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Factors Affecting Location Decisions of the Economic Headliners – Exporters and Foreign-Owned Firms – in China

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JEL classification: R3; R11; F21; L10

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Abstract

Foreign-owned firms are frequently viewed as an important source of new capital, access to world markets and employment generation and there exist numerous studies on the determinants of FDI flows and the role of incentives designed to attract FDI. Similarly important for economic growth are exporters, yet the factors that play a role in their location decisions have not been identified. Using a data set of 1,409 firms in China who report, among other things, why they have chosen a particular location, we find that the perceived importance of various site attributes differs considerably for those two types of firms: foreign-owned firms are attracted by the local market size, supply of skilled workers, and the quality of (telecommunications!) infrastructure; future exporters are driven by low rents, and fewer regulatory requirements and taxes; both types of firms care about the availability of government services.

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1. INTRODUCTION

Foreign-owned firms are frequently viewed as an important source of new capital, access to world markets and employment generation. Numerous studies investigate the determinants of FDI flows and the role of incentives designed to attract FDI (Head and Ries, 1996; Amity and Javorcki, 2005; Hong, 2009; Liu et al., 2009). Equally important for economic growth are exporters, yet we know little about the decision-making process that guides the selection of location for these firms. Our study closes the gap in the literature by identifying the factors that influence the location choice of exporters and by comparing how these two types of economic headliners choose their location.

Specifically, we use a data set of 1,409 firms in China to examine the factors that play an important role in the location decisions and to analyze the difference in the relative importance of a particular attribute for four groups: exporters, non-exporters, domestic and foreign-owned firms. The site attributes we focus on are local market size, the quality of infrastructure, the supply of skilled and unskilled labor, the availability of government services, the proximity to clients and suppliers, and the amount of regulatory requirements and taxes, among others.

Unlike most previous studies that analyze the site's attractiveness based on the measures obtained from regional and industrial statistics, we use data on firms' perceptions about the advantages of the chosen location and the relative weight attached to the various factors during the decision making. This is a significant departure from the literature. First, for a given location, different firms may have different perceptions about such factors as the level of taxes, the quality of infrastructure or the supply of labor. Second, the perception-based measure captures firm-specific attributes. Firms, even within a narrowly defined industry, may produce goods with a varying mix of skilled and unskilled workers and hence respond differently to the composition of the labor supply in the region. Thus, the location's attractiveness may be measured inaccurately using traditional industry- or region- level statistics. Finally, the perception-based measure allows for the richness of the analysis unavailable using traditional methods as some factors are too difficult to quantify but nevertheless play a role in the decision making.

The results of this study indicate that the perceived importance of various site attributes depends on firms' ownership structure (foreign vs. domestic), market orientation (exporters vs. non-exporters) and, in rare cases, also on the interaction of those factors. Thus, foreign-owned firms, irrespective of the exporting status, are attracted by the size of the local market, the quality of telecommunications, and the

supply of skilled labor. Foreign-owned firms who later become exporters are also attracted to the site by proximity to suppliers and the availability of unskilled labor. Future exporters, irrespective of their ownership status, are attracted to a location by low rents, and fewer regulatory requirements and taxes. Both exporters and foreign-owned firms are much more likely than domestic firms targeting domestic market to give weight to the availability of government services.

In the next session we review the various site attributes that make a location attractive for business and discuss the existing evidence on the determinants of location which is specific for China. In section 3 we describe our data and discuss some of the caveats of using the self-reported information. We then set up a regression model for estimating the relationship between foreign ownership and exporting status and the determinants of location, discuss our findings and derive conclusions for policy-makers.

2. BACKGROUND

This section reviews the factors that may affect firms' decisions to locate in a specific area and discusses the reasons for the potential differences in the perceived attractiveness of site's attributes for domestic, foreign-owned and exporting firms. The working hypothesis of the literature on the location determinants is that the firm's decision to locate in a specific area is motivated by the maximization of profits. That is, firms seek locations where they expect to maximize future profits. As such, firms decide on location after having considered a set of location characteristics that affect expected profits over the lifetime of the firm. The literature identifies three groups of characteristics that are expected to affect firm's profit function: (1) market size and market access, (2) agglomeration economies, and (3) factor cost and labor market characteristics.

