Institut für Wirtschaftsforschung Halle

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June 2011 No. 8

IWH-Diskussionspapiere

IWH Discussion Papers

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IWH Discussion Papers are indexed in RePEC-Econpapers and in ECONIS.

Editor:
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Abstract

The focus of this article is the empirical identification of factors influencing Foreign Direct Investment (FDI) in transition economies on a regional level (NUTS 2). The analysis is designed as benchmark between three neighboring post-communist regions, i.e. East Germany, the Czech Republic and Poland. Their different transition paths have not only resulted in economic differences. We can also observe today that the importance of pull factors for FDI varies significantly across the regions. This analysis shows that in comparison with Poland and the Czech Republic, East Germany's major benefit is its purchasing power, its geographical proximity to West European markets, and its modern infrastructure. Furthermore, the analysis suggests that intra-industry linkages such as specialization and agglomeration economies are relevant factors for the location decision of foreign investors. This result can help to explain the regional divergence of FDI streams in transition economies.

Keywords: multinational enterprises, international business; regional economic activity: growth, development, and changes; discrete choice

JEL Classification: F23; R11; C25

Standortwahl multinationaler Unternehmen in Transformationsregionen - Ein Vergleich zwischen Ostdeutschland, der Tschechischen Republik und Polen

Zusammenfassung

Der Fokus dieses Artikels liegt auf der empirischen Identifikation von Faktoren, die ausländische Direktinvestitionen (FDI) in Transformationsökonomien auf regionaler Ebene (NUTS 2) beeinflussen. Die Untersuchung ist als Vergleich zwischen drei benachbarten post-kommunistischen Transformationsregionen (Ostdeutschland, der Tschechischen Republik und Polen) konzipiert. Wie sich zeigt, resultieren die Besonderheiten der länderspezifischen Transformationspfade nicht nur in unterschiedlichen gesamtwirtschaftlichen Strukturen. Stattdessen unterscheiden sich auch die Einflussfaktoren für die Anziehung von FDI zwischen den betrachteten Regionen. So belegt diese Analyse, dass Ostdeutschland im Vergleich zur Tschechischen Republik und Polen vor allem von seiner Kaufkraft, seiner geographischen Nähe zu den westeuropäischen Märkten und seiner modernen Infrastruktur profitiert. Außerdem zeigt die Analyse, dass sektorale Verflechtungen wie regionale Spezialisierung und Agglomerationseffekte relevante Einflussgrößen für die Ansiedlungsentscheidung ausländischer Unternehmen sind. Dieses Ergebnis trägt somit zur Erklärung der Divergenz von FDI-Strömen zwischen Transformationsregionen bei.

Schlagwörter: multinationale Unternehmen; regionalökonomische Aktivitäten: Wachstum, Entwicklung und Wandel; diskrete Regressionsmodelle

JEL-Klassifikation: F23; R11; C25

1. Introduction

The transition process from a socialist planned economy to a market economy was a very challenging task for the affected countries, since this process implicated the establishment of a new economic and institutional framework, market liberalization as well as industrial privatization and restructuring.[1] In comparison to other post-socialist transition economies, the transition in East Germany (EG) followed a very distinct path. Due to the German reunification, EG received massive financial transfers from the Western part of the country. These transfers and the institutional adoption of a well functioning market economy and democracy supported EG's relatively strong and quick modernization process. Since the Central East European Countries' (CEEC) capital stock vanished dramatically in the course of the economic crisis of the late 1980s, the transition process had to be accompanied by a vast amount of Foreign Direct Investment (FDI). Due to the differences in economic transition, it can be expected that EG attracted and still attracs a different kind of FDI than the other CEEC. In order to identify differences in the transition process, we compare the determinants of location choice for FDI in EG with those in two selected neighbor countries: Poland and the Czech Republic.

The aim of this article is the empirical identification of regional factors attracting FDI and to discuss their implications. In contemporary international research on multinational enterprises (MNEs), the heterogeneity of enterprises as well as endowments with specific location factors are regarded as highly significant for investors' location decisions. Heterogeneous characteristics can be differentiated in enterprise characteristics (e.g. nationality or industry branch of the investing enterprise, mode of entry, R&D potential) and regional factors (e.g. market potential, wage, tax rate or industrial agglomeration).

In the existing empirical literature on FDI into Central East European transition countries, several studies analyze the driving forces behind FDI into the region as a whole or into individual countries on a national level (NUTS-0) (see e.g. Bevan and Estrin (2004), Disdier and Mayer (2004), Meyer and Jensen (2005) or Resmini (2000)). However, some of the existing literature argues that it is misleading to consider the CEE region or single states as a whole as locational factors can be very different within countries.

[1] See Detscher (2006:p.9)

Among the studies on location choice factors of FDI on a regional level (NUTS-2 or equivalent), the majority focuses on the determinants of FDI into the regions of one specific country (see e.g. Spies (2010) for Germany, Chidlow, Salciuviene, and Young (2009) for Poland, Crozet, Mayer, and Mucchielli (2004) for France, Chung and Alcácer (2002) for the United States, or Guimarães, Figueiredo, and Woodward (2000) for Portugal), whereas other studies analyze the location choice determinants of single countries of FDI origin (see e.g. Mayer, Méjean, and Nefussi (2010) do for French MNEs and Head and Mayer (2004) for Japanese investors). Beyond that, some studies analyze the determinants of FDI across countries, such as Alegría (2006), who analyzes the location choice determinants across all European EU-countries.

Taking these aspects into consideration, this paper improves the existing empirical literature concerning location choice of MNE in at least four ways. First, it provides a detailed *benchmark of three transition countries*, which had very different conditions regarding their economic, social and institutional development. Second, the analysis uses data on a *sub-national level* - the NUTS 2 level, which admits more differentiated research results regarding the transition process of these countries. Third, the analysis points out *differences in location choice determinants across different sectors*. And fourth, it exploits a unique and very large firm-level dataset, the population of the *IWH FDI Micro database*.

This paper is organized as follows: In section 2 we provide the derivation of the economic model behind the location choice of MNEs. This is followed by the econometric theory, which is underlying the empirical analysis. The data used in the regressions are discussed in section 3. In this section, we also derive hypotheses from the descriptive analysis, economic theory and previous literature on FDI. In section 4, these hypotheses are tested and the econometric results are discussed. Finally, the main empirical findings and their policy implications are summarized in the concluding section 5.

2. Theoretical Background

An enterprise's decision to invest abroad bases on at least three steps (see e.g. Basile, Castellani, and Zanfei 2008). First, an enterprise decides whether to serve a foreign market. Second, the enterprise takes the decision how to serve a foreign market.

This investment can be implemented through exports, joint ventures, licensing, or foreign direct investment. Third, the investing company chooses a region for its foreign investment. In this paper, we analyze the location choice of an investor, who has already decided to invest either in EG, the Czech Republic or Poland, and faces the decision to choose one of the $j \in J$ regions as a location for its foreign investment.

The structure of this section is the following: first, we derive the economic model, which serves as the basis for the empirical analysis. Afterwards, we describe the econometric approach used to analyze the determinants of location choice.

