positioned in the middle are the firms managed by at least one parent country national, having 60.08 workers on average. Further, capital intensity proves to be the highest for firms headed by home country nationals, whereas it is significantly smaller for the other two firm categories. At 35.36% the export share is the highest for companies with foreign managers, whereas it is surprisingly similar for firms with HCN managers and PCN managers. Average TFP is the highest for foreign owned companies managed by home country nationals, but quite similar for the other two categories of firms. One possible explanation for this is that in case of firms with HCN managers only, foreign investors conducted cherry picking, selecting more productive firms.

Table 12: Descriptive statistics for foreign owned firms employing HCN managers, foreign managers and PCN managers

	HCN manager		Foreign manager		PCN manager	
Variable	Number of obs.	Mean (s.d.)	Number of obs.	Mean (s.d.)	Number of obs.	Mean (s.d.)
Age	12,763	9.13 (6.57)	1,628	9.16 (7.15)	1,075	8.71 (6.64)
Employment	12,763	36.26 (129.0)	1,628	91. 94 (319.33)	1,075	60.08 (257.62)
Capital intensity (EUR)	11,252	422,592.8 (1.52e+7)	1,428	137,927.1 (787514.9)	955	120,181.8 (583,477)
Export share (%)	12,372	31.95 (38.51)	1,565	35.36 (39.94)	1,027	31.75 (39.44)
TFP	10,364	16.95 (93.54)	1,254	13.13 (27.33)	777	13.67 (30.15)

Source: Own calculations

A significant share of Slovenian inward FDI originates from the Balkan region (see Table 14). GDP per capita as a measure of a country's productivity is significantly lower in the region compared to Slovenia, therefore the technology transfer process is less likely to occur with FDI coming from the Balkan states. This further implies that the role of the parent country managers in this case may be more one of control, rather than being linked to knowledge transfer. Due to this reason, we also decided to include the summary statistics for foreign owned firms with foreign and parent country national managers, excluding the companies with FDI originating from the Balkan region. The statistics are shown in Table 13.

As far as the average age is concerned, the statistic is not much different than in the case considering all foreign owned firms, although, the average age of foreign owned companies employing PCN managers decreases slightly. The average size of foreign owned firms employing foreign and PCN managers, on the other hand, further increases, reaching 117.73 and 79.27 employees respectively. When excluding the firms with Balkan FDI origin from the summary statistics, the average capital intensity of both categories of firms considered increases as well, although it is still far smaller than with the original statistics for foreign owned firms led by home country nationals. The average export share also proves to be bigger with companies employing foreign managers as well as with those employing parent country nationals, which indicates that firms with FDI originating from the Balkan region are less export oriented than firms with FDI from other regions. Finally, as the firms with Balkan origin FDI are excluded from the summary statistics, this also results in slight increase in average TFP of firms employing foreign and especially those employing PCN managers.

Table 13: Descriptive statistics for foreign owned firms net firms having FDI from the Balkan region employing foreign managers and PCN managers

	Foreign manager		PCN manager	
Variable	Number of obs.	Mean (s.d.)	Number of obs.	Mean (s.d.)
Age	1,144	9.19 (7.45)	634	8.38 (6.76)
Employment	1,144	117.73 (372.11)	634	79.27 (322.11)
Capital intensity (EUR)	992	178,981.2 (936,868.2)	556	173,630.2 (749,020.1)
Export share (%)	1,105	39.5 (40.46)	607	36.10 (40.85)
TFP	936	14.24 (30.30)	488	16.00 (35.94)

Source: Own calculations

As can be observed from Table 14, the largest share of investors comes from the EU member states and the Western Balkan countries. The share of foreign owned firms that report EU-15 as one of the three main FDI source countries is almost 68%, whereas around 15% of foreign owned firms have owners from the Western Balkans (including Croatia). Further, 4.6 % of foreign owned firms report at least one of their largest three foreign owners coming from the new EU member states (EU-12) and 6.08% from EFTA states. The most important FDI origin region outside Europe is North America, accounting for around 3% of foreign owned firms in Slovenia.

Table 14: Shares of foreign owned firms by region of FDI origin

Region of FDI origin	Share of foreign firms with FDI from this region (%)
EU 15	67.5
Balkan	15.43
EFTA	6.08
EU 12 (new members)	4.59
North America	2.77
Middle East	1.63
Asia	1.05
FSU	0.35
Oceania	0.35
Central America	0.15
North Africa	0.06
South America	0.03

Source: Own calculations

Further, presented in Table 15 are the average shares of foreigners between managers in different units of foreign owned firms in Slovenia.

Table 15: Shares of foreigners between managers in different units of foreign owned companies in Slovenia

	Mean share (%)	s.d.
Production and operational units	5.37	21.29
Directors and board members	19.19	38.37
Financial units	2.75	14.73
Human resource, general affairs and employer relations units	2.15	14.42
Sales and marketing units	3.41	16.66
Advertising and public relations units	3.08	16.45
Procurement and distribution units	9.71	29.45
R&D units	7.51	24.65
Other company units	14.33	34.78
Smaller companies	13.70	34.16

Source: Own calculations

The largest average share of foreigners can be observed between directors and board members, reaching 19.2%. Human resource and general affairs departments, on the other hand, have the smallest average share of foreign managers. The latter is also quite big for smaller firms, where foreigners on average account for 13.7% of managers.

2.3. Empirical approach

We can identify three groups of variables that potentially affect the decision on whether to appoint a foreign manager or a HCN manager to the post in the foreign affiliate: firm specific variables, including both foreign owner and local affiliate characteristics, industry specific variables and country specific variables.

Firm specific variables included in our model are age, size, and export share of the foreign owned firm, a dummy variable indicating whether the affiliate has any outward FDI, the variable TFP_gap, capturing the difference between the industry average and firm specific TFP as well as dummy variables for the regions of inward FDI origin[7].

Firm size is measured by the number of employees and enters the regression in logarithmic form. Firm age is counted from the formation year according to the Business Register of the Republic of Slovenia. As age also enters our empirical model in a logarithmic form, we follow Zajc Kejžar & Ponikvar (2011) and start counting age with the value of 1 in order to prevent dropping observations with less than 1 year of operation time, which would generate sample selection bias due to the relatively high exit rates of young firms. In their study, Dörrenbächer et al. (2013) find that there is no significant difference between the HCN manager and PCN manager led affiliates in terms of firm age and firm size, however the degree of internationalization, which they measure as export share, is much higher for parent country national headed subsidiaries. Peng & Beamish (2014), on the other hand, confirmed their hypothesis of a U-shaped correlation between the size of a subsidiary and expatriate staffing level. Among other things they also found, that subsidiary age moderates the U-shaped correlation. Further, Bebenroth, Li & Sekiguchi (2008) came to the conclusion, that subsidiary size and high ownership share have a positive correlation with the number of PCN managers in top management and board positions. They, on the other hand, find that affiliate age has no significant impact on the choice between a HCN and a PCN manager. Further, Belderbos & Heijltjes (2005) found that organisational experience in the country, by the subsidiary as well as the mother company, increases the likelihood that HCN managers will

[7] The region of FDI origin is determined based on the home country of the largest foreign owner

be appointed. A similar conclusion was also reached by Ando et al. (2008). This phenomenon could also manifest itself as a negative effect of subsidiary age on the probability of a foreign manager being appointed.

As already indicated, the variable TFP_gap captures the difference between the natural logarithm of industry average TFP, calculated on 3-digit Nace (Rev2) level and the natural logarithm of firm specific TFP. Further, TFP was calculated following the procedure by Levinsohn & Petrin (2003), using Stata levpet command. Fixed assets were selected as a proxy for capital, labour costs served as a proxy for labour and energy costs were chosen as a proxy for intermediate inputs. The rationale behind using energy costs as a proxy for intermediate inputs is that it might be a more appropriate choice in case of service firms. Namely, in the computer age and amid efforts to preserve the natural environment, many service firms use less and less material. TFP was estimated separately for manufacturing sector, service sector and agricultural sector. The revenue version of the production function was selected as the basis for TFP estimation.

As far as industry specific variables are concerned, our model includes: market size, industry mark-up, number of domestic firms in an industry, average industry TFP of domestic firms, a dummy variable for knowledge intensive service sectors, a dummy variable for medium-high and high-tech manufacturing industries as well as industry dummies.

Market size, industry mark-up, the number of domestic firms in an industry as well as average industry TFP of domestic firms are all determined using the 3-digit Nace Rev2 classification level. Market size is measured by industry sales. It enters our regression in logarithmic form as well as the number of domestic firms in an industry. Industry mark-up and the number of domestic firms in an industry are proxies for competition in the host market, whereas average industry TFP of domestic firms is a proxy for competitiveness of domestic firms.

The dummy variables for knowledge intensive service sectors and medium-high and high-tech manufacturing industries were defined according to the Eurostat aggregation. The model by Santacreu-Vasut & Teshima (2011) predicts, that expatriates are positively correlated with technology transfer and are thus more valuable for high-tech companies. Therefore, it would be logical to expect that firms from high tech and knowledge intensive sectors are more likely to employ a foreign manager.

Finally, country specific factors are accounted for with inclusion of annual dummies, a variable giving physical distance between Slovenia and the country of inward FDI origin[8] as

[8] Home country of the largest foreign owner is considered as the inward FDI country of origin

well as 6 variables encompassing cultural distance between Slovenia and countries of inward FDI origin, based on Hofstede's indicators.

To quantify cultural distance between Slovenia and countries of inward FDI origin, the absolute distances in the following 6 Hofstede's cultural dimensions were calculated (Hofstede, 2011):

1. *Power Distance* - measuring the extent to which the less powerful members of the society accept and expect the unequal distribution of power

2. *Uncertainty Avoidance* - tells us to what extent the members of a society are comfortable with the unknown future

3. *Individualism* - tells us about the extent to which members of a society are integrated into groups

4. *Masculinity* - relates to the way in which emotional roles are divided between genders

5. *Long-Term vs. Short-Term orientation* - categorizes societies based on whether their efforts are more focused on the future or on the present and the past

6. *Indulgence vs. Restraint* - differentiates societies based on whether they allow relatively free gratification of basic human desires related to enjoying life or control the gratification of these needs

Our baseline empirical model is defined as follows:

$$\begin{aligned}\Pr(\text{For\_mng}_{it}=1) &= \beta_0 + \beta_1 InTFPdom_{jt-1} + \beta_2 \ln NoDomFirms_{jt-1} + \beta_3 \ln MarSize_{jt\text{-}1} + \\ &+ \beta_4 IndMarkup_{jt\text{-}1} + \beta_5 dKIS_j + \beta_6 dmiHITECH_j + \beta_7 \ln Age_{it} + \beta_8 \ln Size_{it-1} + \\ &+ \beta_9 Ex\Pr opensity_{it-1} + \beta_{10} dOutFDI_{it-1} + \beta_{11} TFP\_gap_{it-1} + \beta_{12} dist_c + \beta_{13} dist\_c\_pdi_c + \\ &+ \beta_{14} dist\_c\_idv_c + \beta_{15} dist\_c\_mas_c + \beta_{16} dist\_c\_uai_c + \beta_{17} dist\_c\_ltovs_c + \\ &+ \beta_{18} dist\_c\_ivr_c + \sum \beta_{19.j} dindustry_j + \sum \beta_{20.t} dyear_t + \sum \beta_{21} dFDIregion_{it} + u_{it}\end{aligned} \quad (1)$$

where subscripts *i, j,c* and *t* refer to firms, industries, countries and years, respectively. The dependent variable, *d_MgrFr* is only defined for foreign owned firms. It is a binary variable,

taking the value of 1 if the foreign owned company employs at least one foreign manager in a current year and the value of 0 if it does not. The category of managers was defined based on the Standard classification of occupations. *TFPdom* refers to average sectoral TFP of domestic firms, *NoDomFirms* is the number of domestic firms in the industry sector, *MarSize* refers to market size, *IndMarkup* is the industry mark-up, whereas *dKIS* and *dmiHITECH* are dummies for knowledge intensive service sectors and medium-high and high-tech manufacturing sectors, respectively. *Age* further stands for firm age, the variable *Size* stands for firm size, *ExPropensity* refers to export propensity, *dOutFDI* refers to the dummy variable indicating whether the firm has any outward FDI or not, *TFP_gap* stands for the difference between the industry average and firm specific TFP, *dist* stands for the physical distance between Slovenia and inward FDI country of origin, whereas *dist_c_pdi, dist_c_idv, dist_c_mas, dist_c_uai, dist_c_ltovs* and *dist_c_ivr* refer to absolute distances between Slovenia and inward FDI country of origin in terms of Hofstede's Power Distance, Individualism, Masculinity, Uncertainty Avoidance, Long-Term vs. Short-Term orientation and Indulgence vs. Restraint cultural dimensions, respectively. Finally, *dindustry* and *dyear* are industry and annual dummies, respectively, whereas *dFDIregion* are dummies indicating inward FDI region of origin.

The alternative dependent variable considered for the baseline estimations is *d_PCNMgr*, taking the value of 1 if the foreign owned firm employs at least one parent country national manager in a current year and 0 otherwise. A manager is defined as a parent country national, if he/she comes from the same country as any of the three largest foreign investors of the affiliate.

The baseline models are first estimated using a pooled probit estimator. In order to account for possible heteroscedasticity we also apply a heteroscedatic probit model[9]. With the latter, the probit model is generalized, namely, the cumulative distribution function (CDF) of a standard normal random variable Φ() with a mean of 0 and variance of 1 is reformulated into a normal CDF, where variance is allowed to vary as a function of the independent variables (Harvey, 1976; Zajc Kejžar, 2011). Since the majority of models dealing with heterogeneous firm dynamics predict that firm size and age influence the conditional variance of a firm's

[9] In order to account for possible firm-specific factors we also estimated the four full versions of the models used in the baseline analysis and the first robustness check using the random effects probit estimator. The results obtained are similar to the ones presented in the results section of the paper, with minor deviations. Namely, according to the results obtained with random effects probit estimator, the negative effect of average industry TFP of domestic firms on the likelihood of a foreign manager being appointed is not robust, whereas the negative effects of the number of domestic firms in an industry and the absolute distance in Hofstede's Long-Term vs. Short-Term orientation dimension are robust. Further, the finding that the owners form the Middle East are more likely to appoint a foreign manager than the owners from the old EU members is also not robust. The results can be viewed upon request.

growth and exit decision, we decided to also test for heterogeneity induced by firm size in our staffing decision case.

As a robustness check, the dependent variables *d_MgrFr* and *d_PCNMgr* are replaced with variables *d_NewMgrFr* and *d_NewPCNMgr*, taking values of 1 if the foreign owned firm employs at least one new foreign manager or PCN manager, respectively, in a current year and 0 otherwise.

As a second robustness check, we test for the factors that influence the share of foreign managers in foreign owned firms using cross section data. The dataset encompasses all firms that received initial FDI or where the amount of foreign capital increased by at least 100% in a single year between 2002 to 2010 (inclusive). The firms are observed in the year of initial FDI or the first such increase in foreign capital. In order to account for possible selection bias with the decision on whether to employ foreign managers or not in the first place, we apply a two-step Heckman selection model. Therefore, the probability that a multinational will appoint a foreigner to a managing position in the host country is estimated in the first stage, whereas in the second stage, the share of foreign managers among all managers is estimated. The first stage outcome variable, dNwMgr2yr, takes the value of 1 if a foreign owned firm hires a new foreign manager within two years after inward FDI and 0 otherwise, whereas the outcome variable in the second stage of the estimation, ShFrMgrp2, denotes the share of foreign managers in the firm two years after inward FDI.

2.4. Results

In this section, we first present our baseline estimations. We then proceed with our robustness check results.

2.4.1. Baseline results

The baseline results are given in Tables 16 and 17. Standard errors are adjusted for firm clusters in all eight models, which specifies that observations are independent only across clusters (firms) but not necessarily within clusters (firms).

Table 16 gives results for probit and heteroscedastic probit models with *d_MgrFr* as the outcome variable. Presented in the first column of Table 16 are the results for the probit model, obtained without controlling for the impact of Hofstede's cultural distances on the decision whether to appoint a foreign manager or not. In the second column, results for the probit model controlling for cultural distances are shown. The third column gives results for the heteroscedastic probit model, again obtained without controlling for cultural distances,

whereas in the fourth column, the results for the heteroscedastic probit model including Hofstede's distances are presented.

The results for all four model specifications in Table 16 imply that firm size and export propensity have a positive and statistically significant effect on the probability that a foreign manager will be hired. The results also suggest that the likelihood for a foreign manager being appointed is greater with medium-high and high-tech manufacturing firms, whereas the coefficient pertaining to the dummy variable for knowledge intensive services is statistically insignificant on all four accounts. Further, the coefficient for average industry TFP of domestic firms is negative and statistically significant in all four cases. Industry mark-up, market size, the number of domestic firms in an industry and the question whether a firm has outward FDI or not, on the other hand, seem to have no effect on the choice between a foreign and a HCN manager. The coefficient for firm age is, further, negative and significant in probit and heteroscedastic probit models that do not control for cultural distance. Once the cultural distances are controlled for it turns insignificant. The results in model (1) also provide evidence of a positive effect of the gap between average industry TFP and firm specific TFP on the likelihood that a foreign manager will be appointed, however, the coefficient for TFP_gap is insignificant in models (2), (3) and (4).

When it comes to distances in Hofstede's cultural dimensions, being controlled for in models (2) and (4), the results of both models imply that the absolute distance in the Power Distance dimension has a negative and statistically significant effect on the probability of a foreign manager being appointed. Further, the coefficient for the distance in the Masculinity dimension pertaining to model (4) is also negative and statistically significant, however, when it comes to the results of model (2), it is insignificant.

As far as the regions of inward FDI origin are concerned, EU15, or the old EU member states, were chosen as a reference. According to the results of models (1) and (3), owners from six regions are more likely to appoint a foreign manager than the owners from the EU15, namely, owners from North Africa (dNAfrica), Former Soviet Union (dFSU), Asia other then the South-East region (dRestOfAsia), Midle East (dMiddle_east), Western Balkans (dWBalkan) and the 12 new EU member states (dEU12). After controlling for Hofstede's cultural distances, the results of models (2) and (4) show, that only the owners from three regions are more likely to appoint a foreign manager than the owners from the EU15, the probability being highest for the owners from the Former Soviet Union, second highest for the owners form the Middle East and third highest for the owners coming from the EU12.

Table 16: Pooled probit and heteroscedastic probit model results, with d_MgrFr as the outcome variable

VARIABLES	(1) d_MgrFr Probit	(2) d_MgrFr Probit	(3) d_MgrFr Het. probit	(4) d_MgrFr Het. probit
lnAge	-0.112**	-0.0745	-0.0795**	-0.0375
	(0.0492)	(0.0528)	(0.0394)	(0.0392)
lnSize (-1)	0.217***	0.231***	0.253***	0.260***
	(0.0291)	(0.0322)	(0.0207)	(0.0203)
ExPropensity (-1)	0.419***	0.389***	0.311***	0.268***
	(0.114)	(0.125)	(0.0974)	(0.0912)
IndMarkup (-1)	2.85e-05	2.58e-05	1.41e-05	1.02e-05
	(1.92e-05)	(2.00e-05)	(1.75e-05)	(1.58e-05)
dKIS	1.240	1.230	0.705	0.438
	(0.967)	(1.028)	(0.825)	(0.800)
dmiHITECH	1.894**	1.809**	1.333*	1.097*
	(0.877)	(0.883)	(0.751)	(0.657)
dOutFDI (-1)	0.0418	0.0119	-0.00573	-0.0437
	(0.129)	(0.139)	(0.0871)	(0.0818)
TFP_gap (-1)	0.0524*	0.0444	0.0397	0.0309
	(0.0318)	(0.0346)	(0.0262)	(0.0256)
lnTFPdom (-1)	-0.356***	-0.377***	-0.248**	-0.230**
	(0.114)	(0.118)	(0.106)	(0.0903)
lnMarSize (-1)	0.0461	0.0603	0.0152	0.00680
	(0.0536)	(0.0586)	(0.0402)	(0.0403)
lnNoDomFirms (-1)	-0.0522	-0.0725	-0.0352	-0.0324
	(0.0574)	(0.0609)	(0.0386)	(0.0372)
dist		-0.000167		-0.000110
		(0.000211)		(0.000145)
dist_c_pdi		-0.0132***		-0.00955***
		(0.00457)		(0.00328)
dist_c_idv		-0.00683		-0.00530
		(0.00650)		(0.00471)
dist_c_mas		-0.00617		-0.00444*
		(0.00403)		(0.00258)
dist_c_uai		0.00588		0.00418
		(0.00561)		(0.00384)
dist_c_ltovs		-0.00608		-0.00302
		(0.00602)		(0.00396)
dist_c_ivr		-0.00861		-0.00297
		(0.0125)		(0.00875)
dEU12	0.446**	0.636***	0.295**	0.429**
	(0.187)	(0.237)	(0.147)	(0.179)
dEFTA	0.0446	0.164	0.000626	0.0308
	(0.176)	(0.204)	(0.130)	(0.146)

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VARIABLES	(1) d_MgrFr Probit	(2) d_MgrFr Probit	(3) d_MgrFr Het. probit	(4) d_MgrFr Het. probit
dWBalkan	0.876***	-0.211	0.668***	-0.150
	(0.104)	(0.362)	(0.123)	(0.255)
dFSU	1.573***	1.557**	1.309***	1.141**
	(0.264)	(0.626)	(0.270)	(0.485)
dMiddle_east	1.362***	1.123**	0.987**	0.965***
	(0.420)	(0.468)	(0.402)	(0.321)
dNorthAmerica	0.313	1.376	0.219	0.901
	(0.191)	(1.278)	(0.141)	(0.868)
dRestOfAsia	1.419***	2.339	1.140***	1.651
	(0.268)	(1.722)	(0.252)	(1.229)
dSEAsia	0.558	0.806	0.473	0.584
	(0.705)	(1.959)	(0.532)	(1.341)
dNAfrica	2.164***		1.061*	
	(0.361)		(0.642)	
dCentralAmerica	0.560		0.500*	
	(0.387)		(0.286)	
Constant	-2.582**	-1.519	-1.837**	-0.755
	(1.012)	(1.195)	(0.841)	(0.857)
lnsigma2			-0.111**	-0.139***
lnemp_1			(0.049)	(0.032)
Observations	9,327	8,552	9,327	8,552
Year dumies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Log pse.likelihood	-2768.74	-2393.89	-2759.99	-2370.14
Wald test	chi2(81)=	chi2(83)=/	chi2(81)=	chi2(83)=
	=2117.75***		=556.16***	=/
Pseudo R^2	0.153	0.169		
Wald test of lnsigma2=0			chi2(1)=5.05**	chi2(1)=
				=18.95***

Notes: Std. Err. in round brackets, adjusted for firm clusters; *** p<0.01, ** p<0.05, * p<0.1.
Source: Own calculations

The Wald test of lnsigma2=0 is rejected for specification (3) as well as (4), indicating, that heterogeneity induced by firm size actually exists, which means that the use of heteroscedastic probit model is appropriate.

Table 17, gives results for probit and heteroscedastic probit models with *d_PCNMgr* as the outcome variable. Columns one and three give results for the probit and heteroscedastic probit models, not controlling for cultural distances, respectively. Columns two and four, on the other hand, give results for probit and heteroscedastic probit models, where the cultural distances are accounted for, respectively.

According to the results of all four model specifications in Table 17, firm size and export propensity have a statistically significant positive effect on the likelihood of a PCN manager being appointed, which is in line with the results in Table 16. Further, the coefficients for firm age, industry mark-up, number of domestic firms in an industry, dummy variable for outward FDI and the dummy variable for knowledge intensive services turned out statistically insignificant for all four model specifications. The coefficients for TFP_gap pertaining to models (5), (6), (7) and (8) are all positive and statistically significant, which is in line with the results for model (1) from Table 16. Further, the coefficient for average TFP of domestic firms in an industry is negative and statistically significant for both versions of the probit model, which is in line with the results for models (1), (2), (3) and (4) from Table 16. Further, the coefficient pertaining to the dummy variable for medium-high and high-tech manufacturing industries is positive and significant when it comes to model (5), which is also in line with the results in Table 16. The results for model (6), on the other hand, provide evidence of a statistically significant positive effect of market size on the likelihood of a PCN manager being appointed.

When it comes to distances in Hofstede's cultural dimensions being controlled for in models (6) and (8), the results of both models imply that the absolute distance in the Power Distance dimension has a negative and statistically significant effect on the probability of a PCN manager being appointed, which is also in line with the results obtained using models (2) and (4). Further, the coefficient for the absolute distance in the Indulgence vs. Restraint dimension is also negative and statistically significant for model (6) as well as for model (8). The estimation of model (8), however, also yielded a positive and statistically significant coefficient for the distance in the Uncertainty Avoidance dimension.

As far as the regions of inward FDI origin are concerned the EU15 were again chosen as a reference. According to the results of models (5) and (7), the owners from five regions are more likely to appoint a PCN manager than the owners from the EU15. These are owners from North Africa (dNAfrica), Former Soviet Union (dFSU), Asia other than the South-East region (dRestOfAsia), Midle East (dMiddle_east) and Western Balkans (dWBalkan). Owners coming from EFTA (dEFTA) are, on the other hand, less likely to appoint a PCN manager than the owners coming from the EU15. After controlling for Hofstede's cultural distances, the results of models (6) and (8) show that only the owners from three regions are more likely to appoint a PCN manager than the owners from the EU15, the probability being highest for the owners from the former Soviet Union, second highest for the owners form the Middle East and third highest for the owners coming from the EU12, which is in line with the results in Table 16. On the other hand, according to the results for models (6) and (8), the owners coming from EFTA are less likely to appoint a PCN manager than the owners coming from the EU15.

Table 17: Pooled probit and heteroscedastic probit model results, with d_PCNMgr as the outcome variable

VARIABLES	(5) *d_PCNMgr* Probit	(6) *d_PCNMgr* Probit	(7) *d_PCNMgr* Het. probit	(8) *d_PCNMgr* Het. probit
lnAge	-0.0375	-0.00591	-0.0354	0.000869
	(0.0593)	(0.0648)	(0.0477)	(0.0501)
lnSize (-1)	0.122***	0.138***	0.200***	0.217***
	(0.0330)	(0.0361)	(0.0358)	(0.0260)
ExPropensity (-1)	0.367***	0.326**	0.286***	0.225**
	(0.131)	(0.148)	(0.110)	(0.111)
IndMarkup (-1)	3.60e-05	3.56e-05	2.03e-05	2.01e-05
	(2.40e-05)	(2.20e-05)	(2.27e-05)	(1.85e-05)
dKIS	0.809	0.647	0.433	0.115
	(0.985)	(1.024)	(0.840)	(0.818)
dmiHITECH	1.465*	1.128	1.064	0.720
	(0.883)	(0.898)	(0.754)	(0.678)
dOutFDI (-1)	0.0836	0.0951	0.00132	-0.00266
	(0.169)	(0.180)	(0.127)	(0.120)
TFP_gap (-1)	0.0817**	0.0691*	0.0658**	0.0539*
	(0.0355)	(0.0397)	(0.0304)	(0.0301)
lnTFPdom (-1)	-0.253**	-0.231*	-0.172	-0.136
	(0.123)	(0.126)	(0.111)	(0.0986)
lnMarSize (-1)	0.106	0.120*	0.0786	0.0660
	(0.0663)	(0.0690)	(0.0480)	(0.0474)
lnNoDomFirms (-1)	-0.0571	-0.0904	-0.0348	-0.0390
	(0.0716)	(0.0744)	(0.0488)	(0.0480)
dist		-0.000230		-0.000208
		(0.000251)		(0.000181)
dist_c_pdi		-0.0153***		-0.0122***
		(0.00524)		(0.00379)
dist_c_idv		-0.00293		-0.00306
		(0.00722)		(0.00520)
dist_c_mas		0.00671		0.00442
		(0.00461)		(0.00324)
dist_c_uai		0.00932		0.00870*
		(0.00708)		(0.00507)
dist_c_ltowvs		-0.0127		-0.00848
		(0.00810)		(0.00531)
dist_c_ivr		-0.0276*		-0.0187*
		(0.0161)		(0.0112)
dEU12	0.338	0.507*	0.267	0.375*
	(0.252)	(0.305)	(0.172)	(0.212)
dEFTA	-1.055***	-0.933**	-0.736**	-0.617**
	(0.391)	(0.420)	(0.306)	(0.282)
dWBalkan	1.098***	0.407	0.863***	0.242
	(0.119)	(0.407)	(0.153)	(0.289)
dFSU	1.732***	2.658***	1.467***	2.071***
	(0.278)	(0.761)	(0.290)	(0.591)

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VARIABLES	(5) *d_PCNMgr* Probit	(6) *d_PCNMgr* Probit	(7) *d_PCNMgr* Het. probit	(8) *d_PCNMgr* Het. probit
dMiddle_east	1.637***	1.888***	1.147**	1.402***
	(0.470)	(0.486)	(0.494)	(0.388)
dNorthAmerica	0.172	1.594	0.100	1.347
	(0.281)	(1.534)	(0.216)	(1.097)
dRestOfAsia	1.633***	3.224	1.326***	2.636*
	(0.279)	(2.078)	(0.279)	(1.536)
dNAfrica	2.750***		1.589**	
	(0.290)		(0.644)	
Constant	-3.317***	-2.443*	-2.741***	-1.676*
	(1.194)	(1.358)	(0.948)	(1.012)
lnsigma2			-0.109**	-0.134***
lnemp_1			(0.055)	(0.033)
Observations	8,430	7,765	8,430	7,765
Year dumies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Log pse.likelihood	-1783.37	-1522.50	-1775.74	-1507.74
Wald test	chi2(67)= =652.81***	chi2(70)= =270.30***	chi2 (67)= =294.29***	chi2(70)= =308.48***
Pseudo R^2	0.222	0.223	/	/
Wald test of lnsigma2=0			chi2(1)=3.96**	chi2(1)=16.00***

Notes: Std. Err. in round brackets, adjusted for firm clusters; *** p<0.01, ** p<0.05, * p<0.1.
Source: Own calculations

The Wald test of lnsigma2=0 is rejected for specification (7) as well as (8), indicating, that heterogeneity induced by firm size actually exists, which means that the use of heteroscedastic probit model is appropriate.

2.4.2. Robustness checks

2.4.2.1. First robustness check: changing the dependent variables

The first set of robustness check results are given in Tables 18 and 19. The dependent variables *d_MgrFr* and *d_PCNMgr* pertaining to the baseline models are replaced with variables *d_NewMgrFr* and *d_NewPCNMgr*, taking values of 1 if the foreign owned firm employs at least one new foreign manager or PCN manager in a current year, respectively and 0 otherwise.