Access to consumers is, of course, the most critical factor and has received considerable attention in academic literature. Other things being equal, areas with larger market demand are expected to offer greater profit opportunities. Head and Mayer (2003) suggest that the location decision is a function of demand in a specified area, weighted by accessibility to consumers. Thus, the attractiveness of a region as a location for manufacturing plant, in addition to the local market size, depends on the characteristics of the transport infrastructure in place – a better road system enhances access to larger areas. High quality infrastructure facilitates access not only to the output markets, but also to the suppliers of intermediate and primary inputs, thereby lowering production costs.

In an attempt to further reduce production costs, in particular the cost of face-to-face contacts and the costs of outsourcing support services, firms prefer locations in urban areas, in the proximity of firms in financial, legal and business services. Thus, firms locate not only close to other firms in the same line of business, but they are also attracted to industrially diversified regions (Devereux et al., 2003).

Firm's profits are also negatively influenced by factor costs. Other things equal, firms are deterred from locating in areas with high labor costs, capital costs, land prices and rent. Outsourcing is an example par excellence of the firms attempting to minimize factor costs.

There are several reasons to anticipate the differences in the perceived attractiveness of a location between firms of different ownership structure and market orientation. First, the optimal location is determined not only by the location's characteristics, but also by the firm's technological capability and its attributes. Since internationalized firms – foreign-owned firms and exporters – have been shown to be significantly different from domestic firms who produce solely for local market, it is reasonable to anticipate that the view of foreign-owned firms and exporters on opportunities offered by a particular location is likely to differ from that of the not internationalized firms. It is also important to keep in mind that a foreign-owned firm chooses a particular location based on its comparative advantage relative to other sites in the world, whereas an exporter considers a much smaller sample of potential locations within the same country. In addition, if the goods are produced for exports, the costs of producing them and the costs and reliability of transporting them to the world market will be much more important than the local demand factors (Cheng and Kwan, 2000).

As a benchmark for our analysis, in what follows, we summarize what we know about the location determinants of FDI in China. We mention upfront that the literature generally agrees on the importance of the agglomeration economies in FDI location within China, first reported by Head and Ries (1996). As for the other determinants of FDI, Zhang (2002) found that the larger the market size of a province, the more FDI it is likely to attract. The effects of market and supplier access are even stronger when we account for linkages to the neighboring regions (Keith and Ries, 1996) and inter-industry linkages (Amiti and Javorcki, 2008). Bai et al. (2004) and Amiti and Javorcki (2005) do point out, however, that the presence of customers and suppliers in the province of entry matters much more than market and supplier access to the rest of China. The authors attribute this finding to the underdeveloped

transport infrastructure and informal barriers to trade. The importance of infrastructure for FDI location in the provinces of China has also been highlighted by Brennan and Luo (2004).

Amiti and Javorcki (2008) further find that although production costs also play an important role in determining the location of FDI, the magnitude of these effects is approximately half of that of the market and supplier access. Specifically, a doubling of wages or electricity prices reduces entry of foreign firms by 17 and 22 percent. The findings by Sun et al. (2002) suggest that it may be the quality of the labor that is of more importance than the labor cost per se. Gao (2005) specifies further that the location of FDI from developed economies, such as the US and Japan, is more sensitive to the quality of labor than FDI from less developed countries.

Only a limited attempt has been made to separate the export-oriented FDI in the literature on the location determinants of FDI (Cheng and Kwan, 2000; Amiti and Javorcki, 2008). Cheng and Kwan (2000), for example, note that export-oriented FDI is more responsive to preferential tax treatment, but FDI that is aimed at the local market is more responsive to policies on market access and policies that affect domestic demand.

In what follows we attempt to fill the gap in the literature and to shed the light on the differences in the perceived attractiveness of location's attributes between the firms of various ownership forms and market orientation.

3. DATA

3.1. Data Source and Variables

We use data from the World Bank's Study of Competitiveness, Technology and Firm Linkages conducted in 2002. The survey records information on a number of firm characteristics, such as the firm's age, location, industry, location, export orientation, ownership, sales, production costs, etc. This information comes from 1,409 firms, 309 of which were established as foreign-owned. Of the 309 firms who were established as foreign-owned, 202 became exporters. Over half of the 557 exporting firms in the sample started exporting within the first three years from the establishment date. Sectoral distribution of firms is presented in Table 1.