2.1. Economic Theory

The model used for the analysis of investment decisions founds on the model of monopolistic competition developed by Dixit and Stiglitz (1977). One of the major advantages of the Dixit-Stiglitz model is that it links the production cost function with a demand function of a representative utility-maximizing individual. The Dixit-Stiglitz model was extended e.g. by Venables (1996) and Krugman (1991). The latter work is considered as the starting point of the *new economic geography* emphasizing the importance of agglomeration economies on regional development and attraction of investment from abroad. In the recent past, this approach has frequently served as the theoretical framework behind several location choice analyses of foreign direct investments, e.g. see Mayer, Méjean, and Nefussi (2010), Spies (2010), Amiti and Javorcik (2008), and Head and Mayer (2004).

Dixit and Stiglitz (1977) assume a homothetic and concave utility function with two consumption goods, x_0 and X. The market of good X is monopolistically competitive and consists of n product varieties, while x_0 describes the rest of the economy. Since the indirect utility of X equals the aggregate quantity of X and is driven by a constant elasticity of substitution (CES) function, the following utility function is underlying the Dixit-Stiglitz model.

$$U = U(x_0, X(x_1, x_2, ..., x_n)) = \left(x_0, \left(\sum_{i=1}^{n} {x_i}^{\rho}\right)^{\frac{1}{\rho}}\right) = \left(x_0, \left(\sum_{i=1}^{n} {x_i}^{\frac{\sigma-1}{\sigma}}\right)^{\frac{\sigma}{\sigma-1}}\right)^{2}, \quad (1)$$

[2] The notation of the derivation follows Wied-Nebbeling and Schott (2001).

With respect to the concavity assumption, we require $0 < \rho < 1$. Hence, the elasticity of substitution, denoted by $\sigma = \frac{1}{1-\rho} > 1$, exceeds unity. Assuming that x_0 is a numéraire good and that a share $a(P)$ of the total income Y is spent on good X, we obtain the following budget constraint serving as the side condition for the utility maximization:

$$Y = x_0 + a(P)Y \Rightarrow a(P)Y = \sum_{i=1}^{n} p_i x_i = \underbrace{\left(\sum_{i=1}^{n} {p_i}^{1-\sigma}\right)^{\frac{1}{1-\sigma}}}_{P} \cdot \underbrace{\left(\sum_{i=1}^{n} {x_i}^{\frac{\sigma-1}{\sigma}}\right)^{\frac{\sigma}{\sigma-1}}}_{X}, \quad (2)$$

where P is a price index.[3] Dixit and Stiglitz (1977) apply a two-step maximization to derive the optimal demand for good x_i. First, the optimal combination between x_0 and the aggregate good X is derived subject to the aggreagate budget constraint on the right hand side of (2). Afterwards, the optimal quantity of variety i, x_i, is calculated subject to the more detailed budget constraint, $Y = x_0 + \sum_{i=1}^{n} p_i x_i$. By inserting the optimal choice of X, we obtain the optimal demand for x_i. According to (2), we can substitute $\frac{a(P)Y}{P}$ for X, which leads to the following optimal demand for x_i:

$$x_i = \left(\frac{P}{p_i}\right)^{\sigma} X = \frac{a(P)Y \cdot P^{\sigma-1}}{{p_i}^{\sigma}}.^{4} \quad (3)$$

After having derived the optimal demand based on the CES-function, we turn to the profit maximization of the producer of variety i. The producer's optimal monopoly price, p_{mp}, can be denoted by $p_{mp} = c/(1 - 1/|\epsilon_{x,p}|)$.[5] By assuming that a single monopolist does not influence the price index, P, eq. (4) shows that the price elasticity of a single producer is equal to the negative substitution elasticity, σ. Hence, we obtain an optimal price depending only on the marginal costs and the elasticity of substitution.

$$\epsilon_{x_i,p_i} = \frac{\partial \ln x_i}{\partial \ln p_i} = -\sigma \Rightarrow p_i^* = \frac{\sigma}{\sigma - 1} c \quad (4)$$

Since we assumed above that $\sigma > 1$, the equilibrium price exceeds the marginal costs. Furthermore, (4) shows that the equilibrium price depends negatively on the substitution elasticity. This result is the basis for the profit maximization of an

[3] The derivation of the price index P can be found in e.g. Wied-Nebbeling and Schott (2001: 320pp.).
[4] See section A.1 of the appendix for a detailed calculation of the optimal demand for good x_i.
[5] $\epsilon_{x,p}$ describes the elasticity of demand for good x with respect to price p. See e.g. Wied-Nebbeling and Schott (2001:216pp.) for a detailed calculation.

enterprise choosing a region j as a location for a plant in sector k to serve $m \in M$ markets. Furthermore, the distance between the production plant in region j and the market m causes transaction costs (such as transportation and communication costs). Hence, we assume iceberg-type transaction costs, ϕ_{jm},[6] and a corresponding cost function, $c_{jkm} = c_{jk}\phi_{jm}$. It is assumed that the firm tries to maximize its profits over a finite time horizon.

$$\pi_{jk} = (1-t_j)\sum_{m=1}^{M}\left[(p_{jkm} - c_{jkm})x_{jkm}\right] = (1-t_j)\sum_{m=1}^{M}\left[\frac{1}{\sigma-1}c_{jk}\phi_{jm}\frac{a_m(P_m)Y_m{P_m}^{\sigma-1}}{(\frac{\sigma}{\sigma-1}c_{jk}\phi_{jm})^{\sigma}}\right] \tag{5}$$

For the ongoing transformation, the factor of demand $a_m(P_m)Y_m$ and the price index ${P_m}^{\sigma-1}$ is defined as a region's market access MA_m, while it is assumed that the marginal costs c_{jk} depend on the sectoral wage rate, w_{jk}, including a tax wegde on labor, τ_j, capital costs (such as land prices), r_j, and a productivity factor, A_{jk}, accounting for the educational background of the work force, E_j, and agglomeration variables such as a region's sectoral specification, S_{jk}, the sectoral labor force, L_{jk}, ot the economic diversity, H_j. By slightly modifying the approach taken by Brülhart, Jametti, and Schmidheiny (2007), we assume that marginal costs are derived by the product of the independent variables, influencing the production costs by means of variable-specific elasticities. Hence, we obtain the following cost function:

$$c_{jk} = ((1+\tau_j)w_{jk})^{\gamma_1}\,{r_j}^{\gamma_2}A(S_{jk}, L_{jk}, H_j, E_j) = ((1+\tau_j)w_{jk})^{\gamma_1}\,{r_j}^{\gamma_2}{S_{jk}}^{\delta_1}{L_{jk}}^{\delta_2}{H_j}^{\delta_3}{E_j}^{\delta_4} \tag{6}$$

The insertation of (6) and MA_m into (5) modifies the profit function to:

$$\pi_{jk} = (1-t_j)\left[\frac{(\sigma-1)^{\sigma-1}}{\sigma^{\sigma}}\left(((1+\tau_j)w_{jk})^{\gamma_1}\,{r_j}^{\gamma_2}{S_{jk}}^{\delta_1}{L_{jk}}^{\delta_2}{H_j}^{\delta_3}{E_j}^{\delta_4}\right)^{1-\sigma}\sum_{m=1}^{M}\frac{{MA_m}^{\sigma-1}}{{\phi_{jm}}^{\sigma-1}}\right]. \tag{7}$$

By taking logs and specifying the coefficient vector β the profit function can be transformed into the following log-linear empirical function with an error term, e_{jk},[7]

$$\pi_{jk} = \beta_0 + \beta_1 \ln t_j + \beta_2 \ln \tau_j + \beta_3 \ln w_{jk} + \beta_4 \ln r_j + \beta_5 \ln S_{jk} + \beta_6 \ln L_{jk} +$$

[6] This implies that for the delivery of x goods from the location of production j to market m requires the shipment of $\phi_{jm}x$ goods. By definition, ϕ_{jm} exceeds unity if m does not correspond to j. If the goods do not cross region j, ϕ_{jm} equals one.

