

Weekly Report

Innovation Promotes Internationalization of Small and Medium-Sized Enterprises

In recent decades the internationalization of small and medium-sized enterprises (SMEs) has increased significantly, especially in manufacturing industries. Yet in contrast to large, multinational corporations, not much is known about the international activities of SMEs. Data on East German SMEs show that size and innovative capacity have a significant influence on a company's international involvement, as measured by exports and relocating production or other operations abroad. Furthermore, external factors also impact the international activities of SMEs. Particularly significant in this regard is a company's competitive situation and locational factors such as spatial proximity to research institutions and support from regional authorities and organizations. Regional policy aimed at increasing the presence of SMEs in international markets should therefore foster firms' innovative capabilities and support regional companies with good services and guidance programs.

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While the phenomenon of globalization is mainly associated with the activities of large corporations, small and medium-sized enterprises (SMEs), especially those in the manufacturing sector, are increasingly active in international markets.¹ Nevertheless, in contrast to the extensive literature on the international activities of large corporations, little is known about the internationalization of SMEs.²

The goal of this study is to explore the determinants of internationalization of independent SMEs from the manufacturing sector.³ In particular, this study focuses on two forms of foreign activity: exporting and relocating of production or other operations abroad. In the literature it is assumed that firms consider a wide range of factors in their cost-benefit analysis of various internationalization forms.⁴ From these options, firms select the internationalization strategy that will yield maximum profits. Generally, the key determinants of such a decision are subdivided in

¹ See KfW Bankengruppe, Creditreform, IfM, RWI, ZEW (eds.): Den Aufschwung festigen—Beschäftigung und Investitionen weiter vorantreiben. Mittelstandsmonitor 2007, 95–155.

² See OECD: Staying Competitive in the Global Economy: Compendium of Studies on Global Value Chains. Paris 2008.

³ Companies with less than 500 employees are considered SMEs here.

⁴ See Clark, T., Mallory, G.: The Impact of the Strategic Choice on the Internationalisation of the Firm. In: Chrysoschoidis, G., Millar, C., Clegg, J.: Internationalisation Strategies. London and New York 1997, 196–206; Root, F.R.: Entry Strategies for International Markets. Lexington, Mass., 1987; Welford, R., Prescott, K.: European Business: An Issue-based Approach. London 1994.

JEL Classification:
M16, L25, R30, O30

Keywords:
SME, Manufacturing Sector,
Export, Relocation abroad

A look at the numbers: 3,063 independently owned East German SMEs in focus

Information gathered in a representative survey of firms conducted by DIW Berlin on behalf of the German Federal Ministry of Education and Research underlies our empirical analysis.¹ The survey targeted around 29,000 manufacturing and service-sector companies. In total, around 6,200 companies participated. The survey yielded general information about the companies, their financial situation, competitive environment, R&D and innovation

activities, cooperative activities and production capacity. In addition, the companies rated the importance and quality of 15 locational factors, including proximity to universities, availability of supraregional transportation links, services provided by local financial institutions, and support from regional authorities or economic development corporations.

SMEs affiliated to a firm group operate under different conditions than independent SMEs. Companies belonging to a corporate group can exchange expertise and resources, and also share the costs and risks associated with internationalization. In addition, it is unclear how much decision-making power these companies have with regard to market strategy and business development, as the organizational structures of the corporate groups to which they belong are unknown. For this reason, affiliated companies were excluded from the analysis. In addition, data on service-sector companies as well as observations including missing values were removed from the data set. The information on the remaining 3,063 independent East German SMEs in the manufacturing sector is the data basis for the study.

As always with samples, there was a concern about the representativeness of the data. For this reason, we compared the results regarding the international activities of East German SMEs with the results from other studies according to size categories (see Table). Even though the data used in the comparison are shaped by varying structural factors and refer to alternate size categories, other studies concerned with internationalization have yielded similar results to the DIW survey of East German manufacturing SMEs. There were larger differences between surveys, however, regarding the relocations abroad. This could be because the comparison data also includes affiliated companies or that—as is the case in the survey data from the Fraunhofer Institute's 2006 German Manufacturing Survey—larger companies are overrepresented in the sample.² This study is based on a survey conducted in the fall of 2004. The structural implications and conclusions drawn here regarding economic policy remain valid in 2010.