The unique feature of this dataset is that it allows for a far more detailed analysis of the firm's location choice than has been possible to date. Specifically, the survey records detailed information on the

factors that influence plant's location. Among them are the local market size, the proximity to other firms in the same line of business, the rents or cost of buying property, the proximity to local universities and research institutes, the existence of strong linkages between the location and firms or researchers abroad, the quality of transport or telecoms infrastructure, the supply of skilled or unskilled labor, the possibility of expanding new products, the availability of government services, the quality of locally provided financial services, the proximity to suppliers, the proximity to clients, the proximity to distribution channels, the quality of local housing, schools and social network, the levels of local pollution and other environmental problems, the amount of regulatory requirements and taxes. Factors amount to the total of twenty reasons, including „other" and „don't know". From this list, a firm can choose up to five reasons for locating in a particular area. Most firms – close to ninety percent – name at least one location factor (Table 2). Then the firms rate these five factors in terms of their relative importance by assigning a score between 1 and 5 to the five most important location factors, with one being the most important. For the ease of interpretation, we redefine the score to create a monotonically increasing variable "degree of importance." This variable ranges from zero (that is, not in the top five) to five (that is, this factor carries the highest weight in the decision making).

Values presented in Table 3 allow us to draw several preliminary conclusions. First, the reader will notice a very high degree of variability for essentially all determinants of location which implies that the same factor may be viewed as extremely important by some firms and virtually unimportant by others. This is in line with our supposition that the decision to locate in a particular site is firm-specific. Secondly, only few factors obtain the mean rating of greater than one. This implies that only local market size, rents and property prices, and the quality of transportation are likely to be among the top five reasons for locating in a particular site (values below one indicate an abundance of zeros, i.e. firms who did not report a factor as one of the five most important reasons for setting up a plant in a chosen location). Third, some factors seem to be universally important (for example, low rents and property prices) or universally unimportant (quality of local housing, schools and social networks or proximity to local universities and research centers). Others show variability between the different types of firms: proximity to clients seems to be important for non-exporters and less so for other firms; supply of skilled workers seems to be important for the firms set up as foreign-owned, less so for exporters, and even less important for non-exporters and for the firms that were established as domestic. Availability of government services is likely

to be among the top five reasons for exporters and foreign-owned firms, but less so for non-exporters and domestic firms.

The data represent random samples from five cities in China: Beijing, Chengdu, Guang Zhou, Shanghai and Tianjin. We believe that this is a promising setting to study the firms' location decisions. These cities represent the main centers of economic activity in China and all, with the exception of Chengdu, belong to the coastal areas. Chengdu has historically been a transportation hub and an important economic player in China, the other cities are all part of the "open coastal cities" or special economic zones. All five locations are magnets of foreign investment – even the landlocked Chengdu is home to companies like Intel, Motorola, Sony-Ericsson, SAP, Siemens, etc. As such, our analysis is based on the samples drawn from the areas with well developed infrastructure, abundance of labor, and a favorable business climate. Moreover, these cities all boast a wide array of incentives to attract FDI and/or stimulate exports whose complex interplay would make it hard to identify the role of any individual characteristic. It is by using the self-reported degree of importance of individual site attributes that we overcome the difficulties inherent in other studies.

3.2. Caveat

We anticipate the validity of self-reported degree of importance of site attributes to be called into question. First, answers to the questions may be influenced by a firm's desire to sway development policy in its favor. For example, firms may report that fewer regulatory requirements and taxes biased their decision to choose one city over another, in the hopes of affecting the future level of regulations and taxes. Second, for location decisions made in the past, the memory of what truly affected location choices may have faded, and the responses are based on what is perceived to be important to the firm's current operation. Third, it is often impossible to identify the person responsible for making the location decision (the involved individual may have left the firm or several people were responsible for making the location choice, each weighing site attributes differently). Finally, answers may also be biased to the extent that those who do respond are likely to have strong feelings with respect to the question.

That said, we believe that using self-reported perceived measures of importance of various site attributes offers several advantages. First of all, the site selection process is almost idiosyncratic, with the needs of individual companies and the characteristics of available locations combining in such a way as to make each location decision virtually unique (Bowlby, 1988; Ritter 1990). By using self-reported data, we

can obtain information on the variables which are difficult or impossible to quantify. Such variables include qualitative factors such as "quality of life" (quality of local housing, schools and social networks, in our case) and have been shown to be important to the industrial location decision (Epping, 1982). More importantly, there are characteristics such as market size, proximity to clients, availability of government services or supply of skilled and unskilled labor, which are in principle measureable, but need to be estimated for a carefully defined subgroup of firms – available aggregate estimates are too broad to be useful. As such, we argue that the benefits of using self-reported measures outweigh the costs.[1]