[7] See section A.2 of the appendix for a detailed derivation of (8).

$$\beta_7 \ln H_j + \beta_8 \ln E_j + \beta_9 \ln \left(\sum_{m=1}^{M} \frac{MA_m}{\phi_{jm}} \right) + e_{jk}. \tag{8}$$

2.2. Econometric Theory

The analysis of the location choice of FDI in EG, the Czech Republic and Poland is based on a conditional logit approach. In this framework, the location choice bases on a stochastic utility maximization process for an enterprise resulting from the choice of region j as a location plant out of the J possible regions of the sample. Following Greene (2003) and Train (2009), we assume that the investor chooses the region where he expects to make the largest profit, π_j.[8] In this analysis, the deterministic part of the profit function is made up by alternative specific regressors, z_j (e.g. GDP or the industrial structure in a specific region).[9] The stochastic and unobservable part of the equation is represented by an error term, e_j.

$$\pi_j = z_j' \beta + e_j \tag{9}$$

By definition, the investor chooses the region j, which exceeds the expected profits of all the other regions $l \in J$, with $l \neq j$. Thus, the location choice is the dependent variable of this analysis and equals one for the region chosen by the investor, and zero otherwise. This assumption leads to the following estimation of the logit choice probabilities, P_j (see Train (2009)):

$$P_j = \text{Prob}(\pi_j > \pi_l, \forall\ l \neq j) = \text{Prob}(e_j > z_l' \beta - z_j' \beta + e_l, \forall\ l \neq j). \tag{10}$$

For the unobserved part of the error term we assume a type I extreme value distribution, $F(e_j) = \exp(-\exp(-e_j))$, with independently distributed error terms among the alternatives.[10] Following McFadden (1973), a transformation of the Gumbel type

[8] For reasons of simplicity, the sectoral subscript k of the theoretical model will be omitted in the following notation.

[9] Individual specific regressors, in this case the characteristics of the investing firm, will be omitted since the IWH FDI Micro Database only partly contains key figures of the investing companies. If those information were used in the regression, the sample size would significantly reduce including a loss of explanatory power of the analysis.

[10] This distribution is called Gumbel distribution and is the foundation of all logit approaches. See Train (2009:p.34) .

I extreme value distribution leads to the following probability equation

$$P_j = \frac{\exp(z_j'\beta)}{\sum_{l=1}^{J}\exp(z_l'\beta)}, \tag{11}$$

which is defined as the conditional logit equation.

3. Data

The dataset consists of information on 33 NUTS-2 regions listed in table 6 (see Appendix). It is constructed by merging basic population of the *IWH FDI Micro Database* on FDI in EG and Central East Europe (primary data) with secondary data from Eurostat and OECD databases. The primary and secondary data are described in the following subsections 3.1 and 3.2 followed by a descriptive analysis and research hypotheses in subsection 3.3.

3.1. Primary Data

To gain insight into the factors determining real investment decisions into the regions, we use micro-data on foreign direct investment in EG, the Czech Republic and Poland from the *IWH FDI Micro Database*. The East German subsample on foreign investors is supplemented by information on West German investors, since West German investment played a crucial role in the transition process in EG.[11] The data contains information on FDI location decisions of single enterprises into the countries of the sample. Table 1 lists the available information *IWH FDI Micro Database*.

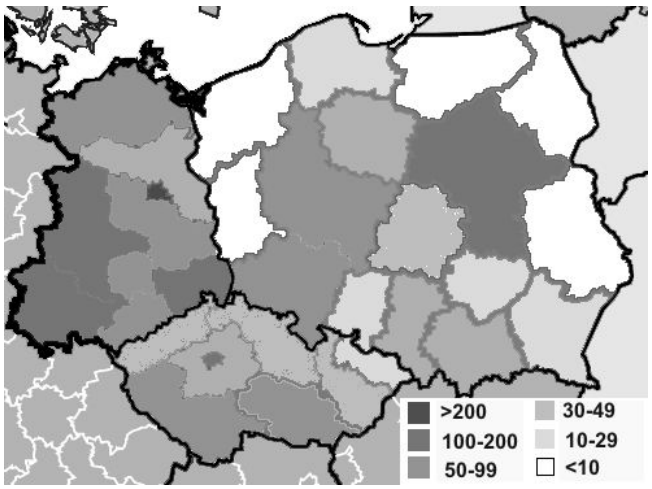
Table 1: Primary Variables and their Sources

Variable Name	Description	Source
Date of investment	Date of registration of the affiliate in the register of commerce	IWH
Location of investment	Site where the affiliate is registered	IWH
Branch of industry	Branch of industry according to NACE-1.1 classification	IWH
Affiliate's size	Number of employees	IWH

[11] See Günther, Gauselmann, et al. (2011) for more detailed information.

- Date of investment t: The date of investment is proxied by the date of registration of the affiliate company in the local register of commerce. Following Jindra (2010b) and Spies (2010), it is assumed throughout the empirical analysis of this paper that the investment decision has been made the year before entering the register.
- Location of investment j: Each affiliate of a MNE is allocated to a NUTS-2-region using the postal code of the affiliate's registered address.
- Branch of industry k: This describes the industrial sector of the affiliate according to the European Union's NACE 1.1. classification. In this analysis we focus on the industrial production (NACE 1.1. Code 14-41)[12], wholesale, retail trade, and transport (NACE 1.1. Code 51-64) as well as financial intermediation and real estate (NACE 1.1. Code 65-74).
- Affiliate's size: The size of the affiliate is measured by the latest available employment figure.

Figure 1: Spatial distribution of FDI per NUTS2-region



Due to data availability reasons, which will be described more detailed in the following subsection, the analysis of investment decisions is restricted to a time period between 2000 and 2008. Hence, the sample contains 1,981 affiliates of MNEs, thereof 956 in EG, 499 in the Czech Republic and 526 in Poland. Figure 1 shows agglomeration tendencies towards each capital. Furthermore, it shows an interesting distribution of FDI in the Czech and Polish border regions. The Czech-(West)German and

[12] excluding construction

the Czech-Austrian border regions seem to be attractive for international investors, whereas FDI streams to the Polish-German border regions are relatively sparse.

