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AND SOCIAL DEVELOPMENT

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Abstract

The purpose of this paper is to explore, with the use of quantitative methods, the relationship between FDI and social development at a firm level. The study focused on obstacles to businesses associated with social development as perceived by companies with foreign capital in Central and Eastern Europe. The investigated factors mostly dealt with education and skills of workers in Central and Eastern Europe. For this purpose, an empirical study was conducted with a sample of 25,000 companies in the region of Central and Eastern Europe during 2002-2008. The empirical study showed that companies with foreign capital more often encounter difficulties associated with an insufficiently educated labour force in relation to the companies with the participation of domestic private capital. This analysis was developed to demonstrate that these companies employ workers with higher education and skilled workers more often than similar firms with ownership that is national, private or public.

Keywords:

FDI, HDI, social development

JEL:

F20, E66, F43

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Introduction

The growth of foreign direct investment (FDI) flows outgrows the rate of growth of other international transactions, particularly trade flows between countries. Currently almost half of trade flows are intrafirm (Blonigen 2005). At the same time, the growing dependence of emerging economies on FDI is usually seen as a highly desirable aspect of development of these markets, since this type of investment is attributed with a number of positive effects for the hosting economy. In this context, most literature on the effects of FDI points to the transfer of improved management techniques, technology spillovers, and easier access to international financial markets, associated with investment made by companies with foreign capital. The literature also indicates that FDI is the most stable long-term commitment that these countries can make on the international capital markets in order to finance their deficits on current accounts (World Bank, 2007; Próchniak and Witkowski, 2013).

These positive effects have drawn the attention of many economic researchers, who aim to investigate the factors that are likely determinants of the location and magnitude of FDI. These determinants range from taxes, GDP, and other “classic” to this literature macroeconomic variables, to factors that are likely more endogenous within the FDI activity, such as trade protection and trade flows. These latter determinants of FDI open up the larger issue of varying microeconomic motivations for FDI that are to a large degree ignored, by the, mostly macroeconomic in scope, partial equilibrium literature. This approach does not take into account many factors relating to business environment in the host country. However, it is straightforward to argue that FDI should flow into countries with relatively stable economic conditions and strong institutions, and that investors should be concerned about political instability, inflexible regulations, and poor social development indicators among prospective workers. Still, there is extraordinarily little evidence to support these arguments (Walsh and Yu, 2010). This lack of evidence is probably caused by firm-level data shortage, although this has changed with the recent advent of large international datasets for firms.

The purpose of this paper is to explore, with the use of quantitative methods, the relationship between FDI and social development at a firm level. The study focused on obstacles to businesses associated with social development as perceived by companies with foreign capital in Central and Eastern Europe. The second part of the chapter contains a brief literature review; the third part describes the data and the methodology of estimating the empirical model, the fourth part presents the results obtained using the econometrically estimated model. The last part of the chapter presents our conclusions.

1. Literature review

A favourable business environment is important for both the decision about the involvement of foreign investors in a given FDI host country and the decision on the scale of the commitment of foreign capital. Before making an investment, investors look at certain major economic policy issues particularly relating to trade, labour, governance, regulatory quality and the availability of physical and social infrastructure. Factors describing the business environment analyzed in this respect are very important for foreign investors, since companies with foreign capital may have a different profile of activity to domestic companies and thus they may react differently to the country's current difficulties and obstacles to doing business. These difficulties can be particularly severe in the area of social development, in particular related to deficiencies in appropriate education and training of local staff. This is because qualified human capital increases business productivity by making better use of current technologies and to enable the introduction of new ones (Acemoglu, and Shimer, 1999).

By looking at a firm level, researchers have asked why companies would want to service foreign markets through affiliate production rather than through exporting or licensing arrangements. Dunning (1993) outlines four motives for a firm to engage in this type of investment: access to resources, access to markets, efficiency gains and acquisition of strategic assets. Wei (2000) finds that corruption significantly adds to firm costs and impedes FDI inflows. Javorcik-Smarzynska and Spatareanu (2005) show that regulation matters for foreign investors. Wei and Smarzyńska (2000) present evidence that corruption reduces inward FDI and shifts the ownership structure towards joint ventures. Habib and Zurawicki (2001, 2002) also provide evidence in the line of an unfavourable business environment deterring foreign direct investments. They find the impact of bad governance on FDI to be larger than that on local investment. They conclude that foreign investors are more sensitive to these traits of the host economy than their local counterparts are.

Skilled human capital increases the productivity of the company, which allows companies to make better use of current technologies and enable them to benefit from new ones (Acemoglu and Shimer, 1999, Bresnahan, Brynjolfsson and Hitt, 2002). In addition, a number of other factors that determine the share of foreign investment could be pointed out. For example, financial development is an important aspect of the business environment. It increases business efficiency by stimulating profitable investment and better selection and allocation of resources to the most profitable projects (Levine, 1997). Johnson et al. (2000) show that companies with foreign capital may have weaker ties with local authorities. This often puts them at a disadvantage relative to their local competition, which can resort to informal ways of influence when competing for a place in the market by bribing officials in order to obtain benefits in the application of laws and regulations to reduce business efficiency when it is not possible to reach the relevant intermediaries.

Foreign companies may also be less effective than local companies because they may face difficulties in understanding the characteristics of local markets. Problems associated with inadequate transport and telecommunications, or uncertainty of electricity supply, etc. add to the cost of reaching customers and increase the cost of doing business (World Bank, 1994).

A relatively large part of the research on FDI firm-level determinants has been done focusing on the region of Central and Eastern Europe. This is naturally caused by funding of large surveys by international firms, Javorcik-Smarzynska (2004), using a firm-level data set from Eastern Europe and the former Soviet Union, that finds empirical evidence for the fact that the strength of the patent laws and the overall level of intellectual property rights protection affect FDI inflows in several high-technology sectors. Anghel (2006) shows using Amadeus data on an international set of firms, that the FDI stock is higher in countries that have higher growth rates of GDP, are more open to trade, enjoy a better control of the degree of corruption and have achieved substantial progress in the transition process. Benacek, Gronicki, and Holland (2000) suggest that market seeking has been the primary motive of investors, national and regional market access was the primary factor that influenced potential investors. Factor cost advantages were not considered an important motive for locating in Central Europe by most investors. Bellak, Leibrecht, and Stehrer (2000) show that for four CEE countries not much can be gained (against other EU countries) in terms of FDI from a further lowering of taxes. This is because the largest gaps arise from deficiencies in research and development in general. Instead, policies should strive to increase the share of higher educated workers as this is relatively low compared to that of the US-plus-EU-6 economies. Goczek (2013) finds that companies with foreign capital often encounter difficulties with inadequate education of the workforce in relation to companies with domestic capital, both private and public.