4. EMPIRICAL EVIDENCE

4.1. Empirical Approach

In this section we examine whether and how exporting status and foreign ownership have an impact on firm's determinants of location and on the perceived level of importance of these determinants. We employ a Probit model with the estimating equation taking the following form:

$$\Pr(y_{ijk} = 1) = \Phi(\alpha_0 + \alpha_1 E_i + \alpha_2 FO_i + \alpha_3 E_i * FO_i + X\beta) \qquad (2)$$

Where y_{ijk} is the zero-one outcome variable indicating whether a factor, for example "local market size" has been chosen among the top five reasons of locating in a particular site; E_i is the exporting status of the firm and FO_i is the foreign ownership status of the firm at the time the firm was established.

The vector of control variables includes firm's age, size in terms of employment and total sales, firm efficiency measured by the share of costs in total sales. Size is perhaps the most important control variable, since large enterprises are usually more self-sufficient and therefore less dependent on external factors (Nachum and Wymbs, 2002). Age is included to control for the degree to which the memory on the actual location preferences may have faded, as well as for the factors specific to the year in which the firm was established. A recent study by Zhou et al. (2002), for example, found that the influence of

[1] Carlson (2000) explores the extent to which survey responses match statistically gathered information and finds that, for the most part, survey answers regarding the importance of various factors reflect firm behavior. Moreover, commonly used variables as population and housing densities may be very poor proxies for land availability, land costs, or labor costs.

opening up policies in China had decreased since the mid-1990s. Zhang (2001) found that market size and transportation conditions played an increasingly important role in attracting FDI flows between 1987 and 1998. Additional controls include industry and location dummies to capture any sectoral or location-specific factors that would make firms in that industry or location to be more sensitive to some location attributes and not to others.

The coefficient α_1 measures the difference in outcomes between exporters and non-exporters, whereas the coefficient α_2 measures the difference in outcomes between foreign- and domestic-owned firms. To capture potential differences in decision making for the foreign-owned firms who are foreign-market oriented, we also included the interaction term. Equation (2) is estimated using the standard Probit model.

From the list of the location determinants, four groups can be distinguished: (1) **Market Size and Market Access:** Local market size, Quality of local transport infrastructure, Quality of local telecommunications infrastructure, Proximity to clients, Proximity to distribution channels, Possibility of expanding new products; (2) **Agglomeration Economies:** Proximity to other firms in the same line of business, Proximity to local universities and research institutes, Existence of strong linkages between this location and firms and researchers located abroad, Availability of government services, Quality of locally provided financial services, Proximity to suppliers; (3) **Factor Cost and Labor Market Characteristics:** Low rents of cost of buying property, Supply of skilled workers, Supply of unskilled workers, Fewer regulatory requirements and taxes; **Other:** Quality of local housing, schools and social network, Levels of local pollution and other environmental problems.

4.2. Results

Results from this regression are presented in Table 4. We would like to mention upfront that the coefficients in the table are from a Probit model *without* interaction effects in all but two cases. Non-linear models with interaction terms generate coefficients that are not only difficult to interpret, but are also of the wrong size, sign and significance level. Even though at first look it appeared that the impact of foreign ownership on the outcome was dependent strongly on the exporting status of the firm (as expressed by the highly significant coefficients on the interaction term), after we have tested for the significance of the findings using the procedure developed by Norton et al. (2004), we found that in all but two cases (supply

of unskilled workers and proximity to suppliers) the impact of exporting status and ownership is direct and does not depend on the value of the other variable. Hence only rows 12 and 15 correspond perfectly to the model specified in equation (2). Every other specification is estimated without the interaction term.

The results of this study indicate that the perceived importance of various site attributes depends on firms' ownership structure (foreign vs. domestic), market orientation (exporters vs. non-exporters) and, in rare cases, also on the interaction of those factors.

Foreign-owned firms, irrespective of the exporting status, are attracted by the size of the local market, the quality of telecommunications, and the supply of skilled labor. The finding for the local market size is very much in sync with the evidence provided by Amiti and Javorcki (2005) who found that doubling market access is associated with a 40% increase in the entry of foreign firms. Notice that our finding for the impact of infrastructure on the location of foreign-owned firms suggests that only the quality of telecommunications infrastructure matters for the decision-making. The quality of the transportation is not significant, a finding that diverges from the conclusions by Head and Ries (1996), Amiti and Javorcki (2005), and a number of studies for countries other than China. Apparently, the use of regional data on the lengths of roads, access to ports, and the lengths of roads generates the results that we fail to confirm with the self-reported information. Finally, all foreign-firms are attracted by the supply of skilled labor. China, a country known primarily for its rich endowment of unskilled labor, has a shortage of skilled workers and it seems reasonable that the best firms would have interest in and a better bargaining position to hire such workers.