Table 2: Distribution of Enterprises per country, branch and origin of investor

Investment location	Total	Industry NACE (14-41)	Service NACE (51-74)
East Germany	956	436	520
Czech Republic	499	235	264
Poland	526	287	239
Total	**1,981**	**985**	**1,023**

The distribution of FDI per country and branch in table 2 shows further structural differences between the three selected transition economies. The majority of Polish enterprises with a foreign investor belongs to the industrial sector, whereas EG and the Czech Repubic attract more service than manufacturing FDI.

3.2. Secondary Data

For the econometric analysis we combined these primary data with further information. As mentioned above, the sample was slightly reduced due to limited data availability. This reduction is mostly driven by the limited regional information on Central East European host countries until the end of the 1990s. In order to maintain the quality of the data and to achieve robust results, all registrations before the year 2000 will be omitted for this analysis. Furthermore, due to a restructuring of the NUTS-2 regions in EG in 2003, parts of the data for the regions Brandenburg-Nordost and Brandenburg-Südwest are not available for the period before 2003. As a workaround, we calculated the missing data on the base of the relation between these two regions and the referring data of Brandenburg (NUTS-1).

In order to capture a region's direct *market access* as a pull factor for investors, we consider the local GDP of the respective NUTS-2 region. Despite a varying population size among the NUTS-2 regions,[13] the regional GDP delivers a robust value for the purchasing power of a region. In order to account for potential export opportunities from the affiliate's location, we include an index for *market potential*

[13] The average population of the NUTS-2-regions in the member states is supposed to lie between 800,000 and 3 million inhabitants. See EU-Parliament and Council (2003:p.3).

measuring access to 26 European markets.[14] This index is calculated for each region j, mp_j, according to the formula proposed by Harris (1954),[15]

$$mp_j = \sum_{m=1}^{M} \frac{GDP_m}{D_{jm}}, \tag{12}$$

where the index m incorporates the 26 European countries. In order to calculate the potential for region j, the national GDP of each country m is divided by, D_{jm}, measuring the road distance in kilometers between the capital/major city of region j and the capital of the foreign market m.[16] The road distance approach seems to be more appropriate than simply using the direct geographical distance between the region in question and the foreign markets, as the majority of the intra-continental transport is carried out overland.

Labor costs in industry k in region j, $wage_{jk}$, are measured by *compensation per employee*. Data from Eurostat's Labour Force Surveys, which are drawn only every four years, are not appropriate for the purpose of the analysis especially as it did not include regional wage data from the EU's new member states until 2004. As outlined by López Rodríguez and Faíña (2007), this problem can be solved through a calculation of the regional wage level in different industries, w_{jk}, by using national account data and industrial employment figures[17] to get a proxy for the *compensation per employee*. This variable allows for a differentiation of the wage level across eight industrial sectors driven by the NACE 1.1 code.[18] In order to control for potential differences in labor productivity, the skill level and the educational background of the workforce is considered in the regression. This is done by means of the share of employees with a scientific-technical occupation, $hrsto_j$, as a proxy for the qualitative *human resource* potential in region j.[19] Furthermore, the unemployment rate of a

[14] All 27 EU-countries except the islands of Cyprus and Malta, but including Switzerland.

[15] Though Harris' market potential is a very simple proxy, it has performed better than theoretically more sophisticated measures in other studies. See e.g. Head and Mayer (2004) for a comparison of the performance of Krugman's and Harris' market potential measures.

[16] For Germany, Frankfurt/Main was used as the city representing the economic center of the Germany because of its central location. As the distance between Warsaw and the Polish voivodeships causes a relatively small value for the fraction, the distance between the Polish region's and Warsaw is indexed to 150. See Angenendt (2010:p.16).

[17] See Eurostat tables $rege2rem$ and $reglfe2enace$, respectively.

[18] The Polish sectoral wage rates could not be calculated for the year 1999, since the Polish sectoral employment figures are available since 2000. Hence, for the Polish investment decisions in 2000 we use an all-sectoral wage rate in order to extend sample size.

[19] See OECD (1995:p.16). This measure seems to be more appropriate for this analysis than other human resource variables like secondary school enrollment, since it reflects the actual working

region, $unemp_j$, is used as an additional explaining labor market factor for location choice.

The effective combined *corporate tax rate*, $corp_c$, and the effective *tax wedge* on labor, tax_c, are country-level variables describing the fiscal policy of a country c. This data is drawn from the OECD tax database.[20] As the *tax wedge*, which describes the tax burden of a childless single person with average earnings, has not been drawn before the year 2000, we assume the same values for the year 1999 as observed in 2000.

Following Bartik (1985), the regional *population density*, $popdens_j$, can be partly used as a proxy for land prices in order to capture capital costs of the location decision. This approach was chosen in serveral location choice studies (e.g. Guimarães, Figueiredo, and Woodward (2000) or Barrios, Görg, and Strobl (2006)). Although Alegría (2006) points out that the population density also incorporates the labor force availability, we will rely to this proxy since the analysis' location choice is controlled for agglomeration variables described below.

The infrastructure of a region j as an FDI-attracting factor is included by means of an index, inf_j, which bases on the the density of the regions' highway, road, and railway networks. For each category, the region with the highest ratio in each category is taken as the benchmark and is assigned a value of 1 for the category. All other regions' scores lie between 0 and 1. Finally, a region's Infrastructure-Index is calculated by means of a weighted average with the roads' value assigned half the weight of the other indices.

On an industrial basis, an enterprise's decision to invest also depends on the regional availability of a variety of inputs from suppliers. To measure the regional economic diversity, the Herfindahl-Index, $herf_j$, for the region j is calculated by

$$herf_j = \sum_{k=1}^{K} \left(\frac{\text{emp}_{jk}}{\sum_{l=1}^{K} \text{emp}_{jl}} \right)^2 \tag{13}$$

force potential. Furthermore, the secondary school enrollment varies among the countries and over time due to differing school systems or reforms. For example, in 1999 the secondary enrollment ratio (ISCED3) for Poland (68.9%) was more than twice the East German share of 26.1%. In the year 2008, the relation has changed as the East German ratio (43.1%) has become larger than the Polish one (38%). It is very unlikely that these differences reflect an actual shift in the enrollment figures.

[20] See OECD (2009).

using the OECD's employment figures, emp_{jk}, from, $K = 31$, sectors specified by the NACE 1.1 Code.[21] As can be seen from equation (13), a diversified economy in region j coincides with a low value of the Herfindahl-Index. Beyond that, the *relative specialization*, $spec_{jk}$, which is measured by the share of employees in sector k of the total employment figure, accounts for a possible comparative advantage of the region j in a specific sector k.

The extent of possible knowledge spillovers can also depend on intra-industry economies of scale. The *absolute agglomeration* can be measured by the absolute employment figures in a specific industry k in region j, emp_{jk}. This variable captures a possible underrepresentation of the workforce in sector k, if a large population or labor force, respectively, results in a misleadingly low value of the Specialization-Index.