2. Methodology

The empirical model is aimed at analyzing the firm-level determinants of the inflow of foreign capital with particular emphasis on the degree of social development. The data used in the model is derived from an empirical study, the "Business Environment and Enterprise Performance Survey" of the World Bank and the European Bank for Reconstruction and Development. This survey provided data on the business operating environment of firms in Central and Eastern Europe, such as their relationship with the state, methods of financing, difficulties in recruiting staff, infrastructure shortages, informal payments and corruption. The survey was conducted in 29 countries of Central and Eastern Europe every three years. Subsequent editions of the study took place in the years 1999, 2002, 2005 and 2008.

The results of the first study were not used in the investigation, because they are not comparable with later because of another questionnaire and a different group of countries analyzed. The other three editions of the survey covered about 25,000 companies that employ five or more people. These companies are either in private or state hands and are foreign, have different sizes, reach different levels of income and have different types of core business. There are variables of interest in foreign ownership in these companies, and in the difficulties encountered in the conduct of business, as well as in a number of their characteristics.¹

The following main hypothesis is verified in the study of determinants of the share of foreign ownership at the firm level: social development factors have a positive impact on the level of foreign direct investment. Moreover, during the investigation, several control hypotheses were also tested:

1. Firms with foreign capital are more likely to encounter problems with infrastructure.
2. Firms with foreign capital have an easier access to financing
3. Firms with foreign capital often encounter problems of an informal nature, especially in contacts with the state.
4. A quick and impartial judicial system is relatively more important to companies with foreign capital.
5. Firms with foreign capital are generally bigger than domestic companies.
6. The scope of the difficulties in doing business faced by a given company may vary from country to country.

The empirical investigations were carried out on a sample of 25,000 companies from Central and Eastern Europe starting from 2002 and ending in 2008. The study was based on regression analysis in which the variables of interest – related to social development - were used. These were mainly variables corresponding to education and women's inequality. The adopted methodology was to select a small model and test the obtained results for robustness (bottom-up or specific-to-general – Lutkepohl, 2007).

The investigation follows Smarzynska and Spatareanu (2004) and Aitken and Harrison (1999) in constructing the dependent variable. These authors proposed the percentage of capital owned by the foreign company in the domestic company as a measure of the FDI stock. Therefore, the equation of the empirical model aimed at assessing the impact of social development factors on the level of foreign direct investment at the firm level is as follows:

¹ Percentage of denied responses differed depending on the question. Enterprises willing to respond to questions about property (91 replies do not know the 25,000 firms), are less likely when it comes to the difficulties they encounter, especially the difficulties that arise at the interface with the state.

$$y = x\beta + \varepsilon \quad (1)$$

where x is the vector of explanatory variables (both of interest and control), $x\beta$ is a vector of coefficients, ε is the random error component. The dependent variable y is the share of foreign ownership in the capital of a company. It may be noted that the empirical verification of hypothesized relationships cannot be fully identified in terms of causality using the model defined by (1). This means that the proposed estimation and hypotheses need to be merely understood as postulated correlations. What's more, it can also be argued that the estimates carried out on microeconomic data using the share of foreign ownership in the capital of sampled firms may not easily translate to conclusions and recommendations at a macroeconomic level. It should also be noted that the dependent variable is censored because it ranges, depending on the adopted method of estimation, between zero and one, or zero and one hundred. Some of these problems have been tackled by selecting a relevant estimation technique. These choices are described below.

A statistically correct estimation using simple linear regression methods is not possible when using a variable representing foreign ownership in the capital of the companies as an indicator of the level of foreign direct investment. This is due to the problem of sample censoring - the model should describe the level of foreign investment at the firm level, but this value is observable only if the foreign investment actually has been made. These are the situations where the marginal benefit exceeds the marginal cost to foreign investors – meaning that a foreign company or a person is willing to invest in a given firm in the country. However, the opposite case is unobservable, in which the costs were higher than the benefits, meaning that some unknown difficulties have prevented investment in a company from a given country. In other words, the costs and difficulties of a prohibitively high value are not observed. For this reason, it can be concluded that the variable describing the amount of foreign investment is censored.

Three methods of dealing with the phenomenon of non-random sample censoring were considered. The first is a double-sided truncated Tobit, the second is complementary logistic regression (sometimes called Complementary Log-Log Regression), which approximates ordered categories to observations; the third is the Fractional Logit. The Tobin correction (1979) used with censoring on both sides at the level of 0 and 100 can correct the results for the impact of non-random (systematic in determinants) unobservable heterogeneity in the sample. This model assumes that the variable of interest, y^* is not fully observed in the whole range between minus and plus infinity. Instead, the variable y is observed, which is defined as follows: $y = 0$, if $y^* \leq 0$, $y = y^*$, where $0 < y^* < 1$ and $y = 1$ if $y^* \geq 1$. It is also assumed that there is a linear relationship between the unobserved variable and the explanatory variables:

$$E(y^*|x) = x\beta \quad (2)$$

This method, however, can be challenged on theoretical grounds by raising doubts about the nature of censoring of the sample. It can be argued that the mechanism causing the truncation of the sample is not non-random, but rather is caused by the very nature of the variable - by definition the share of foreign capital in the capital of a given company is always limited by 0 and 100 (or 0 and 1). Thus, the phenomenon of failing to invest in a given company and the maximum possible involvement of foreign capital in a given company does not affect the results.