Table

International activities of German manufacturing SMEs according to various studies

In percent

	East German SMEs ¹	IAB Establishment Panel 2003 ²	Deutsche Bundesbank 2005 ³	German Manufacturing Survey 2006 ⁴
Export companies in total	32.4	35.0	–	–
Up to 9 employees	21.6	19.0	–	–
10 to 49 employees	36.9	38.0	–	–
50 to 99 employees	60.6	37.0	–	–
100 to 249 employees	73.0	47.0	–	–
250 to 499 employees	–	56.0	–	–
500 or more employees	–	64.0	–	–
Companies in total that relocated production or other operations abroad	2.4	–	–	–
Up to 9 employees	1.4	–	4.3	–
10 to 49 employees	1.8	–	4.7	10.0 ⁵
50 to 99 employees	8.0	–	15.5	22.0
100 to 249 employees	16.0	–	75.7	46.0
250 to 499 employees	–	–	–	–
500 or more employees	–	–	–	–

¹ DIW Berlin survey, fall of 2004.

² Eickelpasch, A., Pffirmann, O.: Erschließung des Marktpotenzials in den mittel- und osteuropäischen EU-Mitgliedsstaaten durch kleine und mittlere Unternehmen. DIW Berlin Politikberatung kompakt 47, 2008, 35.

³ Investoren mit Direktinvestitionen im Ausland, Eickelpasch, A., Pffirmann, O.: Erschließung des Marktpotenzials in den mittel- und osteuropäischen EU-Mitgliedsstaaten durch kleine und mittlere Unternehmen. DIW Berlin Politikberatung kompakt 47, 2008, 39.

⁴ Kinkel, S., Maloca, S., Jäger, A.: Produktions- und FuE-Verlagerungen ins Ausland – Verbreitung, Motive und strategische Implikationen für das deutsche Verarbeitende Gewerbe. Stuttgart 2009.

⁵ Only 20 to 99 employees.

Source: Presentation by DIW Berlin.

DIW Berlin 2010

The results of a range of studies have all yielded similar figures for international activities according to company size.

¹ See information about the survey's representativeness in Eickelpasch, A., Pfeiffer, I.: Unternehmen in Ostdeutschland—wirtschaftlicher Erfolg mit Innovationen. DIW Berlin Wochenbericht no. 14/2006.

² See Kinkel, S., Maloca, S., Jäger, A.: Produktions- und FuE-Verlagerungen ins Ausland—Verbreitung, Motive und strategische Implikationen für das deutsche Verarbeitende Gewerbe. Stuttgart 2009, 10.

the literature into internal (firm-related) and external factors.⁵ Internal factors include the size, age, innovative capacity, and industry affiliation of a company.

Taking these characteristics into consideration allows to control for firms' heterogeneity. External factors, by contrast, should capture the impact of the firm environment on the choice of internationalization strategy. These factors include: locational conditions, the competition situation, and cooperation activities.

⁵ See Cavusgil, T., Zou, S.: Marketing Strategy-performance Relationship: An Investigation. *Journal of Marketing* 58(1), 1994, 1–21.

The estimation approach applied in the study acknowledges that a company can pursue both internationalization strategies—exporting and relocating production or other operations abroad—at the same time.⁶ Information gathered from a 2004 written survey of East German companies carried out by the German Institute for Economic Research (DIW Berlin) provided a data basis for the study (see Box).

Large and innovative SMEs have a stronger international orientation

In 2003/4, a third of independent East German SMEs engaged internationally (see Figure 1). About 32 percent of the surveyed companies exported products and 2.4 percent relocated business activities abroad.⁷ Internationalization varies dramatically among companies of different sizes. Around 77 percent of microbusinesses (up to nine employees) operated exclusively in domestic markets. The corresponding figure for large SMEs employing 100 or more people was only 20 percent. More than 70 percent of these companies exported abroad and 16 percent relocated their activities abroad.