Furthermore, a dummy for capital regions, *capital*, controls for capital specific characteristics capturing the influence of omitted agglomeration factors on the location choice decision (e.g. institutions of bilateral relations, like chamber of foreign trade, embassies etc.).

Table 3: Summary of the Secondary Variables and their sources

Variable	Description	Source
gdp	Market access (regional GDP in Mio. €)	Eurostat
mp	Market Potential (distance-weighted GDP of foreign markets)	Eurostat/Google Maps/own calculations
popdens	Population density in inhabitants/km^2	Eurostat
inf	Infrastructure-Index	Eurostat/own calculations
corp	Effective corporate tax rate in %	OECD
tax	Effective tax wedge in %	OECD
wage	Compensation of Employees in industry k in 1,000 €	Eurostat
hrsto	Share of employees with a technical-scientific occupation	Eurostat
unemp	Unemployment rate in %	Eurostat
herf	Herfindahl-Index	OECD/own calculations
spec	Relative specialization of region j in industry k	OECD/own calculations
emp	Absolute Agglomeration in industry k in region j	OECD
capital	Dummy for capital region	

3.3. Descriptive Analysis & Hypotheses

The following subsection contains a descriptive analysis of the explanatory variables for the complete sample and a separate one for each country. Furthermore, we will derive hypotheses from economic theory as well as from previous literature on FDI

[21] See Mukim and Nunnenkamp (2010:p.11) among others.

and will check whether the economic theory can be supported by the descriptive analysis.

Table 4: Descriptives of the secondary variables

Variable	EG	CZ	PL	Total
Regional GDP	36867.9*	10796.6#	13808.9#	19367.5
gdp	(17453.2)	(5054.4)	(11277.2)	(16328.0)
Market Potential	13339.0*	12282.0#	9679.2#	11308.3
mp	(2123.4)	(1795.9)	(1452.3)	(2379.4)
Population Density	560.6*	418.1	129.8#	317.2
popdens	(1156.3)	(765.4)	(76.20)	(735.2)
Infrastructure-Index	0.7480*	0.4787#	0.4067#	0.5173
inf	(0.4723)	(0.1956)	(0.1377)	(0.3153)
Corporation Tax	41.96*	29.0#	24.78#	31.91
corp	(5.711)	(3.742)	(5.826)	(8.959)
Tax Wedge	53.21*	43.07#	42.72#	46.33
tax	(0.6612)	(0.4260)	(1.158)	(5.019)
Sectoral Wage	31.20*	10.53#	10.03#	16.30
wage	(10.56)	(7.677)	(5.892)	(12.41)
Human Resources	27.95*	28.31#	19.86#	24.11
hrsto	(4.038)	(7.554)	(3.014)	(6.291)
Unemployment Rate	17.36*	7.823#	16.79	14.85
unemp	(2.170)	(3.449)	(4.476)	(5.369)
Diversification	0.1388*	0.1208#	0.1262#	0.1279
herf	(0.0256)	(0.0124)	(0.0095)	(0.0160)
Relative Agglomeration	0.1165*	0.0882#	0.0792#	0.0995
spec	(0.1117)	(0.0768)	(0.0748)	(0.0962)
Absolute Agglomeration	76639.5	63160.3#	98124.4#	78948.9
emp	(78314.8)	(57215.6)	(116008.8)	(86677.9)

*Note: Mean of the referring variable aboves and the corresponding standard error in parenthesis below. * =Significant mean difference compared to the Polish and Czech observations; # =Significant mean difference compared to the German observations. All tests refer to a 5% significance level. The mean and the standard error of the regional values are equally weighted over time, except for the relative and absolute agglomeration, which are calculated on the base of the observation of the chosen investments.*

According to Dunning and Lundan (2008) and Campos and Kinoshita (2002) market-seeking FDI, which are defined as horizontal FDI, aim at serving a local market in order to minimize transaction cost, such as tariffs and transportation costs. The figures in table 4 show that EG is not only economically more developed than the other transition economies included in this analysis, it has also a significantly larger market potential, due to its proximity to major European markets.

Hypothesis 1: Market potential and market access are very important location choice factors for foreign investors seeking to invest in transition economies.

On the cost side, transportation costs and land prices are supposed to influence location decision of an investor. The transportation costs are connected to the quality of the local transportation infrastructure and we assume that a good regional infrastructure potentially raises a region's attractiveness for FDI.[22] Furthermore, a

[22] See Jindra (2010a:p.58).

good local infrastructure can improve the market access due to a better accessibility for potential consumers, customers and suppliers in the periphery.[23] Even though agglomeration economies are expected to increase a region's attractiveness to foreign investors a high population density is also associated with a high land prices, which could deter foreign investments.[24]

Hypothesis 2: A high quality of local transportation infrastructure and low land prices have a positive impact on the region's attractiveness on FDI.

Intuitively, a cost-seeking investment is deterred by high levels of taxes and social security contributions. With respect to Central East European transition economies, the level of taxation is lower in the new member states of the European Union than in the old member states, even though the German government cut the corporation tax from 52% to 38.9% in 2001. The same holds for the effective tax wedge on labor. Since the provision of public goods (such as infrastructure and education) needs to be financed by fiscal revenues, an increase in taxes does not necessarily result in a deterioration of investments from abroad.[25] Recent empirical studies support the ambiguous effects of fiscal policy. While Alegría (2006) obtained a significantly negative impact of taxation on the location choice, Basile, Castellani, and Zanfei (2008) observed an insignificant influece of fiscal policy variables.

Hypothesis 3: A high tax burden and/or social contribution rate on the factor labor does not necessarily deter FDI.

The results from recent studies on the impact of the wage rate on the location choice are ambiguous.[26] Guimarães, Figueiredo, and Woodward (2000) stress that the impact of the wages should be controlled for other variables, such as labor productivity, the skill level and the educational background of the workforce. Considering the wage rates of the countries of our sample, we observe that on average the wage rate in EG is three times high than the corresponding wages in the Czech Republic or Poland, respectively. This difference can hardly be explained by differences in the qualification of the regional labor force, represented by the share of employees with a scientific-technical occupation, since the East German and the Czech shares are

[23] See Spies (2010:p.14).
[24] See Jindra (2010a:p.59).
[25] See Bellak, Leibrecht, and Riedl (2008) and Becker, Egger, and Merlo (2009) among others.
[26] On the one hand, Basile, Castellani, and Zanfei (2008) obtained a negative impact of the wage rate, which was not significant among all models, while on the other hand Barrios, Görg, and Strobl (2006) observed even a positive influence of wage.

nearly equal. A possible explanation could be found by looking at differences in productivity, but obtaining reliable information on this topic proves to be rather difficult. Paqué (2010) points out that the labor productivity in Poland and the Czech Republic respectively only reached 35 and 38 % of the German level so far, while the productivity of the East German economy lies between 75 and 84% of the average German labor productivity.[27]

Hypothesis 4: The effects of the wage rate and the educational qualification of the regional workforce depend on the regions' economic development

Following Marshall (1920), agglomeration effects are made up of three main factors: labor market specialization, knowledge spillovers and supplier linkages. According to Dunning and Lundan (2008), agglomeration economies describe a positive correlation between a region's attractiveness to further investors and the number of already existing firms in a specific sector.[28] In contrast, Crozet, Mayer, and Mucchielli (2004) show theoretically that the agglomeration effect depends on a trade-off between the positive externalities and the negative impact of competition.[29] In recent studies (e.g. Barrios, Görg, and Strobl (2006) or Basile, Castellani, and Zanfei (2008)) it has been shown that agglomeration economies have a significantly positive impact on the attractiveness of a region. Table 4 shows that, in comparison with its two counterparts, the East German economy is less diversified and that FDI streams to EG go to sectors represeting an on average larger share of regional economic activity. The significantly larger sectoral workforce in Polish regions can be explained by the population size of the NUTS-2 regions.[30]

Hypothesis 5: Agglomeration economies and economic diversity are important driving factors for FDI streams.