A common solution to the problem of censoring the sample "by definition" whenever the observations are fractions is the logistic regression method, but this also faces a number of problems due to the nature of the data on the share of foreign ownership in the capital of companies. The estimated logistic regression equation takes the form:

$$E(\log[y/(1-y)]|x) = x\beta \quad (3)$$

It can be noted however that the logistic transformation is possible only when the variable y is from the open interval between 0 and 1 but the data collected on the share of foreign ownership is dominated by the values 0 and 1, which prevent this transformation. Dependent variable transformation methods that can be found in the literature are usually based on changing its range (for example by adding a scalar value to all observations). These methods, however, are always arbitrary and more importantly they may affect the results in a nontrivial and unexpected way.

One of the ways of addressing the latter phenomenon is fitting a logistic regression using a logit transformation under the assumption that the variables are discrete and ordered. This method is called a complementary logistic regression. In this case, the equation describing the investigated phenomenon is expressed by the following formula:

$$\Pr(y \neq 0 | x) = G(x\beta) = 1 - \exp\{-\exp(x\beta)\}, \quad (4)$$

where the value 0 is interpreted as a negative outcome (lack of foreign investment). At the same time all other values of the dependent variable are treated (with the exception of missing values) as a positive result (the existence of foreign investments). The described model can be estimated by the quasi-maximum likelihood estimator of the variance robust to heteroscedascity.

The obvious drawback of this method is that it gives greater weight to observations taking values from the range (0,1), which under these assumptions are all treated as the existence of foreign investment. Thus it simplifies the decision of the foreign investing entity to one level - to invest or not, ignoring the decision about the scale of the involvement at the selection stage. Therefore, a third method was proposed, which is the Fractional Logit by Papke and Wooldridge (1996). The equation for estimating the model of interest is:

$$E(y|x) = G(x\beta) = \frac{\exp(x\beta)}{1 + \exp(x\beta)} \quad (5)$$

In this model, one can estimate the vector of parameters β using the following Bernoulli log-likelihood function:

$$l(\beta) = y \log[G(x\beta)] + (1 - y) \log[1 - G(x\beta)] \quad (6)$$

Assuming a logit function for $G(z)$ gives the following variance:

$$\text{Var}(y|x) = \sigma^2 \cdot G(x\beta)[1 - G(x\beta)] \quad (7)$$

This method has several advantages. It is quite easy to compute using quasi log-likelihood methods. The advantage of this approach compared to ordinary logistic regression and Tobin's correction is not leaving behind observations in which the share of foreign capital is exactly equal to zero or unity.

The problems of the potential endogeneity of some of the variables and the self-selection in the sample were considered during robustness tests. Results obtained with a two-stage estimation method do not indicate the presence of any of these statistical problems. In the first case, it was probably due to the fact that companies are willing to disclose information about their property structure and therefore there is no potential for the self-selection phenomenon in this regard. As for the endogeneity problem, the opposite direction of the impact of the investigated variable on the explanatory variables (FDI inflow increases the level of education in the country) appear to be very unlikely from a theoretical viewpoint.

3. Estimation results

Tables 1 - 4 present the regression results that explain the percentage of foreign capital in firm capital with the percentage of employees with higher education, the proportion of skilled workers and a number of control variables. These estimates were obtained using the two-limit Tobit method (censored on both sides). The fractional logit method gave very similar results (they are in Tables A.1-A.4 in the Appendix). Furthermore, very similar results were obtained with the use of complementary logistic regression (not shown). The tables do not report the results for dummy variables for countries and sectors as the Wald test has shown their joint insignificance and, therefore, they were dropped altogether from the models.

Both variables reflecting the recruitment of educated workers by companies with foreign capital were statistically significant. The percentage of employees with university education was significant at the 0.01 level; the significance of the percentage of skilled workers was generally lower, while the coefficient was generally higher. This result proved to be unaffected by the selection of variables in the model.

There were only three cases in which the education variables were no longer significant and they were all associated with a significant reduction in the number of observations in the sample. The first case was a model specification in which the variable "Is the Top Manager female?" was included. This variable proved to be insignificant, but it reduced the significance of the educational variables. This result can easily be called into question - a very small percentage of firms responded to this question, and therefore the sample size, which in other models amounts to about 13-17 thousand companies, was only 3670 in this case. A similar result, in the second case, can be seen in the first column of Table 2 – a drop in the number of observations by three-quarters (up to 3000 observations) probably caused by the insignificance of the variables of the basic model. In the third case, the variable "% of people using computers at work" was added to the model. This variable was significant, but this was associated with a significant reduction in the number of observations.²

Table 1. Tobit estimation results

	(1)	(2)	(3)	(4)
% of employees at the end of the fiscal year with a university degree	1.2307*** (0.0978)	-0.3690 (0.2197)	1.2162*** (0.0992)	1.1708*** (0.1107)
% of skilled employees at the end of the fiscal year	25.4719** (9.5911)	24.1902 (22.8909)	25.6037** (9.7400)	41.6691*** (11.0080)
Is the Top Manager female?		15.2373 (8.9434)		
Did you experience insufficient water supply for production in last fiscal yr?			2.5233 (4.2479)	
Over the 2006 fiscal year, did this establishment experience power outages?			-6.6903 (3.9606)	
In the last fiscal year, what were this establishment's total annual sales?				-0.0000 (0.0000)
Constant	-279.2456*** (10.8910)	-243.7084*** (27.7680)	-273.1576*** (13.6180)	-284.0878*** (12.4444)
Observations	17205	3670	16721	13654

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

² It should be noted that this variable is similar to the variables describing education - computers are typically used for activities requiring higher levels of education. It is therefore considered that this result, although expected and plausible, does not play a particularly important role in confirming the main hypothesis in this part of the study.

Table 2. Tobit estimation results cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	-0.3636 (0.2476)	0.9395*** (0.1422)	1.4956*** (0.1218)	1.5125*** (0.1166)	1.4923*** (0.1166)
% of skilled employees at end of the fiscal year	20.2200 (26.4161)	39.0218** (13.9918)	45.1689*** (11.8257)	33.1394** (11.2282)	37.5547*** (11.3005)
Total cost of inspections - official and unofficial payments	0.0000 (0.0000)				
Number of working days spent by staff dealing with inspections procedures		0.1868* (0.0792)			
Percentage of total annual sales paid for security in the last fiscal year			-1.1264 (1.0527)		
Losses due to theft, robbery, vandalism or arson in the last fiscal year (% of sales)				-6.2465*** (1.3497)	
Percentage of total annual sales paid in informal payments					-4.2340*** (1.0696)
Constant	-209.1730*** (24.7582)	-304.1093*** (15.8559)	-298.2319*** (13.7458)	-302.6070*** (13.0992)	-295.3646*** (13.1409)
Observations	3000	10511	11534	13549	12697

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table 3. Tobit estimation results c.d.