The export intensity is also strongly associated with company size (see Figure 2). On average, the export share in total turnover of microbusinesses (firms with up to nine employees) in 2003/4 was 5 percent. Firms with 10 to 49 employees exported just over seven percent of their products. For companies with over 50 employees, the export share was over 15 percent.

The companies in research-intensive industries are much more likely to be exporters (Table 1).⁸ The proportion of exporting firms in research-intensive branches was in 2003/4 about 50 percent, twice as

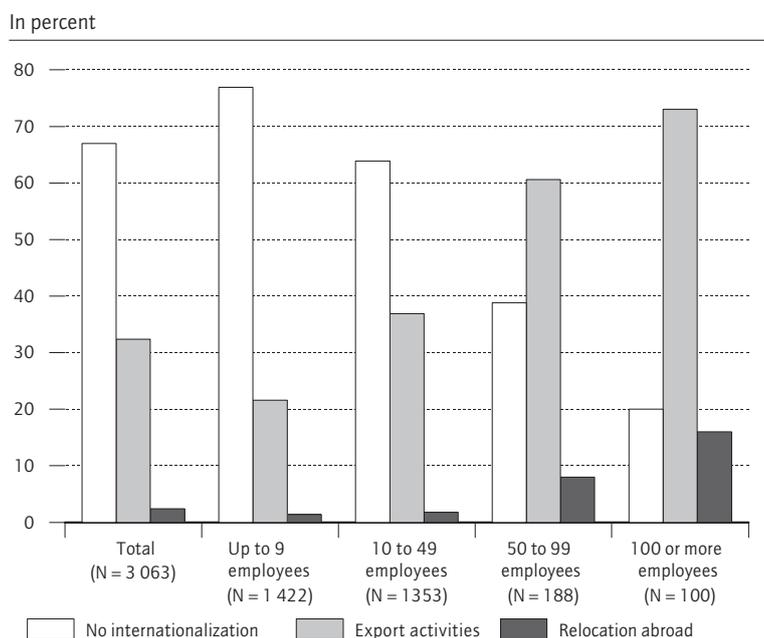
6 Lejpras, A.: Determinants of Internationalization: Differences Between Service and Manufacturing SMEs. DIW Berlin Discussion Paper, no. 886, 2009.

7 The vast majority of the relocations abroad of East German SMEs in the years 2003/4 (close to 87 percent) went to the new EU member states. Poland and the Czech Republic were the most popular destinations for relocating production or other operations abroad: approximately 40 percent and 30 percent of relocations abroad, respectively, went to these two countries. Close to 18 percent of relocations abroad went to the other new EU member states. The proportion going to old EU countries and the rest of the world came to seven and six percent, respectively. See also Eickelpasch, A., Pfeiffer, I.: Standortverlagerungen in der ostdeutschen Industrie. DIW Berlin Wochenbericht, no. 14/2006.

8 The research-intensive industries as the following branches: manufacture of chemicals and chemical products, machinery and equipment, office machinery and computers, electrical machinery and apparatus n.e.c., radio, television and communication equipment, medical, precision, and optical instruments, watches, clocks, motor vehicles, trailers, and semi-trailers, other transport equipment; see NIW, ISI: Neubegrenzung der Wissenswirtschaft—forschung-intensive Industrien und wissensintensive Dienstleistungen. Studien zum deutschen Innovationssystem, no. 22-2007.

Figure 1

International activities of East German SMEs¹ by size category, 2003/2004



1 Small and medium-sized independently owned companies in manufacturing industries.

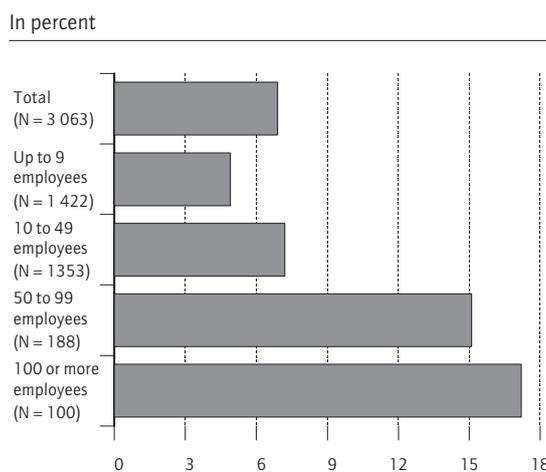
Source: Fall 2004 survey carried out by DIW Berlin.