4. Empirical Results

The regression results presented in table 5 are divided into 4 (sub)samples. The first column shows the results for a regression run for all countries, while the other

[27] See Paqué (2010:9pp.).
[28] See Dunning and Lundan (2008:p.596).
[29] See Crozet, Mayer, and Mucchielli (2004:p.30).
[30] The mean population size of the NUTS-2 regions are 2.4 million in Poland, 1.8 million in EG and 1.3 million in the Czech Republic. See Eurostat table *demo_rd2_jan*.

columns contain the results of separate for each country. Furthermore, table 7 reports estimates for the industrial sector (Nace 1.1 Code 14-41) and the service sector (Nace 1.1 Code 51-74).

Table 5: Conditional Logit for the whole sample and country combinations.

Explanatory Variables	ALL	EG	CZ	PL
lngdp	0.628***	1.246***	0.187	0.292
	(0.0884)	(0.231)	(1.334)	(0.544)
lnmp	0.829***	0.199	0.144	2.351***
	(0.255)	(0.513)	(2.250)	(0.868)
lnpopdens	-0.259***	-0.478	-1.008	-0.799*
	(0.0651)	(0.318)	(0.659)	(0.427)
lninf	0.335**	-0.216	0.456	0.746
	(0.157)	(0.578)	(0.796)	(0.713)
lncorp	1.403***			
	(0.373)			
lntax	-19.24***			
	(3.603)			
lnwage	0.274**	0.0506	0.562*	1.138***
	(0.108)	(0.261)	(0.327)	(0.343)
lnhrsto	0.175	0.947	-0.588	-0.659
	(0.341)	(0.804)	(1.408)	(0.596)
lnunemp	-0.159	-0.418	0.595	-0.853**
	(0.124)	(0.492)	(0.600)	(0.406)
lnherf	-0.303	0.351	-1.447	1.208
	(0.240)	(0.322)	(2.529)	(1.008)
lnspec	0.507***	0.234	-0.390	-0.131
	(0.0812)	(0.249)	(1.009)	(0.488)
lnemp	0.313***	0.561**	1.390	0.942*
	(0.0689)	(0.252)	(1.002)	(0.494)
capital	0.726***	1.101	3.904	0.334
	(0.153)	(1.108)	(2.657)	(0.364)
dCZ	-3.059***			
	(0.836)			
dPL	-3.468***			
	(0.840)			
Investments	1,981	956	499	526
AIC	12,164.54	3,837.82	1,845.28	2,386.08
Log-Likelihood	-6,052.27	-1,896.91	-900.64	-1,171.04

Conditional Logit Estimation. Dependent Variable: Location choice for Region j.
Standard errors in parentheses. Significance level: ***p<0.01,**p<0.05,*p<0.1.

In the whole sample market access and market potential have a significantly positive impact. AIn all national-level subsamples, the market coefficients are positive, but only partly significant. The regional GDP's impact is significantly positive for the East German subsample, while market potential is significantly positive for the Polish subsample. Considering the demand variables per sector for the whole sample in columns 1 and 2 of table 7, it catches the eye that market potential has a significantly positive impact on a location's attractiveness for FDI from the manufacturing sector, while its impact on service FDI is positive, but insignificant. The differences between

the coefficients for market potential do not indicate systematic differences between the two sectors of the economy.

The infrastructure coefficient for the whole sample is significantly positive, whereas the infrastructure's impact within each country is insignificant. This result indicates that regional infrastructure investments can increase the attractiveness of the relevant region itself and of its direct neighboring regions at the same time. Hence, the impact of infrastructure investments on the attraction of FDI appear rather on a national than on a regional level. In contrast to the majority of location choice studies,[31] the population density has a significantly negative impact for the whole sample, and is negative and partly significant across the national subsamples. Although this result has to be interpreted carefully, the choice of the population density as a proxy for land prices seems to be appropriate. The results from the sectoral distinction summarized in table 7 do not indicate major sectoral differences with regard to infrastructure or land prices.[32]

The results for the fiscal policy variables draw an ambiguous picture, since the impact of the corporate tax rate is significantly positive, while the tax wedge on labor has a significantly negative impact. These results are in-line with several other econometric studies (e.g. Basile, Castellani, and Zanfei (2008)) indicating the importance of the provision of public goods for foreign investors' location decisions. The analysis of the sectoral subsamples shows that the positive impact of the corporation tax and the negative influence of the tax wedge on labor remain highly significant for both sectors.

The predominantly significant positive influence of the wage level deserves a deeper consideration, since a higher wage level *per se* does not seem to deter foreign investments. This observation meets the phenomenon described above that labor productivity is incorporated in the wage rate. Hence, the control for labor skills by means of the aggregate share of employees with a scientific-technical occupation appears to be insufficient to capture differences in productivity, especially in Poland and the Czech Republic where the coefficients of the human resource variable is

[31] See e.g. Basile, Castellani, and Zanfei (2008) or Spies (2010) who have found an insignificant or even positive impact of the population density on the location choice.

[32] The significantly positive impact of infrastructure on service FDI in column 2 of table 7 needs to be cautiously interpreted, since the majority of East German service is located in Berlin. Due to the fact that Berlin is a not a territorial state, Berlin achieves a very high value of the infrastructure.

negative. As the coefficient of the wage rate is insignificant among the East German affiliates, the analysis shows somehow that FDI into Poland and the Czech Republic are less cost-sensitive with respect to the wages, which can be partly explained by the relatively high wage level in EG. The effect of the unemployment ratio is ambiguous across the subsamples. The positive coefficient for the Czech affiliates seems plausible despite being insignificant, since a higher unemployment ratio can go along with a better supply of potential employees for firms, which in turn would mean that there is a better availability of workers in EG and Poland due to their higher unemployment rates. The sectoral results in table 7 shows that in the whole sample investments to the manufacturing sector are more wage-sensitive than the ones to the service sector. In combination with the finding that human resources seem to be more important for service-sector FDI than for manufacturing-sector investments, one could conclude that labor market requirements for FDI to the service sector are higher than the ones to the industrial production. Nevertheless, this result has to be interpreted carefully, since the relatively crude division of the economy into services and manufacturing results in a heterogeneous structure within the sectors themselves.