	(1)	(2)	(3)	(4)	(5)
% of employees at end of the fiscal year with a university degree	1.1801*** (0.0975)	1.1321*** (0.0996)	1.1457*** (0.0999)	1.0983*** (0.1004)	1.2311*** (0.0993)
% of skilled employees at end of the fiscal year	27.4528** (9.5889)	22.2974* (9.8350)	21.0206* (9.8107)	18.7115* (9.8825)	26.8639** (9.7551)
How much of an obstacle is: Access to finance	-18.3447*** (1.7067)				
The court system is fair, impartial and uncorrupted		1.0550 (1.1776)			
"The court system is quick"			-1.8380 (1.2402)		
"The court system is able to enforce its decisions"				-1.6629 (1.1303)	
What % of senior management time was spent in dealing with government regulations?					0.3380 (0.1872)
Constant	-249.5947*** (10.6388)	-272.3223*** (11.4482)	-265.8642*** (11.2241)	-262.0646*** (11.3484)	-283.1606*** (11.1840)
Observations	16528	16070	15968	15772	16721

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table 4. Tobit estimation results

	(1)	(2)	(3)	(4)
% of employees at end of the fiscal year with a university degree	1.2279*** (0.0979)	0.9777*** (0.1268)	-0.6111** (0.2349)	0.8689*** (0.1356)
% of skilled employees at end of the fiscal year	23.3916* (9.6039)	26.4911* (12.3402)	38.9955 (24.5572)	37.2681** (13.3536)
How much of an obstacle is: transportation of goods, supplies and inputs?	5.5815* (2.1817)			
Do you use technology licensed from a foreign-owned company?		14.6289*** (3.0366)		
% of establishment's workforce that regularly use computers in their jobs			0.6288** (0.1980)	
Total number of inspections in the last fiscal year				0.7450*** (0.1903)
Constant	-280.3546*** (10.9926)	-273.5188*** (14.7491)	-237.1002*** (24.3362)	-304.6454*** (15.3628)
Observations	17034	12517	3670	11248

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Based on the above results it can therefore be concluded that companies with foreign capital employ higher-skilled and better educated workers.³ This result is robust to the addition of other variables in the model. Moreover, the estimated coefficient is always the same size irrespective of control variables – this enables us to argue that the study is carried out correctly in statistical terms.

The results concerning control variables were diverse. Interestingly, the hypothesis that companies with foreign capital have particular difficulties with informal relationships in contact with the state in the economy has not been confirmed. As a rule, these difficulties were lower for these firms relative to domestic firms. The variables pertaining to different types of informal payments were not statistically significant. Nevertheless, some of the results may indirectly provide some backing to the control hypotheses. Enterprises with foreign capital were controlled during state inspections relatively more often and their managers spend significantly more time in contact with the state authorities. Perhaps the lack of contact of foreign capital firms with local intermediaries dealing with the state officials has no effect on the experience of corruption, but harassment with long-running state inspections is in fact more common amongst these firms (Table 4 column 4).

³ This result may be due to the fact that foreign firms in the sample are more advanced and more export oriented. It is difficult, however, to determine whether this finding also indicates that increasing human capital attracts foreign direct investment. The results presented in Goczek (2013) can put this result in perspective - according to the author, the biggest obstacle to business for companies with foreign capital is an insufficiently educated workforce. These two results when combined allow us to reach the conclusions presented in the conclusions section of the chapter.

The importance of control variables relating to the inadequacy of technical infrastructure is ambiguous. Companies with foreign capital are not more likely to be troubled by problems with water supply or electricity than domestic firms; however these results depend on the method of estimation. The foreign owned companies complained significantly more often about the shortcomings of the transport infrastructure, but perhaps they simply dealt with this problem more often – almost by definition, they are faced with the necessity of transporting people and goods over long distances. Thus, only this kind of infrastructure could have an impact on the size of the involvement of foreign capital in a given economy, however, this result was also not robust to changes in the methods of estimation.

As the results shown in the first column of Table 3 indicate, development of the local financial market did not matter for enterprises with foreign capital, which confirms the main thesis of empirical studies on external financing difficulties by Goczek (2012). The author points out that companies with foreign capital face relatively fewer difficulties in getting external financing, as these companies are able to transfer some of the capital from parent companies.

During the next stage of research, the scale effects hypothesis (whether a large scale of a given company influences the results) was tested by adding the number of employees and the value of sales of the company to the model. While the number of employees was significant, the value of sales was not. The addition of these variables did not affect the variables relating to the main hypothesis of this section. The results of these estimations are reported in Tables 5 - 8.

Table 5. Fractional Logit results – scale effects

	(1)	(2)	(3)	(4)
% of employees at the end of the fiscal year with a university degree	0.0280*** (0.0007)	0.0108 (0.0061)	0.0324*** (0.0011)	0.0282*** (0.0063)
% of skilled employees at the end of the fiscal year	-0.0630 (0.0827)	5.5611*** (1.2272)	0.4404*** (0.1219)	-0.1169 (0.7136)
Number of employees at the end of the fiscal year	0.6480*** (0.0137)	0.0969* (0.0429)	0.7195*** (0.0206)	0.6724*** (0.1199)
Is the Top Manager female?		-0.2347 (0.2426)		
Did you experience insufficient water supply for production in the last fiscal year?			-0.4398*** (0.0805)	
Over the fiscal year 2006, did this establishment experience power outages?			0.4194*** (0.0647)	
In the last fiscal year, what were this establishment's total annual sales?				-0.0000 (0.0000)
Constant	-11.3162*** (0.1930)	-8.3545*** (1.2566)	-13.0056*** (0.3192)	-11.6292*** (1.6925)
Observations	16164	558	11344	16164

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table 6. Fractional Logit results – scale effects