DIW Berlin 2010

Companies with 50 or more employees are particularly active internationally—over 60% are exporters.

Figure 2

Export shares for East German SMEs by size category, 2003/4



1 Small and medium-sized independently owned companies in manufacturing industries.

Source: Fall 2004 survey carried out by DIW Berlin. DIW Berlin 2010

Companies with 50 or more employees are particularly active in this area, with average export shares in total turnover of over 15 percent.

Table 1
International activities of East German SMEs¹ by industry, 2003/4

In percent

	Export activities	Relocation abroad	No internationalization	Number of companies
Companies in total	32.4	2.4	67.0	3 063
Research-intensive industries in total	49.6	2.7	50.0	914
Chemicals, chemical products	60.9	4.7	37.5	64
Machinery and equipment	48.6	1.9	53.3	360
Office machinery, computers and equipment	66.7	0.0	41.7	12
Electrical machinery and apparatus	44.5	4.1	55.5	146
Radio, television, and communications equipment and apparatus	61.2	6.1	38.8	49
Medical, precision, and optical instruments, watches and clocks	51.4	0.9	49.1	220
Motor vehicles, trailers, and semi-trailers	48.4	6.5	48.4	31
Other transport equipment	25.0	6.3	75.0	32
Other industries in total	25.1	2.3	74.2	2 149
Food products and beverages	10.7	1.5	88.2	271
Textiles	45.7	3.7	51.9	81
Wearing apparel	28.6	7.1	64.3	42
Tanning and dressing of leather	30.8	7.7	65.4	26
Wood and products of wood and cork products, except furniture	16.6	1.3	82.8	157
Pulp, paper, and paper products	55.6	0.0	44.4	27
Publishing, printing, and reproduction of recorded media	19.7	1.7	77.3	233
Rubber and plastic products	51.2	3.0	47.6	168
Other nonmetallic mineral products	18.8	1.3	80.0	160
Metal production and processing	45.0	5.0	50.0	40
Fabricated metal products, except machinery and equipment	22.3	1.9	77.5	730
Furniture, jewelry, musical instruments, sports goods, games and toys and other products	38.7	6.3	59.9	142
Recycling	20.8	0.0	80.6	72

¹ Small and medium-sized independently owned companies in manufacturing industries.

Source: Fall 2004 survey carried out by DIW Berlin.

DIW Berlin 2010

Research-intensive industries are particularly competitive and export a large share of their output. But there are successful exporters in other industries as well.

high as among the remaining companies. In terms of relocations abroad, however, research-intensive and non-research-intensive SMEs hardly differ (2.7 versus 2.4 percent).

A positive relationship is also found between a firm's innovative capacity—measured by four indicators—and its international activity (Figure 3). Companies that introduce completely new products to the market or that apply for patents operate particularly frequently in foreign markets. Moreover, companies that engage in exporting exhibit a higher R&D intensity than those that relocate production processes abroad.

Regional environment can promote international activities

In comparison to large and/or affiliated companies, independent SMEs have lower resource capacities in terms of financing, staffing, and expertise. They

are less able to profit from the inter-regional or international division of labor. As a result, unaffiliated SMEs are quite heavily dependent on external factors.⁹ Favorable factor endowment therefore plays a key role for independent SMEs. Hence, we expect that good-quality locational conditions facilitate the international activities of SMEs, as well.

In the survey, the companies answered questions about the importance and quality of locational factors. These factors can be subdivided into four groups:

- regional availability of qualified workers,
- proximity to research facilities,
- supraregional transportation links, and

⁹ See Acs, Z.J., Morck, R., Shaver, J.M., Yeung, B.: The Internationalization of Small and Medium-sized Enterprises: A Policy Perspective. *Small Business Economics* 9(1), 1997; Hollenstein, H.: Determinants of International Activities: Are SMEs Different? *Small Business Economics* 24, 1991.