Presented in Table 18 are the results for probit and heteroscedastic probit models with *d_NewMgrFr* as the outcome variable. Columns one and three again give results for the probit and heteroscedastic probit models, not controlling for cultural distances, respectively. Columns two and four, on the other hand, give results for probit and heteroscedastic probit models, respectively, where the cultural distances are accounted for.

The results for all four model specifications in Table 18 imply, that firm size and export propensity have a positive and statistically significant effect on the probability that a new foreign manager will be hired, which is in line with the baseline results. The coefficient for firm age is, on the other hand, negative and statistically significant in all four model specifications, which is in line with the results of baseline models (1) and (3).

Further, the coefficients for industry mark-up, the dummy variable for knowledge intensive service sectors, the dummy variable for medium-high and high-tech manufacturing industries, the dummy variable indicating whether a firm has any outward FDI or not, the difference between the average industry TFP and firm specific TFP, average sectoral TFP of domestic firms and market size are statistically insignificant according to the results of all four model specifications. The results of models (9), (10) and (11) on the other hand suggest, that the number of domestic firms in an industry has a statistically significant negative effect on the likelihood of a new foreign manager being appointed.

As far as the distances in Hofstede's cultural dimensions are concerned, the results of both models ((10) as well as (12)) imply that absolute distance in the Power Distance dimension has a negative and statistically significant effect on the probability of a new foreign manager being appointed, which is also in line with the baseline results. Further, the results obtained estimating models (10) and (12) also suggest, that the absolute distance in the Long-Term vs. Short-Term orientation dimension also has a negative statistically significant impact on the likelihood that a new foreign manager will be appointed.

Finally, when it comes to the regions of inward FDI origin the EU15 still remain the chosen benchmark. According to the results of models (9) and (11), the owners from five regions are more likely to appoint a new foreign manager than the owners from the EU15. These owners are from North Africa (dNAfrica), the former Soviet Union (dFSU), Asia other than the South-East region (dRestOfAsia), the Western Balkans (dWBalkan), and Central America (dCentralAmerica). After controlling for Hofstede's cultural distances, however, the results of models (10) and (12) show, that only the owners from the former Soviet Union (dFSU) are more likely to appoint a new foreign manager than owners from the EU.

Table 18: Pooled probit and heteroscedastic probit model results, with d_NewMgrFr as the outcome variable

VARIABLES	(9) d_NewMgrFr Probit	(10) d_NewMgrFr Probit	(11) d_NewMgrFr Het. probit	(12) d_NewMgrFr Het.probit
lnAge	-0.161***	-0.119**	-0.124***	-0.0912**
	(0.0465)	(0.0501)	(0.0408)	(0.0455)
lnSize (-1)	0.204***	0.202***	0.282***	0.269***
	(0.0283)	(0.0299)	(0.0272)	(0.0304)
ExPropensity (-1)	0.302***	0.357***	0.215**	0.270***
	(0.102)	(0.112)	(0.0923)	(0.0994)
IndMarkup (-1)	3.61e-05	3.45e-05	1.75e-05	2.14e-05
	(2.91e-05)	(2.60e-05)	(2.90e-05)	(2.63e-05)
dKIS	0.589	0.295	0.360	0.114
	(0.717)	(0.779)	(0.618)	(0.681)
dmiHITECH	-0.174	-0.415	-0.347	-0.488
	(0.905)	(0.926)	(0.765)	(0.786)
dOutFDI (-1)	-0.0680	-0.133	-0.0773	-0.134
	(0.119)	(0.121)	(0.0881)	(0.0949)
TFP_gap (-1)	-0.0403	-0.0459	-0.0338	-0.0386
	(0.0348)	(0.0391)	(0.0294)	(0.0331)
lnTFPdom (-1)	-0.117	-0.0924	-0.0715	-0.0576
	(0.102)	(0.113)	(0.0899)	(0.100)
lnMarSize (-1)	0.0732	0.0695	0.0313	0.0257
	(0.0609)	(0.0619)	(0.0554)	(0.0595)
lnNoDomFirms (-1)	-0.114**	-0.118**	-0.0817*	-0.0814
	(0.0539)	(0.0573)	(0.0437)	(0.0495)
dist		-8.52e-05		-6.19e-05
		(0.000159)		(0.000129)
dist_c_pdi		-0.00854**		-0.00717**
		(0.00399)		(0.00341)
dist_c_idv		-0.000675		-0.000923
		(0.00612)		(0.00518)
dist_c_mas		-0.00519		-0.00411
		(0.00395)		(0.00311)
dist_c_uai		0.00449		0.00401
		(0.00452)		(0.00371)
dist_c_ltovs		-0.0168***		-0.0133***
		(0.00570)		(0.00506)
dist_c_ivr		-0.00839		-0.00521
		(0.00993)		(0.00840)
dEU12	0.148	0.318	0.111	0.272
	(0.203)	(0.290)	(0.162)	(0.247)
dEFTA	-0.0592	0.164	-0.0655	0.104
	(0.138)	(0.161)	(0.116)	(0.145)
dWBalkan	0.492***	-0.142	0.378***	-0.117
	(0.0924)	(0.302)	(0.0845)	(0.253)
dFSU	1.345***	1.700***	1.169***	1.449***
	(0.167)	(0.487)	(0.162)	(0.429)

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VARIABLES	(9) d_NewMgrFr Probit	(10) d_NewMgrFr Probit	(11) d_NewMgrFr Het. probit	(12) d_NewMgrFr Het.probit
dMiddle_east	0.282	0.0343	0.302	0.144
	(0.457)	(0.499)	(0.363)	(0.398)
dNorthAmerica	0.157	0.741	0.127	0.557
	(0.185)	(0.977)	(0.146)	(0.789)
dRestOfAsia	1.067***	1.983	0.822***	1.553
	(0.186)	(1.388)	(0.194)	(1.156)
dSEAsia	1.037	1.117	0.886	0.888
	(0.730)	(1.688)	(0.575)	(1.372)
dNAfrica	2.169***		1.415***	
	(0.294)		(0.387)	
dCentralAmerica	0.541*		0.518**	
	(0.293)		(0.221)	
Constant	-2.714**	-1.636	-2.001**	-1.125
	(1.072)	(1.235)	(0.999)	(1.123)
lnsigma2			-0.084**	-0.071**
lnemp_1			(0.034)	(0.034)
Observations	8,743	7,998	8,743	7,998
Year dumies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Log pse.likelihood	-874.44	-757.39	-872.36	-755.59
Wald test	chi2(70)=	chi2(73)=	chi2 (71)=	chi2(73)=
	=/	=/	=1539.58***	=/
Pseudo R^2	0.140	0.164		
Wald test of lnsigma2=0			chi2(1)=5.98**	chi2(1)=4.48**

Notes: Std. Err. in round brackets, adjusted for firm clusters; *** p<0.01, ** p<0.05, * p<0.1.
Source: Own calculations

The Wald test of lnsigma2=0 is again rejected for both heteroscedastic probit models, indicating that the use of heteroscedastic probit estimator is appropriate.

Further, Table 19 shows the results for probit and heteroscedastic probit models with *d_NewPCNMgr* as the outcome variable. Columns one and three again give results for the probit and heteroscedastic probit models, not controlling for cultural distances, respectively. Columns two and four, give results for probit and heteroscedastic probit models, respectively, where the cultural distances are accounted for.

The results for all four models in Table 19 imply that firm size as well as export propensity have a statistically significant positive effect on the likelihood that a new PCN manager will be appointed. This result is in line with the baseline results as well as with the results in Table 18. The coefficient for average industry TFP of domestic firms was negative and statistically significant for all four models, which is in line with the results for models (1), (2), (3), (4), (5)

and (6). Further, the coefficients for firm age, obtained estimating models (13) and (15) are also negative and statistically significant, which is in line with the results for models (1), (3), (9), (10), (11) and (12). The four models in Table 19 also give positive and statistically significant coefficients pertaining to the dummy variable for knowledge intensive service sectors. Further, the negative and statistically significant coefficients for the number of domestic firms in an industry obtained with models (9), (10) and (11) are reaffirmed with the results of models (13), (14) and (15). Positive and statistically significant coefficients for industry mark-up as well as for market size were obtained estimating models (13) and (14), whereas the results for models (15) and (16) give negative and statistically significant coefficients for the dummy variable indicating whether a firm has outward FDI or not.

When it comes to distances in Hofstede's cultural dimensions being controlled for in models (14) and (16), the results of both models imply that the absolute distance in the Power Distance dimension has a negative and statistically significant effect on the probability of a new PCN manager being appointed, which reaffirms the baseline results as well as the results form Table 18. Further, the results obtained estimating models (14) and (16) suggest that the absolute distance in the Long-Term vs. Short-Term orientation dimension also has a negative and statistically significant impact on the likelihood that a new PCN manager will be appointed, which is in line with the results obtained with models (10) and (12).

Finally, when it comes to the regions of inward FDI origin, the EU15 are still the chosen benchmark. According to the results of model (13) the owners from four regions are more likely to appoint a new PCN manager than the owners from the EU15. These are owners from North Africa (dNAfrica), the former Soviet Union (dFSU), Asia other than the South-East region (dRestOfAsia) and the Western Balkans (dWBalkan). According to the results obtained with model (15), however, the owners from the Middle East (dMiddle_east) are also more likely to appoint a new PCN manager than the owners from the EU15 in addition to the owners from the four regions identified with model (13). After controlling for Hofstede's cultural distances, however, the results of models (14) and (16) show that only the owners from three regions are more likely to appoint a new PCN manager than the owners from the EU15. The probability is highest for the owners from Asia other than the South-East region (dRestOfAsia), second highest for the owners from the Former Soviet Union (dFSU), and third highest for the owners from the Middle East (dMiddle_east). The result that the owners from the Former Soviet Union and the Middle East are more likely to appoint a new PCN manager than the owners from the EU15 is also in line with the baseline results.

Table 19: Pooled probit and heteroscedastic probit model results, with d_NewPCNMgr as the outcome variable

VARIABLES	(13) d_NewPCNMgr Probit	(14) d_NewPCNMgr Probit	(15) d_NewPCNMgr Het. probit	(16) d_NewPCNMgr Het. probit
lnAge	-0.102*	-0.0617	-0.0834*	-0.0459
	(0.0604)	(0.0670)	(0.0457)	(0.0534)
lnSize (-1)	0.125***	0.126***	0.265***	0.258***
	(0.0387)	(0.0415)	(0.0390)	(0.0444)
ExPropensity (-1)	0.292**	0.400***	0.190*	0.276**
	(0.123)	(0.139)	(0.100)	(0.115)
IndMarkup (-1)	5.55e-05*	5.64e-05**	3.20e-05	3.84e-05
	(3.11e-05)	(2.59e-05)	(3.23e-05)	(2.75e-05)
dKIS	1.676**	1.628**	1.234*	1.190*
	(0.765)	(0.781)	(0.662)	(0.691)
dmiHITECH	0.901	0.608	0.681	0.540
	(0.854)	(0.846)	(0.690)	(0.697)
dOutFDI (-1)	-0.158	-0.248	-0.205*	-0.252*
	(0.178)	(0.188)	(0.124)	(0.130)
TFP_gap (-1)	-0.000500	-0.00492	-0.00161	-0.00563
	(0.0403)	(0.0461)	(0.0320)	(0.0375)
lnTFPdom (-1)	-0.294***	-0.291***	-0.230**	-0.237**
	(0.106)	(0.103)	(0.0960)	(0.0991)
lnMarSize (-1)	0.158**	0.159**	0.0806	0.0673
	(0.0764)	(0.0725)	(0.0648)	(0.0657)
lnNoDomFirms (-1)	-0.177**	-0.185**	-0.102*	-0.0968
	(0.0731)	(0.0741)	(0.0611)	(0.0663)
dist		-0.000219		-0.000169
		(0.000219)		(0.000164)
dist_c_pdi		-0.0108*		-0.00980**
		(0.00551)		(0.00412)
dist_c_idv		0.00722		0.00449
		(0.00836)		(0.00657)
dist_c_mas		0.00186		0.00249
		(0.00487)		(0.00349)
dist_c_uai		0.00199		0.00375
		(0.00655)		(0.00471)
dist_c_ltowvs		-0.0233***		-0.0167**
		(0.00874)		(0.00665)
dist_c_ivr		-0.0190		-0.0106
		(0.0171)		(0.0129)
dEU12	-0.115	-0.136	0.00541	-0.0238
	(0.350)	(0.394)	(0.245)	(0.300)
dEFTA	-0.525	-0.206	-0.341	-0.160
	(0.365)	(0.397)	(0.253)	(0.287)
dWBalkan	0.665***	0.323	0.491***	0.225
	(0.111)	(0.379)	(0.0948)	(0.294)
dFSU	1.524***	2.585***	1.267***	2.046***
	(0.181)	(0.794)	(0.167)	(0.615)

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VARIABLES	(13) d_NewPCNMgr Probit	(14) d_NewPCNMgr Probit	(15) d_NewPCNMgr Het. probit	(16) d_NewPCNMgr Het. probit
dMiddle_east	0.670	0.875**	0.597*	0.771**
	(0.487)	(0.401)	(0.328)	(0.313)
dNorthAmerica	-0.216	1.061	-0.137	0.785
	(0.263)	(1.346)	(0.200)	(1.001)
dRestOfAsia	1.399***	3.630*	1.009***	2.654*
	(0.190)	(2.067)	(0.200)	(1.567)
dNAfrica	2.407***		1.321***	
	(0.346)		(0.462)	
Constant	-4.282***	-3.534***	-3.098***	-2.409**
	(1.296)	(1.354)	(1.141)	(1.191)
lnsigma2			-0.119***	-0.110***
lnemp_1			(0.037)	(0.038)
Observations	7,270	6,676	7,270	6,676
Year dumies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
Log pse.likelihood	-480.95	-409.13	-477.37	-406.15
Wald test	chi2(53)=	chi2(57)=	chi2 (53)=	chi2(57)=
	=483.94***	=414.75***	=765.33***	=642.15***
Pseudo R^2	0.203	0.225		
Wald test of lnsigma2=0			chi2(1)=10.46***	chi2(1)=8.52***

Notes: Std. Err. in round brackets, adjusted for firm clusters; *** p<0.01, ** p<0.05, * p<0.1.
Source: Own calculations

The Wald test of lnsigma2=0 is again rejected for both heteroscedastic probit models, indicating that the use of heteroscedastic probit model is appropriate.

2.4.2.2. Second robustness check: Heckman selection model

The second set of robustness check results, which were obtained by applying the two-step Heckman selection model to cross section data, are given in Table 20. The first stage results, with dNwMgr2yr as the outcome variable, are presented in the second column, whereas the results for the second stage of estimation, with Sh_Fr_Mgrp2 as the outcome variable are given in the first column.

According to the results of the first stage Heckman selection model estimations, firm size and export propensity have a positive and statistically significant impact on the likelihood that a new foreign manager will be appointed within two years after inward FDI. The latter supports the baseline as well as the first robustness check results. The estimated coefficients for all

other firm and industry specific variables, on the other hand, turned out to be statistically insignificant. Further, the coefficients for the absolute distances in all six Hofstede's cultural dimensions are also statistically insignificant.

When it comes to regions of inward FDI origin, the analysis was again done with EU15 as a benchmark. After controlling for cultural distances, the first stage results show, that only owners from two regions are more likely to appoint a new foreign manager within two years after inward FDI than the owners from the EU15. These are owners from the Middle East (dMiddle_east) and owners from Asia other than the South-East region (dRestOfAsia).

The second stage of Heckman selection model estimation gives predominantly statistically insignificant results. However, firm size seems to have a statistically significant negative effect on the share of foreign managers, given that the affiliate employs at least one new foreign manager within two years after inward FDI. This means, that as a foreign firm grows, the number of employees grows faster than the share of foreign managers appointed. The effect of average TFP of domestic firms in an industry is also statistically significant and negative, which fits well with baseline results as well as with the first robustness check results presented in Table 19.

Table 20: Heckman selection model results (cross section)

VARIABLES	Step 2 Sh_Fr_Mgrp2	Step 1 dNwMgr2yr
lnAge		-0.123
		(0.0791)
lnSize	-13.41***	0.160***
	(2.183)	(0.0553)
ExPropensity	-3.761	0.359*
	(9.790)	(0.210)
TFP_gap	2.711	-0.0375
	(3.160)	(0.0686)
IndMarkup	0.00176	5.69e-05
	(0.00240)	(4.61e-05)
dKIS	0.544	0.159
	(18.37)	(0.379)
dmiHITECH	-13.87	-0.284
	(18.53)	(0.393)
lnTFPdom	-23.00**	0.203
	(10.02)	(0.191)
lnMarSize	1.530	0.0717
	(5.651)	(0.0994)

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VARIABLES	Step 2 Sh_Fr_Mgrp2	Step 1 dNwMgr2yr
lnNoDomFirms	0.842	-0.135
	(4.853)	(0.0908)
dist_c_pdi		0.00302
		(0.0105)
dist_c_idv		0.0239
		(0.0156)
dist_c_mas		-0.00732
		(0.00652)
dist_c_uai		-0.0148
		(0.0106)
dist_c_ltowvs		-0.00999
		(0.0124)
dist_c_ivr		0.0172
		(0.0176)
dEU12		-0.183
		(0.569)
dEFTA		0.509
		(0.340)
dWBalkan		0.953
		(0.827)
dMiddle_east		2.770***
		(0.784)
dNorthAmerica		-5.429
		(0)
dRestOfAsia		2.602**
		(1.063)
dOceania		-4.965
		(0)
Constant	-20.22	-1.303
	(102.6)	(2.117)
Observations	802	802
Year dumies	YES	YES
Industry dummies	YES	YES
lambda	-5.393	
	(8.392)	
rho	-0.218	
sigma	24.77	
Wald test	chi2(17)=93.84***	

Notes: Std. Err. in round brackets; *** p<0.01, ** p<0.05, * p<0.1.
Source: Own calculations

2.5. Concluding remarks

Technology and knowledge transfer is a major benefit that host countries gain through inward FDI. According to empirical evidence, parent country national managers play a very

important role in facilitating the knowledge transfer process. Therefore, the host county skilled immigration regime, which has a direct effect on the employment of foreign managers in turn also affects the knowledge and technology transfer into the host economy and consequentially its welfare gains. Liberalisation of the skilled immigration regime should therefore be considered as a part of FDI promotion policy mix. Expected welfare gains are largest for tacit knowledge intensive industries with low-competitive domestic firms.

As far as firm specific factors are concerned, our analysis provides robust evidence suggesting that firm size and export propensity have a positive impact on the likelihood that a foreign manager will be appointed to a foreign owned firm. The findings about the positive impact of firm size on the probability that a foreign manager will be appointed are in line with the conclusions of Bebenroth, Li & Sekiguchi (2008), whereas the results regarding the positive effect of export share on the propensity to appoint a foreign manager fit well with the findings by Dörrenbächer et al. (2013). We also found evidence implying that firm age has a negative impact on the likelihood that a foreign manager will be appointed, however, it is not robust. Since the age of a foreign owned firm could be interpreted as the affiliate's experience in the host market, this findings are in line with the conclusions by Belderbos & Heijltjes (2005) who found that organisational experience in the country, by the subsidiary as well as the mother company, increases the likelihood that HCN managers will be appointed. A similar conclusion was also reached by Ando et al. (2008). Further, we also found evidence that the likelihood of a foreign manager being appointed is greater for knowledge intensive service firms and medium-high and high-tech manufacturing firms as well as for firms where the gap between the average industry TFP and firm specific TFP is greater. However, these results are not robust.

When it comes to industry specific factors, our results suggest that the average industry TFP of domestic firms has a negative effect on the likelihood of a foreign manager being appointed. In addition to that, we found some non-robust evidence implying that the number of domestic firms in an industry also has a negative effect on the probability of a foreign manager being appointed.

Finally, with regard to country specific factors, we found robust evidence suggesting that the absolute distance in the Hofstede's Power Distance dimension between the host country and the FDI country of origin has a negative effect on the likelihood that a foreign manager will be appointed. In addition to that, we found evidence implying that the absolute distance in the Long-Term vs. Short-Term orientation dimension also has a negative impact on the probability that a foreign manager will be appointed, however, these results are not robust.

Further, when it comes to regions of inward FDI origin, we used the old EU member states (EU15) as a benchmark for our analysis. After controlling for absolute distances in terms of Hofstede's cultural dimensions between Slovenia and countries of inward FDI origin, our results show that the owners coming from the Former Soviet Union and from the Middle East

are more likely to appoint a foreign manager than the owners coming from the old EU member states (EU15). Additionally, we found non-robust evidence indicating that the owners coming from the new EU member states (EU12) and the owners coming from Asia other than the South-East region were also more likely to appoint a foreign manager, whereas the owners coming from the EFTA countries were less likely to do so.

3 SPILLOVER EFFECTS THROUGH WORKER MOBILITY: EVIDENCE FROM SLOVENIAN SMEs

Abstract

The paper tests for potential productivity spillovers arising through worker mobility from foreign owned firms to domestic SMEs using Slovenian data, covering the period from 2002 to 2010. Separate analyses were done for the service and manufacturing sector SMEs. My paper contributes to a segment of literature that is relatively scarce since it requires the use of linked employer-employee databases, which emerged only recently. I find robust evidence in support of the hypothesis that flows of highly educated workers from foreign owned firms to domestic SMEs boost total factor productivity growth of domestic service SMEs. There is also some indication that hiring new workers with experience from foreign owned firms, in general, has a positive effect on service SMEs TFP growth, regardless of whether they come from a different sector or the same sector. However, these results are not robust. On the other hand, I find no evidence implying the existence of spillovers through worker mobility in the manufacturing sector.

3.1. Introduction

Economic theory predicts that foreign owned firms have an advantage over domestic firms in terms of productivity. Several empirical studies have found evidence to support this claim (e.g., Arnold & Javorcik (2009) and Damijan et al. (2015), among recent ones). This is the reason why foreign owned firms are largely seen as a potential source of knowledge and technology diffusion for the host economy. Extensive research has already been done when it comes to productivity spillovers in general with mixed results. A number of studies confirm their existence. Keller & Yeaple (2009), for example, analysed U.S. data. They found that productivity spillovers accounted for about 14% of productivity growth in U.S. manufacturing firms in the period from 1987 to 1996. Smarzynska-Javorcik (2004) analyzed Lithuanian firm-level data and confirmed the existence of positive spillovers effects taking place between firms across different industries. Girma & Wakelin (2000) further established that domestic firms benefit in terms of productivity if multinational firms operate in the same sector and region. Their study was based on UK data for manufacturing firms. They also find that domestic firms are worse off if MNEs are located in the same sector but different region. According to Girma & Wakelin (2000), regions that are less developed gain less from spillovers, whereas sectors with higher competition and sectors with a low technology gap between foreign owned and domestic firms gain more.

In contrast, many studies find no evidence for the existence of productivity spillovers and some even detect negative spillovers. Aitken & Harrison (1999), for example, used panel data on Venezuelan plants and documented the existence of negative productivity spillovers. Aslanoğlu (2000) further analyzed data for Turkish manufacturing firms and found no evidence that domestic firms benefit in terms of productivity when foreign owned firms are present.

In Slovenia, positive productivity spillovers were documented by Damijan et al. (2003) for the manufacturing sector. Horizontal productivity spillovers in the Slovenian manufacturing sector were further confirmed by Zajc Kejžar (2011), however, according to her, they tended to compensate for only a minor part of the competitive pressure resulting from foreign firm entry. Zajc Kejžar and Ponikvar (2014) also examined data for the Slovenian manufacturing sector and found that only the most productive firms experienced productivity improvements as a result of inward FDI. The least efficient companies, on the other hand, faced job losses, whereas firms in the middle of the TFP distribution experienced both effects. The existence of productivity spillovers has, however, not yet been tested on Slovenian data for service firms.

Productivity spillovers can occur through different mechanisms. One of them is worker mobility. In this case, a person is hired by a foreign owned company and subsequently receives firm training. The employee may acquire knowledge regarding superior managerial practices, process innovations, high quality intermediate inputs, etc. pertaining to the foreign owned firm. In the next step the worker, regarded as a knowledge carrier, is hired by a

domestic company. This way the knowledge is transferred between companies, boosting domestic firm's productivity (Poole, 2013).

The literature in the management field agrees about the importance of expatriates for the technology transfer from the mother company to the local affiliates and their learning process. But can a MNE fully retain its technological advantages in case of worker mobility between its affiliates and local companies? Both theoretical and empirical studies examine the potential for productivity spillovers to domestic firms through the mobility of workers who were previously employed and trained in MNE affiliates. According to Fosfuri, Motta, & Rønde's (2001) model, technological spillovers arise due to the mobility of workers previously trained and employed in MNE affiliates, while pecuniary spillovers arise when the foreign subsidiary pays the trained employee a higher wage to deter him/her from moving to a local competitor. Further, technological spillovers are more likely to arise when the MNE and the local firm do not compete aggressively in the product market, when they sell in independent or vertically related markets, in case of high absorptive capacity of the local firm and when the employee training is general rather than specific. A model describing a similar setup was also derived by Glass & Saggi (2002), who additionally shed some light on government incentives to attract or discourage FDI.

The presence of spillovers through worker mobility has been empirically tested only recently with the emergence of matched employer-employee databases. Consequentially, research on this topic is relatively scarce. However, in general the existing research seems to confirm the role of worker mobility as a channel for spillover effects. Balsvik (2011), for example, found that in case of Norwegian manufacturing firms during the 1990s, workers with experience from MNEs contributed 20% more to the productivity of their plant than workers who had no such experience. According to his results the productivity effect at the plant level exceeded the private return to mobility, suggesting that the mobility of workers from MNEs to non-MNEs could be considered a true knowledge externality. However, Maliranta, Mohnen, & Rouvinen (2009) concluded that workers with R&D experience transfer knowledge that can easily be copied and implemented without much additional R&D effort. Namely, only hiring workers previously employed in R&D to do a non-R&D job in the new firm increases productivity and profitability, whereas hiring them to do R&D does not. Görg & Strobl (2005) further confirmed, that firms, which are led by owners who were employed in MNEs from the same industry immediately prior to starting their own business, are more productive than other domestic firms. Their research was done for the case of Ghana. Poole (2013) provided evidence for positive wage spillovers through worker mobility in Brazil, i.e. when MNE workers switch to domestic firms this results in an increase of incumbent domestic workers' wages. Martins (2005) further examined Portuguese data and found, that employees who switched from foreign to domestic firms, have higher wages than workers in domestic firms, who have no prior experience in foreign firms. The wages of switchers also increase with the length of their past tenure at foreign firms. However, in case of Portugal, flows of workers between foreign owned and domestic firms prove to be relatively small. Finally, Martins (2005) concludes, that the evidence found, at best, provides only moderate support for the role of labour mobility as a knowledge transfer channel. Hakkala & Sembenelli (2014) show that

spillovers can only be detected in cases when workers move from multinationals to purely domestic firms in high-tech sectors. Their analysis was conducted using Finnish data. They also report that competition reduces inter-firm worker flows. Pesola (2011) also based her findings on Finnish data and discovered that highly educated workers earn a wage premium for their previous experience at a foreign firm, which is higher than the premium for other types of experience.

The aim of my paper is to study the effects of worker flows from foreign owned firms to domestic SMEs on the productivity growth of domestic SMEs. I will therefore try to establish whether worker mobility indeed functions as a channel for productivity spillovers using Slovenian data. To my knowledge, this paper is in fact the first one to test for productivity spillovers through worker mobility on Slovenian data. In contrast to previously mentioned papers it analyses data for service and manufacturing sectors separately. I focus my research on domestic SMEs, since spillovers may be a relatively more important source of TFP growth for smaller firms than for larger ones. Due to the dynamic nature of the empirical model I use a system GMM estimator developed by Arellano & Bover (1995) and Blundell & Bond (1998) to conduct my analysis.

The remainder of the paper is structured as follows: Section 2 presents the data, its sources and the descriptive statistics. It is followed by a description of methodology and related issues in Section 3. Section 4 consists of empirical results, while the paper ends with Section 5, containing concluding remarks.

3.2. Data and descriptive statistics

For the purpose of my analysis I combined three different databases covering the period from 2002 to 2010. First is a matched employer-employee database provided by the Slovenian Statistical Office. It contains data on the economically active population, among other things information on a person's education, profession, identification of a current employer and their position in the firm. The second database was obtained from the Bank of Slovenia and consists of data on inward foreign direct investment (FDI). Since a 10% threshold is applied, only firms with foreign ownership exceeding 10% are included in the database. In the remainder of my paper these firms are defined as foreign owned firms. The two databases were then merged with Slovenian firms' financial data provided by AJPES (The Agency of the Republic of Slovenia for Public Legal Records and Related Services) using firm identifiers. The full merged database contains roughly 30000 firms on average for each year in the studied period. Firms simultaneously having negative capital and zero employees were identified as inactive and excluded. The linked data provides us with the information needed to determine firm characteristics, including total factor productivity (TFP), the nationality of firms' owners, characteristics of its workers and, additionally, the workers' recent professional

histories. As already stated, my study focuses on the effects of knowledge brought by workers with previous experience at foreign owned firms on domestic SMEs' productivity growth. According to the findings of Keller & Yeaple (2009) small firms benefit more in terms of FDI spillovers than larger firms. One possible explanation for this result may be that small firms have less money available for their own R&D activities and are consequently more reliant on other sources of TFP growth. In light of the conclusion by Keller & Yeaple (2009) it seems reasonable to focus on SMEs, since the effects of spillovers may be relatively more important for them than for larger firms.

Table 21 shows some basic summary statistics for foreign owned firms and domestic SMEs. The data in the table reveal that the number of domestic SMEs grew by 35% in the 2002 to 2010 period, from 23,740 to 32,002. The number of foreign owned firms on the other hand increased by only 8% between 2002 and 2010, peaking in 2008 with 1751 foreign owned firms.