	(1)	(2)	(3)	(4)	(5)
% of employees at end of the fiscal year with a university degree	0.0276*** (0.0037)	0.0283*** (0.0078)	0.0094 (0.0063)	0.0110 (0.0069)	0.0290*** (0.0007)
% of skilled employees at the end of fiscal year	1.0853** (0.4207)	-0.1406 (0.8910)	5.3690*** (1.2679)	5.6638*** (1.2808)	-0.0339 (0.0834)
Number of employees at the end of the fiscal year	0.8052*** (0.0728)	0.6759*** (0.1509)	0.0853 (0.0442)	0.0993* (0.0460)	0.5888*** (0.0139)
How much of an obstacle is: transportation of goods, supplies and inputs?	1.0927*** (0.2871)				
Do you use technology licensed from a foreign-owned company?		1.2408 (3.6338)			
Does this establishment compete against unregistered or informal firms?					
How much of an obstacle are the informal sector competitors to your operations?			-0.0765 (0.0575)		
How much of an obstacle are the formal sector competitors to your operations?			0.0283 (0.0895)		
% of the establishment's workforce that regularly use computers in their jobs				0.0002 (0.0073)	
Total number of inspections in last fiscal year					-0.0004 (0.0006)
Constant	-12.9715*** (1.0002)	-14.1607 (7.6845)	-8.3938*** (1.2573)	-8.9052*** (1.1955)	-10.4748*** (0.1937)
Observations	15873	15537	558	5580	13844

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table 7. Fractional Logit results – scale effects

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of fiscal year with a university degree	0.0163** (0.0063)	0.0289*** (0.0007)	0.0267*** (0.0007)	0.0128*** (0.0003)	0.0502*** (0.0014)
% of skilled employees at the end of fiscal year	5.4677*** (1.2994)	-0.0577 (0.0833)	0.0330 (0.0845)	-0.3733*** (0.0328)	0.2238 (0.1349)
Number of employees at the end of the fiscal year	0.0943* (0.0480)	0.6060*** (0.0146)	0.7065*** (0.0144)	0.5029*** (0.0051)	0.9797*** (0.0228)
Total cost of inspections - official and unofficial payments	0.0000 (0.0000)				
Number of working days spent by staff dealing with inspections procedures		-0.0034** (0.0013)			
% of sales from products/services subject to compulsory certificates					
% of total annual sales paid for security in the last fiscal year			-0.1276*** (0.0095)		

	(1)	(2)	(3)	(4)	(5)
Losses due to theft, robbery, vandalism or arson in the last fiscal year (% of sales)				0.0039*	
				(0.0018)	
Percentage of total annual sales paid in informal payments					-0.1411***
					(0.0107)
Constant	-8.7814***	-10.6624***	-11.9221***	-8.1220***	-16.9843***
	(1.2694)	(0.1988)	(0.2019)	(0.0601)	(0.3475)
Observations	492	13769	15010	15559	12197

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.
Source: own calculations.

Table 8 Fractional Logit results – scale effects cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0264***	0.0283***	0.0280***	0.0271***	0.0304***
	(0.0007)	(0.0009)	(0.0008)	(0.0009)	(0.0009)
% of skilled employees at the end of the fiscal year	0.1481	0.0793	0.0769	-0.0825	0.3683***
	(0.0807)	(0.1030)	(0.0871)	(0.0968)	(0.0968)
Number of employees at the end of the fiscal year	0.6060***	0.6611***	0.6603***	0.6058***	0.5960***
	(0.0134)	(0.0173)	(0.0145)	(0.0169)	(0.0147)
How much of an obstacle is: Access to finance	-0.1048***				
	(0.0160)				
The court system is fair, impartial and uncorrupted		-0.2668***			
		(0.0193)			
“The court system is quick”			-0.0535**		
			(0.0195)		
“The court system is able to enforce its decisions”				-0.1983***	
				(0.0166)	
What % of senior management time was spent in dealing with government regulations?					-0.0488***
					(0.0026)
Constant	-10.4657***	-11.0044***	-11.4925***	-10.2132***	-10.4964***
	(0.1924)	(0.2437)	(0.2130)	(0.2410)	(0.2120)
Observations	14715	15799	15786	15491	13910

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.
Source: own calculations.

Lastly, variables previously tested on the country-level (country characteristics that are the same for each firm in a given country) were added to the analysis. As already mentioned, dummy variables were jointly insignificant, however, in almost all cases, three of them turned out to be significant (they were Hungary and Kazakhstan with a negative sign, Estonia with a positive sign). Therefore, at the outset of the investigation, variables at the macroeconomic level were expected to be insignificant. The following measures of social development were examined:

1. The Human Development Index (HDI).
2. The individual components of the HDI: logarithm of income per capita and life expectancy. For some of the countries, the variables “average number of years of education” or “the expected number of years of education” were not available.
3. The Freedom House Index of civil liberties.
4. Income inequality measured by the Gini index.

Results for the HDI variable are shown in Tables 9-12. The HDI index was significant in all specifications. The adding of this variable did not affect the strength of the relationship between education and FDI, despite the fact that they both contain a similar component of education. This relationship was significant and positive. Then, the HDI variable was disaggregated and its components were then added to the regression alongside the index of civil liberties and the Gini index. The results of the addition of these variables to the model are shown in Tables 6.A5-6.A8 in the Appendix. As already mentioned, for some of the countries, the variables “average number of years of education” or “the expected number of years of education” were not available. None of the tested components of the HDI were significant, i.e. neither the logarithm of the level of income per capita nor life expectancy. This result could be caused by the fact that these variables are themselves correlated. Nevertheless, significant and of the assumed sign were both indices – the Civil Liberties index and Gini coefficient.