Curiously, foreign-owned firms who later become exporters are also attracted by the availability of unskilled labor. Hale and Long (2008) found no direct or indirect effects of FDI on the market for unskilled labor in China. Our finding suggests the existence of such effect for outwardly oriented foreign-owned firms. Perhaps foreign-owned firms, who compete on the international market, are more interested in the quality-cost balance. It may be useful to explore the link between the destination of the firm's exports and the firm's mix of skilled and unskilled workers to explore further our finding. Foreign-owned firms who become exporters are also attracted to the site by proximity to suppliers. Future exporters, irrespective of their ownership status, are attracted to a location by low rents, and fewer regulatory requirements and taxes. Overall, it appears from the data that exporters weigh heavily the cost-decreasing

factors. Both exporters and foreign-owned firms are much more likely than domestic firms targeting domestic market to give weight to the availability of government services.

On the whole, these seem to be significant differences in the importance attributed to various site attributes by the two types of firms prized as the best economic performers – exporters and foreign-owned enterprises. A somewhat unanticipated finding is how little is explained by the interaction of those factors. The results from the ordered probit regression, with the degree of importance of each factor as the dependent variable, echo all of the aforementioned findings.

5. CONCLUSIONS

This research provides valuable information for policy-makers who aim to attract economic headliners – exporters and foreign-owned firms – to the region. The empirical results indicate that exporters and foreign-owned firms, both desirable in terms of the productivity gains and the potential spillovers to less productive firms, might value different site attributes. Policy-makers can therefore find them useful in predicting future location patterns by firms and, more importantly, when evaluating public policies intended to influence the location decisions of best performers. For instance, cities that want to attract exporters need to drastically reduce the complexities of regulatory requirements and increase the availability of government services. Improving the quality of telecommunications systems and educating the labor force is an effective way of attracting foreign-owned companies. Since local market size is an important determinant for the foreign-owned firms, it is also essential to ensure the elimination of informal trade barriers, such as duties and administrative restrictions aimed at keeping out goods and services from competing provinces.

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Table 1: Sectoral distribution of the sample

Sectors	Number of Firms	Percent
accounting and related services	96	6.81
advertising and marketing	77	5.46
apparel and leather goods	203	14.41
business logistics services	106	7.52
communication services	65	4.61
consumer products	154	10.93
electronic components	194	13.77
electronic equipment	185	13.13
information technology services	119	8.45
vehicles and vehicle parts	210	14.9
Total	1,409	100

Table 2: Distribution of firms by the number of important determinants of location

Number of reported location factors		Number of firms	Percent	Cumulative Percent
	0	148	10.5	10.5
	1	57	4.05	14.55
	2	49	3.48	18.03
	3	93	6.6	24.63
	4	394	27.96	52.59
	5	668	47.41	100
Total		1,409	100	

Table 3: Means and Standard Deviations of the Degree of Importance of Location Factors by Exporting and Foreign Ownership Status