- support from regional authorities and other organizations.¹⁰

From the viewpoint of East German SMEs that act internationally, the most important locational factor is the availability of qualified workers (see Table 2). Some 73 percent of companies assigned a high degree of importance to this factor, and rated the regional availability of qualified workers as satisfactory. Companies that relocated operations abroad, however, assess the situation much less favorably (average rating: -1.53).

Companies with an international presence attached a higher importance to the availability of supra-regional transportation links than other SMEs. Nevertheless, the assessment of the quality of this factor differs between the two groups only slightly (satisfactory up to good).

A large majority of East German SMEs indicated that support from regional authorities and other institutions is very important. SMEs assess mostly the status quo in this area as unsatisfactory. Interestingly, however, exporting companies rated the services provided by regional economic development corporations, governments, chambers of commerce and associations significantly better than firms without a foreign engagement. In this area, as well, relatively poor marks were given by companies that relocated operations abroad.

Research infrastructure plays a significantly larger role for exporting SMEs than for those that operate in domestic markets only or relocate activities abroad. Generally, companies assess their proximity to research institutions quite positively.

Internationally oriented SMEs are competitive abroad

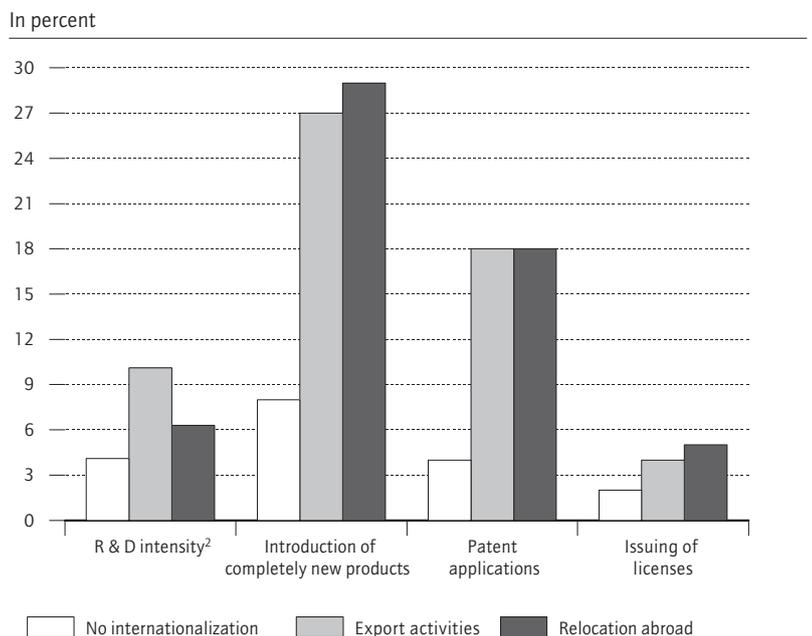
Another significant determinant of a company's development is the competitive environment in which it operates. According to Michael Porter's theory, competitors located in the same region can exert relentless pressure on a company to introduce innovations, improve quality, reduce costs, and increase efficiency.¹¹ Spatial proximity to main competitors

¹⁰ The use of company assessments of locational conditions may cause concern because they do not necessarily correspond with the objective reality of the same. Nevertheless, they are still significant because they reflect the opinion of decision-makers and so have a direct affect on their behavior. In addition, this approach takes into account that not all companies are the same when it comes to their needs and/or requirements regarding locational conditions. In other words, this approach takes into account firm-specific effects of various locational conditions.

¹¹ See Porter, M.E.: *The Competitive Advantage of Nations*. New York 1990.

Figure 3

International activities of East German SMEs¹ by innovation indicators, 2003/4



- ¹ Small and medium-sized independently owned companies in manufacturing industries.
- ² Share of employees in R&D in all employees.

Source: Fall 2004 survey carried out by DIW Berlin.

DIW Berlin 2010

Introducing new products and applying for a patent are positively correlated with exporting and relocating abroad.

therefore makes it easier for a company to unlock productive potential and succeed internationally.

On the other hand, the literature indicates that companies tend to exhibit "follow-the-leader behavior,"¹² i.e., they are likely to imitate the successful international practices of their foreign competitors in order to reduce the risks and costs associated with international activities.