Table 9. Fractional Logit estimation results – HDI cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0097*** (0.0008)	-0.0038 (0.0024)	0.0097*** (0.0008)	0.0087*** (0.0009)	0.0111*** (0.0009)
% of skilled employees at the end of fiscal year	-0.1271 (0.0742)	-0.0079 (0.1460)	-0.0905 (0.0763)	-0.0813 (0.0844)	-0.0903 (0.0950)
HDI	1.9248*** (0.3637)	2.0491* (0.8484)	1.9543*** (0.3684)	1.7212*** (0.4031)	1.4484*** (0.4155)
Is the Top Manager female?		0.2049 (0.1199)			
Did you experience insufficient water supply for production in the last fiscal year?			0.0086 (0.0382)		
Over the fiscal year 2006, did this establishment experience power outages?			-0.0726* (0.0339)		
In the last fiscal year, what were this establishment's total annual sales?				-0.0000 (0.0000)	
% of total annual sales paid in informal payments					-0.0351*** (0.0102)
Constant	-3.8479*** (0.2856)	-4.0443*** (0.6993)	-3.7934*** (0.2916)	-3.7134*** (0.3171)	-3.5496*** (0.3277)
Observations	17203	3670	16719	13652	12695

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001

Source: own calculations.

Table 10. Fractional Logit estimation results – HDI cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0098*** (0.0008)	0.0071*** (0.0010)	-0.0037 (0.0023)	-0.0037 (0.0024)	0.0065*** (0.0011)
% of skilled employees at the end of the fiscal year	-0.1340 (0.0744)	-0.1744* (0.0864)	-0.0162 (0.1426)	-0.0033 (0.1380)	-0.1472 (0.0917)
How much of an obstacle is: transportation of goods, supplies and inputs?	0.0441* (0.0203)				
HDI	1.9874*** (0.3658)	1.1241* (0.4632)	2.0440* (0.8459)	1.8114* (0.8567)	1.9956*** (0.4982)
Do you use technology licensed from a foreign-owned company?		-0.0990*** (0.0233)			
Does this establishment compete against unregistered or informal firms?			0.0362* (0.0183)		
How much of an obstacle are the informal sector competitors to your operations?				-0.0490** (0.0166)	
How much of an obstacle are the formal sector competitors to your operations?				-0.0005 (0.0231)	
Total number of inspections in the last fiscal year					0.0064*** (0.0016)
Constant	-3.9212*** (0.2882)	-3.0818*** (0.3627)	-3.6942*** (0.6590)	-3.4759*** (0.6666)	-3.9501*** (0.3906)
Observations	17032	12517	3670	3670	11248

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001

Source: own calculations.

Table 11. Fractional Logit estimation results- HDI

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	-0.0030 (0.0026)	0.0070*** (0.0011)	-0.0013 (0.0029)	0.0108*** (0.0009)	0.0111*** (0.0009)
% of skilled employees at the end of the fiscal year	0.0463 (0.1823)	-0.1550 (0.1053)	-0.0635 (0.1597)	-0.1475 (0.0896)	-0.1589 (0.0923)
Total cost of inspections - official and unofficial payments	0.0000 (0.0000)				
HDI	3.3169*** (0.9353)	2.3275*** (0.5123)	1.1170 (1.0169)	1.5329*** (0.4499)	1.9858*** (0.4091)
Number of working days spent by staff dealing with inspections procedures		0.0016** (0.0006)			
% of total annual sales paid in informal payments			-0.0008 (0.0018)		
% of total annual sales paid for security in the last fiscal year				-0.0064 (0.0097)	
Losses due to theft, robbery, vandalism or arson in the last fiscal year (% of sales)					-0.0576*** (0.0138)
Constant	-4.6161*** (0.7332)	-4.1561*** (0.4017)	-2.7424*** (0.8047)	-3.6044*** (0.3543)	-3.9362*** (0.3224)
Observations	3000	10511	1957	11532	13548

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001

Source: own calculations.

Table 12. Fractional Logit estimation results- HDI

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0094*** (0.0008)	0.0091*** (0.0008)	0.0092*** (0.0008)	0.0089*** (0.0008)	0.0097*** (0.0008)
% of skilled employees at the end of the fiscal year	-0.1103 (0.0748)	-0.1372 (0.0764)	-0.1346 (0.0758)	-0.1570* (0.0761)	-0.1233 (0.0748)
How much of an obstacle is: Access to finance	-0.1653*** (0.0143)				
HDI	1.8675*** (0.3666)	1.8833*** (0.3762)	1.8972*** (0.3770)	1.9040*** (0.3796)	1.9884*** (0.3694)
The court system is fair, impartial and uncorrupted		0.0073 (0.0115)			
"The court system is quick"			-0.0165 (0.0116)		
"The court system is able to enforce its decisions"				-0.0169 (0.0106)	
What % of senior management time was spent in dealing with government regulations?					0.0032 (0.0017)
Constant	-3.5978*** (0.2884)	-3.8044*** (0.2939)	-3.7732*** (0.2966)	-3.7444*** (0.2974)	-3.9270*** (0.2909)
Observations	16526	16068	15966	15770	16719

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001

Source: own calculations.

The analysis carried out in this part of the study was motivated by the need of a more thorough examination of the hypothesis that companies with foreign capital employ workers with higher education and skilled workers more often than similar nationally owned firms do. The results of the econometric investigation confirmed this hypothesis. This was robust both to the choice of estimation methods and to the choice of different sets of control variables in the model. Robustness was established regarding not only the variables' statistical significance, but also regarding the strength of the impact, as shown by a small variation of the estimated coefficient of the variable proxying the level of education. Thus, the main research hypothesis assuming a positive relationship between foreign direct investment and the level of education was confirmed in the data.

On this basis, it can be concluded that the level of education, both higher, and vocational (as shown by the variable "% of skilled workers") is a social development factor, which significantly and positively affects the share of foreign capital in the surveyed companies. This suggests that raising the level of education, should increase the amount of incoming foreign direct investment.

Summary

The subject of the study was to examine the determinants of foreign direct investment at the enterprise level. In this context, these determinants were analyzed in the empirical model as obstacles to doing business. The study focused on social development determinants of FDI as perceived by companies with foreign capital. The investigated factors mostly dealt with education and skills of workers in Central and Eastern Europe. For this purpose, an empirical study was conducted with a sample of 25,000 companies in the region of Central and Eastern Europe during 2002-2008.

As mentioned earlier, the surveyed companies had a representative character of the whole economy; therefore it is possible to draw more general conclusions, including those drawn from the whole group of companies in the region. This study revealed that companies with foreign capital more often encounter difficulties associated with an insufficiently educated labour force in relation to the companies with the participation of domestic private capital. This analysis was developed to demonstrate that these companies employ workers with higher education and skilled workers more often than similar firms with ownership that is national, private or public. This result was robust to the selection of statistical methods for estimating and was robust to the addition of different control variables to the model. Robustness concerned not only the significance, but also the strength of the impact of the investigated, as demonstrated by the small variation in the estimated coefficients.