	Non-Exporter	Exporter	Established as Domestic	Established as Foreign-Owned
Local market size (1)	1.51	0.97	1.29	1.34
	(2.07)	(1.75)	(1.97)	(1.98)
Proximity to other firms in the same line of business (2)	0.71	0.62	0.65	0.77
	(1.49)	(1.44)	(1.44)	(1.57)
Low rents of cost of buying property (3)	1.45	1.48	1.47	1.42
	(1.98)	(1.96)	(1.98)	(1.94)
Proximity to local universities and research institutes (4)	0.23	0.17	0.21	0.20
	(0.88)	(0.78)	(0.84)	(0.84)
Existence of strong linkages with firms and researchers abroad (5)	0.26	0.22	0.25	0.20
	(0.96)	(0.89)	(0.95)	(0.88)
Quality of local transport infrastructure (6)	1.28	1.35	1.33	1.20
	(1.69)	(1.70)	(1.72)	(1.57)
Quality of local telecommunications infrastructure (7)	0.46	0.35	0.41	0.42
	(1.07)	(0.97)	(1.04)	(1.04)
Supply of skilled workers (8)	0.50	0.89	0.53	1.11
	(1.14)	(1.51)	(1.19)	(1.59)
Supply of unskilled workers (9)	0.19	0.46	0.28	0.37
	(0.72)	(1.11)	(0.87)	(1.02)
Possibility of expanding new products (10)	0.62	0.62	0.61	0.64
	(1.32)	(1.27)	(1.31)	(1.31)
Availability of government services (11)	0.83	1.32	0.89	1.47
	(1.53)	(1.84)	(1.60)	(1.85)
Quality of locally provided financial services (12)	0.27	0.30	0.27	0.32
	(0.86)	(0.89)	(0.87)	(0.88)
Proximity to suppliers (13)	0.35	0.48	0.39	0.42
	(0.99)	(1.22)	(1.07)	(1.17)
Proximity to clients (14)	1.09	0.63	0.95	0.72
	(1.70)	(1.40)	(1.63)	(1.43)
Proximity to distribution channels (15)	0.63	0.54	0.59	0.59
	(1.33)	(1.20)	(1.28)	(1.30)
Quality of local housing, schools and social network (16)	0.17	0.14	0.17	0.13
	(0.76)	(0.62)	(0.72)	(0.66)
Local pollution and other environmental problems (17)	0.54	0.61	0.58	0.53

	Non-Exporter	Exporter	Established as Domestic	Established as Foreign-Owned
	(1.25)	(1.29)	(1.27)	(1.25)
Fewer regulatory requirements and taxes (18)	0.29	0.65	0.35	0.73
	(0.98)	(1.46)	(1.07)	(1.56)

Table 4: Impact of Foreign Ownership and Exporting on the Attractiveness of Various Site Attributes

		Exporter		Set Up as Foreign Owned		Interaction
Market Size and Market Access						
Local market size	**(1)**	-0.267***	(0.090)	0.206**	(0.096)	
Quality of local transport infrastructure	**(2)**	0.008	(0.086)	-0.005	(0.093)	
Quality of local telecommunications infrastructure	**(3)**	-0.011	(0.106)	0.251**	(0.114)	
Proximity to clients	**(4)**	-0.277***	(0.095)	-0.033	(0.103)	
Proximity to distribution channels	**(5)**	-0.197**	(0.097)	-0.024	(0.104)	
Possibility of expanding new products	**(6)**	-0.013	(0.093)	-0.036	(0.102)	
Agglomeration Economies						
Proximity to other firms in the same line of business	**(7)**	-0.104	(0.098)	0.112	(0.103)	
Proximity to local universities and research institutes	**(8)**	0.122	(0.134)	-0.030	(0.154)	
Existence of strong linkages between this location and firms and researchers located abroad	**(9)**	0.027	(0.133)	-0.095	(0.145)	
Availability of government services	**(10)**	0.193**	(0.090)	0.258***	(0.095)	
Quality of locally provided financial services	**(11)**	0.073	(0.114)	0.022	(0.117)	
Proximity to suppliers	**(12)**	-0.003	(0.118)	-0.410**	(0.192)	[+]**

		Exporter		Set Up as Foreign Owned		Interaction
Factor Cost and Labor Market Characteristics						
Low rents of cost of buying property	**(13)**	0.169*	(0.087)	-0.109	(0.094)	
Supply of skilled workers	**(14)**	0.071	(0.094)	0.385***	(0.098)	
Supply of unskilled workers	**(15)**	0.154	(0.123)	-0.426*	(0.231)	[+]**
Fewer regulatory requirements and taxes	**(16)**	0.283***	(0.110)	0.018	(0.111)	
Other						
Quality of local housing, schools and social network	**(17)**	0.123	(0.135)	-0.109	(0.155)	
Levels of local pollution and other environmental problems	**(18)**	0.099	(0.096)	-0.127	(0.106)	

Notes: Results generated by the probit regressions with the dependent variables indicated in the left column and the independent variables in the column headings. Additional controls include firm's age, size in terms of employment and total sales, firm efficiency measured by the share of costs in total sales, as well as industry and location dummies. Rows 12 and 15 report the findings from the interaction model (sign and significance level of the interaction is verified using the plots generated by the Stata command "inteff"). For the rest of the table the model with direct effects is used (coefficients from the interaction model – rejected by the results of the "inteff" command – are misleading in sign, size, and significance level). Standard errors in parentheses.