Table 21: Descriptive statistics for domestic SMEs and foreign firms from 2002 to 2010

Year	No. of domestic SMEs	No. of foreign owned firms	No. of workers at domestic SMEs	No. of workers at foreign owned firms	No. of switchers*	No. of switchers with h.e.**
2002	23,740	1,514	301,978	64,207	1,573	685
2003	24,397	1,483	303,717	59,146	2,615	842
2004	25,223	1,512	297,381	60,495	2,643	1,046
2005	26,314	1,585	300,046	67,304	3,265	1,154
2006	27,352	1,537	297,557	63,302	4,130	1,367
2007	28,911	1,638	254,816	73,019	4,563	1,746
2008	30,587	1,751	266,434	78,975	4,759	1,895
2009	31,358	1,737	257,357	73,142	3,582	1,435
2010	32,002	1,634	250,285	72,935	3,858	1,619

Notes: *Switchers are defined as workers who switched jobs from foreign owned firms to domestic SMEs
**h.e. stands for higher education

Source: Own calculations

On average the number of domestic SMEs was roughly 17 times the number of foreign owned firms during the period in question. The number of workers that domestic SMEs employed, on the other hand, dropped from 301,978 in 2002 to 250,285 in 2010, or by 17%. Since the number of SMEs increased during the period, whereas the number of workers they employed decreased, it seems, that the SMEs have become smaller on average in terms of employees. The number of workers at foreign owned firms, on the other hand, increased by roughly 14% in the period, peaking at 78,975 in 2008. On average domestic SMEs employed about four

times more people than foreign owned firms between 2002 and 2010. This indicates, that foreign owned firms are considerably larger on average when compared to domestic SMEs. The first necessary, but not sufficient condition for the emergence of productivity spillovers via worker mobility is of course the existence of worker flows. The data in Table 21 show that the number of workers who switched jobs from foreign owned firms to domestic SMEs (switchers) in a given year, increased from 1573 in 2002 to 3858 in 2010. The number of switchers peaked in 2008, when it reached triple the number from 2002. Similar conclusions can be drawn when describing developments in the number of switchers with higher education. On average the share of switchers with higher education in the total number of switchers is 38%.

Table 22 presents the number of domestic SMEs employing at least 1 new switcher from a foreign owned firm in a given year. As can be seen from the table, the annual number of SMEs employing at least one new switcher, has more than doubled, when comparing 2002 with 2010. On average the number of SMEs employing new switchers represents roughly 7% of all domestic SMEs.

Table 22: Number of SMEs employing at least one worker, who switched from a foreign firm, in a given year

Year	No. of SMEs
2002	959
2003	1,388
2004	1,571
2005	1,848
2006	2,136
2007	2,528
2008	2,697
2009	2,032
2010	2,006

Source: Own calculations

Further summary statistics, presented separately for domestic SMEs and foreign owned firms, are reported in Table 23. The data indicate that on average there is not much age difference between domestic SMEs and foreign owned firms, while other indicators exhibit significant gaps. As can be seen, the average export share for domestic SMEs is 8.43%, whereas for foreign owned firms it is 32.34%. Foreign owned firms tend to be bigger, on average employing four times as many people as domestic SMEs. The latter lag behind foreign owned firms in terms of value added per employee as well as capital intensity. Capital intensity is 3.1

times higher with foreign owned firms compared to domestic SMEs, whereas value added per employee is 1.6 times higher. Foreign owned firms also employ a higher share of highly educated workers. In domestic SMEs, workers with higher education on average represent 21.4% of the total workforce, compared to 32.5% in foreign owned firms. Further, another indicator crucial for my study is TFP, which is my chosen measure of productivity. The existence of a gap in terms of TFP between foreign owned firms and domestic SMEs would imply that there is potential for productivity spillovers to take place. As can readily be calculated using data in Table 23, TFP is 80% higher for foreign owned firms than for domestic SMEs. Based on summary statistics at hand, we can therefore conclude, that the potential for productivity spillovers from foreign owned firms to domestic SMEs indeed exists.

Table 23: Descriptive statistics for foreign owned and domestic firms 2002-2010

	Domestic SMEs		Foreign owned firms	
Variable	Mean	s.d.	Mean	s.d.
Age	9.98	6.62	9.13	6.64
Export share (%)	8.43	21.86	32.34	38.69
Employment	10.26	41.45	42.30	160.22
Value added per employee (EUR)	25,611.7	162,683	40,997.6	345,742.6
Capital intensity (EUR)	123,987.1	4,520,724	390,534.2	1.43e+7
Share of highly educated employees (%)	21.38	33.49	32.54	33.87
TFP[10]	9.18	35.61	16.54	88.81

Source: Own calculations

I have decided to conduct my analysis separately for SMEs in the service sector and for SMEs in the manufacturing sector, since the nature of the work process in the two groups of firms is very different. In order to enable comparison between service and manufacturing SMEs, Table 24 presents summary statistics for both sets of firms separately. As can be seen from Table 24, service SMEs tend to be slightly younger on average. For manufacturing SMEs, the average export share amounts to 16.12%, whereas for service SMEs it is only 6.81%. This can of course be explained by the fact that some services cannot be exported, as well as the fact that barriers for international trade with services are greater than barriers for trade in goods. On average service firms employ 7.61 workers, whereas manufacturing firms on average

[10] The methodology behind TFP calculation is described in section 3.

employ 23.29 workers. Value added per employee seems to be slightly higher for the service sector. Surprisingly, capital intensity turns out to be greater for service firms than for manufacturing firms. This, however, may be a consequence of the way I defined capital intensity. Namely, my definition of capital includes all firm fixed assets, tangible as well as intangible. Further, in service SMEs the average share of employees with higher education is 23.3% which is roughly double the share for manufacturing SMEs. Finally, on average service firms have a slightly lower TFP.

Table 24: Descriptive statistics for domestic SMEs in service and manufacturing sector in the period from 2002 to 2010

	Service SMEs		Manufacturing SMEs	
Variable	Mean	s.d.	Mean	s.d.
Age	9.61	6.38	11.38	7.08
Export share (%)	6.81	20.00	16.12	27.87
Employment	7.61	32.89	23.29	70.32
Value added per employee (EUR)	25,756.9	171,394.8	24,419.5	72,902.0
Capital intensity (EUR)	124,143.5	3,082,028	62,217.6	543,940.1
Share of highly educated employees (%)	23.31	35.01	11.62	22.22
TFP	9.15	37.13	9.93	16.91

Source: Own calculations

3.3. Methodology and empirical analysis

The empirical models of firm growth I used include some factors proposed by models of firm dynamics (e.g., Ericson & Pakes, 1995; Jovanovic, 1982): firm age, firm size, capital intensity, annual dummies and industry dummies. I then further enhance them by adding some specific variables that I find important for this particular case. The models are specified as follows:

$$\begin{aligned} grTFP_{it} &= \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFrHE_{it-2} + \beta_5 \ln Age_{it} + \\ &+ \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\,\mathrm{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} + \\ &+ \beta_{11} ShNwHE_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it} \end{aligned} \quad (1)$$

$$grTFP_{it} = \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFr_{it-2} + \beta_5 \ln Age_{it} + \\ + \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\text{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} + \\ + \beta_{11} ShNw_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it} \quad (2)$$

$$grTFP_{it} = \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFrSs_{it-2} + \beta_5 \ln Age_{it} + \\ + \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\text{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} + \\ + \beta_{11} ShNwSs_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it} \quad (3)$$

$$grTFP_{it} = \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFrDs_{it-2} + \beta_5 \ln Age_{it} + \\ + \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\text{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} + \\ + \beta_{11} ShNwDs_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it} \quad (4)$$

The first model is used to test for the effects of employing highly educated workers with immediate prior work experience in a foreign owned firm, on company TFP growth. The second model, on the other hand, is used to test for the effects of employing workers with immediate prior work experience in a foreign owned firm in general, regardless of their education, on firm TFP growth. The third model is further used to test for the effects of employing workers with immediate prior work experience in a foreign owned firm from the same sector and the fourth model focuses on the case when the foreign owned firm is located in a different sector.

The dependent variable in all cases is therefore growth of TFP. When calculating TFP via production function estimation, one needs to account for simultaneity bias. As noted by Marschak and Andrews (1944), the amounts of inputs in the production function are not exogenous. Among other things, they depend on the efficiency of the firm which is a consequence of firm-level profit maximization. Simultaneity bias arises because of correlation between unobserved productivity shocks and the level of inputs chosen (De Loecker, 2007). A firm may have prior knowledge of the productivity shock unobservable to the econometrician and adapt input choices accordingly (Olley & Pakes, 1996). In order to account for this problem I decided to follow the approach developed by Levinsohn & Petrin (2003). Using the Stata levpet procedure, I selected fixed assets as a proxy for capital, labour costs as a proxy for labour and energy costs as a proxy for intermediate inputs. TFP was estimated separately for the manufacturing, service, and agricultural sectors. The revenue version of the production function was chosen as the basis of my estimation.

In the model, Age represents a firm's age, $Empl$ is firm size, which is defined as the number of employees in a firm, and $K\text{int}$ represents capital intensity. The latter was defined as fixed assets per employee. $dExporter$ is a dummy variable, that tells us whether a company engages

in export activities, and *ShHE* denotes the share of employees with higher education in a firm. *dyear* and *dindustry* refer to year and industry dummies. The latter are based on Nace Rev.2 two-digit level classification. *TFP*, *Age* , *Empl* and *K* int enter the empirical models in logarithmic values. In case of *Empl*, *K* int, *dExporter* and *ShHE* first lags are used. Further, for TFP, the first, the second and the third lag are included into the regression.

ShFrHE is my main variable of interest in the first model, as it represents highly educated employees with immediate prior working experience at a foreign firm. It is structured as follows:

$$ShFrHE = \frac{NwFrHE}{NoEmpl}$$

where $NwFrHE$ is the number of highly educated workers with immediate prior working experience at a foreign owned firm, employed by the company in the current and previous year, and $NoEmpl$ is the number of all employees in the firm. The second lag of $ShFrHE$ was used in the model. In order to check whether employing new highly educated workers (without immediate prior experience in a foreign owned firm) alone enhances TFP growth, I included a control variable, $ShNwHE$. The latter is defined as the share of highly educated workers employed by the firm in the current or previous year in the total number of company employees. Again, the second lag of the variable was used.

In the second model my main variable of interest is *ShFr* . It is defined as

$$ShFr = \frac{NwFr}{NoEmpl}$$

where $NwFr$ is the number of all workers with immediate prior working experience at a foreign owned firm, regardless of their education, employed by the company in the current and previous year. As in the first model, the second lag of the core variable was used. Since the latter was changed with respect to the first model, the control variable also needed to be adjusted. The control variable constructed for the second model, *ShNw*, thus encompasses the share of all workers employed by the firm in the current and previous year in the total number of company employees.

Further, in the third model my main variable of interest is *ShFrSs* . It is defined as

$$ShFrSs = \frac{NwFrSs}{NoEmpl}$$

where *NwFrSs* is the number of all workers with immediate previous working experience at a foreign owned firm from the same sector, employed by the company in the current and previous year. Again, the second lag of the core variable was used. The control variable constructed for this case is *ShNwSs*. It encompasses the share of all workers employed by the firm in the current and previous year, who previously worked in the same sector, in the total number of company employees.

Finally, the main variable of interest in the fourth model is *ShFrDs*. It is defined as

$$ShFrDs = \frac{NwFrDs}{NoEmpl}$$

where *NwFrDs* is the number of all workers with immediate previous working experience at a foreign owned firm from a different sector, employed by the company in the current and previous year. As before, the second lag of the core variable was used. The control variable included in the last model is *ShNwDs*. It encompasses the share of all workers employed by the firm in the current and previous year, who previously worked in a different sector, in the total number of company employees.

Due to the dynamic nature of my empirical model and the fact that my panel consists of a large number of firms and a small number of time periods, I used the system GMM estimator developed by Arellano & Bover (1995) and Blundell & Bond (1998). As can be seen from the model specification equations, three lags of the dependent variable were used as instruments. Further, all regressors listed in the model specification equations, except firm age, industry dummies and annual dummies enter the model flagged as endogenous variables.

3.4. Results

In this section, I first present the base line results obtained by estimating models (1), (2), (3) and (4) using the system GMM estimator. In the next step, I proceed with presenting secondary results, which serve as a robustness check.

3.4.1 Main results

Table 25 gives my base line results for service SMEs. In columns (1), (2), (3), and (4) I report results obtained by estimating models (1), (2), (3), and (4) respectively. The null hypothesis of the Wald test is rejected for all model specifications. The Sargan test of over-identifying restrictions confirms the validity of instruments used in models (1), (2), (3), and (4). Further,

Arellano–Bond test for serial correlation confirms the absence of a serial correlation of order 2 for all model specifications. Three lags of the dependent variable in the specification were found to be appropriate in order to yield efficient estimates.

In Table 25, the coefficient on the first lag of the dependent variable is negative and statistically significant for all four specifications. In the case of model (1) it amounts to approximately -0.24, which implies that a 1 percent increase in TFP growth in the previous year leads to a 0.24 percent decrease in TFP growth in the current period. The first lag coefficients for the remaining models are very similar in size. Further, the second lag coefficients are negative and statistically significant for all models, but smaller in absolute terms than first lag coefficients: -0.075 for model (1), -0.084 for model (2), -0.082 for model (3), and -0.076 for model (4). The statistical insignificance of the third lag coefficients implies that the persistence effect fades within a 3-year period.

Table 25: Spillover effects in Slovenian service SMEs, base line results

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
grTFP(-1)	-0.239***	-0.244***	-0.245***	-0.241***
	(0.0204)	(0.0202)	(0.0203)	(0.0204)
grTFP(-2)	-0.0745***	-0.0838***	-0.0816***	-0.0760***
	(0.0193)	(0.0195)	(0.0192)	(0.0191)
grTFP(-3),	-0.0151	-0.0172	-0.0151	-0.0138
	(0.0136)	(0.0139)	(0.0136)	(0.0135)
lnEmpl(-1)	0.144**	0.156**	0.147**	0.164**
	(0.0600)	(0.0627)	(0.0614)	(0.0636)
$lnEmpl^2$ (-1)	-0.0410***	-0.0438***	-0.0392***	-0.0433***
	(0.0143)	(0.0160)	(0.0152)	(0.0158)
lnKint(-1)	-0.0149	-0.0130	-0.0160	-0.0119
	(0.0135)	(0.0129)	(0.0144)	(0.0124)
dExporter (-1)	0.180***	0.170**	0.172**	0.188***
	(0.0675)	(0.0710)	(0.0800)	(0.0676)
ShHE(-1)	0.00142*	0.000581	0.000544	0.000445
	(0.000854)	(0.000754)	(0.000820)	(0.000755)
ShFrHE (-2)	0.423*			
	(0.218)			
ShNwHE(-2)	-0.113*			
	(0.0578)			

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VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
lnAge	0.0754	0.0122	0.0795	0.140**
	(0.0566)	(0.0448)	(0.0517)	(0.0558)
ShFr(-2)		0.397***		
		(0.106)		
ShNw(-2)		-0.0804***		
		(0.0263)		
ShFrSs(-2)			0.379**	
			(0.187)	
ShNwSs(-2)			-0.133**	
			(0.0670)	
ShFrDs(-2)				0.384***
				(0.122)
ShNwDs(-2)				-0.0558
				(0.0370)
Constant	-9.872	-0.815	-19.75	-2.074
	(27.78)	(12.97)	(37.12)	(10.69)
Observations	35,352	35,352	35,352	35,352
Number of n7	12,317	12,317	12,317	12,317
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
(df)	(66)	(66)	(66)	(66)
Wald χ^2	1157.4***	95960.4***	8406.5***	15439.02***
(df) Sargan χ^2	(100) 110.00	(100) 105.48	(100) 105.37	(100) 104.56
(p)	(0.23)	(0.33)	(0.34)	(0.36)
AR(1) z(p)	-17.063(0.00)	-17.011(0.00)	-16.989(0.00)	-17.027(0.00)
AR(2) z(p)	-0.917(0.36)	-0.812(0.42)	-0.843(0.40)	-0.860(0.39)

Notes: z-statistics are in parentheses, *** ,**, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

All four sets of estimates imply that firm size has a non-monotonic effect on service firms' TFP growth. This means that TFP growth increases with firm size when companies are small, however, at a certain point, the correlation becomes negative and productivity growth starts decreasing with size. One part of the explanation likely stems from the fact that, generally, larger firms are more productive than smaller ones. In turn, big productivity leaps are much harder to achieve for firms operating at high levels of productivity to start with, than for firms

that have much space for improvement. Further, my results for the first three models show no evidence of a significant impact of age on TFP growth, whereas the estimated coefficient for age is positive and significant in the fourth model. Additionally, the effect of capital intensity on TFP growth is statistically insignificant in all versions of the specification. A partial explanation for this result may perhaps be found in conclusions obtained by Zajc Kejžar & Ponikvar (2014). They suggest that capital intensity is important for TFP growth only in case of least productive firms, but not for those achieving higher levels of productivity. In line with my expectations, exporting firms seem to grow faster in terms of TFP than firms engaging in domestic sales only. Further, the share of workers with higher education, which is a proxy for the skill structure of labour, has a statistically significant positive effect on TFP growth according to results for model (1), but not according to results for models (2), (3), and (4). Finally, and most importantly, estimates for my main variables of interest, *ShFrHE*, *ShFr*, *ShFrSs* and *ShFrDs* confirm the existence of knowledge spillovers through worker mobility. Positive and statistically significant coefficient for variable *ShFr* obtained by estimating model (2) implies that knowledge spillovers indeed occur through mobility of workers with experience from a foreign owned firm. The negative and statistically significant coefficient for the control variable *ShNw* shows that the knowledge spillovers detected are not a result of an increase in the share of newly hired workers alone. Further, in line with my expectations given the results pertaining to model (2), estimates for model (1), that focuses on the mobility of highly educated workers with experience from foreign owned firms, also confirm the existence of productivity spillovers. The results show that the share of workers with higher education and immediate previous working experience at a foreign owned firm, newly employed by the firm within the current and previous year, positively and significantly influences firm TFP growth. In addition to that, the coefficient for the control variable *ShNwHE* is negative and statistically significant which means that an increase in the share of newly employed workers with higher education per se cannot be considered a driver behind TFP growth. Finally, the positive and statistically significant coefficients for variables *ShFrSs* and *ShFrDs* in models (3) and (4) respectively, indicate that the share of workers with immediate previous working experience at a foreign firm from either same or different sector, newly employed by the firm within the current and previous year, positively and significantly influences firm TFP growth. I can therefore conclude that, workers' experience in foreign owned firms indeed plays a role as a driver behind service SMEs TFP growth. The negative and statistically significant coefficients for *ShNw*, *ShNwHE* and *ShNwSs* may perhaps seem unintuitive at first glance. However, one possible explanation for this phenomenon is that firms employing more new workers may also have a greater turnover when it comes to their workforce. Greater fluctuation of workers could have a negative effect on TFP growth.

Table 26 presents my core results for manufacturing SMEs. Again columns (1), (2), (3), and (4) report results obtained by estimating models (1), (2), (3), and (4) respectively.

Table 26: Spillover effects in Slovenian manufacturing SMEs, base line results

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
grTFP(-1)	-0.214***	-0.214***	-0.210***	-0.219***
	(0.0345)	(0.0350)	(0.0345)	(0.0345)
grTFP(-2)	-0.0858***	-0.0857***	-0.0833***	-0.0904***
	(0.0315)	(0.0327)	(0.0319)	(0.0323)
grTFP(-3)	-0.0162	-0.0103	-0.00877	-0.0138
	(0.0213)	(0.0216)	(0.0218)	(0.0221)
lnEmpl(-1)	0.0662	0.0478	0.0347	0.0476
	(0.0922)	(0.0843)	(0.0868)	(0.0863)
$lnEmpl^2$ (-1)	-0.0137	-0.0106	-0.00315	-0.00863
	(0.0206)	(0.0174)	(0.0192)	(0.0195)
lnKint(-1)	0.0215	0.000828	0.00528	0.00122
	(0.0247)	(0.0264)	(0.0292)	(0.0261)
dExporter (-1)	0.0109	-0.00410	0.0245	-0.00125
	(0.0682)	(0.0620)	(0.0695)	(0.0665)
ShHE(-1)	0.00106	0.000319	8.77e-05	0.000203
	(0.00147)	(0.00155)	(0.00171)	(0.00168)
ShFrHE (-2)	-0.0874			
	(0.610)			
ShNwHE (-2)	-0.207*			
	(0.115)			
lnAge	0.213**	0.162**	0.196**	0.235***
	(0.0889)	(0.0685)	(0.0815)	(0.0774)
ShFr(-2)		0.254		
		(0.165)		
ShNw(-2)		-0.0232		
		(0.0392)		
ShFrSs(-2)			0.277	
			(0.422)	
ShNwSs(-2)			-0.0652	
			(0.114)	

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VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
ShFrDs(-2)				0.262
				(0.187)
ShNwDs(-2)				-0.0353
				(0.0636)
				(8.492)
Constant	-3.271	-5.198	-0.741	-1.362
	(6.950)	(6.786)	(8.839)	(2.017)
Observations	8,692	8,692	8,692	8,692
Number of n7	3,018	3,018	3,018	3,018
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
(df)	(36)	(36)	(36)	(36)
Wald $\chi 2$	447.63***	736.08***	699.13***	883.94***
(df) Sargan $\chi 2$	(105) 132.09	(105)126.17	(105) 121.23	(105) 125.52
(p)	(0.04)**	(0.08)*	(0.13)	(0.08)*
AR(1) z(p)	-3.29(0.00)	-3.31(0.00)	-3.33(0.00)	-3.31(0.00)
AR(2) z(p)	-0.58(0.56)	-0.51(0.61)	-0.62(0.53)	-0.47(0.64)

Notes: z-statistics are in parentheses, *** ,**, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

As in the case of service SMEs, the Wald test rejects the joint insignificance of the independent variables for all model specifications, whereas the Arellano–Bond test for serial correlation shows there is no serial correlation of order 2. Again, three lags of the dependent variable in the specification were found to be appropriate in order to yield efficient estimates. However, all specifications except (3) fail to pass the Sargan test of over-identifying restrictions, which rejects the null hypothesis that the moment conditions are legitimate. Further, the statistical insignificance of the majority of coefficients may also imply that the given model specifications are not entirely suitable for the case of manufacturing firms. However, estimation results for coefficients pertaining to lags of the dependent variable are still in line with results obtained for service firms. The coefficients for the first and second lag are negative and statistically significant for all versions of model specification, whereas the coefficient pertaining to the third lag is already statistically insignificant. In contrast to my results for service SMEs, the estimated coefficient for firm age is significant (and positive) in

all models. However, variables testing for the presence of spillovers through worker mobility *ShFrHE*, *ShFr*, *ShFrSs* and *ShFrDs* in models (1), (2), (3), and (4) respectively, all have statistically insignificant coefficient estimates. The results obtained by estimating the empirical models (1), (2), (3), and (4) using data on manufacturing SMEs are therefore largely inconclusive.

3.4.2 Robustness check

In this subsection I provide a robustness check for my base line results presented in subsection 4.1. Since meaningful results were only obtained estimating models (1), (2), (3) and (4) using data on service SMEs, I will not further elaborate on the auxiliary set of results for manufacturing SMEs. However, the latter can be found in the Appendix B. In order to test the robustness of results presented in Table 25, I reformulate my main variables of interest *ShFrHE*, *ShFr*, *ShFrSs* and *ShFrDs* by extending the time period during which new employments are included into the analysis from two years to three years. Namely, the shares now include newly employed workers in the current and two previous years. Consequentially, the control variables for each model are modified in the same way.

Table 27 gives results obtained by estimating model specifications (1), (2), (3), and (4) modified by using the reformulated core and control variables. Results for modified specifications (1), (2), (3), and (4) are presented in columns (1), (2), (3), and (4) respectively.

In line with my base line results, the null hypothesis of the Wald test is rejected for all model specifications. Sargan test of over-identifying restrictions again confirms the validity of moment conditions in all cases. The Arellano–Bond test for serial correlation confirms the absence of a serial correlation of order 2 for all four specifications. Three lags of the dependent variable in the specification are once again found to be appropriate in order to obtain efficient estimates. Coefficient estimates for lags of the dependent variable, firm size and dummy variable identifying exporters are quite close to initial results for service SMEs. Again, capital intensity seems to have no significant effect on TFP growth, which is in line with base line results, with the exception of model (2) where the coefficient estimate for capital intensity is negative and statistically significant. The estimated coefficient for firm age is statistically significant only in specification (3), whereas with base line results it was significant only with specification (4). All four sets of results imply that the share of employees with higher education has no statistically significant effect on firm TFP growth. This is generally in line with the base line results, with the exception of specification (1), where the coefficient for *ShHE* proved to be positive and statistically significant.

When it comes to my main variables of interest, the results show that estimated coefficients for *ShFr*, *ShFrSs* and *ShFrDs* are statistically insignificant. This means that the results

obtained failed to confirm the existence of productivity spillovers due to mobility of workers with recent experience at a foreign firm in general, at a foreign firm from the same sector or different sector. However, results obtained for model (1) once again confirm the existence of knowledge spillovers through mobility of highly educated workers from foreign owned firms to domestic SMEs. One possible explanation for this outcome is that sophisticated knowledge brought into the firm by workers with higher education has a more persistent effect on TFP growth, whereas the effect of less sophisticated knowledge attributed to the general population of workers fades away more quickly. Further, according to results in columns (1), (2), (3), and (4), control variables have no significant effect on TFP growth.

Table 27: Spillover effects in Slovenian service SMEs, robustness check

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
grTFP(-1)	-0.243***	-0.246***	-0.242***	-0.244***
	(0.0205)	(0.0205)	(0.0210)	(0.0205)
grTFP(-2)	-0.0771***	-0.0768***	-0.0791***	-0.0773***
	(0.0192)	(0.0192)	(0.0195)	(0.0193)
grTFP(-3)	-0.0159	-0.0140	-0.0122	-0.0141
	(0.0136)	(0.0138)	(0.0137)	(0.0135)
lnEmpl(-1)	0.148**	0.145**	0.160**	0.162***
	(0.0602)	(0.0585)	(0.0682)	(0.0617)
$lnEmpl^2$ (-1)	-0.0423***	-0.0397***	-0.0429**	-0.0421***
	(0.0147)	(0.0135)	(0.0174)	(0.0144)
lnKint(-1)	-0.0162	-0.0212*	-0.0154	-0.0194
	(0.0148)	(0.0127)	(0.0141)	(0.0135)
dExporter (-1)	0.204***	0.181***	0.187***	0.182***
	(0.0683)	(0.0621)	(0.0684)	(0.0653)
ShHE (-1)	0.00123	0.000362	0.000372	0.000388
	(0.000847)	(0.000702)	(0.000829)	(0.000732)
ShFrHE(-2)	0.786*			
	(0.401)			
ShNwHE(-2)	-0.0851			
	(0.0575)			
lnAge	0.100	0.0476	0.146**	0.113
	(0.0628)	(0.0603)	(0.0592)	(0.0729)
ShFr(-2)		0.125		
		(0.122)		

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VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
ShNw(-2)		-0.0238		
		(0.0208)		
ShFrSs(-2)			-0.0723	
			(0.290)	
ShNwSs(-2)			0.0120	
			(0.0568)	
ShFrDs(-2)				0.159
				(0.154)
ShNwDs(-2)				-0.0190
				(0.0442)
Constant	-9.410	15.29	-18.13	5.582
	(31.93)	(17.32)	(35.63)	(20.89)
Observations	35,352	35,352	35,352	35,352
Number of n7	12,317	12,317	12,317	12,317
Year dummies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
(df)	(66)	(66)	(66)	(66)
Wald $\chi 2$	2088.30***	2739.74***	11533.74***	1274.44***
(df) Sargan $\chi 2$	(92) 101.35	(92) 104.76	(92) 107.58	(92)103.10
(p)	(0.24)	(0.17)	(0.13)	(0.20)
AR(1) z(p)	-17.10 (0.00)	-17.07(0.00)	-17.00(0.00)	-17.07(0.00)
AR(2) z(p)	-0.96(0.34)	-0.94(0.35)	-0.84(0.40)	-0.93(0.35)

Notes: z-statistics are in parentheses, ***, **, * denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

3.5. Concluding remarks

The paper tests for potential productivity spillovers arising through worker mobility from foreign owned firms to domestic SMEs. Generally, research on spillover effects through worker mobility is relatively scarce due to only recent emergence of linked employer-employee databases. To my knowledge, no such study has yet been done for Slovenia. In contrast to previous research I analyse data for service and manufacturing sectors separately. I estimate the impact of knowledge brought by new workers with experience from foreign owned firms on domestic SMEs' TFP growth using Slovenian data covering the period from 2002 to 2010. Since my empirical model is dynamic in nature and my panel consists of a

small number of time periods and a large set of firms, I conduct my analysis using the GMM estimator developed by Arellano & Bover (1995) and Blundell & Bond (1998). My results confirm the existence of spillover effects in the service sector. I find robust evidence in support of the hypothesis that flows of highly educated workers from foreign owned firms to domestic SMEs boost total factor productivity growth of domestic service SMEs. There is also some indication that hiring new workers with experience from foreign owned firms in general, as well as hiring new workers coming from foreign owned firms in the same or different sector, has a positive effect on service SMEs' TFP growth. However, these results are not robust when the period in which new employments are accounted for is prolonged. One possible explanation for this outcome is that sophisticated knowledge brought into the firm by workers with higher education has a more persistent effect on TFP growth, whereas the effect of less sophisticated knowledge attributed to the general population of workers fades away more quickly. This finding is also in line with Poole (2013), who concludes that higher skilled former multinational workers are better able to transfer knowledge to domestic firms than less skilled ones. Analyses done for the manufacturing sector, on the other hand, provides no conclusive evidence.

The findings of this paper bear important policy implications. For starters, they may represent an additional incentive for greater effort in terms of FDI promotion policy. Perhaps making the labour market in Slovenia more flexible would also be a path worth considering in light of these results. The current legislation in Slovenia offers strong protection to the employees with permanent work contract. Hence, it is hard for firms to lay off workers. As a consequence, they consider every new employment very carefully. From the job seekers' perspective that makes it harder to get a new job. If the job market was more flexible, more people would consider leaving the safety of their current job and move to another employer, potentially enabling knowledge spillovers.

The work done opens a lot of new interesting questions for further research. For example, although the results of this paper indirectly confirm the existence of absorptive capacity for the Slovenian SMEs, it would be interesting to test for it directly. Further, it would be possible to test whether the spillovers coming from the same sector effect the intensity of competition and market structure in this sector. The impact of spillovers on market concentration in the presence of endogenous sunk costs was for example studied by Senyuta & Žigić (2016), using a theoretical model. On the other hand, the existence of spillovers may induce protective measures by the source firms (intellectual property protection, higher wages, special contracts etc.) The behaviour of firms in the presence of spillovers was for example analysed by Gersbach & Schmutzler (2003), Zabojnik (2002) as well as Senyuta & Žigić (2016) using theoretical framework. It would, however, be interesting to explore these issues empirically, as an extension of the research presented in this paper. Finally, it would also be intriguing to repeat the study described in this paper for the data pertaining to the financial crisis period.

CONCLUSION

The main aim of this doctoral dissertation is to explore the role of worker mobility for the process of knowledge and technology transfer from the mother company to the affiliate in the host economy and its further dispersion among incumbent firms. Further, the factors influencing skilled foreign worker mobility itself are analysed. We conduct our research using a linked employer-employee dataset, covering the whole population of firms operating in Slovenia in the period from 2002 to 2010.