In the complete sample, the significantly positive coefficients for intra-industry linkages (such as the sectoral employment share of the total workforce and sectoral employment) are in-line with Krugman's *new economic geography*, implying that a region becomes more attractive with increasing economic activities in the target sector of an investment. In all national subsamples, the impact of the absolute sectoral labor force figures is positive, while the share of total employment only has an insignificant impact in each country. The coefficients for the inter-industry linkages represented by the Herfindahl-Index are insignificant among all (sub)samples, implying that this study does not deliver a proof whether an economic diversification is *per se* beneficial for a region's competitiveness to attract FDI.[33] As shown in table 7, the positive impact of intra-industry linkages is highly significant for the location choice in both sectors. On a national level, the estimates do not clearly indicate whether a region with a high degree of agglomeration is more attractive for foreign investors than other regions within the countries.

[33] A high diversification does not necessarily exclude potential inter-industry linkages.

5. Conclusion

The different transition paths of EG and its two neighbour countries, Poland and the Czech Republic, have not only resulted in economic differences, e.g. in purchasing power or wage rates. We can also observe today that the importance of different pull factors for foreign investment has been significantly different across and within the three countries. In comparison with the two other transition economies, EG' s major advantages can be found its modern infrastructure, and it's geographical proximity to the major European markets. Furthermore, analyis shows that a reduction of tax rates does not necessarily lead to an improvement of a country's competitiveness to attract foreign investors. The results of this analysis stress the importance of the provision of public goods, such as transportation infrastructure, education and an efficient institutional framework, for foreign investors' location choice.

The estimates also show that higher wages do not *per se* distract investors. As long as higher wages go along with offsetting factors such as higher productivity of the workforce they can even have a positive impact, as found in this study for EG. This indicates the high importance of education for attracting FDI, especially regarding the economically more sustainable FDI in more advanced sectors of the economy. The positive result for EG in this category suggests that EG's present and future could rather lie in the exploitation of competitive advantages and a highly educated and specialized workforce than in acting as the extended workbench for other more industrialized countries. Compared to EG, Poland and the Czech Republic seem to have the potential to speed up their economies' catching-up process by implementing policies fostering productivity and improving the overall quality of their workforces.

In addition to the classical cost-seeking factors and regional endowment effects, this analysis shows that agglomeration economies are another pull factor for FDI that needs to be taken into account. Specialization and intra-industrial linkages seem to be more relevant on a regional level than on a national level. When comparing regions with similar levels of production costs and endowments with public goods, agglomeration economieshelp to attract further investment. This aspect result could help to explain the divergence of FDI streams into the regions of the transition economies.

Finally, it looks like a country's position in the transition to industrialization is important not only for the quantity but also for the structure of incoming FDI

streams. Taking factors like quality of infrastructure, educational background and productivity of the work force, allocation of public goods and efficiency of institutions into consideration, it seems that countries finding themselves in very differing stages of the transition process attract FDI based on significantly different pull factors. Regarding the countries included in our analysis, EG, with its very distinct transition path, is still economically ahead of Poland and the Czech Republic.

Since this analysis is based on a three-country sample, there is a large potential for extending research into pull factors of FDI to further regions. On an empirical level, the usage of a nested logit could lead to further information, as this approach incorporates homogeneity of regions within a country. Furthermore, one could include investor-specific variables in the regression to gain insights into the interaction between investor-specific and regional characteristics.

A. Appendix

A.1. The Optimal Demand within the Dixit-Stiglitz Model

In order to derive the optimal demand for x_i, we apply a two-step approach. First, the optimal combination between x_0 and the aggregate good X is derived subject to the aggreagate budget constraint on the right hand side of (2). Afterwards, the optimal quantity of variety i, x_i, is calculated subject to the more detailed budget constraint. By inserting the optimal choice of X into the latter maximization, we obtain the optimal demand for x_i. The first of the maximization procedure is denoted by the following Lagrange function:

$$L(x_0, X, P, \lambda) = U(x_0, X) + \lambda(Y - x_0 - PX) \tag{14}$$

The first-order condition $\partial L/\partial X = 0$ leads the following optimum, which will be used in the second step.

$$\frac{\partial L}{\partial X} = \frac{\partial U}{\partial X} - \lambda P = 0 \Rightarrow \frac{\partial U}{\partial X} = \lambda P \tag{15}$$

As shown by Wied-Nebbeling and Schott (2001), the optimal ratio between x_0 and X depends on the price index P. In the second step of the maximization procedure, the utility function U is maximized subject to the more detailed budget constraint, $Y = x_0 + \sum_{i=1}^{n} p_i x_i$.

$$L(x_0, X, x_i, p_i, \lambda) = U(x_0, X) + \lambda(Y - x_0 - \sum_{i=1}^{n} p_i x_i) \tag{16}$$

With respect to the assumption of a CES function in (1), the derivative of variety x_i leads to the following first-order condition:

$$\frac{\partial L}{\partial x_i} = \frac{\partial U}{\partial X}\frac{\partial X}{\partial x_i} - \lambda p_i = \frac{\partial U}{\partial X}\left(\sum_{i=1}^{n} {x_i}^{\frac{\sigma-1}{\sigma}}\right)^{\frac{\sigma}{\sigma-1}-1} {x_i}^{\frac{\sigma}{\sigma-1}-1} - \lambda p_i = 0 \tag{17}$$

By inserting (15) into (17), we obtain the optimal demand for the variety x_i. According to (2) we can substitute $\frac{a(P)Y}{P}$ for X. Hence, we obtain the following optimal demand for good ,x_i, which depends on the expenditure on X, $\alpha(P)Y$, the price

index P, the price of variety i, p_i, and the elasticity of substitution, σ.

$$\lambda P\left(\sum_{i=1}^{n} {x_i}^{\frac{\sigma-1}{\sigma}}\right)^{\frac{\sigma}{\sigma-1}-1} {x_i}^{\frac{\sigma}{\sigma-1}-1} = \lambda p_i \Rightarrow x_i = \left(\frac{P}{p_i}\right)^{\sigma} X = \frac{\alpha(P)Y \cdot P^{\sigma-1}}{{p_i}^{\sigma}} \tag{18}$$