This analysis complementing the study indicates that firms with foreign capital often employ workers with higher education and skilled workers than similar firms with a national property, private or public. This conclusion confirms earlier findings from the study of foreign direct investment at the macroeconomic level (Brzozowski, Goczek, 2013). Moreover, the study results are in line with the results in Goczek (2013) that showed that companies with foreign capital encounter difficulties with inadequate education of the workforce more often than companies with domestic capital, both private and public. On this basis, it can be concluded that the level of education, both higher and vocational, is a factor of social development which significantly and positively affects the share of foreign capital in the surveyed companies. This suggests that raising the level of education, which, according to the surveyed companies with foreign capital in the analyzed countries is too low, should increase the scale of incoming foreign direct investment. The influence of the other factors of social development, such as the inequality of women was insignificant or impossible to estimate based on the collected data and, therefore, was not investigated at the firm level.

Appendix

Table A1. Fractional Logit estimation results

	(1)	(2)	(3)	(4)
% of employees at the end of the fiscal year with a university degree	0.0178*** (0.0006)	0.0153* (0.0076)	0.0210*** (0.0008)	0.0263*** (0.0006)
% of skilled employees at the end of the fiscal year	1.7353*** (0.0608)	3.5579* (1.6661)	3.0576*** (0.0880)	1.9394*** (0.0652)
Is the Top Manager female?		-0.1866 (0.3202)		
Did you experience insufficient water supply for production in the last fiscal year?			0.2134*** (0.0616)	
Over the fiscal year 2006, did this establishment experience power outages?			0.7647*** (0.0465)	
In the last fiscal year, what were this establishment's total annual sales?				0.0000 (0.0000)
Constant	-3.1473*** (0.0577)	-5.4222*** (1.3369)	-5.8946*** (0.1448)	-3.4397*** (0.0629)
Observations	21922	6280	16231	16234

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001

Source: own calculations.

Table A2. Fractional Logit estimation results cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0213*** (0.0006)	0.0178*** (0.0006)	0.0147* (0.0059)	0.0131* (0.0051)	0.0182*** (0.0006)
% of skilled employees at the end of the fiscal year	1.4957*** (0.0626)	1.7620*** (0.0617)	3.4296** (1.2877)	3.1813** (1.0690)	1.4963*** (0.0606)
How much of an obstacle is: transportation of goods, supplies and inputs?	+0.1112*** (0.0241)				
Do you use technology licensed from a foreign-owned company?		0.1232 (0.1140)			
Does this establishment compete against unregistered or informal firms?			-0.0803 (0.0505)		
How much of an obstacle are the informal sector competitors to your operations?				-0.1592** (0.0496)	
How much of an obstacle are the formal sector competitors to your operations?				0.1342 (0.0800)	
Total number of inspections in last fiscal year					0.0014** (0.0005)
Constant	-3.3275*** (0.0615)	-3.3972*** (0.2353)	-5.6057*** (0.9690)	-5.5076*** (0.8180)	-2.8948*** (0.0573)
Observations	21347	21147	6280	6280	18613

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table A3. Fractional Logit estimation results cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0199** (0.0074)	0.0183*** (0.0006)	0.0177*** (0.0006)	0.0113*** (0.0002)	0.0228*** (0.0007)
% of skilled employees at the end of the fiscal year	3.3259* (1.6376)	1.5128*** (0.0605)	1.9777*** (0.0619)	1.2435*** (0.0249)	2.2380*** (0.0739)
Total cost of inspections - official and unofficial payments	0.0000 (0.0000)				-0.1361*** (0.0077)
Number of working days spent by staff dealing with inspections procedures		0.0023* (0.0009)			
Percentage of total annual sales paid for security in the last fiscal year			-0.1301*** (0.0094)		
Losses due to theft, robbery, vandalism or arson in the last fiscal year (% of sales)				-0.0466*** (0.0017)	
% of total annual sales paid in informal payments					-0.1361*** (0.0077)
Constant	-5.6399*** (1.2124)	-2.8960*** (0.0573)	-3.0545*** (0.0574)	-2.4762*** (0.0217)	
Observations	539	18511	19792	21235	16150

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table A4. Fractional Logit estimation results cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0165*** (0.0006)	0.0169*** (0.0006)	0.0182*** (0.0006)	0.0164*** (0.0006)	0.0166*** (0.0006)
% of skilled employees at the end of the fiscal year	1.6405*** (0.0603)	1.7918*** (0.0617)	1.8944*** (0.0646)	1.3444*** (0.0631)	1.9185*** (0.0672)
How much of an obstacle is: Access to finance	-0.0938*** (0.0133)				
The court system is fair, impartial and uncorrupted		-0.1247*** (0.0117)			
"The court system is quick"			-0.0892*** (0.0134)		
"The court system is able to enforce its decisions"				-0.1540*** (0.0112)	
What % of senior management time was spent in dealing with government regulations?					-0.0412*** (0.0017)
Constant	-2.7830*** (0.0627)	-2.8291*** (0.0629)	-3.1542*** (0.0668)	-2.5190*** (0.0660)	-2.8461*** (0.0662)
Observations	20171	21522	21229	20925	19650

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table A5. Fractional Logit estimation results: other macroeconomic-level variables