The goal of the first paper pertaining to this dissertation is to analyse the causal relationship between worker mobility and knowledge transfer to the host economy. Or, to put it differently, to establish whether firms experiencing inward FDI combined with employment of skilled foreign workers perform better in terms of productivity growth than firms undergoing inward FDI alone and their domestic peers employing solely domestic skilled workers. There are two possible reasons as for why hiring skilled foreign workers may positively impact foreign owned firms' TFP growth: i) they may facilitate the process of knowledge transfer between the mother company and the affiliate ii) they may bring knowledge complementary to that of domestic workers (Lazear, 1999; Malchow-Møller et al., 2011).

To identify the role of worker mobility for knowledge transfer from abroad, we need to identify causal effects of multiple treatments (i.e. inward FDI and inward FDI combined with skilled migrant worker employment). To deal with the likely non-randomness of the two treatments we follow the approach by Arnold & Javorcik (2009) based on a combination of propensity score matching and difference-in-differences methods and extend it to multiple treatments.

Our results suggest that inward FDI combined with employment of foreign skilled workers (especially PCN managers) results in a temporary increase in TFP growth, which is in turn translated into a higher TFP level. They are therefore very much in line with the findings by Inzelt (2008) who suggested in her study of Hungary that initial temporary mobility of foreign managers (1 to 2 years after the FDI entry) led to "one-off" transfer of knowledge to the local affiliate.

The second paper of this dissertation explores the factors which influence the decision by a multinational company on whether to appoint a foreign (PCN) manager or a host country national manager to lead a host country affiliate. Existing studies dealing with this topic are generally conducted based on the population or a sample of foreign firms. Consequently, they mainly explore firm and country specific factors impacting the staffing decision. Our study, on the other hand, is done based on the data for the entire population of firms operating in Slovenia, domestic as well as foreign owned. This enables us to extend the research to the

effects industry specific factors have on the likelihood of a foreign manager being appointed to the host country affiliate.

Our analysis provides robust evidence suggesting that firm size and export propensity have a positive impact on the likelihood that a foreign manager will be appointed to a foreign owned firm. Our results also suggest that average industry TFP of domestic firms has a negative effect on the probability of a foreign manager being hired. We further find robust evidence indicating that the absolute distance in the Hofstede's Power Distance dimension between the host country and the FDI country of origin has a negative effect on the likelihood that a foreign manager will be appointed. Finally, when it comes to regions of inward FDI origin, we used the old EU member states (EU15) as a benchmark for our analysis. After controlling for absolute distances between Slovenia and countries of inward FDI origin in terms of Hofstede's cultural dimensions, our results show that the owners coming from the Former Soviet Union and from the Middle East are more likely to appoint a foreign manager than the owners coming from the old EU member states (EU15).

The third paper tests for potential productivity spillovers arising through worker mobility from foreign owned firms to domestic SMEs. Generally, research on spillover effects through worker mobility is relatively scarce since linked employer-employee databases required to conduct such an analysis became available only recently. Research on spillovers through worker mobility has, to my knowledge, not yet been done based on Slovenian data. As a contrast to the existing FDI spillover studies conducted for Slovenia, I analyse the data for both, the service as well as for the manufacturing sector. I find robust evidence in support of the hypothesis that flows of highly educated workers from foreign owned firms to domestic SMEs boost total factor productivity growth of domestic service SMEs.

The three papers bear important policy implications. Since foreign skilled workers seem to be an important factor for success of the knowledge transfer to the host economy, liberalisation of the skilled immigration regime may be a good point to start. Further, in light of evidence for spillovers through worker mobility taking place in Slovenia, it might be beneficial to consider actions aimed at making Slovenian labour market more flexible. Namely, the current legislation in Slovenia offers strong protection to the employees with permanent work contracts. Hence, it is hard for firms to lay off workers. Consequently, they consider every new employment very carefully. From the job seekers' perspective that makes it harder to get a new job. If the job market was more flexible, more people would consider leaving the safety of their current job and move to another employer, potentially enabling knowledge spillovers.

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APPENDICES

LIST OF APPENDICES

Appendix A: Chapter 1

Appendix A.1: Difference in differences results for baseline models with 100%, 150% and 200% foreign capital increase benchmarks including the covariate debt to asset

Table A.1.1: Difference in differences results for the series of binomial comparisons pertaining to the multinomial model considering employment of foreign managers including the covariate debt-to-asset

	Kernel matching and Diff - in - Diff		
	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 1 and group 0			
Baseline			
Control	0.058	-0.065	0.137
Treated	0.035	0.032	0.023
Diff (1-0)	-0.023 (0.080)	0.098 (0.082)	-0.113 (0.085)
Follow up			
Control	-0.081	0.015	-0.031
Treated	-0.037	-0.049	-0.041
Diff (1-0)	0.044 (0.089)	-0.064 (0.088)	-0.011 (0.096)
Diff - in - Diff	0.067 (0.120)	-0.161 (0.120)	0.103 (0.128)
No. of observ.	424	420	375
Balancing tests	2/19 covariates unbalanced	2/19 covariates unbalanced	4/19 covariates unbalanced
Binomial comparison between group 2 and group 0			
Baseline			
Control	0.171	-0.046	-0.004
Treated	0.057	0.017	0.040
Diff (2-0)	-0.115 (0.199)	0.064 (0.095)	0.045 (0.180)
Follow up			
Control	-0.227	0.048	0.049
Treated	0.242	0.237	0.241
Diff (2-0)	0.469** (0.193)	0.189* (0.097)	0.192 (0.184)
Diff - in - Diff	0.584** (0.277)	0.126 (0.136)	0.147 (0.258)
No. of observ.	186	640	203
Balancing tests	5/19 covariates unbalanced	5/19 covariates unbalanced	5/19 covariates unbalanced

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	Kernel matching and Diff - in - Diff		
	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 2 and group 1			
Baseline			
Control	0.063	0.098	0.110
Treated	0.078	0.044	0.070
Diff (2-1)	0.016 (0.079)	-0.054 (0.095)	-0.040 (0.093)
Follow up			
Control	-0.014	-0.016	-0.052
Treated	0.279	0.284	0.284
Diff (2-1)	0.294*** (0.081)	0.300*** (0.099)	0.335*** (0.098)
Diff - in - Diff	0.278** (0.113)	0.354** (0.137)	0.375*** (0.134)
No. of observ.	343	269	292
Balancing tests	1/19 covariates unbalanced	1/19 covariates unbalanced	All covariates balanced
Control variables: lnage, lnemp, ebitda, debt-to-asset, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parenthesses, ***,**,* denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

Table A.1.2: Difference in differences results for the series of binomial comparisons pertaining to the multinomial model considering employment of foreign experts including the covariate debt-to-asset

	Kernel matching and Diff - in - Diff		
	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 1 and group 0			
Baseline			
Control	-0.006	0.039	-0.016
Treated	0.065	0.050	0.045
Diff (1-0)	0.071 (0.074)	0.012 (0.080)	0.061 (0.091)
Follow up			
Control	-0.020	-0.037	-0.053
Treated	-0.027	-0.029	-0.023
Diff (1-0)	-0.007 (0.081)	0.008 (0.093)	0.030 (0.103)
Diff - in - Diff	-0.078 (0.110)	-0.003 (0.123)	-0.030 (0.137)
No. of observ.	436	394	358
Balancing tests	4/19 covariates unbalanced	5/19 covariates unbalanced	4/19 covariates unbalanced
Binomial comparison between group 2 and group 0			
Baseline			
Control	0.010	0.078	0.122
Treated	-0.066	-0.088	-0.071
Diff (2-0)	-0.076 (0.104)	-0.166* (0.091)	-0.193* (0.113)
Follow up			
Control	0.033	-0.004	0.047
Treated	0.124	0.042	0.071
Diff (2-0)	0.091 (0.109)	0.046 (0.095)	0.024 (0.125)
Diff - in - Diff	0.167 (0.150)	0.212 (0.132)	0.217 (0.168)
No. of observ.	200	174	170
Balancing tests	5/19 covariates unbalanced	3/19 covariates unbalanced	3/19 covariates unbalanced

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	Kernel matching and Diff - in - Diff		
	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 2 and group 1			
Baseline			
Control	-0.047	-0.053	0.003
Treated	-0.047	-0.060	-0.034
Diff (2-1)	-0.000 (0.097)	-0.008 (0.091)	-0.037 (0.096)
Follow up			
Control	-0.074	-0.256	-0.085
Treated	0.133	0.036	0.066
Diff (2-1)	0.208** (0.102)	0.292*** (0.096)	0.151 (0.103)
Diff - in - Diff	0.208 (0.140)	0.300** (0.132)	0.188 (0.141)
No. of observ.	162	204	167
Balancing tests	All covariates balanced	All covariates balanced	All covariates balanced
Control variables: lnage, lnemp, ebitda, debt-to-asset, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parenthesses, ***,**,* denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

Table A.1.3: Difference in differences results for the series of binomial comparisons pertaining to the multinomial model considering employment of parent country national managers including the covariate debt-to-asset

	Kernel matching and Diff - in - Diff		
	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 1 and group 0			
Baseline			
Control	0.169	-0.024	-0.087
Treated	0.060	0.036	0.033
Diff (1-0)	-0.109 (0.093)	0.059 (0.078)	0.120 (0.083)
Follow up			
Control	-0.043	-0.062	-0.171
Treated	-0.034	-0.048	-0.044
Diff (1-0)	0.009 (0.102)	0.014 (0.088)	0.127 (0.092)
Diff - in - Diff	0.118 (0.138)	-0.046 (0.117)	0.007 (0.124)
No. of observ.	490	456	423
Balancing tests	4/19 covariates unbalanced	4/19 covariates unbalanced	2/19 covariates unbalanced
Binomial comparison between group 2 and group 0			
Baseline			
Control	0.039	-0.028	0.264
Treated	0.055	0.047	0.149
Diff (2-0)	0.016 (0.138)	0.075 (0.129)	-0.115 (0.109)
Follow up			
Control	0.087	-0.081	0.022
Treated	0.500	0.411	0.510
Diff (2-0)	0.413*** (0.151)	0.493*** (0.137)	0.488*** (0.120)
Diff - in - Diff	0.397* (0.205)	0.418*** (0.188)	0.603*** (0.163)
No. of observ.	236	224	424
Balancing tests	2/19 covariates unbalanced	3/19 covariates unbalanced	3/19 covariates unbalanced

Continued...

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	Kernel matching and Diff - in - Diff		
	100% FDI increase benchmark	150% FDI increase benchmark	200% FDI increase benchmark
Binomial comparison between group 2 and group 1			
Baseline			
Control	-0.025	-0.029	0.021
Treated	0.055	0.017	0.055
Diff (2-1)	0.080 (0.114)	0.047 (0.117)	0.034 (0.123)
Follow up			
Control	-0.033	-0.054	-0.046
Treated	0.500	0.459	0.459
Diff (2-1)	0.533*** (0.121)	0.513*** (0.122)	0.505*** (0.129)
Diff - in - Diff	0.453*** (0.166)	0.466*** (0.169)	0.472*** (0.178)
No. of observ.	243	253	229
Balancing tests	All covariates balanced	All covariates balanced	All covariates balanced
Control variables: lnage, lnemp, ebitda, debt-to-asset, lnTFP, TFPGr, exp_share, ShHEemp, year, industry dummies (1-digit NACE)			

Notes: Standard errors are in parenthesses, ***,**,* denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

Appendix A.2: Balancing tests for propensity score matching baseline models with 200% foreign capital increase benchmark

Table A.2.1: Balancing test for the propensity score matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 200% foreign capital increase benchmark case

	Unmatched	Mean			%reduct	t-test		V(T)/
Variable	Matched	Treated	Control	%bias	bias	t	p>|t|	V(C)
lnage	U	1.6701	2.0605	-41.9		-10.38	0.000	1.48*
	M	2.1928	2.152	4.4	89.5	0.44	0.661	0.88
lnemp	U	2.1392	1.1073	63.8		15.87	0.000	1.75*
	M	3.2865	3.2882	-0.1	99.8	-0.01	0.991	0.82
ebitda	U	5.8e	1.2e	19.7		11.74	0.000	11.06*
	M	1.3e	1.2e	4.3	78.3	0.24	0.807	0.95
lnTFP	U	9.1025	8.9629	16.6		2.99	0.003	1.47*
	M	9.1871	9.1633	2.8	82.9	0.29	0.774	1.35
TFPGr	U	0.0363	0.01857	3.6		0.47	0.641	0.76*
	M	0.03778	0.03187	1.2	66.7	0.13	0.900	1.29
exp_share	U	0.28442	0.08	67.5		21.00	0.000	3.00*
	M	0.2916	0.28789	1.2	98.2	0.10	0.923	0.95
ShHEemp	U	35.402	24.114	33.0		6.93	0.000	0.99
	M	30.533	29.154	4.0	87.8	0.54	0.592	0.90
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.
dnace1_1	U	0.03507	0.04973	-7.3		-1.94	0.053	.
	M	0.05294	0.06471	-5.8	19.8	-0.46	0.646	.
dnace1_2	U	0.11125	0.07032	14.3		4.59	0.000	.
	M	0.19412	0.22941	-12.3	13.8	-0.79	0.427	.
dnace1_3	U	0.03144	0.02762	2.3		0.67	0.503	.
	M	0.01765	0.01176	3.5	-53.9	0.45	0.653	.
dnace1_4	U	0.45466	0.37683	15.8		4.61	0.000	.
	M	0.37059	0.32353	9.6	39.5	0.91	0.364	.
dnace1_5	U	0.08464	0.06519	7.4		2.26	0.024	.
	M	0.10588	0.11176	-2.2	69.8	-0.17	0.862	.
dnace1_6	U	0.12092	0.10139	6.2		1.86	0.063	.
	M	0.09412	0.11176	-5.6	9.7	-0.53	0.594	.
dnace1_7	U	0.13543	0.1358	-0.1		-0.03	0.975	.
	M	0.14118	0.14118	0.0	100.0	0.00	1.000	.

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Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
dnace1_8	U	0.0133	0.10224	-38.8		-8.44	0.000	.
	M	0.00588	0	2.6	93.4	1.00	0.318	.
dnace1_9	U	0.00726	0.06148	-30.1		-6.49	0.000	.
	M	0.01765	0.00588	6.5	78.3	1.00	0.316	.
year	U	2006	2006.1	-6.6		-2.20	0.028	0.57*
	M	2006.5	2006.5	0.3	96.1	0.03	0.975	0.96

*if variance ratio outside [0.90; 1.11] for U and [0.74;1.35] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.108	278.13	0.000	23.2	16.2	118.1*	0.91	89
Matched	0.009	4.22	0.997	3.9	3.8	22.3	1.26	0

*if B>25%, R outside [0.5; 2]

Table A.2.2: Balancing test for the propensity score matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 200% foreign capital increase benchmark case

Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
lnage	U	1.9525	2.0509	-10.9		-0.72	0.470	1.31
	M	2.2785	2.5106	-25.7	-135.9	-0.83	0.410	1.07
lnemp	U	2.4599	1.0569	81.1		6.28	0.000	2.24*
	M	3.5128	3.8244	-18.0	77.8	-0.52	0.608	0.45
ebitda	U	9.4e	1.1e	45.3		7.03	0.000	8.45*
	M	1.7e	2.6e	-50.9	-12.2	-0.74	0.466	0.18*
lnTFP	U	9.367	8.9513	61.3		2.68	0.007	0.53*
	M	9.3638	9.481	-17.3	71.8	-0.47	0.645	0.38*
TFPGr	U	0.04014	0.0128	6.0		0.23	0.820	0.37*
	M	0.05102	0.08014	-6.4	-6.5	-0.24	0.811	0.61
exp_share	U	0.2343	0.0808	55.1		4.56	0.000	2.35*
	M	0.34814	0.41646	-24.5	55.5	-0.56	0.582	0.93
ShHEemp	U	34.772	23.708	33.8		1.94	0.052	0.79
	M	41.231	37.675	10.8	67.9	0.41	0.682	0.60

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Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.
dnace1_1	U	0.03571	0.05133	-7.6		-0.65	0.517	.
	M	0.05263	0.05263	0.0	100.0	0.00	1.000	.
dnace1_2	U	0.09524	0.07257	8.2		0.80	0.423	.
	M	0.10526	0.15789	-18.9	-132.2	-0.47	0.642	.
dnace1_3	U	0.02381	0.02323	0.4		0.04	0.972	.
	M	0	0	0.0	100.0	.	.	.
dnace1_4	U	0.54762	0.38891	32.1		2.98	0.003	.
	M	0.63158	0.57895	10.7	66.8	0.32	0.748	.
dnace1_5	U	0.08333	0.06728	6.1		0.59	0.557	.
	M	0.15789	0.15789	0.0	100.0	0.00	1.000	.
dnace1_6	U	0.07143	0.08704	-5.8		-0.51	0.612	.
	M	0	0	0.0	100.0	.	.	.
dnace1_7	U	0.08333	0.14016	-18.1		-1.50	0.134	.
	M	0.05263	0.05263	0.0	100.0	0.00	1.000	.
dnace1_8	U	0.02381	0.09827	-31.4		-2.29	0.022	.
	M	0	0	0.0	100.0	.	.	.
dnace1_9	U	0.0119	0.0615	-26.6		-1.89	0.059	.
	M	0	0	0.0	100.0	.	.	.
year	U	2005.9	2006.1	-7.0		-0.68	0.498	0.57*
	M	2006.5	2007	-22.9	-226.3	-0.95	0.348	1.09

*if variance ratio outside [0.70; 1.44] for U and [0.39; 2.60] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.192	68.91	0.000	24.9	14.5	179.4*	0.96	67
Matched	0.075	3.97	0.984	12.9	10.7	64.3*	2.09*	22

* if B>25%, R outside [0.5;2]

Table A.2.3: Balancing test for the propensity score matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign managers, baseline 200% foreign capital increase benchmark case

	Unmatched	Mean			%reduct	t-test		V(T)/
Variable	Matched	Treated	Control	%bias	bias	t	p>|t|	V(C)
lnage	U	1.9525	1.6578	29.7		1.72	0.086	0.89
	M	2.2785	2.3393	-6.1	79.4	-0.26	0.800	2.43
lnemp	U	2.4599	2.0984	18.6		1.13	0.258	1.21
	M	3.5128	3.2845	11.8	36.8	0.59	0.559	2.96*
ebitda	U	9.4e	5.9e	12.0		0.74	0.457	0.57*
	M	1.7e	1.1e	20.1	-67.1	0.92	0.366	1.60
lnTFP	U	9.367	9.0735	38.6		1.57	0.118	0.38*
	M	9.3638	9.2701	12.3	68.1	0.37	0.717	0.36*
TFPGr	U	0.04014	0.05548	-3.9		-0.15	0.881	0.54*
	M	0.05102	-0.04291	23.6	-512.5	1.10	0.280	3.06*
exp_share	U	0.2343	0.29098	-16.1		-0.94	0.348	0.78
	M	0.34814	0.22766	34.2	-112.6	1.01	0.321	1.04
ShHEemp	U	34.772	35.075	-0.9		-0.05	0.959	0.80
	M	41.231	39.487	5.3	-476.6	0.24	0.815	1.04
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.
dnace1_1	U	0.03571	0.03607	-0.2		-0.02	0.987	.
	M	0.05263	0	28.2	-14710.5	1.00	0.324	.
dnace1_2	U	0.09524	0.11443	-6.2		-0.53	0.597	.
	M	0.10526	0.10526	0.0	100.0	0.00	1.000	.
dnace1_3	U	0.02381	0.02861	-3.0		-0.25	0.801	.
	M	0	0	0.0	100.0	.	.	.
dnace1_4	U	0.54762	0.46766	16.0		1.40	0.163	.
	M	0.63158	0.84211	-42.1	-163.3	-1.48	0.148	.
dnace1_5	U	0.08333	0.08706	-1.3		-0.12	0.908	.
	M	0.15789	0.05263	37.6	-2721.1	1.04	0.303	.
dnace1_6	U	0.07143	0.10448	-11.7		-0.95	0.340	.
	M	0	0	0.0	100.0	.	.	.
dnace1_7	U	0.08333	0.1393	-17.8		-1.43	0.152	.
	M	0.05263	0	16.8	6.0	1.00	0.324	.
dnace1_8	U	0.02381	0.01244	8.5		0.86	0.391	.
	M	0	0	0.0	100.0	.	.	.

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Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
dnace1_9	U	0.0119	0.00373	9.2		1.06	0.288	.
	M	0	0	0.0	100.0	.	.	.
year	U	2005.9	2006	-0.9		-0.10	0.921	1.01
	M	2006.5	2006.3	8.1	-751.2	0.28	0.779	1.05

* if variance ratio outside [0.70; 1.44] for U and [0.39; 2.60] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.123	16.27	0.235	12.5	10.5	99.7*	0.8	33
Matched	0.124	6.18	0.800	14.0	9.9	82.9*	2.40*	33

* if B>25%, R outside [0.5; 2]

Table A.2.4: Balancing test for the propensity score matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 200% foreign capital increase benchmark case

Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
lnage	U	1.6721	2.0382	-39.1		-9.77	0.000	1.44*
	M	2.2145	2.2414	-2.9	92.7	-0.31	0.754	1.14
lnemp	U	2.1039	1.0682	64.6		16.46	0.000	1.81*
	M	3.3031	3.3601	-3.6	94.5	-0.35	0.729	0.72*
ebitda	U	4.9e	9.9e	24.2		12.62	0.000	7.78*
	M	1.3e	1.7e	-27.4	-13.2	-0.90	0.368	0.46*
lnTFP	U	9.1103	8.9587	18.1		3.27	0.001	1.44*
	M	9.1854	9.1976	-1.5	91.9	-0.15	0.879	1.33
TFPGr	U	0.04471	0.01785	5.5		0.72	0.474	0.68*
	M	0.05343	0.03693	3.4	38.6	0.36	0.717	1.04
exp_share	U	0.27121	0.07812	64.9		20.34	0.000	2.92*
	M	0.29231	0.25915	11.1	82.8	0.91	0.362	1.08
ShHEemp	U	34.636	22.84	34.7		7.42	0.000	1.00
	M	30.352	30.042	0.9	97.4	0.12	0.901	0.88

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	Unmatched	Mean			%reduct	t-test		V(T)/
Variable	Matched	Treated	Control	%bias	bias	t	p>|t|	V(C)
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.
dnace1_1	U	0.03653	0.05044	-6.8		-1.88	0.060	.
	M	0.0565	0.0565	0.0	100.0	0.00	1.000	.
dnace1_2	U	0.10731	0.068	13.9		4.61	0.000	.
	M	0.19209	0.19774	-2.0	85.6	-0.13	0.894	.
dnace1_3	U	0.02968	0.02697	1.6		0.49	0.621	.
	M	0.01695	0.00565	6.8	-317.3	1.00	0.316	.
dnace1_4	U	0.46918	0.39727	14.5		4.34	0.000	.
	M	0.39548	0.38418	2.3	84.3	0.22	0.828	.
dnace1_5	U	0.0879	0.06757	7.6		2.39	0.017	.
	M	0.11864	0.14124	-8.4	-11.2	-0.63	0.529	.
dnace1_6	U	0.11644	0.09889	5.7		1.74	0.082	.
	M	0.0791	0.10734	-9.1	-61.0	-0.91	0.362	.
dnace1_7	U	0.12443	0.13092	-1.9		-0.57	0.569	.
	M	0.11864	0.0791	11.8	-509.2	1.25	0.214	.
dnace1_8	U	0.0137	0.08993	-34.9		-7.88	0.000	.
	M	0.00565	0.00565	0.0	100.0	0.00	1.000	.
dnace1_9	U	0.00685	0.06067	-30.1		-6.67	0.000	.
	M	0.01695	0.0226	-3.2	89.5	-0.38	0.704	.
year	U	2006	2006.1	-7.2		-2.48	0.013	0.57*
	M	2006.6	2006.5	2.0	72.6	0.25	0.803	1.01

* if variance ratio outside [0.90; 1.11] for U and [0.74; 1.35] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.115	302.86	0.000	23.0	16.3	121.0*	0.94	89
Matched	0.012	5.93	0.989	5.5	3.0	25.7*	1.25	22

* if B>25%, R outside [0.5; 2]

Table A.2.5: Balancing test for the propensity score matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 200% foreign capital increase benchmark case

	Unmatched	Mean			%reduct	t-test		V(T)/
Variable	Matched	Treated	Control	%bias	bias	t	p>|t|	V(C)
lnage	U	2.1333	2.0275	11.8		0.57	0.567	1.24
	M	2.0073	1.8555	16.9	-43.4	0.42	0.681	0.83
lnemp	U	3.316	1.0082	141.5		8.65	0.000	2.11*
	M	3.399	3.4844	-5.2	96.3	-0.19	0.853	1.93
ebitda	U	3.3e	8.8e	39.9		22.92	0.000	259.49*
	M	1.7e	3.5e	-21.4	46.4	-0.62	0.541	0.05*
lnTFP	U	9.3275	8.9778	50.0		2.03	0.042	0.66
	M	9.4922	9.6826	-27.2	45.6	-0.57	0.575	0.31
TFPGr	U	-0.07211	0.01414	-15.1		-0.61	0.543	1.17
	M	-0.17202	-0.22824	9.8	34.8	0.28	0.783	2.94
exp_share	U	0.48506	0.07695	125.5		9.25	0.000	3.72*
	M	0.3707	0.26241	33.3	73.5	0.81	0.426	2.76
ShHEemp	U	49.015	22.844	82.6		3.74	0.000	0.70
	M	50.147	56.792	-21.0	74.6	-0.62	0.544	0.76
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.
dnace1_1	U	0	0.04569	-30.9		-1.29	0.195	.
	M	0	0	0.0	100.0	.	.	.
dnace1_2	U	0.17143	0.06976	31.3		2.36	0.018	.
	M	0.08333	0.08333	0.0	100.0	0.00	1.000	.
dnace1_3	U	0.05714	0.02276	17.4		1.36	0.173	.
	M	0	0	0.0	100.0	.	.	.
dnace1_4	U	0.31429	0.40754	-19.4		-1.12	0.262	.
	M	0.41667	0.5	-17.3	10.6	-0.39	0.698	.
dnace1_5	U	0	0.06276	-36.6		-1.53	0.126	.
	M	0	0	0.0	100.0	.	.	.
dnace1_6	U	0.11429	0.10145	4.1		0.25	0.801	.
	M	0.16667	0.25	-26.7	-549.2	-0.48	0.633	.
dnace1_7	U	0.28571	0.13431	37.5		2.63	0.009	.
	M	0.33333	0.16667	41.3	-10.1	0.92	0.368	.
dnace1_8	U	0.02857	0.08576	-24.7		-1.21	0.227	.
	M	0	0	0.0	100.0	.	.	.

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Variable	Unmatched Matched	Mean Treated	Mean Control	%bias	%reduct bias	t-test t	t-test p>|t|	V(T)/ V(C)
dnace1_9	U	0.02857	0.06039	-15.4		-0.79	0.429	.
	M	0	0	0.0	100.0	.	.	.
year	U	2005.6	2006.1	-22.7		-1.34	0.180	0.55
	M	2005.3	2006.1	-36.4	-60.5	-1.37	0.186	0.26*

* if variance ratio outside [0.55; 1.82] for U and [0.29; 3.47] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.295	77.98	0.000	39.9	27.8	266.5*	0.68	33
Matched	0.141	4.68	0.946	15.2	16.9	87.5*	0.36*	22

* if B>25%, R outside [0.5; 2]

Table A.2.6: Balancing test for the propensity score matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign experts, baseline 200% foreign capital increase benchmark case

Variable	Unmatched Matched	Mean Treated	Mean Control	%bias	%reduct bias	t-test t	t-test p>|t|	V(T)/ V(C)
lnage	U	2.1333	1.6421	50.2		2.18	0.029	0.87
	M	2.0073	2.2161	-21.4	57.5	-0.67	0.511	1.59
lnemp	U	3.316	2.0273	69.3		3.38	0.001	1.10
	M	3.399	4.1196	-38.8	44.1	-1.22	0.237	0.63
ebitda	U	3.3e	4.9e	34.3		4.47	0.000	26.51*
	M	1.7e	7.4e	-68.5	-99.6	-1.27	0.218	0.02*
lnTFP	U	9.3275	9.1129	27.2		1.01	0.311	0.45*
	M	9.4922	9.7647	-34.5	-27.0	-0.93	0.364	0.44
TFPGr	U	-0.07211	0.05921	-25.0		-1.06	0.288	1.77
	M	-0.17202	0.10909	-53.6	-114.1	-1.47	0.156	4.92*
exp_share	U	0.48506	0.26873	56.1		2.78	0.006	1.27
	M	0.3707	0.23937	34.0	39.3	0.82	0.421	1.05
ShHEemp	U	49.015	35.061	43.7		1.93	0.054	0.69
	M	50.147	48.69	4.6	89.6	0.12	0.904	0.53

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Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.
dnace1_1	U	0	0.03774	-28.0		-1.17	0.242	.
	M	0	0	0.0	100.0	.	.	.
dnace1_2	U	0.17143	0.11085	17.3		1.11	0.268	.
	M	0.08333	0.08333	0.0	100.0	0.00	1.000	.
dnace1_3	U	0.05714	0.02712	14.8		1.05	0.295	.
	M	0	0	0.0	100.0	.	.	.
dnace1_4	U	0.31429	0.48467	-35.1		-1.98	0.048	.
	M	0.41667	0.33333	17.2	51.1	0.41	0.689	.
dnace1_5	U	0	0.06604	-37.6		-1.57	0.116	.
	M	0	0	0.0	100.0	.	.	.
dnace1_6	U	0.11429	0.12028	-1.9		-0.11	0.915	.
	M	0.16667	0.25	-25.7	-1289.5	-0.48	0.633	.
dnace1_7	U	0.28571	0.12854	39.2		2.68	0.008	.
	M	0.33333	0.33333	0.0	100.0	0.00	1.000	.
dnace1_8	U	0.02857	0.01297	10.8		0.78	0.435	.
	M	0	0	0.0	100.0	.	.	.
dnace1_9	U	0.02857	0.00354	19.8		2.16	0.031	.
	M	0	0	0.0	100.0	.	.	.
year	U	2005.6	2006	-18.4		-1.21	0.226	0.98
	M	2005.3	2005.3	0.0	100.0	0.00	1.000	0.72

* if variance ratio outside [0.55; 1.82] for U and [0.29; 3.47] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.223	22.91	0.018	32.2	31.2	142.6*	0.80	22
Matched	0.269	8.96	0.625	17.8	10.9	125.6*	1.02	22

* if B>25%, R outside [0.5; 2]

Table A.2.7: Balancing test for the propensity score matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of parent country national managers, baseline 200% foreign capital increase benchmark case

	Unmatched	Mean			%reduct	t-test		V(T)/
Variable	Matched	Treated	Control	%bias	bias	t	p>|t|	V(C)
lnage	U	1.6781	2.0605	-41.1		-10.39	0.000	1.47*
	M	2.1932	2.2557	-6.7	83.6	-0.73	0.467	1.08
lnemp	U	2.1577	1.1073	65.2		16.47	0.000	1.73*
	M	3.295	3.4322	-8.5	86.9	-0.88	0.380	0.78
ebitda	U	5.8e	1.2e	20.1		12.06	0.000	10.67*
	M	1.3e	1.3e	-0.2	98.9	-0.01	0.990	0.97
lnTFP	U	9.1202	8.9629	18.9		3.46	0.001	1.43*
	M	9.2007	9.1683	3.9	79.3	0.41	0.685	1.29
TFPGr	U	0.0358	0.01857	3.5		0.47	0.641	0.73*
	M	0.03989	0.00497	7.0	-102.7	0.86	0.390	2.20*
exp_share	U	0.28199	0.08	67.0		21.23	0.000	2.96*
	M	0.28805	0.27721	3.6	94.6	0.29	0.770	0.92
ShHEemp	U	35.482	24.114	33.4		7.12	0.000	0.98
	M	31.226	29.124	6.2	81.5	0.83	0.407	0.85
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.
dnace1_1	U	0.03563	0.04973	-7.0		-1.91	0.056	.
	M	0.05556	0.03889	8.2	-18.2	0.74	0.457	.
dnace1_2	U	0.1092	0.07032	13.6		4.48	0.000	.
	M	0.18333	0.18889	-1.9	85.7	-0.14	0.893	.
dnace1_3	U	0.02989	0.02762	1.4		0.41	0.683	.
	M	0.01667	0.03333	-10.0	-634.5	-1.01	0.313	.
dnace1_4	U	0.46207	0.37683	17.3		5.18	0.000	.
	M	0.38889	0.38889	0.0	100.0	0.00	1.000	.
dnace1_5	U	0.08506	0.06519	7.5		2.37	0.018	.
	M	0.11111	0.12222	-4.2	44.1	-0.33	0.743	.
dnace1_6	U	0.11954	0.10139	5.8		1.77	0.077	.
	M	0.08889	0.06667	7.1	-22.4	0.79	0.433	.
dnace1_7	U	0.13218	0.1358	-1.1		-0.31	0.756	.
	M	0.13333	0.13333	0.0	100.0	0.000	1.000	.
dnace1_8	U	0.01379	0.10224	-38.5		-8.61	0.000	.
	M	0.00556	0	2.4	93.7	1.000	0.318	.