A.2. Specification of the Coefficients of the Empirical Function

The profit function

$$\pi_{jk} = (1-t_j)\left[\frac{(\sigma-1)^{\sigma-1}}{\sigma^{\sigma}}\left(((1+\tau_j)w_{jk})^{\gamma_1} {r_j}^{\gamma_2} {S_{jk}}^{\delta_1} {L_{jk}}^{\delta_2} {H_j}^{\delta_3} {E_j}^{\delta_4}\right)^{1-\sigma} \sum_{m=1}^{M} \frac{{MA_m}^{\sigma-1}}{{\phi_{jm}}^{\sigma-1}}\right],$$

can be transformed by taking logs into the following log-linear empirical function with an error term, e_{jk}:

$$\ln \pi_{jk} = \underbrace{(\sigma-1)\ln(\sigma-1) - \sigma\ln\sigma}_{\beta_0} + \underbrace{\ln(1-t_j)}_{\approx\beta_1 \ln t_j} + \underbrace{\gamma_1(1-\sigma)\ln(1+\tau_j)}_{\approx\beta_2 \ln \tau_j} + \underbrace{\gamma_1(1-\sigma)}_{\beta_3}\ln w_{jk} +$$

$$\underbrace{\gamma_2(1-\sigma)}_{\beta_4}\ln r_j + \underbrace{\delta_1(1-\sigma)}_{\beta_5}\ln S_{jk} + \underbrace{\delta_2(1-\sigma)}_{\beta_6}\ln L_{jk} + \underbrace{\delta_3(1-\sigma)}_{\beta_7}\ln H_j + \underbrace{\delta_4(1-\sigma)}_{\beta_8}\ln E_j +$$

$$\underbrace{(\sigma-1)}_{\beta_9}\ln\left(\sum_{m=1}^{M}\frac{MA_m}{\phi_{jm}}\right) + e_{jk}.$$

The definitions of the coefficients above lead to the profit function serving as the foundation for the empirical analysis.

$$\pi_{jk} = \beta_0 + \beta_1 \ln t_j + \beta_2 \ln \tau_j + \beta_3 \ln w_{jk} + \beta_4 \ln r_j + \beta_5 \ln S_{jk} + \beta_6 \ln L_{jk} +$$

$$\beta_7 \ln H_j + \beta_8 \ln E_j + \beta_9 \ln\left(\sum_{m=1}^{M}\frac{MA_m}{\phi_{jm}}\right) + e_{jk}.$$

A.3. Tables

Table 6: The 33 NUTS-2-regions included in the dataset

Regional ID	Country	NUTS-2	Name	Frequency
1	**East Germany**	**DE30**	**Berlin**	**275**
2	East Germany	DE41	Brandenburg - Nordost	43
3	East Germany	DE42	Brandenburg - Südwest	78
4	East Germany	DE80	Mecklenburg-Vorpommern	84
5	East Germany	DED1	Chemnitz	63
6	East Germany	DED2	Dresden	111
7	East Germany	DED3	Leipzig	53
8	East Germany	DEE0	Sachsen-Anhalt	107
9	East Germany	DEG0	Thüringen	142
10	**Czech Republic**	**CZ01**	**Praha**	**161**
11	Czech Republic	CZ02	Stredni Cechy	43
12	Czech Republic	CZ03	Jihozapad	60
13	Czech Republic	CZ04	Severozapad	48
14	Czech Republic	CZ05	Severovychod	47
15	Czech Republic	CZ06	Jihovychod	74
16	Czech Republic	CZ07	Stredni Morava	43
17	Czech Republic	CZ08	Moravskoslezsko	23
18	Poland	PL11	Lodzkie	37
19	**Poland**	**PL12**	**Mazowieckie**	**172**
20	Poland	PL21	Malopolskie	32
21	Poland	PL22	Slaskie	38
22	Poland	PL31	Lubelskie	7
23	Poland	PL32	Podkarpackie	11
24	Poland	PL33	Swietokrzyskie	11
25	Poland	PL34	Podlaskie	6
26	Poland	PL41	Wielkopolskie	68
27	Poland	PL42	Zachodniopomorskie	8
28	Poland	PL43	Lubuskie	7
29	Poland	PL51	Dolnoslaskie	57
30	Poland	PL52	Opolskie	11
31	Poland	PL61	Kujawsko-Pomorskie	31
32	Poland	PL62	Warminsko-Mazurskie	6
33	Poland	PL63	Pomorskie	24
The capital regions are highlighted in blackface letters.				**1,981**

Table 7: Conditional Logit for each country and branch

Explanatory	ALL		EG		CZ		PL	
Variables	IND	SERV	IND	SERV	IND	SERV	IND	SERV
lngdp	0.888***	0.564***	1.806***	0.627*	0.226	2.660	0.401	0.779
	(0.122)	(0.139)	(0.334)	(0.337)	(1.628)	(2.842)	(0.639)	(1.185)
lnmp	0.723**	0.519	-0.964	0.390	-1.636	2.841	1.542	3.198**
	(0.339)	(0.406)	(0.831)	(0.880)	(2.981)	(3.602)	(1.046)	(1.630)
lnpopdens	-0.284***	-0.381***	0.185	0.450	-2.242**	0.581	-1.061**	-0.153
	(0.0932)	(0.100)	(0.446)	(0.737)	(0.933)	(0.988)	(0.531)	(0.735)
lninf	0.169	0.800***	-0.187	-0.430	0.951	-0.787	1.094	-0.0163
	(0.231)	(0.245)	(0.859)	(0.840)	(1.084)	(1.410)	(0.860)	(1.240)
lncorp	1.629***	1.479***						
	(0.554)	(0.522)						
lntax	-13.74**	-19.22***						
	(5.577)	(4.816)						
lnwage	-0.432	0.265	0.688	-0.428	-0.480	-0.135	-0.0899	0.366
	(0.293)	(0.167)	(1.243)	(0.373)	(1.187)	(0.789)	(0.766)	(0.567)
lnhrsto	-0.0339	0.373	-0.169	2.749**	-1.157	0.714	-1.335*	0.857
	(0.455)	(0.535)	(1.317)	(1.201)	(1.816)	(2.279)	(0.769)	(0.963)
lnunemp	-0.0559	-0.234	-1.188*	0.0199	1.631*	-0.507	0.0829	-1.621**
	(0.172)	(0.191)	(0.713)	(0.712)	(0.884)	(0.853)	(0.543)	(0.721)
lnherf	-0.620*	-0.538	1.215**	-0.639	-1.311	-0.173	-1.728	3.490**
	(0.371)	(0.349)	(0.572)	(0.503)	(3.282)	(4.126)	(1.426)	(1.621)
lnspec	0.379***	0.470***	0.564*	0.616	-0.689	2.018	-0.0364	-1.059
	(0.110)	(0.155)	(0.311)	(0.647)	(1.146)	(2.284)	(0.567)	(1.089)
lnemp	0.218**	0.291**	0.0682	-0.482	1.426	-1.002	0.930	0.668
	(0.0961)	(0.116)	(0.316)	(0.706)	(1.148)	(2.309)	(0.571)	(1.110)
capital	0.442**	1.049***	-2.677*	-0.357	8.776**	-2.862	0.729	0.622
	(0.212)	(0.237)	(1.598)	(2.333)	(3.604)	(4.314)	(0.470)	(0.689)
Investments	958	1,023	436	520	235	264	287	239
AIC	6,215.68	5,837.46	1,823.96	1,938.36	956.36	878.1	1,405.16	947.16
Log-Likelihood	-3,092.84	-2,903.73	-900.98	-958.18	-467.18	-428.05	-691.58	-462.58

Conditional Logit Estimation. Dependent Variable: Location choice for Region j. Standard errors in parentheses: ***p<0.01,**p<0.05,*p<0.1. Country-Dummies used in columns ALL are not displayed.

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