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of fiscal year with a university degree	0.0102*** (0.0008)	-0.0010 (0.0024)	0.0102*** (0.0008)	0.0093*** (0.0009)	0.0113*** (0.0009)
% of skilled employees at the end of the fiscal year	-0.1368 (0.0736)	0.0019 (0.1433)	-0.1029 (0.0756)	-0.0857 (0.0837)	-0.1232 (0.0951)
GDP	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
Civil Liberties	-0.0716*** (0.0188)	-0.0925* (0.0440)	-0.0705*** (0.0192)	-0.0732*** (0.0212)	-0.0737*** (0.0218)
Life	0.0114 (0.0091)	0.0483* (0.0193)	0.0098 (0.0094)	0.0135 (0.0103)	-0.0059 (0.0109)
Gini	-0.0150** (0.0052)	0.0071 (0.0113)	-0.0164** (0.0053)	-0.0121* (0.0060)	-0.0214*** (0.0062)
Is the Top Manager female?		0.1914 (0.1167)			
Did you experience insufficient water supply for production in the last fiscal year?			0.0076 (0.0379)		
Over the fiscal year 2006, did this establishment experience power outages?			-0.0706* (0.0340)		
In the last fiscal year, what were this establishment's total annual sales?				-0.0000 (0.0000)	
% of total annual sales paid in informal payments					-0.0374*** (0.0102)
Constant	-2.4747*** (0.7094)	-5.8324*** (1.4605)	-2.2489** (0.7366)	-2.7046*** (0.7970)	-1.0215 (0.8572)
Observations	17203	3670	16719	13652	12695

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table A6. Fractional Logit estimation results – other macroeconomic-level variables cont.

	(1)	(2)	(3)	(4)	(5)
% of employees at end of the fiscal year with a university degree	0.0103*** (0.0008)	0.0076*** (0.0010)	-0.0009 (0.0024)	-0.0031 (0.0026)	0.0073*** (0.0011)
% of skilled employees at the end of the fiscal year	-0.1427 (0.0738)	-0.1732* (0.0860)	-0.0039 (0.1407)	0.0098 (0.1435)	-0.1421 (0.0914)
How much of an obstacle is: transportation of goods, supplies and inputs?	0.0458* (0.0205)				
GDP	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)
Civil Liberties	-0.0703*** (0.0189)	-0.0517* (0.0236)	-0.0910* (0.0440)	-0.0907* (0.0440)	-0.0640** (0.0248)
Life	0.0116 (0.0091)	0.0139 (0.0113)	0.0481* (0.0193)	0.0465* (0.0193)	0.0178 (0.0117)
Gini	-0.0156** (0.0052)	-0.0072 (0.0066)	0.0057 (0.0113)	0.0072 (0.0113)	-0.0072 (0.0068)
Do you use technology licensed from a foreign-owned company?		-0.0993*** (0.0233)			
Does this establishment compete against unregistered or informal firms?			0.0350 (0.0183)		
% of establishment's workforce that regularly use computers in their jobs				0.0042* (0.0020)	
Total number of inspections in last fiscal year					0.0063*** (0.0016)
Constant	-2.5048*** (0.7122)	-2.8058** (0.8679)	-5.4608*** (1.4569)	-5.3880*** (1.4607)	-3.3462*** (0.9010)
Observations	17032	12517	3670	3670	11248

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table A7. Fractional Logit estimation results – other macroeconomic-level variables cont

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0009 (0.0027)	0.0078*** (0.0011)	0.0032 (0.0030)	0.0112*** (0.0009)	0.0114*** (0.0009)
% of skilled employees at the end of the fiscal year	0.0451 (0.1790)	-0.1535 (0.1052)	-0.0363 (0.1606)	-0.1586 (0.0887)	-0.1755 (0.0924)
Total cost of inspections - official and unofficial payments	0.0000 (0.0000)				
GDP	-0.0000 (0.0000)	0.0000 (0.0000)	-0.0000* (0.0000)	-0.0000 (0.0000)	0.0000 (0.0000)
Civil Liberties	-0.1476** (0.0487)	-0.0789** (0.0256)	0.0231 (0.0518)	-0.0667** (0.0229)	-0.0448* (0.0213)
Life	0.0499* (0.0209)	0.0167 (0.0121)	0.1218*** (0.0255)	0.0078 (0.0113)	0.0112 (0.0106)
Gini	0.0156 (0.0122)	-0.0055 (0.0071)	-0.0092 (0.0142)	-0.0145* (0.0065)	-0.0159** (0.0059)
Number of working days spent by staff dealing with inspections procedures		0.0018** (0.0006)			
% of total annual sales paid in informal payments			0.0009 (0.0018)		
% of total annual sales paid for security in the last fiscal year				-0.0048 (0.0096)	
Losses due to theft, robbery, vandalism or arson in the last fiscal year (% of sales)					-0.0565*** (0.0137)
Constant	-5.7704*** (1.5814)	-3.2395*** (0.9304)	-10.1912*** (1.9851)	-2.2643** (0.8756)	-2.6107** (0.8391)
Observations	3000	10511	1957	11532	13548

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

Table A8. Fractional Logit estimation results – other macroeconomic-level variables

	(1)	(2)	(3)	(4)	(5)
% of employees at the end of the fiscal year with a university degree	0.0100*** (0.0008)	0.0096*** (0.0008)	0.0098*** (0.0008)	0.0094*** (0.0008)	0.0102*** (0.0008)
% of skilled employees at the end of the fiscal year	-0.1198 (0.0742)	-0.1468 (0.0757)	-0.1417 (0.0753)	-0.1653* (0.0756)	-0.1326 (0.0742)
How much of an obstacle is: Access to finance	-0.1683*** (0.0143)				
GDP	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
Civil Liberties	-0.0737*** (0.0190)	-0.0719*** (0.0195)	-0.0750*** (0.0197)	-0.0717*** (0.0198)	-0.0752*** (0.0191)
Life	0.0143 (0.0093)	0.0132 (0.0094)	0.0143 (0.0094)	0.0148 (0.0094)	0.0103 (0.0093)
Gini	-0.0149** (0.0053)	-0.0135* (0.0054)	-0.0113* (0.0054)	-0.0133* (0.0054)	-0.0156** (0.0053)
The court system is fair, impartial and uncorrupted		0.0058 (0.0115)			
“The court system is quick”			-0.0160 (0.0117)		
“The court system is able to enforce its decisions”				-0.0169 (0.0106)	
What % of senior management time was spent in dealing with government regulations?					0.0038* (0.0017)
Constant	-2.4473*** (0.7201)	-2.6213*** (0.7268)	-2.7293*** (0.7281)	-2.6769*** (0.7323)	-2.3952*** (0.7216)
Observations	16526	16068	15966	15770	16719

Standard errors in parentheses, * p<.05, ** p<.01, *** p<.001.

Source: own calculations.

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