Continued...

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Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
dnace1_9	U	0.0069	0.06148	-30.4		-6.70	0.000	.
	M	0.01667	0.02778	-6.2	79.6	-0.71	0.476	.
year	U	2006.1	2006.1	-3.1		-1.11	0.266	0.58*
	M	2006.5	2006.2	10.2	-224.5	1.30	0.193	1.01

* if variance ratio outside [0.91; 1.10] for U and [0.75; 1.34] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.112	303.29	0.000	23.1	18.1	120.0*	0.92	89
Matched	0.013	6.27	0.975	5.2	6.2	26.4*	1.02	11

* if B>25%, R outside [0.5; 2]

Table A.2.8: Balancing test for the propensity score matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of parent country national managers managers, baseline 200% foreign capital increase benchmark case

Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
lnage	U	1.8595	2.0479	-20.0		-1.08	0.282	1.52
	M	2.3649	2.1952	18.0	9.9	0.38	0.708	0.75
lnemp	U	2.2712	1.0389	63.2		4.10	0.000	3.21*
	M	3.5927	3.0642	27.1	57.1	0.75	0.464	1.91
ebitda	U	9.8e	1.0e	40.4		5.88	0.000	12.25*
	M	1.8e	6.1e	55.1	-36.4	1.23	0.238	9.47*
lnTFP	U	9.2448	8.9703	38.5		1.23	0.219	0.70
	M	9.2878	9.5503	-36.8	4.4	-0.82	0.427	0.86
TFPGr	U	0.05478	0.01272	9.0		0.24	0.810	0.41*
	M	0.02369	0.36554	-73.5	-712.7	-1.45	0.167	0.35
exp_share	U	0.27388	0.07988	61.3		4.33	0.000	3.36*
	M	0.48204	0.72555	-76.9	-25.5	-1.27	0.223	1.73
ShHEemp	U	34.627	23.771	30.8		1.40	0.162	1.06
	M	39.26	44.968	-16.2	47.4	-0.40	0.692	0.74
dnace1_0	U	0	0	.		.	.	.
	M	0	0	.	.	.	.	.

Continued...

...continuation

Variable	Unmatched / Matched	Mean: Treated	Mean: Control	%bias	%reduct bias	t-test: t	t-test: p>|t|	V(T)/ V(C)
dnace1_1	U	0.04	0.0454	-2.7		-0.18	0.854	.
	M	0	0	0.0	100.0	.	.	.
dnace1_2	U	0.1	0.07302	9.6		0.73	0.464	.
	M	0.22222	0.22222	0.0	100.0	0.00	1.000	.
dnace1_3	U	0.04	0.02338	9.4		0.78	0.437	.
	M	0	0	0.0	100.0	.	.	.
dnace1_4	U	0.54	0.39134	30.0		2.15	0.031	.
	M	0.55556	0.33333	44.8	-49.5	0.92	0.372	.
dnace1_5	U	0.06	0.0677	-3.1		-0.22	0.828	.
	M	0.11111	0	45.2	-1342.3	1.00	0.332	.
dnace1_6	U	0.06	0.08759	-10.5		-0.69	0.490	.
	M	0	0	0.0	100.0	.	.	.
dnace1_7	U	0.08	0.14103	-19.5		-1.24	0.215	.
	M	0.11111	0.44444	-106.4	-446.2	-1.60	0.128	.
dnace1_8	U	0.02	0.09889	-33.8		-1.87	0.062	.
	M	0	0	0.0	100.0	.	.	.
dnace1_9	U	0.02	0.06188	-21.2		-1.23	0.219	.
	M	0	0	0.0	100.0	.	.	.
year	U	2006	2006.1	-3.2		-0.24	0.808	0.53*
	M	2006.3	2005.8	24.4	-670.0	0.66	0.521	0.87

* if variance ratio outside [0.64; 1.57] for U and [0.23; 4.43] for M

Sample	Ps R2	LR chi2	p>chi2	MeanBias	MedBias	B	R	%Var
Unmatched	0.178	32.52	0.001	23.7	20.0	177.6*	1.12	56
Matched	1.000	23.51	.	30.1	21.2	154.3*	0.17*	11

* if B>25%, R outside [0.5; 2]

Table A.2.9: Balancing test for the propensity score matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of parent country national managers managers, baseline 200% foreign capital increase benchmark case

Computations failed to give a result for the test (convergence vas not achieved).

Appendix A.3: Balancing tests for kernel matching baseline models with 100%, 150% and 200% foreign capital increase benchmarks

Table A.3.1: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.467	2.267	-0.200	1.44	0.1510
lnemp	2.931	3.323	0.393	1.50	0.1360
ebitda	4.907	14.335	9.428	1.46	0.1448
lnTFP	8.925	9.168	0.243	1.67	0.0967*
TFPGr	-0.059	0.037	0.096	1.24	0.2171
exp_share	0.151	0.291	0.140	2.32	0.0210**
ShHEemp	20.360	30.542	10.181	2.51	0.0126**
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.075	0.078	0.003	0.06	0.9548
dnace1_2	0.136	0.208	0.072	0.99	0.3231
dnace1_3	0.029	0.021	-0.009	0.32	0.7500
dnace1_4	0.458	0.339	-0.119	1.36	0.1737
dnace1_5	0.059	0.083	0.025	0.50	0.6208
dnace1_6	0.108	0.109	0.002	0.03	0.9779
dnace1_7	0.077	0.141	0.064	1.04	0.2997
dnace1_8	0.029	0.005	-0.024	1.39	0.1649
dnace1_9	0.029	0.016	-0.014	0.56	0.5749
Iyear	2.005.350	2.005.359	0.009	0.03	0.9759
Number of observations (baseline): 32099					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.2: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.642	2.180	-0.462	2.88	0.0048***
lnemp	3.184	3.337	0.153	0.48	0.6313
ebitda	5.531	18.704	13.174	3.08	0.0026***
lnTFP	9.197	9.418	0.221	1.52	0.1317
TFPGr	0.019	0.057	0.038	0.54	0.5935
exp_share	0.340	0.415	0.075	0.94	0.3498
ShHEemp	32.810	46.314	13.504	2.61	0.0102**
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.096	0.160	0.064	0.88	0.3802
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.542	0.600	0.058	0.57	0.5694
dnace1_5	0.220	0.120	-0.100	1.36	0.1766
dnace1_6	0.058	0.040	-0.018	0.41	0.6791
dnace1_7	0.076	0.040	-0.036	0.80	0.4251
dnace1_8	0.008	0.040	0.032	0.89	0.3763
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.428	2.005.160	-0.268	0.85	0.3961
Number of observations (baseline): 31913					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.3: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign managers, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	1.921	2.180	0.260	1.47	0.1456
lnemp	2.867	3.337	0.470	1.57	0.1205
ebitda	16.380	18.704	2.324	0.31	0.7607
lnTFP	9.436	9.418	-0.018	0.13	0.8985
TFPGr	0.165	0.057	-0.108	1.26	0.2120
exp_share	0.402	0.415	0.013	0.16	0.8738
ShHEemp	37.203	46.314	9.111	1.96	0.0523*
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.138	0.160	0.022	0.30	0.7656
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.595	0.600	0.005	0.05	0.9578
dnace1_5	0.135	0.120	-0.015	0.23	0.8194
dnace1_6	0.071	0.040	-0.031	0.69	0.4923
dnace1_7	0.061	0.040	-0.021	0.48	0.6358
dnace1_8	-0.000	0.040	0.040	1.29	0.2007
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.485	2.005.160	-0.325	1.00	0.3181
Number of observations (baseline): 236					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.4: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.483	2.254	-0.229	1.50	0.1362
lnemp	2.210	3.411	1.201	4.27	0.0000***
ebitda	2.803	15.106	12.303	1.68	0.0951*
lnTFP	9.081	9.162	0.081	0.51	0.6120
TFPGr	0.068	0.032	-0.035	0.41	0.6796
exp_share	0.150	0.304	0.154	2.24	0.0263**
ShHEemp	31.602	29.422	-2.180	0.49	0.6262
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.036	0.083	0.047	0.88	0.3781
dnace1_2	0.109	0.210	0.101	1.27	0.2050
dnace1_3	-0.000	0.022	0.022	0.80	0.4228
dnace1_4	0.380	0.315	-0.065	0.69	0.4909
dnace1_5	0.119	0.094	-0.025	0.41	0.6800
dnace1_6	0.152	0.110	-0.041	0.64	0.5208
dnace1_7	0.205	0.144	-0.062	0.86	0.3930
dnace1_8	-0.000	0.006	0.006	0.40	0.6909
dnace1_9	-0.000	0.017	0.017	0.69	0.4888
Iyear	2.005.225	2.005.376	0.151	0.48	0.6327
Number of observations (baseline): 32090					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.5: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.377	2.077	-0.300	1.58	0.1181
lnemp	2.938	3.201	0.263	0.72	0.4757
ebitda	5.565	17.958	12.394	2.45	0.0161**
lnTFP	9.458	9.338	-0.120	0.75	0.4539
TFPGr	-0.153	0.017	0.170	1.96	0.0528*
exp_share	0.065	0.315	0.250	3.49	0.0008***
ShHEemp	28.084	45.489	17.404	3.39	0.0011***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.120	0.095	-0.025	0.35	0.7271
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.642	0.619	-0.023	0.20	0.8411
dnace1_5	0.162	0.143	-0.019	0.23	0.8195
dnace1_6	0.020	0.048	0.028	0.62	0.5362
dnace1_7	0.027	0.048	0.020	0.44	0.6639
dnace1_8	0.030	0.048	0.018	0.39	0.6999
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.930	2.005.190	0.261	0.68	0.4985
Number of observations (baseline): 31909					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.6: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign managers, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.089	2.087	-0.001	0.01	0.9928
lnemp	3.298	3.265	-0.033	0.15	0.8776
ebitda	15.893	18.209	2.316	0.42	0.6727
lnTFP	9.306	9.412	0.105	0.86	0.3908
TFPGr	0.028	0.030	0.003	0.05	0.9631
exp_share	0.359	0.317	-0.042	0.70	0.4844
ShHEemp	39.664	43.544	3.880	0.99	0.3254
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.184	0.105	-0.079	1.44	0.1504
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.522	0.632	0.110	1.43	0.1547
dnace1_5	0.126	0.158	0.032	0.59	0.5531
dnace1_6	0.073	0.053	-0.020	0.54	0.5919
dnace1_7	0.088	0.053	-0.036	0.89	0.3733
dnace1_8	0.007	-0.000	-0.007	0.77	0.4427
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.211	2.005.211	-0.001	0.00	0.9975
Number of observations (baseline): 223					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculation

Table A.3.7: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.395	2.240	-0.156	1.06	0.2892
lnemp	2.600	3.384	0.784	3.10	0.0022***
ebitda	3.280	14.020	10.741	1.70	0.0905*
lnTFP	8.969	9.144	0.175	1.16	0.2473
TFPGr	-0.058	0.025	0.083	1.00	0.3194
exp_share	0.067	0.310	0.243	4.05	0.0001***
ShHEemp	33.438	29.579	-3.859	0.92	0.3609
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.013	0.067	0.053	1.27	0.2055
dnace1_2	0.177	0.230	0.053	0.71	0.4812
dnace1_3	0.000	0.024	0.024	0.96	0.3404
dnace1_4	0.256	0.309	0.053	0.64	0.5213
dnace1_5	0.130	0.097	-0.033	0.59	0.5543
dnace1_6	0.151	0.103	-0.048	0.85	0.3971
dnace1_7	0.229	0.145	-0.083	1.26	0.2097
dnace1_8	0.029	0.006	-0.023	1.25	0.2126
dnace1_9	0.015	0.018	0.003	0.12	0.9047
Iyear	2.005.185	2.005.430	0.245	0.86	0.3918
Number of observations (baseline): 32073					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.8: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign managers, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.285	2.161	-0.124	1.31	0.1910
lnemp	2.949	3.246	0.297	1.57	0.1180
ebitda	11.503	14.985	3.483	1.22	0.2220
lnTFP	9.189	9.320	0.131	1.80	0.0729*
TFPGr	0.003	0.040	0.037	0.82	0.4134
exp_share	0.204	0.315	0.111	2.79	0.0056***
ShHEemp	39.178	43.124	3.946	1.37	0.1725
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.053	0.048	-0.005	0.21	0.8377
dnace1_2	0.080	0.095	0.016	0.46	0.6486
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.664	0.571	-0.092	1.59	0.1131
dnace1_5	0.034	0.143	0.109	3.10	0.0021***
dnace1_6	0.028	0.048	0.020	0.86	0.3912
dnace1_7	0.117	0.048	-0.069	2.22	0.0274**
dnace1_8	0.025	0.048	0.022	0.98	0.3288
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.367	2.005.333	-0.034	0.17	0.8668
Number of observations (baseline): 31909					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.9: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign managers, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.246	2.263	0.017	0.10	0.9201
lnemp	3.201	3.443	0.242	0.93	0.3520
ebitda	12.172	15.732	3.561	0.60	0.5467
lnTFP	9.245	9.387	0.142	0.90	0.3707
TFPGr	0.148	0.084	-0.064	0.90	0.3701
exp_share	0.283	0.334	0.052	0.73	0.4657
ShHEemp	38.922	40.890	1.968	0.42	0.6767
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.088	0.056	-0.033	0.66	0.5079
dnace1_2	0.062	0.111	0.049	0.92	0.3616
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.573	0.611	0.038	0.41	0.6842
dnace1_5	0.166	0.167	0.001	0.01	0.9927
dnace1_6	0.062	0.000	-0.062	1.93	0.0559*
dnace1_7	0.049	0.056	0.007	0.16	0.8730
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.469	2.005.500	0.031	0.09	0.9254
Number of observations (baseline): 206					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.10: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.308	2.270	-0.038	0.28	0.7797
lnemp	2.699	3.459	0.760	3.31	0.0011***
ebitda	2.679	15.621	12.942	2.17	0.0310**
lnTFP	8.963	9.179	0.216	1.62	0.1071
TFPGr	0.022	0.065	0.043	0.64	0.5238
exp_share	0.109	0.296	0.187	3.50	0.0006***
ShHEemp	34.510	30.406	-4.104	1.08	0.2820
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.090	0.079	-0.011	0.24	0.8122
dnace1_2	0.112	0.215	0.103	1.56	0.1207
dnace1_3	0.001	0.011	0.010	0.62	0.5348
dnace1_4	0.410	0.373	-0.037	0.46	0.6451
dnace1_5	0.049	0.090	0.042	0.91	0.3619
dnace1_6	0.143	0.085	-0.058	1.19	0.2370
dnace1_7	0.195	0.136	-0.060	1.01	0.3115
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	-0.000	0.011	0.011	0.71	0.4787
Iyear	2.005.982	2.005.565	-0.417	1.62	0.1057
Number of observations (baseline): 26813					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.11: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.548	2.305	-0.243	1.50	0.1371
lnemp	3.843	3.843	-0.000	0.00	0.9996
ebitda	14.706	21.371	6.665	1.35	0.1809
lnTFP	9.145	9.487	0.342	2.65	0.0095***
TFPGr	0.038	-0.085	-0.123	1.11	0.2710
exp_share	0.146	0.337	0.190	2.58	0.0115**
ShHEemp	33.289	49.783	16.494	2.85	0.0054***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.090	0.053	-0.037	0.67	0.5060
dnace1_2	0.072	0.211	0.139	1.65	0.1030
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.569	0.263	-0.306	2.93	0.0043***
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.159	0.316	0.157	1.57	0.1202
dnace1_7	0.078	0.105	0.028	0.41	0.6840
dnace1_8	0.033	0.053	0.020	0.41	0.6809
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.491	2.004.316	-0.175	0.53	0.5990
Number of observations (baseline): 26640					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.12: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign experts, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.402	2.376	-0.026	0.17	0.8637
lnemp	3.874	3.723	-0.151	0.55	0.5848
ebitda	19.606	22.617	3.012	0.36	0.7175
lnTFP	9.496	9.534	0.037	0.23	0.8182
TFPGr	0.004	-0.047	-0.051	0.51	0.6090
exp_share	0.383	0.344	-0.040	0.49	0.6282
ShHEemp	45.033	45.331	0.298	0.05	0.9594
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.085	0.062	-0.023	0.40	0.6896
dnace1_2	0.223	0.188	-0.035	0.41	0.6851
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.323	0.313	-0.011	0.11	0.9152
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.185	0.250	0.065	0.74	0.4632
dnace1_7	0.184	0.188	0.003	0.04	0.9681
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.427	2.004.313	-0.114	0.39	0.6954
Number of observations (baseline): 215					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.13: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.446	2.257	-0.189	1.40	0.1640
lnemp	2.715	3.532	0.817	3.54	0.0005***
ebitda	2.928	16.419	13.491	2.17	0.0314**
lnTFP	9.162	9.144	-0.018	0.13	0.8932
TFPGr	0.082	0.050	-0.032	0.47	0.6393
exp_share	0.149	0.296	0.148	2.62	0.0094***
ShHEemp	30.401	29.391	-1.009	0.26	0.7962
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.030	0.084	0.055	1.24	0.2159
dnace1_2	0.124	0.223	0.099	1.45	0.1479
dnace1_3	-0.000	0.012	0.012	0.73	0.4682
dnace1_4	0.410	0.349	-0.061	0.75	0.4562
dnace1_5	0.059	0.102	0.044	0.89	0.3755
dnace1_6	0.177	0.096	-0.080	1.51	0.1319
dnace1_7	0.147	0.120	-0.027	0.48	0.6342
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.053	0.012	-0.041	1.76	0.0806*
Iyear	2.005.519	2.005.584	0.066	0.24	0.8086
Number of observations (baseline): 26803					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.14: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.350	2.230	-0.120	0.72	0.4743
lnemp	3.345	3.645	0.300	1.04	0.3006
ebitda	14.416	18.216	3.799	0.79	0.4336
lnTFP	9.136	9.416	0.280	2.47	0.0152**
TFPGr	-0.053	-0.088	-0.035	0.35	0.7262
exp_share	0.185	0.386	0.200	2.82	0.0057***
ShHEemp	45.101	49.253	4.152	0.74	0.4605
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.134	0.056	-0.078	1.40	0.1639
dnace1_2	0.173	0.167	-0.007	0.09	0.9309
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.263	0.222	-0.040	0.46	0.6443
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.146	0.278	0.131	1.52	0.1306
dnace1_7	0.253	0.222	-0.031	0.35	0.7242
dnace1_8	0.031	0.056	0.025	0.57	0.5703
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.783	2.004.389	-0.394	1.40	0.1652
Number of observations (baseline): 26638					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.15: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign experts, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.277	2.175	-0.102	0.69	0.4888
lnemp	3.583	3.532	-0.051	0.21	0.8333
ebitda	15.054	18.132	3.078	0.47	0.6403
lnTFP	9.543	9.501	-0.042	0.34	0.7367
TFPGr	-0.009	-0.108	-0.099	1.12	0.2656
exp_share	0.396	0.381	-0.015	0.21	0.8378
ShHEemp	49.655	49.949	0.295	0.06	0.9528
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.049	0.062	0.014	0.32	0.7518
dnace1_2	0.185	0.125	-0.060	0.90	0.3707
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.242	0.250	0.008	0.10	0.9221
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.191	0.313	0.122	1.52	0.1306
dnace1_7	0.333	0.250	-0.083	0.98	0.3273
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.463	2.004.250	-0.213	0.83	0.4104
Number of observations (baseline): 203					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.16: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.464	2.266	-0.199	1.42	0.1580
lnemp	2.744	3.508	0.764	3.24	0.0014***
ebitda	2.370	15.030	12.659	2.00	0.0466**
lnTFP	9.037	9.148	0.111	0.78	0.4382
TFPGr	0.029	0.043	0.015	0.21	0.8324
exp_share	0.156	0.303	0.147	2.49	0.0136**
ShHEemp	26.668	29.960	3.292	0.83	0.4098
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.093	0.077	-0.016	0.32	0.7466
dnace1_2	0.220	0.239	0.018	0.24	0.8090
dnace1_3	0.013	0.013	0.000	0.01	0.9887
dnace1_4	0.226	0.342	0.116	1.40	0.1617
dnace1_5	0.142	0.103	-0.039	0.70	0.4872
dnace1_6	0.142	0.097	-0.045	0.82	0.4106
dnace1_7	0.137	0.116	-0.021	0.36	0.7173
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.027	0.013	-0.014	0.64	0.5235
Iyear	2.005.560	2.005.632	0.073	0.26	0.7978
Number of observations (baseline): 26792					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.17: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign experts, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.348	2.107	-0.241	1.62	0.1087
lnemp	3.531	3.496	-0.036	0.13	0.8930
ebitda	7.733	17.298	9.565	2.91	0.0043***
lnTFP	9.134	9.443	0.309	2.80	0.0060***
TFPGr	0.054	-0.071	-0.124	1.21	0.2270
exp_share	0.303	0.405	0.102	1.39	0.1671
ShHEemp	33.474	47.134	13.661	2.86	0.0050***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.218	0.214	-0.004	0.04	0.9642
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.251	0.286	0.035	0.40	0.6900
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.108	0.143	0.035	0.53	0.5956
dnace1_7	0.279	0.286	0.007	0.08	0.9384
dnace1_8	0.145	0.071	-0.074	1.28	0.2036
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.583	2.004.500	-0.083	0.34	0.7332
Number of observations (baseline): 26634					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.18: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign experts, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.171	2.133	-0.037	0.23	0.8204
lnemp	3.567	3.412	-0.155	0.54	0.5875
ebitda	18.450	18.551	0.101	0.01	0.9908
lnTFP	9.377	9.551	0.175	1.21	0.2282
TFPGr	-0.033	-0.132	-0.099	0.90	0.3718
exp_share	0.370	0.350	-0.020	0.24	0.8130
ShHEemp	41.357	47.427	6.070	1.06	0.2904
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.304	0.182	-0.123	1.36	0.1765
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.262	0.364	0.102	1.04	0.3004
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.146	0.182	0.035	0.45	0.6533
dnace1_7	0.287	0.273	-0.014	0.15	0.8793
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.581	2.004.364	-0.217	0.81	0.4212
Number of observations (baseline): 188					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.19: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of parent country national managers, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.564	2.241	-0.323	2.16	0.0316**
lnemp	2.626	3.180	0.554	1.95	0.0524*
ebitda	2.719	12.899	10.179	1.53	0.1261
lnTFP	9.076	9.221	0.145	0.91	0.3650
TFPGr	0.046	0.059	0.013	0.14	0.8878
exp_share	0.066	0.282	0.216	3.31	0.0011***
ShHEemp	28.436	32.158	3.723	0.80	0.4264
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.070	0.070	1.45	0.1491
dnace1_2	0.036	0.187	0.151	2.02	0.0439**
dnace1_3	-0.000	0.013	0.013	0.61	0.5435
dnace1_4	0.464	0.387	-0.077	0.79	0.4296
dnace1_5	0.071	0.091	0.020	0.35	0.7277
dnace1_6	0.107	0.104	-0.003	0.05	0.9636
dnace1_7	0.321	0.126	-0.195	2.80	0.0056***
dnace1_8	0.000	0.009	0.009	0.50	0.6206
dnace1_9	-0.000	0.013	0.013	0.61	0.5435
Iyear	2.005.339	2.005.348	0.009	0.03	0.9779
Number of observations (baseline): 32140					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.20: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of parent country national managers, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.225	2.245	0.020	0.12	0.9052
lnemp	3.436	3.414	-0.021	0.07	0.9464
ebitda	7.436	24.035	16.600	3.54	0.0006***
lnTFP	8.945	9.210	0.265	2.32	0.0221**
TFPGr	0.011	0.055	0.044	0.65	0.5200
exp_share	0.349	0.415	0.067	0.87	0.3845
ShHEemp	30.844	45.789	14.946	3.08	0.0026***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.334	0.231	-0.103	1.20	0.2335
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.462	0.615	0.153	1.60	0.1133
dnace1_5	0.092	0.077	-0.015	0.27	0.7862
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.113	0.077	-0.036	0.64	0.5239
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.271	2.005.077	-0.194	0.60	0.5497
Number of observations (baseline): 31901					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.21: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of parent country national managers, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.279	2.245	-0.034	0.23	0.8202
lnemp	3.422	3.414	-0.008	0.03	0.9788
ebitda	29.611	24.035	-5.576	0.57	0.5710
lnTFP	9.267	9.210	-0.057	0.44	0.6594
TFPGr	-0.015	0.055	0.070	0.91	0.3621
exp_share	0.393	0.415	0.023	0.32	0.7532
ShHEemp	46.200	45.789	-0.411	0.09	0.9284
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.262	0.231	-0.031	0.40	0.6871
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.589	0.615	0.026	0.29	0.7705
dnace1_5	0.076	0.077	0.001	0.01	0.9916
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.072	0.077	0.005	0.11	0.9148
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.241	2.005.077	-0.164	0.59	0.5560
Number of observations (baseline): 265					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.22: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of parent country national managers, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.306	2.220	-0.086	0.64	0.5218
lnemp	2.480	3.314	0.835	3.46	0.0006***
ebitda	1.597	14.008	12.411	2.10	0.0371**
lnTFP	8.958	9.179	0.221	1.67	0.0963*
TFPGr	0.087	0.036	-0.051	0.67	0.5040
exp_share	0.114	0.291	0.177	3.05	0.0025***
ShHEemp	27.042	30.405	3.363	0.86	0.3883
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.090	0.072	-0.017	0.37	0.7093
dnace1_2	0.253	0.193	-0.060	0.86	0.3904
dnace1_3	-0.000	0.014	0.014	0.76	0.4500
dnace1_4	0.382	0.357	-0.024	0.29	0.7742
dnace1_5	0.053	0.106	0.054	1.04	0.3006
dnace1_6	0.155	0.106	-0.049	0.88	0.3780
dnace1_7	0.068	0.126	0.058	1.04	0.3005
dnace1_8	0.000	0.010	0.010	0.62	0.5383
dnace1_9	-0.000	0.014	0.014	0.76	0.4500
Iyear	2.005.815	2.005.362	-0.453	1.63	0.1051
Number of observations (baseline): 32117					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.23: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of parent country national managers, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.344	2.207	-0.137	0.88	0.3783
lnemp	3.072	3.319	0.246	0.76	0.4480
ebitda	6.727	22.626	15.899	3.23	0.0016***
lnTFP	9.065	9.219	0.153	1.32	0.1896
TFPGr	0.022	0.047	0.025	0.39	0.7000
exp_share	0.329	0.394	0.065	0.84	0.4035
ShHEemp	34.904	45.812	10.908	2.16	0.0325**
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.247	0.182	-0.065	0.86	0.3923
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.487	0.636	0.149	1.62	0.1088
dnace1_5	0.152	0.091	-0.061	1.02	0.3080
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.114	0.091	-0.023	0.40	0.6872
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.297	2.005.182	-0.115	0.39	0.6967
Number of observations (baseline): 31899					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.24: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of parent country national managers, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.172	2.207	0.035	0.25	0.8038
lnemp	3.226	3.319	0.093	0.33	0.7402
ebitda	18.520	22.626	4.106	0.66	0.5096
lnTFP	9.162	9.219	0.057	0.42	0.6773
TFPGr	-0.018	0.047	0.065	0.91	0.3656
exp_share	0.413	0.394	-0.018	0.25	0.8064
ShHEemp	41.496	45.812	4.316	0.94	0.3478
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.208	0.182	-0.026	0.37	0.7116
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.614	0.636	0.022	0.26	0.7965
dnace1_5	0.096	0.091	-0.005	0.10	0.9208
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.082	0.091	0.009	0.18	0.8573
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.317	2.005.182	-0.135	0.50	0.6203
Number of observations (baseline): 240					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.25: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of parent country national managers, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.533	2.221	-0.312	2.09	0.0380**
lnemp	2.768	3.299	0.531	2.06	0.0410**
ebitda	2.513	13.240	10.727	1.70	0.0906*
lnTFP	9.002	9.161	0.159	1.06	0.2890
TFPGr	-0.094	0.035	0.129	1.46	0.1451
exp_share	0.087	0.296	0.209	3.36	0.0009***
ShHEemp	26.395	30.527	4.132	0.97	0.3331
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.049	0.064	0.015	0.34	0.7366
dnace1_2	0.175	0.213	0.038	0.50	0.6203
dnace1_3	-0.000	0.021	0.021	0.84	0.3999
dnace1_4	0.359	0.346	-0.013	0.14	0.8853
dnace1_5	0.086	0.106	0.020	0.35	0.7298
dnace1_6	0.181	0.096	-0.085	1.45	0.1478
dnace1_7	0.151	0.128	-0.023	0.36	0.7162
dnace1_8	-0.000	0.011	0.011	0.59	0.5536
dnace1_9	0.000	0.016	0.016	0.73	0.4671
Iyear	2.005.901	2.005.415	-0.486	1.61	0.1082
Number of observations (baseline): 32096					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.26: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of parent country national managers, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.423	2.340	-0.082	0.54	0.5932
lnemp	3.203	3.385	0.182	0.53	0.5963
ebitda	14.649	17.799	3.149	0.59	0.5576
lnTFP	9.044	9.217	0.174	1.46	0.1477
TFPGr	0.059	0.149	0.090	1.49	0.1380
exp_share	0.336	0.481	0.145	1.96	0.0519*
ShHEemp	35.102	45.743	10.641	2.05	0.0424**
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.252	0.222	-0.030	0.38	0.7066
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.618	0.556	-0.062	0.67	0.5026
dnace1_5	0.064	0.111	0.047	0.88	0.3820
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.067	0.111	0.045	0.82	0.4138
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.102	2.005.556	0.454	1.53	0.1280
Number of observations (baseline): 31898					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.3.27: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of parent country national managers, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.325	2.320	-0.006	0.04	0.9703
lnemp	3.237	3.226	-0.012	0.04	0.9707
ebitda	18.990	17.775	-1.214	0.17	0.8662
lnTFP	9.236	9.200	-0.035	0.25	0.7998
TFPGr	-0.002	0.023	0.025	0.33	0.7424
exp_share	0.423	0.381	-0.043	0.54	0.5901
ShHEemp	42.574	46.979	4.405	0.88	0.3795
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.228	0.111	-0.117	1.65	0.1021
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.585	0.667	0.082	0.88	0.3791
dnace1_5	0.097	0.111	0.014	0.24	0.8085
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.090	0.111	0.021	0.37	0.7116
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.440	2.005.222	-0.218	0.70	0.4824
Number of observations (baseline): 218					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Appendix A.4: Balancing tests for kernel matching baseline models with 100%, 150% and 200% foreign capital increase benchmarks including the covariate debt-to-asset

Table A.4.1: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.374	2.264	-0.111	0.78	0.4340
lnemp	2.567	3.330	0.762	2.84	0.0049***
ebitda	3.844	14.406	10.562	1.60	0.1102
debt_to_asset	0.613	0.703	0.090	1.40	0.1616
lnTFP	9.094	9.170	0.075	0.51	0.6133
TFPGr	0.058	0.035	-0.023	0.28	0.7787
exp_share	0.152	0.292	0.141	2.26	0.0251**
ShHEemp	24.011	30.623	6.611	1.57	0.1174
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.091	0.079	-0.012	0.24	0.8077
dnace1_2	0.131	0.209	0.078	1.05	0.2947
dnace1_3	-0.000	0.016	0.016	0.73	0.4648
dnace1_4	0.436	0.340	-0.095	1.07	0.2864
dnace1_5	0.096	0.084	-0.012	0.22	0.8225
dnace1_6	0.080	0.110	0.030	0.52	0.6068
dnace1_7	0.136	0.141	0.005	0.08	0.9333
dnace1_8	-0.000	0.005	0.005	0.42	0.6745
dnace1_9	0.030	0.016	-0.015	0.59	0.5556
Iyear	2.005.606	2.005.356	-0.250	0.85	0.3989
Number of observations (baseline): 32099					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.2: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.241	2.180	-0.061	0.28	0.7766
lnemp	3.478	3.337	-0.141	0.38	0.7085
ebitda	6.645	18.704	12.059	2.35	0.0209**
debt_to_asset	0.659	0.751	0.091	1.07	0.2868
lnTFP	8.959	9.418	0.458	2.60	0.0110**
TFPGr	0.171	0.057	-0.115	1.29	0.1993
exp_share	0.217	0.415	0.198	2.31	0.0235**
ShHEemp	25.073	46.314	21.241	3.74	0.0003***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.408	0.160	-0.248	2.50	0.0142**
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.498	0.600	0.102	0.84	0.4007
dnace1_5	0.025	0.120	0.095	1.34	0.1840
dnace1_6	0.009	0.040	0.031	0.72	0.4732
dnace1_7	0.036	0.040	0.004	0.08	0.9368
dnace1_8	0.024	0.040	0.016	0.34	0.7310
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.466	2.005.160	-0.306	0.81	0.4190
Number of observations (baseline): 31913					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.3: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.189	2.242	0.054	0.46	0.6496
lnemp	3.361	3.434	0.073	0.34	0.7320
ebitda	21.028	19.469	-1.560	0.26	0.7970
debt_to_asset	0.747	0.699	-0.048	1.04	0.3014
lnTFP	9.423	9.415	-0.008	0.06	0.9505
TFPGr	0.063	0.078	0.016	0.27	0.7858
exp_share	0.358	0.432	0.074	1.29	0.1989
ShHEemp	46.671	46.507	-0.163	0.04	0.9653
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.149	0.167	0.017	0.32	0.7493
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.595	0.625	0.030	0.41	0.6842
dnace1_5	0.169	0.125	-0.044	0.83	0.4058
dnace1_6	0.039	-0.000	-0.039	1.92	0.0559*
dnace1_7	0.024	0.042	0.018	0.68	0.4968
dnace1_8	0.024	0.042	0.017	0.65	0.5157
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.166	2.005.250	0.084	0.37	0.7108
Number of observations (baseline): 236					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.4: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.332	2.254	-0.078	0.54	0.5907
lnemp	2.803	3.411	0.608	2.30	0.0226**
ebitda	8.825	15.106	6.281	0.87	0.3845
debt_to_asset	0.622	0.680	0.058	1.08	0.2828
lnTFP	8.953	9.162	0.209	1.39	0.1660
TFPGr	-0.065	0.032	0.098	1.14	0.2553
exp_share	0.109	0.304	0.196	3.07	0.0024***
ShHEemp	26.511	29.422	2.911	0.68	0.4957
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.097	0.083	-0.014	0.26	0.7931
dnace1_2	0.119	0.210	0.091	1.21	0.2270
dnace1_3	0.044	0.022	-0.022	0.73	0.4670
dnace1_4	0.419	0.315	-0.104	1.17	0.2419
dnace1_5	0.032	0.094	0.062	1.17	0.2440
dnace1_6	0.065	0.110	0.046	0.79	0.4275
dnace1_7	0.195	0.144	-0.051	0.75	0.4532
dnace1_8	0.030	0.006	-0.024	1.35	0.1779
dnace1_9	0.000	0.017	0.017	0.74	0.4603
Iyear	2.005.615	2.005.376	-0.240	0.79	0.4322
Number of observations (baseline): 32090					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.5: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.244	2.077	-0.167	1.91	0.0569*
lnemp	2.917	3.201	0.284	1.60	0.1109
ebitda	14.634	17.958	3.325	1.05	0.2956
debt_to_asset	0.611	0.813	0.202	5.30	0.0000***
lnTFP	9.106	9.338	0.232	3.79	0.0002***
TFPGr	-0.046	0.017	0.064	1.55	0.1218
exp_share	0.142	0.315	0.173	4.91	0.0000***
ShHEemp	43.649	45.489	1.840	0.68	0.4953
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.103	0.095	-0.007	0.23	0.8213
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.550	0.619	0.069	1.28	0.2018
dnace1_5	0.124	0.143	0.019	0.51	0.6114
dnace1_6	0.022	0.048	0.025	1.20	0.2327
dnace1_7	0.178	0.048	-0.130	4.07	0.0001***
dnace1_8	0.024	0.048	0.024	1.12	0.2617
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.080	2.005.190	0.111	0.61	0.5429
Number of observations (baseline): 31909					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.6: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.013	2.022	0.009	0.06	0.9503
lnemp	3.092	3.038	-0.054	0.22	0.8286
ebitda	19.784	17.829	-1.954	0.24	0.8097
debt_to_asset	0.766	0.801	0.035	0.61	0.5448
lnTFP	9.507	9.275	-0.232	1.91	0.0581*
TFPGr	0.098	0.044	-0.054	0.75	0.4531
exp_share	0.268	0.311	0.043	0.68	0.4970
ShHEemp	46.558	41.503	-5.056	1.20	0.2309
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.109	0.111	0.002	0.04	0.9696
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.648	0.611	-0.037	0.45	0.6528
dnace1_5	0.100	0.167	0.066	1.16	0.2470
dnace1_6	0.089	0.056	-0.033	0.76	0.4462
dnace1_7	0.054	0.056	0.002	0.04	0.9666
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.191	2.005.056	-0.136	0.46	0.6466
Number of observations (baseline): 223					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculation

Table A.4.7: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.523	2.236	-0.287	1.88	0.0614*
lnemp	2.497	3.392	0.895	3.27	0.0013***
ebitda	3.970	14.101	10.130	1.45	0.1485
debt_to_asset	0.558	0.663	0.105	1.96	0.0520*
lnTFP	9.095	9.146	0.051	0.32	0.7503
TFPGr	0.137	0.023	-0.113	1.30	0.1949
exp_share	0.123	0.312	0.189	2.85	0.0048***
ShHEemp	29.050	29.667	0.617	0.14	0.8902
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.106	0.067	-0.039	0.75	0.4518
dnace1_2	0.193	0.232	0.039	0.47	0.6370
dnace1_3	0.017	0.018	0.001	0.03	0.9748
dnace1_4	0.388	0.311	-0.077	0.84	0.4043
dnace1_5	0.034	0.098	0.063	1.13	0.2594
dnace1_6	0.101	0.104	0.003	0.04	0.9661
dnace1_7	0.098	0.146	0.048	0.70	0.4839
dnace1_8	0.034	0.006	-0.028	1.43	0.1551
dnace1_9	0.028	0.018	-0.009	0.34	0.7344
Iyear	2.005.710	2.005.427	-0.283	0.90	0.3713
Number of observations (baseline): 32073					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.8: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.341	2.161	-0.181	1.02	0.3096
lnemp	3.541	3.246	-0.295	0.91	0.3659
ebitda	5.140	14.985	9.846	2.70	0.0081***
debt_to_asset	0.727	0.810	0.083	0.59	0.5534
lnTFP	8.977	9.320	0.344	2.64	0.0097***
TFPGr	-0.004	0.040	0.045	0.54	0.5904
exp_share	0.284	0.315	0.031	0.41	0.6837
ShHEemp	22.505	43.124	20.619	4.36	0.0000***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.081	0.048	-0.033	0.67	0.5013
dnace1_2	0.267	0.095	-0.172	2.34	0.0214**
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.347	0.571	0.224	2.17	0.0320**
dnace1_5	0.193	0.143	-0.050	0.65	0.5199
dnace1_6	0.018	0.048	0.029	0.73	0.4685
dnace1_7	0.066	0.048	-0.018	0.38	0.7032
dnace1_8	0.028	0.048	0.019	0.46	0.6437
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.973	2.005.333	0.360	1.07	0.2851
Number of observations (baseline): 31909					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.9: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign managers, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.146	2.120	-0.026	0.18	0.8564
lnemp	3.202	3.091	-0.111	0.47	0.6423
ebitda	12.598	14.361	1.763	0.40	0.6884
debt_to_asset	0.772	0.798	0.026	0.49	0.6255
lnTFP	9.271	9.254	-0.017	0.13	0.8971
TFPGr	0.110	0.070	-0.040	0.59	0.5537
exp_share	0.274	0.311	0.037	0.62	0.5351
ShHEemp	39.881	38.744	-1.137	0.30	0.7624
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.066	0.056	-0.011	0.28	0.7791
dnace1_2	0.104	0.111	0.007	0.13	0.8945
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.541	0.556	0.015	0.18	0.8541
dnace1_5	0.162	0.167	0.005	0.08	0.9374
dnace1_6	0.058	0.056	-0.002	0.05	0.9575
dnace1_7	0.069	0.056	-0.013	0.34	0.7331
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.409	2.005.222	-0.187	0.68	0.4980
Number of observations (baseline): 206					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.10: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.344	2.270	-0.074	0.58	0.5619
lnemp	2.895	3.459	0.564	2.50	0.0131**
ebitda	4.527	15.621	11.094	1.90	0.0588*
debt_to_asset	0.643	0.689	0.047	0.88	0.3773
lnTFP	8.934	9.179	0.245	1.84	0.0663*
TFPGr	-0.006	0.065	0.071	1.05	0.2945
exp_share	0.255	0.296	0.040	0.72	0.4725
ShHEemp	29.933	30.406	0.472	0.13	0.9006
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.095	0.079	-0.016	0.35	0.7270
dnace1_2	0.255	0.215	-0.040	0.59	0.5583
dnace1_3	0.064	0.011	-0.053	2.22	0.0273**
dnace1_4	0.269	0.373	0.104	1.33	0.1858
dnace1_5	0.037	0.090	0.053	1.20	0.2330
dnace1_6	0.120	0.085	-0.035	0.75	0.4549
dnace1_7	0.137	0.136	-0.001	0.03	0.9801
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.023	0.011	-0.011	0.60	0.5475
Iyear	2.005.382	2.005.565	0.183	0.70	0.4858
Number of observations (baseline): 26813					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.11: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.453	2.318	-0.135	0.87	0.3851
lnemp	3.230	3.822	0.593	2.27	0.0251**
ebitda	5.996	20.402	14.406	3.54	0.0006***
debt_to_asset	0.554	0.624	0.071	1.22	0.2235
lnTFP	9.157	9.451	0.294	2.28	0.0244**
TFPGr	0.010	-0.066	-0.076	0.72	0.4739
exp_share	0.209	0.322	0.113	1.54	0.1258
ShHEemp	39.368	49.477	10.109	1.81	0.0727*
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.106	0.050	-0.056	1.06	0.2927
dnace1_2	0.161	0.200	0.039	0.47	0.6398
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.387	0.250	-0.137	1.42	0.1592
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.090	0.300	0.210	2.34	0.0212**
dnace1_7	0.131	0.150	0.019	0.25	0.8011
dnace1_8	0.125	0.050	-0.075	1.37	0.1747
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.754	2.004.300	-0.454	1.55	0.1232
Number of observations (baseline): 26640					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.12: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.438	2.376	-0.062	0.40	0.6910
lnemp	3.824	3.723	-0.101	0.34	0.7310
ebitda	24.089	22.617	-1.472	0.15	0.8796
debt_to_asset	0.638	0.598	-0.040	0.54	0.5911
lnTFP	9.284	9.534	0.250	1.64	0.1042
TFPGr	-0.047	-0.047	-0.000	0.00	0.9976
exp_share	0.332	0.344	0.012	0.15	0.8828
ShHEemp	37.804	45.331	7.526	1.37	0.1752
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.109	0.062	-0.047	0.76	0.4469
dnace1_2	0.274	0.188	-0.086	0.94	0.3482
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.255	0.313	0.057	0.58	0.5602
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.176	0.250	0.074	0.83	0.4102
dnace1_7	0.186	0.187	0.002	0.02	0.9840
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.631	2.004.312	-0.319	1.09	0.2792
Number of observations (baseline): 215					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.13: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.457	2.257	-0.201	1.47	0.1430
lnemp	2.643	3.532	0.888	3.59	0.0004***
ebitda	4.238	16.419	12.181	1.86	0.0636*
debt_to_asset	0.609	0.681	0.073	1.39	0.1662
lnTFP	8.976	9.144	0.168	1.23	0.2213
TFPGr	0.039	0.050	0.012	0.17	0.8687
exp_share	0.141	0.296	0.155	2.65	0.0086***
ShHEemp	32.380	29.391	-2.989	0.74	0.4579
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	-0.000	0.084	0.084	1.91	0.0579*
dnace1_2	0.241	0.223	-0.018	0.25	0.8030
dnace1_3	-0.000	0.012	0.012	0.69	0.4885
dnace1_4	0.439	0.349	-0.090	1.06	0.2918
dnace1_5	-0.000	0.102	0.102	2.12	0.0349**
dnace1_6	0.121	0.096	-0.024	0.46	0.6481
dnace1_7	0.199	0.120	-0.079	1.31	0.1923
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	-0.000	0.012	0.012	0.69	0.4885
Iyear	2.005.688	2.005.584	-0.104	0.37	0.7124
Number of observations (baseline): 26803					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.14: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.415	2.230	-0.186	1.07	0.2880
lnemp	3.573	3.645	0.072	0.25	0.8038
ebitda	7.098	18.216	11.118	2.64	0.0096***
debt_to_asset	0.574	0.611	0.036	0.63	0.5309
lnTFP	8.943	9.416	0.473	4.05	0.0001***
TFPGr	0.078	-0.088	-0.166	1.51	0.1333
exp_share	0.366	0.386	0.020	0.24	0.8135
ShHEemp	33.869	49.253	15.383	2.64	0.0098***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.058	0.056	-0.003	0.06	0.9562
dnace1_2	0.275	0.167	-0.109	1.22	0.2239
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.283	0.222	-0.061	0.64	0.5246
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.127	0.278	0.150	1.64	0.1053
dnace1_7	0.213	0.222	0.009	0.10	0.9232
dnace1_8	0.043	0.056	0.013	0.26	0.7926
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.529	2.004.389	-0.140	0.46	0.6457
Number of observations (baseline): 26638					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.15: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.266	2.210	-0.056	0.36	0.7159
lnemp	3.425	3.579	0.154	0.64	0.5259
ebitda	11.839	17.456	5.617	0.98	0.3291
debt_to_asset	0.523	0.596	0.073	1.27	0.2085
lnTFP	9.380	9.444	0.064	0.51	0.6120
TFPGr	-0.053	-0.060	-0.008	0.08	0.9330
exp_share	0.344	0.373	0.029	0.39	0.6946
ShHEemp	46.180	49.364	3.184	0.65	0.5148
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.043	0.059	0.016	0.37	0.7101
dnace1_2	0.190	0.176	-0.013	0.18	0.8609
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.194	0.235	0.041	0.53	0.6003
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.260	0.294	0.034	0.39	0.6944
dnace1_7	0.313	0.235	-0.078	0.91	0.3634
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.443	2.004.353	-0.090	0.35	0.7287
Number of observations (baseline): 203					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.16: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.328	2.269	-0.058	0.35	0.7246
lnemp	2.532	3.498	0.967	3.63	0.0004***
ebitda	2.467	14.939	12.471	1.76	0.0795*
debt_to_asset	0.572	0.660	0.087	1.57	0.1176
lnTFP	9.063	9.146	0.083	0.52	0.6018
TFPGr	-0.016	0.045	0.061	0.74	0.4582
exp_share	0.176	0.302	0.126	1.91	0.0573*
ShHEemp	30.838	29.865	-0.973	0.22	0.8281
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.045	0.077	0.032	0.63	0.5315
dnace1_2	0.143	0.237	0.094	1.16	0.2466
dnace1_3	-0.000	0.019	0.019	0.78	0.4368
dnace1_4	0.358	0.340	-0.018	0.19	0.8477
dnace1_5	0.033	0.103	0.069	1.23	0.2205
dnace1_6	0.191	0.096	-0.095	1.55	0.1221
dnace1_7	0.230	0.115	-0.114	1.72	0.0866*
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	-0.000	0.013	0.013	0.63	0.5267
Iyear	2.006.071	2.005.635	-0.437	1.41	0.1607
Number of observations (baseline): 26792					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.17: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.119	2.107	-0.012	0.07	0.9430
lnemp	3.037	3.496	0.459	1.71	0.0900*
ebitda	21.379	17.298	-4.080	0.66	0.5130
debt_to_asset	0.638	0.636	-0.002	0.04	0.9667
lnTFP	9.884	9.443	-0.441	1.84	0.0687*
TFPGr	0.122	-0.071	-0.193	1.41	0.1617
exp_share	0.276	0.405	0.129	1.60	0.1138
ShHEemp	46.435	47.134	0.700	0.12	0.9020
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.189	0.214	0.025	0.28	0.7783
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.392	0.286	-0.106	1.04	0.3028
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.206	0.143	-0.064	0.78	0.4385
dnace1_7	0.158	0.286	0.127	1.37	0.1750
dnace1_8	0.054	0.071	0.018	0.32	0.7481
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.754	2.004.500	-1.254	4.18	0.0001***
Number of observations (baseline): 26634					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.18: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of foreign experts, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.186	2.072	-0.114	0.65	0.5177
lnemp	3.462	3.398	-0.064	0.23	0.8170
ebitda	18.394	16.234	-2.160	0.24	0.8084
debt_to_asset	0.626	0.619	-0.007	0.12	0.9074
lnTFP	9.305	9.481	0.176	1.16	0.2509
TFPGr	0.003	-0.034	-0.037	0.34	0.7368
exp_share	0.365	0.390	0.026	0.31	0.7580
ShHEemp	38.759	47.116	8.357	1.54	0.1266
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.314	0.231	-0.083	0.88	0.3820
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.313	0.308	-0.006	0.06	0.9542
dnace1_5	0.000	0.000	0.000	.	.
dnace1_6	0.156	0.154	-0.002	0.02	0.9826
dnace1_7	0.217	0.308	0.090	0.97	0.3354
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.004.798	2.004.462	-0.337	1.24	0.2175
Number of observations (baseline): 188					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.19: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.284	2.244	-0.040	0.25	0.8009
lnemp	2.361	3.175	0.814	2.73	0.0067***
ebitda	1.451	12.846	11.395	1.65	0.1009
debt_to_asset	0.599	0.728	0.128	1.75	0.0810*
lnTFP	8.987	9.220	0.233	1.37	0.1713
TFPGr	0.169	0.060	-0.109	1.08	0.2831
exp_share	0.090	0.281	0.191	2.79	0.0056***
ShHEemp	25.989	32.084	6.096	1.27	0.2045
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.098	0.069	-0.029	0.53	0.5939
dnace1_2	0.097	0.186	0.089	1.13	0.2606
dnace1_3	0.000	0.017	0.017	0.67	0.5025
dnace1_4	0.280	0.385	0.105	1.05	0.2960
dnace1_5	0.178	0.091	-0.087	1.41	0.1606
dnace1_6	0.116	0.104	-0.012	0.18	0.8541
dnace1_7	0.120	0.126	0.005	0.08	0.9372
dnace1_8	0.040	0.009	-0.031	1.40	0.1613
dnace1_9	0.071	0.013	-0.058	2.09	0.0378**
Iyear	2.005.332	2.005.351	0.019	0.06	0.9541
Number of observations (baseline): 32140					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.20: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.115	2.245	0.130	0.91	0.3637
lnemp	3.042	3.414	0.372	1.26	0.2108
ebitda	6.871	24.035	17.164	4.02	0.0001***
debt_to_asset	0.670	0.707	0.038	0.71	0.4761
lnTFP	9.078	9.210	0.132	1.15	0.2520
TFPGr	0.039	0.055	0.016	0.25	0.7999
exp_share	0.231	0.415	0.184	2.84	0.0052***
ShHEemp	40.780	45.789	5.010	1.02	0.3109
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.199	0.231	0.032	0.43	0.6669
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.669	0.615	-0.054	0.62	0.5354
dnace1_5	0.021	0.077	0.056	1.35	0.1782
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.111	0.077	-0.034	0.66	0.5112
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.421	2.005.077	-0.344	1.23	0.2203
Number of observations (baseline): 31901					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.21: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 100% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.256	2.245	-0.011	0.08	0.9378
lnemp	3.251	3.414	0.164	0.59	0.5568
ebitda	24.767	24.035	-0.732	0.08	0.9358
debt_to_asset	0.731	0.707	-0.023	0.37	0.7154
lnTFP	9.350	9.210	-0.139	1.08	0.2819
TFPGr	-0.025	0.055	0.080	1.09	0.2786
exp_share	0.402	0.415	0.014	0.20	0.8452
ShHEemp	48.162	45.789	-2.372	0.52	0.6057
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.213	0.231	0.017	0.24	0.8139
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.643	0.615	-0.027	0.32	0.7495
dnace1_5	0.084	0.077	-0.007	0.14	0.8867
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.060	0.077	0.017	0.38	0.7070
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.370	2.005.077	-0.293	1.06	0.2898
Number of observations (baseline): 265					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.22: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.414	2.220	-0.195	1.34	0.1800
lnemp	2.466	3.314	0.849	3.17	0.0017***
ebitda	2.452	14.008	11.556	1.78	0.0764*
debt_to_asset	0.635	0.709	0.074	1.30	0.1937
lnTFP	9.073	9.179	0.106	0.72	0.4746
TFPGr	-0.024	0.036	0.059	0.72	0.4723
exp_share	0.136	0.291	0.155	2.45	0.0149**
ShHEemp	28.106	30.405	2.299	0.54	0.5896
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.031	0.072	0.041	0.87	0.3825
dnace1_2	0.156	0.193	0.037	0.51	0.6124
dnace1_3	-0.000	0.014	0.014	0.69	0.4907
dnace1_4	0.367	0.357	-0.009	0.10	0.9174
dnace1_5	0.181	0.106	-0.075	1.24	0.2168
dnace1_6	0.109	0.106	-0.003	0.04	0.9651
dnace1_7	0.156	0.126	-0.031	0.48	0.6294
dnace1_8	-0.000	0.010	0.010	0.56	0.5745
dnace1_9	-0.000	0.014	0.014	0.69	0.4907
Iyear	2.006.138	2.005.362	-0.775	2.54	0.0116**
Number of observations (baseline): 32117					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.23: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.388	2.207	-0.181	1.27	0.2075
lnemp	3.133	3.319	0.186	0.66	0.5136
ebitda	5.148	22.626	17.478	3.86	0.0002***
debt_to_asset	0.689	0.757	0.069	1.45	0.1488
lnTFP	8.832	9.219	0.387	3.30	0.0013***
TFPGr	-0.028	0.047	0.075	1.20	0.2329
exp_share	0.284	0.394	0.110	1.57	0.1198
ShHEemp	41.146	45.812	4.666	0.96	0.3398
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.332	0.182	-0.150	1.91	0.0589*
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.539	0.636	0.098	1.08	0.2832
dnace1_5	0.054	0.091	0.037	0.75	0.4544
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.075	0.091	0.016	0.30	0.7642
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.323	2.005.182	-0.141	0.48	0.6329
Number of observations (baseline): 31899					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.24: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 150% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.146	2.249	0.103	0.74	0.4634
lnemp	3.133	3.277	0.144	0.51	0.6117
ebitda	23.066	24.597	1.531	0.19	0.8476
debt_to_asset	0.790	0.789	-0.002	0.04	0.9713
lnTFP	9.087	9.228	0.141	0.96	0.3409
TFPGr	-0.029	0.017	0.047	0.65	0.5145
exp_share	0.456	0.343	-0.114	1.54	0.1258
ShHEemp	43.944	49.284	5.340	1.21	0.2276
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.169	0.100	-0.069	1.16	0.2477
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.665	0.700	0.035	0.43	0.6664
dnace1_5	0.078	0.100	0.022	0.43	0.6648
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.088	0.100	0.012	0.24	0.8125
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.195	2.005.100	-0.095	0.36	0.7219
Number of observations (baseline): 240					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.25: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.321	2.218	-0.104	0.72	0.4732
lnemp	2.508	3.306	0.798	3.11	0.0021***
ebitda	4.843	13.307	8.464	1.39	0.1669
debt_to_asset	0.642	0.690	0.048	0.92	0.3573
lnTFP	9.035	9.162	0.127	0.87	0.3864
TFPGr	-0.087	0.033	0.120	1.37	0.1717
exp_share	0.162	0.297	0.135	2.21	0.0282**
ShHEemp	31.386	30.610	-0.776	0.19	0.8504
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.106	0.064	-0.041	0.88	0.3778
dnace1_2	0.101	0.214	0.113	1.56	0.1208
dnace1_3	0.057	0.016	-0.041	1.52	0.1294
dnace1_4	0.352	0.348	-0.004	0.05	0.9639
dnace1_5	0.054	0.107	0.053	0.98	0.3270
dnace1_6	0.131	0.096	-0.035	0.63	0.5312
dnace1_7	0.200	0.128	-0.072	1.13	0.2583
dnace1_8	-0.000	0.011	0.011	0.62	0.5364
dnace1_9	-0.000	0.016	0.016	0.76	0.4478
Iyear	2.005.864	2.005.412	-0.452	1.54	0.1247
Number of observations (baseline): 32096					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.26: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.159	2.340	0.181	1.50	0.1360
lnemp	3.008	3.385	0.376	1.63	0.1038
ebitda	6.680	17.799	11.119	3.82	0.0002***
debt_to_asset	0.638	0.718	0.080	2.07	0.0399**
lnTFP	9.159	9.217	0.058	0.68	0.4974
TFPGr	0.264	0.149	-0.115	1.55	0.1230
exp_share	0.387	0.481	0.093	1.65	0.1001
ShHEemp	34.774	45.743	10.970	3.05	0.0026***
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.193	0.222	0.030	0.54	0.5883
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.640	0.556	-0.085	1.28	0.2006
dnace1_5	0.067	0.111	0.044	1.12	0.2639
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.100	0.111	0.011	0.27	0.7880
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.397	2.005.556	0.158	0.78	0.4371
Number of observations (baseline): 31898					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.4.27: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the multinomial model considering employment of parent country national managers, including the covariate debt-to-asset, baseline 200% FDI increase benchmark case

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.285	2.267	-0.018	0.12	0.9011
lnemp	3.110	3.277	0.167	0.56	0.5766
ebitda	19.012	16.289	-2.723	0.42	0.6742
debt_to_asset	0.763	0.753	-0.010	0.19	0.8489
lnTFP	9.195	9.193	-0.002	0.02	0.9878
TFPGr	0.021	0.055	0.034	0.45	0.6502
exp_share	0.405	0.434	0.029	0.38	0.7019
ShHEemp	41.953	43.390	1.437	0.30	0.7619
dnace1_0	0.000	0.000	0.000	.	.
dnace1_1	0.000	0.000	0.000	.	.
dnace1_2	0.206	0.200	-0.006	0.08	0.9332
dnace1_3	0.000	0.000	0.000	.	.
dnace1_4	0.607	0.600	-0.007	0.08	0.9357
dnace1_5	0.085	0.100	0.015	0.27	0.7861
dnace1_6	0.000	0.000	0.000	.	.
dnace1_7	0.101	0.100	-0.001	0.02	0.9854
dnace1_8	0.000	0.000	0.000	.	.
dnace1_9	0.000	0.000	0.000	.	.
Iyear	2.005.375	2.005.300	-0.075	0.27	0.7895
Number of observations (baseline): 218					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Appendix A.5: Balancing tests for the first robustness check kernel matching models

Table A.5.1: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the first robustness check multinomial model considering employment of foreign managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.356	2.214	-0.142	0.95	0.3454
lnemp	2.53	3.356	0.826	3.1	0.0022***
lnTFP	9.014	9.164	0.151	0.96	0.3376
TFPGr	-0.007	0.023	0.029	0.36	0.7229
exp_share	0.131	0.304	0.173	2.7	0.0075***
ShHEemp	32.946	30.457	-2.489	0.56	0.5743
dnace1_0	0	0	0	.	.
dnace1_1	0.069	0.069	-0.001	0.01	0.9914
dnace1_2	0.078	0.213	0.134	1.8	0.0738*
dnace1_3	0	0.019	0.019	0.79	0.4316
dnace1_4	0.418	0.331	-0.087	0.95	0.3415
dnace1_5	0.031	0.106	0.075	1.35	0.1801
dnace1_6	0.138	0.1	-0.038	0.64	0.5216
dnace1_7	0.19	0.137	-0.053	0.78	0.438
dnace1_8	0	0.006	0.006	0.45	0.6517
dnace1_9	0.075	0.019	-0.056	1.79	0.0757*
Iyear	2004.863	2005.35	0.487	1.64	0.1028
Number of observations (baseline): 36055					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.2: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the first robustness check multinomial model considering employment of foreign managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.361	2.221	-0.141	0.85	0.3985
lnemp	3.279	3.4	0.121	0.41	0.6797
lnTFP	8.916	9.306	0.39	3.78	0.0002***
TFPGr	0.07	0.038	-0.032	0.47	0.6358
exp_share	0.175	0.303	0.128	1.91	0.0588*
ShHEemp	29.091	36.587	7.496	1.74	0.0843*
dnace1_0	0	0	0	.	.
dnace1_1	0.059	0.038	-0.021	0.52	0.6026
dnace1_2	0.236	0.154	-0.082	1.11	0.2708
dnace1_3	0	0.038	0.038	1.23	0.2214
dnace1_4	0.475	0.5	0.025	0.25	0.801
dnace1_5	0.106	0.115	0.009	0.15	0.8795
dnace1_6	0.057	0.038	-0.018	0.46	0.648
dnace1_7	0.066	0.077	0.011	0.22	0.8291
dnace1_8	0.001	0.038	0.038	1.2	0.2342
dnace1_9	0	0	0	.	.
Iyear	2004.907	2004.5	-0.407	1.24	0.2177
Number of observations (baseline): 35848					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.3: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the first robustness check multinomial model considering employment of foreign managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.348	2.306	-0.042	0.27	0.784
lnemp	3.649	3.432	-0.216	0.81	0.4224
lnTFP	9.148	9.242	0.094	0.72	0.4718
TFPGr	0.055	0.095	0.04	0.66	0.513
exp_share	0.247	0.381	0.135	1.98	0.0507*
ShHEemp	33.962	38.743	4.781	1.16	0.2469
dnace1_0	0	0	0	.	.
dnace1_1	0.037	0.053	0.016	0.41	0.6803
dnace1_2	0.213	0.211	-0.003	0.04	0.9719
dnace1_3	0	0	0	.	.
dnace1_4	0.388	0.474	0.086	0.92	0.3577
dnace1_5	0.269	0.158	-0.111	1.46	0.1474
dnace1_6	0.036	0	-0.036	1.49	0.1394
dnace1_7	0.058	0.105	0.047	0.92	0.3608
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2004.98	2005.211	0.23	0.85	0.3983
Number of observations (baseline): 259					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.4: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the first robustness check multinomial model considering employment of foreign experts

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.379	2.212	-0.167	1.07	0.2867
lnemp	2.664	3.386	0.722	2.87	0.0045***
lnTFP	9.099	9.196	0.097	0.63	0.5311
TFPGr	0.09	0.06	-0.03	0.37	0.7144
exp_share	0.068	0.296	0.228	3.73	0.0003***
ShHEemp	33.106	30.763	-2.343	0.54	0.5896
dnace1_0	0	0	0	.	.
dnace1_1	0.063	0.078	0.015	0.3	0.7641
dnace1_2	0.068	0.214	0.146	1.98	0.0487**
dnace1_3	0.021	0.019	-0.001	0.04	0.9642
dnace1_4	0.248	0.344	0.096	1.08	0.2813
dnace1_5	0.113	0.11	-0.003	0.05	0.9585
dnace1_6	0.14	0.104	-0.036	0.6	0.5479
dnace1_7	0.317	0.117	-0.2	3.01	0.0029***
dnace1_8	0	0	0	.	.
dnace1_9	0.03	0.013	-0.017	0.73	0.4662
Iyear	2005.096	2005.474	0.378	1.29	0.1979
Number of observations (baseline): 29679					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.5: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the first robustness check multinomial model considering employment of foreign experts

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.268	2.306	0.037	0.23	0.8148
lnemp	2.94	3.957	1.016	3.67	0.0004***
lnTFP	9.068	9.175	0.107	0.83	0.4065
TFPGr	0.035	-0.105	-0.141	1.35	0.1803
exp_share	0.28	0.403	0.123	1.55	0.1232
ShHEemp	41.191	40.77	-0.422	0.08	0.9366
dnace1_0	0	0	0	.	.
dnace1_1	0	0	0	.	.
dnace1_2	0.302	0.353	0.051	0.53	0.5986
dnace1_3	0	0	0	.	.
dnace1_4	0.222	0.176	-0.045	0.56	0.5747
dnace1_5	0.007	0.059	0.052	1.28	0.2035
dnace1_6	0.066	0.118	0.051	0.84	0.4045
dnace1_7	0.387	0.235	-0.152	1.67	0.0976*
dnace1_8	0.016	0.059	0.043	1.01	0.3141
dnace1_9	0	0	0	.	.
Iyear	2004.798	2004.765	-0.033	0.13	0.8978
Number of observations (baseline): 29485					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.6: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the first robustness check multinomial model considering employment of foreign experts

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.241	2.236	-0.004	0.03	0.9758
lnemp	3.752	3.757	0.005	0.02	0.9835
lnTFP	9.115	9.195	0.08	0.61	0.5404
TFPGr	-0.045	-0.054	-0.009	0.11	0.912
exp_share	0.336	0.378	0.042	0.64	0.5237
ShHEemp	36.387	39.495	3.108	0.7	0.4836
dnace1_0	0	0	0	.	.
dnace1_1	0	0	0	.	.
dnace1_2	0.395	0.353	-0.042	0.5	0.6177
dnace1_3	0	0	0	.	.
dnace1_4	0.2	0.235	0.035	0.49	0.623
dnace1_5	0.058	0.059	0.001	0.02	0.987
dnace1_6	0.098	0.118	0.02	0.36	0.7163
dnace1_7	0.249	0.235	-0.014	0.18	0.8557
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2004.569	2004.647	0.078	0.34	0.7364
Number of observations (baseline): 240					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.7: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the first robustness check multinomial model considering employment of parent country national managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.209	2.2	-0.008	0.09	0.9251
lnemp	2.653	3.301	0.648	4.4	0.0000***
lnTFP	8.984	9.166	0.182	2.23	0.0263**
TFPGr	-0.024	0.028	0.052	1.13	0.2594
exp_share	0.156	0.299	0.143	4.14	0.0000***
ShHEemp	30.817	31.014	0.197	0.08	0.9342
dnace1_0	0	0	0	.	.
dnace1_1	0.058	0.066	0.008	0.29	0.7684
dnace1_2	0.174	0.208	0.033	0.78	0.4335
dnace1_3	0.031	0.016	-0.014	0.92	0.3565
dnace1_4	0.418	0.344	-0.074	1.44	0.1517
dnace1_5	0.055	0.115	0.059	1.92	0.0562*
dnace1_6	0.091	0.098	0.008	0.24	0.8097
dnace1_7	0.135	0.126	-0.009	0.25	0.8038
dnace1_8	0.01	0.011	0.001	0.07	0.9435
dnace1_9	0.028	0.016	-0.012	0.8	0.4255
Iyear	2005.141	2005.301	0.159	1	0.3178
Number of observations (baseline): 36087					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.8: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the first robustness check multinomial model considering employment of parent country national managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.504	2.442	-0.062	0.45	0.6545
lnemp	2.581	3.34	0.759	2.14	0.0348**
lnTFP	9.126	9.198	0.072	0.54	0.5907
TFPGr	0.017	0.081	0.064	0.81	0.4205
exp_share	0.109	0.371	0.262	3.64	0.0004***
ShHEemp	43.525	42.744	-0.781	0.13	0.893
dnace1_0	0	0	0	.	.
dnace1_1	0	0	0	.	.
dnace1_2	0.041	0.222	0.182	2.58	0.0114**
dnace1_3	0	0	0	.	.
dnace1_4	0.824	0.667	-0.157	1.76	0.0811*
dnace1_5	0	0	0	.	.
dnace1_6	0	0	0	.	.
dnace1_7	0.135	0.111	-0.024	0.37	0.7154
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2005.425	2005.556	0.131	0.45	0.6539
Number of observations (baseline): 35833					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.5.9: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the first robustness check multinomial model considering employment of parent country national managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.479	2.427	-0.052	0.41	0.6805
lnemp	3.38	3.291	-0.088	0.26	0.7916
lnTFP	9.384	9.062	-0.322	2.23	0.0280**
TFPGr	0.066	0.073	0.007	0.09	0.9294
exp_share	0.327	0.378	0.051	0.63	0.5291
ShHEemp	45.847	37.484	-8.363	1.58	0.1164
dnace1_0	0	0	0	.	.
dnace1_1	0	0	0	.	.
dnace1_2	0.224	0.25	0.026	0.31	0.7557
dnace1_3	0	0	0	.	.
dnace1_4	0.608	0.625	0.017	0.17	0.8631
dnace1_5	0	0	0	.	.
dnace1_6	0	0	0	.	.
dnace1_7	0.168	0.125	-0.043	0.61	0.5407
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2005.366	2005.625	0.259	0.86	0.3915
Number of observations (baseline): 276					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Appendix A.6: Balancing tests for the second robustness check kernel matching models

Table A.6.1: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the second robustness check multinomial model considering employment of foreign managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.507	2.221	-0.285	1.64	0.1022
lnemp	2.911	3.101	0.19	0.53	0.597
ebitda	2.316	17.037	14.72	0.99	0.3216
lnTFP	9.117	9.438	0.322	1.72	0.0855*
TFPGr	0.15	0.112	-0.038	0.31	0.7563
exp_share	0.192	0.342	0.151	1.64	0.1023
ShHEemp	15.789	32.31	16.52	2.92	0.0037***
dnace1_0	0	0	0	.	.
dnace1_1	0.118	0.042	-0.075	1.49	0.1375
dnace1_2	0.353	0.191	-0.162	1.66	0.0978*
dnace1_3	0.059	0.025	-0.033	0.85	0.3966
dnace1_4	0.294	0.481	0.186	1.52	0.1296
dnace1_5	0	0.076	0.076	1.18	0.2378
dnace1_6	0.059	0.078	0.019	0.29	0.7728
dnace1_7	0.059	0.085	0.026	0.38	0.706
dnace1_8	0.059	0.014	-0.045	1.52	0.1278
dnace1_9	0	0.008	0.008	0.38	0.7039
Iyear	2006.059	2006.086	0.027	0.26	0.7929
Number of observations (baseline): 32505					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.2: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the second robustness check multinomial model considering employment of foreign managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.522	2.096	-0.427	1.95	0.0541*
lnemp	3.299	4.027	0.728	1.62	0.109
ebitda	8.756	48.909	40.153	1.29	0.2
lnTFP	8.912	9.501	0.589	2.83	0.0059***
TFPGr	0.079	0.283	0.204	1.24	0.2176
exp_share	0.267	0.435	0.169	1.58	0.1182
ShHEemp	29.669	35.237	5.568	0.82	0.4118
dnace1_0	0	0	0	.	.
dnace1_1	0.283	0.065	-0.219	2.71	0.0083***
dnace1_2	0.023	0.194	0.171	1.76	0.0816*
dnace1_3	0	0	0	.	.
dnace1_4	0.489	0.484	-0.005	0.04	0.9718
dnace1_5	0.002	0.032	0.03	0.7	0.4843
dnace1_6	0.029	0.129	0.1	1.2	0.2327
dnace1_7	0.114	0.065	-0.05	0.7	0.4859
dnace1_8	0.06	0.032	-0.028	0.54	0.5901
dnace1_9	0	0	0	.	.
Iyear	2005.427	2006.065	0.637	3.09	0.0027***
Number of observations (baseline): 31919					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.3: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the second robustness check multinomial model considering employment of foreign managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.237	2.161	-0.076	0.52	0.6036
lnemp	3.359	4.078	0.719	2.54	0.0123**
ebitda	24.287	52.235	27.948	1.36	0.1776
lnTFP	9.722	9.574	-0.147	1.07	0.2864
TFPGr	0.308	0.289	-0.019	0.15	0.8805
exp_share	0.286	0.46	0.174	2.26	0.0258**
ShHEemp	41.227	37.025	-4.203	0.88	0.3822
dnace1_0	0	0	0	.	.
dnace1_1	0.009	0.034	0.026	0.88	0.3791
dnace1_2	0.153	0.207	0.054	0.72	0.4714
dnace1_3	0	0	0	.	.
dnace1_4	0.613	0.483	-0.13	1.36	0.1756
dnace1_5	0.037	0.034	-0.002	0.07	0.9464
dnace1_6	0.123	0.138	0.015	0.23	0.819
dnace1_7	0.036	0.069	0.033	0.76	0.4477
dnace1_8	0.03	0.034	0.004	0.13	0.8994
dnace1_9	0	0	0	.	.
Iyear	2006.032	2006.069	0.037	0.63	0.5277
Number of observations (baseline): 648					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.4: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the second robustness check multinomial model considering employment of foreign experts

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.757	2.215	-0.542	1.07	0.287
lnemp	2.046	3.079	1.033	1	0.3184
ebitda	1.424	15.079	13.654	0.43	0.6643
lnTFP	9.159	9.431	0.272	0.51	0.6123
TFPGr	-0.215	0.106	0.32	0.92	0.3571
exp_share	0.018	0.348	0.33	1.22	0.2213
ShHEemp	35.221	31.965	-3.256	0.2	0.8411
dnace1_0	0	0	0	.	.
dnace1_1	0	0.042	0.042	0.3	0.7664
dnace1_2	0	0.194	0.194	0.69	0.4894
dnace1_3	0	0.024	0.024	0.22	0.8257
dnace1_4	0.5	0.487	-0.013	0.04	0.9714
dnace1_5	0	0.076	0.076	0.41	0.6848
dnace1_6	0.5	0.076	-0.424	2.24	0.0256**
dnace1_7	0	0.076	0.076	0.41	0.6848
dnace1_8	0	0.015	0.015	0.18	0.8605
dnace1_9	0	0.008	0.008	0.13	0.8961
Iyear	2007.5	2006.088	-1.412	5.7	0.0000***
Number of observations (baseline): 27235					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.5: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the second robustness check multinomial model considering employment of foreign experts

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.569	2.276	-0.293	2.2	0.0295**
lnemp	3.528	4.421	0.893	3.02	0.0031***
ebitda	10.055	67.896	57.841	1.68	0.0966*
lnTFP	9.412	9.677	0.264	1.53	0.1278
TFPGr	0.192	0.406	0.213	1.36	0.1755
exp_share	0.238	0.338	0.1	1.38	0.1717
ShHEemp	43.351	43.901	0.55	0.09	0.9276
dnace1_0	0	0	0	.	.
dnace1_1	0.051	0.069	0.018	0.34	0.7347
dnace1_2	0.176	0.138	-0.038	0.5	0.6214
dnace1_3	0.088	0.034	-0.053	1.16	0.2467
dnace1_4	0.278	0.379	0.101	0.99	0.3251
dnace1_5	0.016	0.034	0.019	0.51	0.6085
dnace1_6	0.271	0.172	-0.099	1.16	0.2488
dnace1_7	0.12	0.172	0.052	0.66	0.5095
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2005.928	2006	0.072	0.36	0.7225
Number of observations (baseline): 26651					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.6: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the second robustness check multinomial model considering employment of foreign experts

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.164	2.252	0.087	0.56	0.5745
lnemp	4.18	4.213	0.033	0.12	0.9039
ebitda	43.453	69.083	25.63	0.77	0.4407
lnTFP	9.6	9.681	0.081	0.48	0.6343
TFPGr	0.187	0.392	0.205	1.35	0.1813
exp_share	0.41	0.372	-0.038	0.49	0.6253
ShHEemp	32.442	47.305	14.862	2.66	0.0090***
dnace1_0	0	0	0	.	.
dnace1_1	0.058	0.071	0.014	0.27	0.7889
dnace1_2	0.206	0.143	-0.063	0.82	0.4143
dnace1_3	0.01	0.036	0.026	0.77	0.4415
dnace1_4	0.408	0.393	-0.015	0.15	0.8793
dnace1_5	0.013	0.036	0.023	0.68	0.4988
dnace1_6	0.048	0.179	0.13	1.89	0.0616*
dnace1_7	0.258	0.143	-0.115	1.45	0.1494
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2006	2006	0	.	.
Number of observations (baseline): 648					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.7: Balancing test for the kernel matching binomial model comparing group 1 and group 0 pertaining to the second robustness check multinomial model considering employment of parent country national managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.622	2.215	-0.407	2.92	0.0037***
lnemp	2.503	3.131	0.629	2.15	0.0316**
ebitda	2.995	18.26	15.265	1.18	0.2377
lnTFP	8.934	9.444	0.51	3.43	0.0006***
TFPGr	0.005	0.119	0.114	1.13	0.2594
exp_share	0.139	0.345	0.206	2.8	0.0052***
ShHEemp	25.176	32.629	7.454	1.64	0.1019
dnace1_0	0	0	0	.	.
dnace1_1	0.074	0.043	-0.031	0.77	0.4417
dnace1_2	0.185	0.191	0.006	0.08	0.9359
dnace1_3	0.037	0.025	-0.012	0.4	0.6913
dnace1_4	0.444	0.479	0.034	0.35	0.729
dnace1_5	0.148	0.074	-0.074	1.41	0.1603
dnace1_6	0	0.081	0.081	1.54	0.1244
dnace1_7	0.074	0.086	0.012	0.21	0.8312
dnace1_8	0	0.015	0.015	0.64	0.5244
dnace1_9	0.037	0.007	-0.03	1.75	0.0807*
Iyear	2006	2006.084	0.084	0.89	0.3752
Number of observations (baseline): 32521					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.8: Balancing test for the kernel matching binomial model comparing group 2 and group 0 pertaining to the second robustness check multinomial model considering employment of parent country national managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.529	2.297	-0.233	1.91	0.0600*
lnemp	3.528	3.841	0.312	0.87	0.389
ebitda	6.053	37.008	30.955	3.99	0.0001***
lnTFP	9.021	9.43	0.409	2.47	0.0155**
TFPGr	0.056	0.165	0.11	1.53	0.1286
exp_share	0.333	0.499	0.166	1.83	0.0707*
ShHEemp	22.251	28.665	6.414	1.61	0.1105
dnace1_0	0	0	0	.	.
dnace1_1	0.033	0.071	0.039	0.72	0.4765
dnace1_2	0.299	0.214	-0.084	0.86	0.3924
dnace1_3	0	0	0	.	.
dnace1_4	0.579	0.571	-0.008	0.07	0.9461
dnace1_5	0.048	0.071	0.023	0.42	0.6789
dnace1_6	0.041	0.071	0.03	0.55	0.5842
dnace1_7	0	0	0	.	.
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2006.001	2006.143	0.141	0.6	0.5497
Number of observations (baseline): 31903					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Table A.6.9: Balancing test for the kernel matching binomial model comparing group 2 and group 1 pertaining to the second robustness check multinomial model considering employment of parent country national managers

Weighted Variable(s)	Mean Control	Mean Treated	Diff.	t	Pr(T>t)
lnage	2.211	2.297	0.085	0.64	0.5251
lnemp	3.636	3.841	0.205	0.68	0.4999
ebitda	16.988	37.008	20.02	2.86	0.0051***
lnTFP	9.573	9.43	-0.143	1.03	0.3067
TFPGr	0.102	0.165	0.063	0.99	0.3247
exp_share	0.435	0.499	0.065	0.8	0.4227
ShHEemp	26.157	28.665	2.508	0.63	0.5283
dnace1_0	0	0	0	.	.
dnace1_1	0.059	0.071	0.012	0.26	0.7977
dnace1_2	0.164	0.214	0.05	0.66	0.5091
dnace1_3	0	0	0	.	.
dnace1_4	0.645	0.571	-0.073	0.78	0.438
dnace1_5	0.11	0.071	-0.039	0.7	0.4829
dnace1_6	0.022	0.071	0.049	1.2	0.2332
dnace1_7	0	0	0	.	.
dnace1_8	0	0	0	.	.
dnace1_9	0	0	0	.	.
Iyear	2006.057	2006.143	0.086	1.05	0.2974
Number of observations (baseline): 648					

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively ; t-test at period = 0

Source: Own calculations

Appendix B: Chapter 3

Table B.1: Spillover effects in Slovenian manufacturing SMEs, robustness check

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
grTFP(-1)	-0.200***	-0.206***	-0.213***	-0.193***
	(0.0344)	(0.0346)	(0.0350)	(0.0348)
grTFP(-2)	-0.0790**	-0.0781**	-0.0815**	-0.0709**
	(0.0319)	(0.0320)	(0.0318)	(0.0323)
grTFP(-3)	-0.0107	-0.00987	-0.00824	-0.00537
	(0.0216)	(0.0216)	(0.0219)	(0.0218)
lnEmpl(-1)	0.0581	0.0627	0.0326	0.0714
	(0.0815)	(0.0932)	(0.0946)	(0.0837)
$lnEmpl^2$ (-1)	-0.00778	-0.00884	-0.00629	-0.00913
	(0.0191)	(0.0206)	(0.0205)	(0.0184)
lnKint(-1)	0.0116	0.0116	0.00725	0.0141
	(0.0255)	(0.0257)	(0.0259)	(0.0253)
dExporter (-1)	0.0106	0.00758	0.00747	0.00364
	(0.0703)	(0.0653)	(0.0700)	(0.0645)
ShHE(-1)	0.000271	0.000350	0.000555	0.000292
	(0.00189)	(0.00159)	(0.00158)	(0.00169)
ShFrHE(-2)	-0.867			
	(0.883)			
ShNwHE(-2)	-0.0332			
	(0.194)			
LnAge	0.188	0.135	0.214**	0.195**
	(8.515)	(6.898)	(8.451)	(1.823)
ShFr(-2)		-0.0912		
		(0.195)		
ShNw(-2)		-0.0356		
		(0.0368)		
ShFrSs(-2)			-0.360	
			(0.379)	
ShNwSs(-2)			0.0722	
			(0.105)	

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VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4
ShFrDs(-2)				-0.178
				(0.258)
ShNwDs(-2)				-0.0215
				(0.0763)
				(9.689)
Constant	-0.792	-1.930	-1.020	-1.083
	(8.574)	(6.986)	(8.456)	(1.872)
Observations	8,692	8,692	8,692	8,692
Number of n7	3,018	3,018	3,018	3,018
Year dumies	YES	YES	YES	YES
Industry dummies	YES	YES	YES	YES
(df)	(36)	(36)	(36)	(36)
Wald $\chi 2$	443.44***	407.92***	429.86***	400.08
(df) Sargan $\chi 2$	(97) 123.26	(97) 118.29	(97)116.04	(97)116.32
(p)	(0.04)**	(0.07)*	(0.09)*	(0.09)*
AR(1) z(p)	-3.36(0.00)	-3.31(0.00)	-3.32(0.00)	-3.34(0.00)
AR(2) z(p)	-0.54(0.59)	-0.68(0.49)	-0.60(0.55)	-0.64(0.52)

Notes: z-statistics are in parentheses, ***,**,* denote significance at 1%, 5% and 10%, respectively
Source: Own calculations

Appendix C: Summary in Slovenian language/Daljši povzetek disertacije v slovenskem jeziku

Cilj doktorske disertacije, ki jo sestavljajo trije znanstveni članki, je osvetliti vlogo mobilnosti delovne sile pri prenosu znanja in tehnologije v državo gostiteljico ter pri njuni razpršitvi med domača podjetja. Poleg tega je njen namen tudi analizirati dejavnike, ki vplivajo na mobilnost tuje izobražene delovne sile.

Znanje in tehnologije sta eden glavnih dejavnikov, po katerem se uspešna podjetja razlikujejo od manj uspešnih in razvite države od tistih v razvoju. Dandanes poskuša večina držav privabiti tuje neposredne investicije (Bah et al., 2015). Glavni razlog za to je prepričanje, da tuje neposredne investicije s seboj prinesejo tudi znanje in tehnologijo. Ekonomska teorija predvideva, da morajo imeti multinacionalna podjetja, ki se odločijo za vstop na tuji trg preko tuje neposredne investicije, neko konkurenčno prednost pred domačimi podjetji (napredna tehnologija, superiorne menedžerske prakse), saj morajo z nečim kompenzirati svoje nepoznavanje lokalnega trga (Bellak, 2004; Caves, 1971; Dunning, 1981; Markusen, 1995). Do prenosa znanja in tehnologije v državo gostiteljico, kot stranskega produkta tuje neposredne investicije, pride v okviru t.i. direktnih učinkov TNI (tujih neposrednih investicij). Znanje in tehnologija se preneseta iz matične družbe na podružnico v državi gostiteljici. To se odrazi v višji produktivnosti tuje podružnice v primerjavi z domačimi podjetji. Ta proces se lahko zgodi na več različnih načinov. Ena izmed možnosti je mobilnost delovne sile[11]. Multinacionalno podjetje lahko v podružnico v državi gostiteljici napoti delavce s sedeža multinacionalnega podjetja ali iz drugih podružnic, z namenom usposabljanja lokalnih delavcev ali drugačne pomoči pri procesu prenosa znanja in tehnologije. Vendar pa lahko znanje v državo gostiteljico vstopi tudi na drug način, in sicer preko imigracije izobražene delovne sile nasploh. Zaposlovanje izobraženih tujih delavcev lahko samo po sebi prispeva k višji produktivnosti podjetja v primeru, da imajo ti znanja, ki so komplementarna že obstoječim znanjem v podjetju (Lazear, 1999; Malchow-Møller et al., 2011).

Širok nabor empiričnih študij potrjuje teoretična predvidevanja, da so podjetja v tuji lasti bolj produktivna od domačih. A čeprav omenjene študije potrjujejo statistično korelacijo med tujim lastništvom in produktivnostjo, marsikatera med njimi ne preverja vzročne povezanosti med tujim lastništvom in višjo produktivnostjo (Barba Navaretti & Venables, 2004). To pomeni, da ne upoštevajo možnosti pristranskosti pri izbiri (angl. selection bias). Tuji investitorji se namreč lahko nagibajo k prevzemom nadpovprečno uspešnih podjetij (Salis, 2008). Študije, ki to možnost upoštevajo, kažejo precej bolj nejasno sliko. Razlike v

[11] Glej npr. Belderbos & Heijltjes (2005)

produktivnosti med domačimi podjetji in podjetji v tuji lasti, o katerih poročajo, so manjše in pogosto statistično neznačilne (Barba Navaretti & Venables, 2004). Malo je znanega v zvezi z razlogi za mešane rezultate pri ugotavljanju, ali so podjetja v tuji lasti bolj produktivna od domačih. Bi lahko mobilnost izobraženih tujih delavcev pojasnila razlike v učinkovitosti prenosa znanja iz matičnih podjetij na podružnice v državah gostiteljicah? So podjetja s tujim lastništvom, ki zaposlujejo izobražene tuje delavce, bolj produktivna kot tista, ki jih ne? V literaturi je mogoče najti več razlogov, zaradi katerih bi lahko bili poskusi prenosa znanja bolj učinkoviti, če jih spremlja mobilnost ljudi. Prvič, posamezniki so sposobni prilagoditi znanje novim okoliščinam (Allen as cited by Argote & Ingram, 2000). Drugič, ljudje so sposobni prenesti tako eksplicitno kot tudi tiho znanje (Argote & Ingram, 2000; Berry & Broadbent, 1984, 1987), kar se zdi ključna prednost izobraženih tujih delavcev, ki prihajajo iz matičnega podjetja. Tretjič, tuji strokovnjaki ali menedžerji, ki prihajajo od zunaj (ne iz matičnega podjetja) in ne prenašajo znanja, ki je specifično za multinacionalno podjetje, lahko vseeno pripomorejo k procesu prenosa znanja. Lahko imajo na primer izkušnje s prevzemi. Po besedah Daniliuca in Jangove (2014) lahko izkušnje s prevzemi pripomorejo k lažji integraciji prevzetega podjetja. Poleg tega lahko tuji delavci s seboj prinesejo tudi znanja in kompetence, ki so komplementarna tistim, ki jih imajo domači delavci in niso nujno vezana na proces prenosa znanja med matičnim podjetjem in podružnico. Kot so izpostavili Malchow-Møller et al. (2011), imajo tuji strokovnjaki lahko znanja, povezana z izvozno destinacijo podjetja (npr. znanja o lokalni kulturi, trgu, jeziku,…), kar posledično pozitivno vpliva na izvozne aktivnosti podjetja. Glede na to, da se v literaturi v zvezi z učinkovitostjo prenosa znanja omenjajo predvsem menedžerji in strokovnjaki, smo v svojo analizo vključili naslednje tri kategorije delavcev: tuje menedžerje, menedžerje iz države izvora TNI ter tuje strokovnjake.

Cilj prvega članka disertacije je tako analizirati vzročno povezanost med mobilnostjo izobražene tuje delovne sile in prenosom znanja v državo gostiteljico. Ugotoviti smo poskušali, ali pri podjetjih v tuji lasti, ki zaposlujejo izobražene tuje delavce, skupna faktorska produktivnost raste hitreje kot pri drugih domačih in tujih podjetjih. Za dosego raziskovalnega cilja je bilo potrebno definirati vzročne učinke polinominalnih poskusov (angl. multinomial treatments) - vhodnih tujih investicij ter vhodnih tujih investicij v kombinaciji z zaposlitvijo tujega izobraženega delavca. Glede na to, da izbira v omenjena poskusa po vsej verjetnosti ni slučajna, smo se odločili slediti pristopu Arnolda in Javorcikove (2009) ter združili metodi iskanja parov po načelu stopnje verjetnosti (angl. propensity score matching) ter razlike v razlikah (angl. difference-in-differences).

Oblikovali smo model polinominalnih poskusov (angl. multinomial treatment model), ki je bil nato preoblikovan v serijo binomskih modelov. Kontrolno skupino našega osnovnega modela polinominalnih poskusov sestavljajo podjetja, ki so celotno preučevano obdobje v domači lasti in zaposlujejo le domače menedžerje/strokovnjake. Prva poskusna skupina (angl. first treatment level) vključuje podjetja, ki so pridobila začetno TNI v opazovanem obdobju, a vhodni TNI, v letu vstopa TNI ali v letu po njem, ni sledila zaposlitev novega tujega menedžerja/novega menedžerja iz države izvora TNI/novega tujega strokovnjaka. Poleg tega

prva poskusna skupina vsebuje tudi podjetja, ki imajo tuji kapital skozi celotno preučevano obdobje, a se je v enem izmed let opazovanega obdobja slednji povečal za vsaj 100 %, pri čemer dotična podjetja v letu po vhodni TNI niso zaposlovala nobenega tujega menedžerja/ menedžerja iz države izvora TNI/tujega strokovnjaka. Druga poskusna skupina nadalje vključuje podjetja, ki so pridobila začetno TNI v opazovanem obdobju, vhodni TNI pa je v letu vstopa TNI ali v letu po njem sledila zaposlitev novega tujega menedžerja/novega menedžerja iz države izvora TNI/novega tujega strokovnjaka. Poleg tega druga poskusna skupina vsebuje tudi podjetja, ki imajo tuji kapital skozi celotno preučevano obdobje, a se je v enem izmed let opazovanega obdobja ta povečal za vsaj 100 %, pri čemer dotična podjetja v letu po vstopu TNI zaposlujejo vsaj enega tujega menedžerja/menedžerja iz države izvora TNI/tujega strokovnjaka. Izid, torej rast skupne faktorske produktivnosti podjetja, je bil izmerjen v letu, ki je sledilo letu vhodne TNI.

Oblikovali smo torej tri različne specifikacije modela polinominalnih poskusov. Prvi se osredotoča na zaposlitve tujih menedžerjev, drugi na zaposlitve tujih strokovnjakov ter tretji na zaposlitve menedžerjev iz države izvora TNI. Poleg originalnih specifikacij modelov, smo oblikovali še dve skupini modelov. Pri prvi skupini smo originalno specifikacijo spremenili tako, da smo prag povečanja tujega kapitala s 100 % dvignili na 150 %, pri drugi skupini modelov pa smo ta isti prag dvignili na 200 %.

Verjetnost izbora v poskusno skupino je bila določena na podlagi naslednjih karakteristik, ki so bile izmerjene v obdobju pred poskusom: starosti podjetja, skupne faktorske produktivnosti podjetja, rasti skupne faktorske produktivnosti podjetja, deleža visokoizobraženih delavcev, deleža izvoza, ebitda, dummy spremenljivk za leta ter panožne sektorje.

V naslednjem koraku smo, kot je že omenjeno, modele polinominalnih poskusov preoblikovali v serijo binomskih modelov ter jih ocenili s pomočjo kombinacije metod iskanja parov po načelu stopnje verjetnosti in razlike v razlikah. Rezultate podjetij, pri katerih je vhodna TNI (tuja neposredna investicija) združena z zaposlitvijo tujega izobraženega delavca, smo primerjali z rezultati podjetij, kjer vhodna TNI ni kombinirana z zaposlitvijo tujega izobraženega delavca ter z rezultati domačih podjetij, ki zaposlujejo izključno domače izobražene delavce. Rezultate podjetij, kjer vhodna TNI ni združena z zaposlitvijo tujega izobraženega delavca, smo nato primerjali še z rezultati domačih podjetij, ki zaposlujejo izključno domače izobražene delavce.

Za namen prvega preizkusa robustnosti smo osnovne modele preoblikovali tako, da smo spremenili časovni okvir, v katerem so bile upoštevane zaposlitve tujih izobraženih delavcev, ravno tako pa smo premaknili točko v času, v kateri je bil izmerjen izid. Slednji, tokrat naravni logaritem skupne faktorske produktivnosti, je bil tako izmerjen v drugem letu po letu vhodne TNI. Ocene so bile narejene le za specifikacijo, pri kateri se upošteva 200-odstotni prag za povečanje tujega kapitala.

Za namen drugega preizkusa robustnosti smo osnovne modele znova preoblikovali, in sicer tako, da smo drugače opredelili skupino podjetij, ki je bila deležna vhodnih TNI. V osnovnih modelih so bila v to skupino vključena vsa podjetja, ki so pridobila začetno TNI v opazovanem obdobju ter podjetja pri katerih se je v enem izmed let opazovanega obdobja tuj kapital povečal za vsaj 100 %, 150 % oziroma 200 %. V primeru modela, ki smo ga specificirali za namen drugega preizkusa robustnosti, pa so bila v to skupino vključena vsa podjetja, v katerih je tuji lastnik v preučevanem obdobju pridobil kontrolni delež. Izid, zopet rast skupne faktorske produktivnosti, pa je bil izmerjen v letu po vhodni TNI.

S pomočjo izvedenih analiz smo pridobili robustne dokaze, ki kažejo na to, da vhodne TNI same, brez zaposlitev izobraženih tujih delavcev, nimajo statistično značilnega pozitivnega vpliva na rast skupne faktorske produktivnosti podjetij. Našli smo tudi nekatere indikacije, ki nakazujejo na to, da podjetja pri katerih je vhodna TNI kombinirana z zaposlitvijo tujega menedžerja (nasploh), dosegajo višje stopnje rasti skupne faktorske produktivnosti kot domača podjetja, ki zaposlujejo samo domače menedžerje. Vendar pa te ugotovitve niso robustne. Po drugi strani smo pridobili robustne dokaze, ki govorijo v prid tezi, da podjetja, pri katerih je vhodna TNI združena z zaposlitvijo menedžerja iz države izvora TNI, dosegajo višje stopnje rasti skupne faktorske produktivnosti kot domača podjetja. Čeprav je v primeru, ko je bil izid merjen leto kasneje, prednost v rasti skupne faktorske produktivnosti postala statistično neznačilna, naši rezultati kažejo, da je prednost v višini skupne faktorske produktivnosti kljub vsemu ostala statistično značilna.

Nadalje smo našli tudi dokaze, ki potrjujejo, da podjetja, kjer je vhodna TNI kombinirana z zaposlitvijo tujega menedžerja (nasploh), dosegajo višje stopnje rasti skupne faktorske produktivnosti kot podjetja, kjer vhodna TNI ni kombinirana z zaposlitvijo tujega menedžerja. Vendar pa ti dokazi zopet niso robustni. Po drugi strani smo pridobili robustne dokaze, ki potrjujejo, da podjetja, kjer je vhodna TNI kombinirana z zaposlitvijo menedžerja iz države izvora TNI, dosegajo višje stopnje rasti skupne faktorske produktivnosti kot podjetja, v katerih pride le do vhodne TNI. Prednost v rasti skupne faktorske produktivnosti je v primeru, ko je bil izid merjen leto kasneje, zopet postala statistično neznačilna, vendar pa naši rezultati kažejo, da je prednost v višini skupne faktorske produktivnosti kljub vsemu ostala statistično značilna.

Dobljene rezultate je možno pojasniti s tem, da mobilnost izobražene tuje delovne sile dejansko funkcionira kot kanal za prenos znanja med matičnim podjetjem in podružnico. Glavna razlika med tujimi menedžerji nasploh in menedžerji iz države izvora TNI je namreč ta, da je za slednje veliko bolj verjetno, da so bili napoteni iz matične družbe v podružnico v državi gostiteljici z namenom, da usposobijo domače delavce. Kot sta povzela Bonache & Brewster (2001), ki citirata dela Torbiörna (1982), Naumanna (1992) in Mayrhoferja & Brewsterja (1996), delavci, ki so v podružnico napoteni iz matične družbe, ponavadi prihajajo iz države, kjer ima družba sedež.

Nadalje smo našli dokaze, ki potrjujejo, da podjetja, kjer je vhodna TNI združena z zaposlitvijo tujega strokovnjaka, dosegajo višje stopnje rasti skupne faktorske produktivnosti kot podjetja, pri katerih pride le do vhodne TNI. Podobno kot pri specifikacijah modelov, ki se osredotočajo na zaposlitve menedžerjev iz države izvora TNI, je tudi tokrat prednost v rasti skupne faktorske produktivnosti v primeru, ko je bil izid merjen leto kasneje, postala statistično neznačilna. Vendar pa je prednost v višini skupne faktorske produktivnosti zopet ostala statistično značilna.

Naši rezultati torej kažejo, da vhodna TNI v kombinaciji z zaposlitvijo tujega izobraženega delavca (še posebej menedžerja iz države izvora TNI) povzroči začasen dvig rasti skupne faktorske produktivnosti, kar se kasneje pokaže v obliki višje ravni skupne faktorske produktivnosti. Rezultati se tako v precejšnji meri skladajo z ugotovitvami Inzeltove (2008), ki je v svoji raziskavi za Madžarsko prišla do zaključka, da začetna začasna mobilnost tujih menedžerjev (v roku enega do dveh let po vstopu TNI) verjetno vodi do enkratnega prenosa znanja v lokalno podružnico.

Cilj drugega članka disertacije je nadalje ugotoviti, kateri dejavniki vplivajo na odločitev multinacionalnega podjetja, ali bo za vodenje podružnice zaposlilo domačega ali tujega menedžerja (oziroma menedžerja iz države izvora TNI).

Kot povzemajo Hahn, Hayakawa & Ito (2013), imajo domači menedžerji prednost pri dostopanju do lokalnega znanja in pri oblikovanju lokalnih povezav. Domači menedžerji lahko tudi znižajo stroške dela, ki jih ima podjetje, saj je ponavadi zaposlitev menedžerjev iz države izvora TNI precej dražja. Po drugi strani menedžerji iz države izvora TNI veljajo za dragoceno imetje podjetja. Pri prenosu znanja med matičnim podjetjem in podružnico so namreč bolj učinkoviti kot domači menedžerji. Po besedah Inzeltove (2008) je dodaten razlog za imenovanje menedžerja, ki prihaja iz matičnega podjetja, na vodilno mesto v novi podružnici tudi razvoj absorbcijske kapacitete skozi sozvočje.

Obstoječe študije, ki se ukvarjajo s to tematiko, so bolj ali manj narejene na vzorcih ali populacijah podjetij s tujim lastništvom. Posledično se osredotočajo predvsem na dejavnike, ki vplivajo na odločitev o zaposlitvi tujega menedžerja, vezane na podjetja in države. Prednost naše baze podatkov je predvsem v tem, da vključuje celotno populacijo slovenskih podjetij, tako tujih kot domačih. To nam je omogočilo analizirati učinke dejavnikov, ki vplivajo na verjetnost zaposlitve tujega menedžerja, vezanih na panogo, v kateri podjetje deluje. Po nam znanih podatkih ta vidik še ni bil raziskan.

Identificiramo lahko tri skupine spremenljivk, ki potencialno vplivajo na odločitev o zaposlitvi tujega menedžerja v podružnici, locirani v državi gostiteljici: spremenljivke vezane na podjetje, spremenljivke vezane na panogo ter spremenljivke vezane na državo.

Kar se tiče spremenljivk, vezanih na podjetje, naš model vključuje starost podjetja (*Age*), njegovo velikost (*Size*), izvozno usmerjenost (*ExPropensity*), dummy spremenljivko, ki nam pove, ali ima podjetje izhodne TNI (*dOutFDI*), spremenljivko TFP_gap, ki predstavlja razliko med povprečno panožno skupno faktorsko produktivnostjo in skupno faktorsko produktivnostjo podjetja, ter dummy spremenljivke za regije izvora TNI (*dFDIregion*).

Poleg tega so v model vključene tudi naslednje panožne spremenljivke: velikost trga (*MarSize*), povprečna panožna marža (*IndMarkup*), število domačih podjetij v panogi (*NoDomFirms*), povprečna panožna skupna faktorska produktivnost domačih podjetij (*TFPdom*), dummy spremenljivka za na znanju temelječe storitvene panoge (*dKIS*), dummy spremenljivka za srednje visokotehnološke in visokotehnološke proizvodne panoge (*dmiHITECH*) ter panožne dummy spremenljivke (*dindustry)*.

Med spremenljivkami, vezanimi na državo, pa so bile v model vključene naslednje: letne dummy spremenljivke (*dyear*), spremenljivka, ki vsebuje fizično razdaljo med Slovenijo in državo izvora TNI (*dist*), ter 6 spremenljivk, ki vsebujejo absolutno razdaljo med Slovenijo in državo izvora TNI v Hofstedovih kulturnih dimenzijah (Power Distance (*dist_c_pdi*), Uncertainty Avoidance (*dist_c_uai*), Individualism (*dist_c_idv*), Masculinity *(dist_c_mas*), Long_Term vs. Short-Term orientation (*dist_c_ltovs*) ter Indulgence vs. Restraint (*dist_c_ivr*)).

Naš osnovni model je bil definiran na naslednji način:

$$\begin{aligned}\Pr(\text{For\_mng}_{it}=1) &= \beta_0 + \beta_1 InTFPdom_{jt-1} + \beta_2 \ln NoDomFirms_{jt-1} + \beta_3 \ln MarSize_{jt-1} + \\ &+ \beta_4 IndMarkup_{jt-1} + \beta_5 dKIS_j + \beta_6 dmiHITECH_j + \beta_7 \ln Age_{it} + \beta_8 \ln Size_{it-1} + \\ &+ \beta_9 ExPropensity_{it-1} + \beta_{10} dOutFDI_{it-1} + \beta_{11} TFP\_gap_{it-1} + \beta_{12} dist_c + \beta_{13} dist\_c\_pdi_c + \\ &+ \beta_{14} dist\_c\_idv_c + \beta_{15} dist\_c\_mas_c + \beta_{16} dist\_c\_uai_c + \beta_{17} dist\_c\_ltovs_c + \\ &+ \beta_{18} dist\_c\_ivr_c + \sum \beta_{19.j} dindustry_j + \sum \beta_{20.t} dyear_t + \sum \beta_{21} dFDIregion_{it} + u_{it}\end{aligned} \quad (1)$$

kjer se indeksi i, j, c in t nanašajo na podjetja, panoge, države in leta (v tem vrstnem redu). Odvisna spremenljivka *d_MgrFr* je binarna spremenljivka, ki zavzame vrednost 1, če podjetje s tujim lastništvom v tekočem letu zaposluje vsaj enega tujega menedžerja, in vrednost 0, če ga ne. Alternativna odvisna spremenljivka, ki je bila uporabljena v okviru glavne analize, je *d_PCNMgr*, ki zavzame vrednost 1, če podjetje s tujim lastništvom v tekočem letu zaposluje vsaj enega menedžerja, ki prihaja iz države izvora TNI, in vrednost 0, če ga ne.

Modeli, uporabljeni v glavni analizi, so bili najprej ocenjeni s cenilko pooled probit. Z namenom, da bi upoštevali morebitno heteroskedastičnost, smo jih ocenili tudi s pomočjo cenilke heteroscedastic probit. Pri slednji se probit model posploši. Kumulativna porazdelitvena funkcija standardne normalne spremenljivke z aritmetično sredino 0 in

varianco enako 1, se preoblikuje v normalno kumulativno porazdelitveno funkcijo, kjer se varianca lahko spreminja v odvisnosti od neodvisnih spremenljivk (Harvey, 1976; Zajc Kejžar, 2011). V naši analizi smo testirali heterogenost, povzročeno s strani velikosti podjetja.

Za namen prvega preizkusa robustnosti sta bili odvisni spremenljivki *d_MgrFr* in *d_PCNMgr* zamenjani s spremenljivkama *d_NewMgrFr* in *d_NewPCNMgr*. Prva zavzame vrednost 1 v primeru, da podjetje s tujim lastništvom v tekočem letu zaposli vsaj enega novega tujega menedžerja, druga pa v primeru da zaposli vsaj enega novega menedžerja iz države izvora TNI. V nasprotnem primeru zavzameta vrednost 0.

Za namen drugega preizkusa robustnosti smo testirali, kateri dejavniki vplivajo na delež tujih menedžerjev v podjetjih s tujim lastništvom. Za analizo smo uporabili presečne podatke. Uporabljena baza podatkov tako vključuje vsa podjetja, ki so v preučevanem obdobju pridobila začetno vhodno TNI, ter tista, kjer se je obseg tujega kapitala v posameznem letu preučevanega obdobja povečal vsaj za 100 %. Podjetja so bila opazovana v letu začetnega vstopa TNI ali v prvem letu povečanja tujega kapitala, ki ustreza omenjenemu pogoju. Da bi upoštevali pristranskost pri izbiri v zvezi z odločitvijo, ali bo podjetje sploh zaposlilo kakšnega tujega menedžerja ali ne, smo uporabili dvostopenjski Heckmanov model izbire (angl. Heckman selection model). V prvi fazi smo tako ocenili verjetnost, da bo podjetje s tujim lastništvom zaposlilo tujega menedžerja, v drugi fazi pa je bil ocenjen delež tujih menedžerjev med vsemi menedžerji. Odvisna spremenljivka uporabljena v prvi fazi, dNwMgr2yr, zavzame vrednost 1, če podjetje s tujim lastništvom v roku dveh let po vhodni TNI zaposli tujega menedžerja ter vrednost 0, če ga ne. Odvisna spremenljivka v drugi fazi, ShFrMgrp2, pa predstavlja delež tujih menedžerjev v podjetju dve leti po vhodni TNI.

Naša raziskava prinaša robustne rezultate, ki kažejo, da imata velikost podjetja v tuji lasti ter njegova izvozna usmerjenost pozitivne učinke na verjetnost izbire tujega menedžerja. Naši rezultati ravno tako nakazujejo, da ima povprečna panožna skupna faktorska produktivnost domačih podjetij negativen vpliv na verjetnost zaposlitve tujega menedžerja. Dobili smo tudi robustne rezultate, ki potrjujejo, da ima absolutna razdalja v Hofstedovi dimenziji Power Distance med državo gostiteljico in državo izvora TNI, negativen učinek na verjetnost izbire tujega menedžerja. Pri analizi vpliva regij izvora TNI smo kot osnovo za primerjavo uporabili EU15 oziroma stare članice EU. Po tem, ko smo upoštevali vpliv absolutnih razdalj med Slovenijo in državami izvora TNI z vidika Hofstedovih kulturnih dimenzij, smo ugotovili, da je verjetnost zaposlitve tujega menedžerja pri lastnikih, ki prihajajo iz nekdanje Sovjetske zveze in z Bližnjega vzhoda, večja kot pri lastnikih iz EU15.

Ko sta znanje in tehnologija uspešno prenesena iz matičnega podjetja na podružnico v državi gostiteljici, se lahko razširita tudi na obstoječa domača podjetja. Gre za tako imenovane učinke prelivanja (angl. spillover effects). Do slednjih lahko pride preko več različnih kanalov. Eden izmed njih je mobilnost delovne sile. Gre za primer, ko se delavec, predhodno zaposlen v podjetju s tujim lastništvom (oziroma v multinacionalnem podjetju), zaposli v

domačem podjetju in s seboj prinese znanje pridobljeno v podjetju s tujim lastništvom (Blomström & Kokko, 1998).

Na področju učinkov prelivanja že obstaja zajeten obseg literature, vendar pa so rezultati mešani. Učinki prelivanja so bili že dokumentirani za slovenski proizvodni sektor (npr. Zajc Kejžar (2011) in Damijan et al. (2003)), vendar pa njihov obstoj še ni bil testiran za primer storitvenega sektorja. Nabor raziskav na temo učinkov prelivanja preko mobilnosti delovne sile je po drugi strani tudi na svetovni ravni precej ozek. Tovrstne analize namreč zahtevajo baze podatkov, ki povezujejo delavce in delodajalce. Slednje pa so se začele pojavljati šele nedavno. Cilj tretjega članka te disertacije je torej ugotoviti, ali mobilnost delovne sile v primeru slovenskega gospodarstva v resnici deluje kot kanal preko katerega prihaja do učinkov prelivanja. Po mojih podatkih učinki prelivanja v slovenskem gospodarstvu še niso bili analizirani z vidika mobilnosti delovne sile. Moja raziskava k obstoječi literaturi prispeva tudi z ločenima analizama za proizvodna in storitvena podjetja. Glede na to, da so učinki prelivanja po vsej verjetnosti pomembnejši vir rasti skupne faktorske produktivnosti za manjša podjetja kot za večja[12], sem se v svoji raziskavi osredotočila na domača majhna in srednje velika podjetja (MSP).

V svoji analizi sem uporabila 4 osnovne modele, ki so bili specificirani na naslednji način:

$$\begin{aligned} grTFP_{it} &= \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFrHE_{it-2} + \beta_5 \ln Age_{it} + \\ &+ \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\,\mathrm{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} + \\ &+ \beta_{11} ShNwHE_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it} \end{aligned} \quad (1)$$

$$\begin{aligned} grTFP_{it} &= \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFr_{it-2} + \beta_5 \ln Age_{it} + \\ &+ \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\,\mathrm{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} + \\ &+ \beta_{11} ShNw_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it} \end{aligned} \quad (2)$$

$$\begin{aligned} grTFP_{it} &= \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFrSs_{it-2} + \beta_5 \ln Age_{it} + \\ &+ \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\,\mathrm{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} + \\ &+ \beta_{11} ShNwSs_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it} \end{aligned} \quad (3)$$

[12] Glej Keller & Yeaple (2009)

$$grTFP_{it} = \beta_0 + \beta_1 \ln TFP_{it-1} + \beta_2 \ln TFP_{it-2} + \beta_3 \ln TFP_{it-3} + \beta_4 ShFrDs_{it-2} + \beta_5 \ln Age_{it} + \quad (4)$$
$$+ \beta_6 \ln Empl_{it-1} + \beta_7 \ln Empl_{it-1}^2 + \beta_8 \ln K\,\mathrm{int}_{it-1} + \beta_9 dExporter_{it-1} + \beta_{10} ShHE_{it-1} +$$
$$+ \beta_{11} ShNwDs_{it-2} + \sum \beta_{12,t} dyear_t + \sum \beta_{13,j} dindustry_j + u_{it}$$

S pomočjo prvega modela sem testirala učinke zaposlovanja visokoizobraženih delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom na rast skupne faktorske produktivnosti domačega podjetja. Z drugim modelom sem testirala učinke zaposlovanja delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom nasploh (ne glede na njihovo izobrazbo) na rast skupne faktorske produktivnosti podjetja. Tretji model sem nadalje uporabila za testiranje učinkov zaposlovanja delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom iz istega sektorja na rast skupne faktorske produktivnosti podjetja, medtem ko sem se pri četrtem modelu osredotočila na učinke zaposlovanja delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom iz drugega sektorja.

V vse štiri modele so vključene naslednje spremenljivke: starost podjetja (*Age*), velikost podjetja (*Empl*), kapitalska intenzivnost (*Kint*), dummy spremenljivka, ki nam pove, ali podjetje izvaža ali ne (*dExporter*), delež visokoizobraženih zaposlenih v podjetju (*ShHE*) ter letne in panožne dummy spremenljike (*dyear* in *dindustry*). Odvisna spremenljivka je, kot je že omenjeno, v vseh štirih modelih rast skupne faktorske produktivnosti.
Osrednja spremenljivka v prvem modelu je *ShFrHE,* ki je definirana na naslednji način:

$$ShFrHE = \frac{NwFrHE}{NoEmpl}$$

kjer je *NwFrHE* število visokoizobraženih delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom, ki jih je domače podjetje zaposlilo v tekočem in predhodnem letu, medtem ko *NoEmpl* predstavlja število vseh zaposlenih v domačem podjetju. Da bi preverila, ali morda zaposlovanje novih visokoizobraženih delavcev samo po sebi pozitivno vpliva na rast skupne faktorske produktivnosti, sem v model vključila še kontrolno spremenljivko *ShNwHE*. Slednja je definirana kot delež visokoizobraženih delavcev, ki jih je podjetje zaposlilo v tekočem in preteklem letu, v številu vseh zaposlenih.

Osrednja spremenljivka v drugem modelu je *ShFr,* ki je definirana takole:

$$ShFr = \frac{NwFr}{NoEmpl}$$

kjer je *NwFr* število vseh delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom, ki jih je domače podjetje zaposlilo v tekočem in predhodnem letu. Kot kontrolno

spremenljivko sem v drugi model vključila tudi ShNw, ki predstavlja delež vseh delavcev, ki jih je domače podjetje zaposlilo v tekočem in predhodnem letu, v številu vseh zaposlenih.

Osrednja spremenljivka v tretjem modelu je nadalje *ShFrSs,* ki je definirana na naslednji način:

$$ShFrSs = \frac{NwFrSs}{NoEmpl}$$

kjer *NwFrSs* predstavlja število vseh delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom iz istega sektorja, ki jih je domače podjetje zaposlilo v tekočem ali predhodnem letu. Za tretji model je bila oblikovana kontrolna spremenljivka *ShNwSs,* ki predstavlja delež delavcev s predhodno zaposlitvijo v istem sektorju, ki jih je podjetje zaposlilo v tekočem ali predhodnem letu, v številu vseh zaposlenih.

Osrednja spremenljivka v zadnjem, četrtem modelu, je *ShFrDs,* ki je definirana takole:

$$ShFrDs = \frac{NwFrDs}{NoEmpl}$$

kjer *NwFrDs* predstavlja število vseh delavcev z nedavnimi delovnimi izkušnjami v podjetju s tujim lastništvom iz drugega sektorja, ki jih je domače podjetje zaposlilo v tekočem ali predhodnem letu. Pripadajoča kontrolna spremenljivka, *ShNwDs,* predstavlja delež delavcev s predhodno zaposlitvijo v drugem sektorju, ki jih je podjetje zaposlilo v tekočem ali predhodnem letu, v številu vseh zaposlenih.

Za namen preizkusa robustnosti sem preoblikovala osrednje spremenljivke in pripadajoče kontrolne spremenljivke v vseh štirih modelih, in sicer tako, da sem podaljšala obdobje v katerem so bile upoštevane nove zaposlitve delavcev, z dveh let na tri leta. Omenjeni deleži so tako izračunani na podlagi delavcev, ki jih je podjetje zaposlilo v tekočem in dveh preteklih letih.

Zaradi dinamične narave empiričnih modelov in dejstva, da panel vsebuje veliko število podjetij in majhno število časovnih enot, sem modele ocenila s cenilko GMM, ki so jo razvili Arellano & Bover (1995) ter Blundell & Bond (1998). Kot je razvidno iz specifikacije modelov, so bili kot instrumenti uporabljeni trije odlogi odvisne spremenljivke. Vsi regresorji vključeni v specifikacije modelov, z izjemo starosti podjetja, panožnih ter letnih dummy spremenljivk, so v analizo vstopili kot endogene spremenljivke.

Rezultati moje analize potrjujejo obstoj učinkov prelivanja v storitvenem sektorju. Našla sem robustne dokaze v prid tezi, da prehodi visokoizobraženih delavcev od podjetij s tujim

lastništvom k domačim MSP pozitivno vplivajo na rast skupne faktorske produktivnosti domačih storitvenih MSP. Obstajajo tudi določene indikacije, da zaposlovanje novih delavcev z nedavnimi izkušnjami v podjetju s tujim lastništvom nasploh, iz istega ali iz drugega sektorja, pozitivno vpliva na rast skupne faktorske produktivnosti domačih storitvenih MSP. Vendar pa ti rezultati niso robustni v primeru, ko se obdobje, v katerem se upoštevajo nove zaposlitve, podaljša. Ena izmed možnih razlag za ta izid je, da ima sofisticirano znanje, ki ga v podjetje prinesejo visokoizobraženi delavci, trajnejši učinek na rast skupne faktorske produktivnosti kot enostavnejše znanje, povezano s splošno populacijo zaposlenih. Dobljeni rezultati se skladajo tudi z zaključki Pooleove (2013), ki ugotavlja, da visokoizobraženi delavci z izkušnjami iz multinacionalk, bolj učinkovito prenašajo znanje v domača podjetja kot manj usposobljeni delavci. Analize, narejene za proizvodni sektor, po drugi strani niso prinesle oprijemljivih zaključkov.

Raziskave, opisane v doktorski disertaciji, smo izvedli s pomočjo štirih različnih baz podatkov, ki pokrivajo obdobje od leta 2002 do leta 2010. Prva baza, pridobljena od Statističnega urada RS, povezuje delodajalce in zaposlene. Vsebuje podatke o vseh delovno aktivnih prebivalcih v Sloveniji. Med drugim vsebuje podatke o izobrazbi posameznika, o njegovem poklicu glede na Standardno klasifikacijo poklicev, o tem, kje je zaposlen, na katerem delovnem mestu opravlja delo itd. Naslednji dve bazi smo pridobili od Banke Slovenije. Ena izmed baz vsebuje vsa podjetja v Sloveniji, ki imajo vsaj 10 % tuje lastništvo. Vsebuje trenutno stanje tujega kapitala in TNI za vsako izmed podjetij po letih. Druga baza nadalje vsebuje podjetja, ki delujejo v Sloveniji ter imajo izhodne tuje neposredne investicije. Vse tri omenjene baze podatkov smo povezali z AJPES-ovo bazo, ki vsebuje podatke iz zaključnih računov slovenskih podjetij. Baze so bile združene na podlagi identifikatorjev za podjetja. Končna, združena baza, v povprečju vsebuje 30 000 podjetij za posamezno leto. Podjetja, ki imajo negativen kapital in hkrati nimajo niti enega zaposlenega delavca, so bila označena kot neaktivna in izključena iz baze podatkov. Na podlagi tako urejenih podatkov smo lahko izračunali skupno faktorsko produktivnost podjetja, določili karakteristike tam zaposlenih delavcev ter zgodovino njihovih zaposlitev, identificirali izvor TNI v podjetju (če jo ima), izračunali število novih zaposlitev v posameznem letu po različnih kategorijah delavcev itd.

Vsi trije članki prinašajo pomembne implikacije za ukrepe in politike države. Glede na to, da se zdi, da so izobraženi tuji delavci ključni za prenos znanja in tehnologije v državo gostiteljico, je morda vredno razmisliti o politiki spodbujanja imigracije za izobraženo tujo delovno silo. V luči obstoja učinkov prelivanja preko mobilnosti delovne sile v Sloveniji, bi bilo morda smiselno oblikovati tudi ukrepe, ki bi povečali fleksibilnost trga dela v Sloveniji. Trenutno namreč slovenska zakonodaja močno ščiti delavce, ki so zaposleni na podlagi pogodbe za nedoločen čas. Delodajalci imajo tako velike težave pri odpuščanju zaposlenih in zato temeljito premislijo, preden zaposlijo novega delavca. Z vidika iskalca zaposlitve to pomeni, da je težko dobiti novo zaposlitev. V primeru, da bi bil trg delovne sile bolj

fleksibilen, bi si morda več ljudi upalo zapustiti trenutnega delodajalca in si poiskati novo zaposlitev, pri čemer bi potencialno lahko povzročili učinke prelivanja.