If the first thesis is correct, we would expect companies with strong local competition to have a particularly strong international orientation. But the survey results indicate the opposite: SMEs that compete mainly with local competitors have a rather weak presence internationally. By contrast, SMEs with mainly foreign competitors have a significantly greater international presence (see Table 3). These findings are not in line with Porter's thesis. The reason for this contradiction could be that East German

¹² See DiMaggio, P.J., Powell, W.W.: *The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields*. *American Sociological Review* 48, 1983; Levitt, B., March, J.G.: *Organizational Learning*. *Annual Review of Sociology* 14, 1988; Ito, K., Rose, E.L.: *Foreign Direct Investment Location Strategies in the Tire Industry*. *Journal of International Business Studies* 33(3), 2002.

Table 2

Selected locational conditions for East German SMEs¹, 2003/4

	Importance of regional factor ²			Assessment of locational factor ³		
	Export activities ⁴	Relocation abroad ⁴	No internationalization	Export activities ⁴	Relocation abroad ⁴	No internationalization
	In percent			Average from -10 (very bad) to +10 (very good)		
Regional availability of qualified workers						
Availability of qualified workers	73.2	73.6	66.5	0.07	-1.53	-0.18
Training and qualification programs	42.0	47.1	43.7	2.46	0.37	3.46
Proximity to research facilities						
Proximity to universities	22.7	14.9	11.9	7.18	6.15	6.83
Proximity to research institutes	19.6	11.5	8.3	6.65	8.00	5.69
Access to supraregional transportation links	53.5	56.3	39.1	2.90	3.44	3.70
Support from regional authorities and other organizations						
Services from local financial institutions	59.7	51.7	55.4	-0.45	-2.86	-0.48
Support from employment offices	28.9	32.2	29.4	-0.33	-2.22	-0.30
Services from local authorities	31.0	31.0	35.8	-0.40	-3.40	-0.53
Services from economic development corporation	42.6	36.8	33.1	2.14	0.67	-0.47
Support from state government	43.6	40.2	33.9	-0.03	-1.62	-2.42
Support from chambers of commerce and associations	36.0	32.2	39.3	2.06	-1.96	0.49

1 Small and medium sized independently owned companies in manufacturing industries.

2 The locational factor is of great importance (multiple answers possible).

3 Ratings were only taken into account when the factor was of great importance.

4 Figures that vary significantly from companies without international activities are highlighted in bold.

Source: Fall 2004 survey carried out by DIW Berlin.

DIW Berlin 2010

A proximity to universities is twice as important for exporting companies than for others. This locational factor also received excellent marks. For the most part, support from regional authorities and other organizations is assessed as very bad.

Table 3

Main competitors and cooperation activities of East German SMEs¹, 2003/2004

In percent

	Export activities ²	Relocation abroad ²	No internationalization
Main competitors...			
... located abroad	39,7	47,1	10,1
... located in the firm's proximity	21,2	21,8	60,7
Frequent cooperation activities...			
... in product development	25,4	23,0	24,2
... in process development	19,3	23,0	21,9
... in distribution	22,4	13,8	26,4

1 Small and medium sized independently owned companies in manufacturing industries.

2 Figures that vary significantly from companies without international activities are highlighted in bold.

Source: Fall 2004 survey carried out by DIW Berlin.

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International activities reduce the frequency of cooperation in distribution. Main competitors located in the firm's proximity has only half the significance of one located abroad.

SMEs which face strong local competition primarily sell products that are fundamentally ill-suited for supraregional or international markets (e.g. recycling or print products).

Cooperation has no influence

Cooperation between companies promotes, among other things, the exchange of knowledge and experience.¹³ Such cooperation is particularly important for independent SMEs because it can help to compensate for the disadvantages of small size. Skills and capacities that are lacking internally can be made up for with the expertise and resources of outside partners.

Yet surprisingly, in the fields of product and process development, there is not much difference between East German SMEs which are only active domestically and those which operate internationally. In terms of distribution activities, companies which operate exclusively in domestic markets are actually significantly more likely to cooperate with partners than companies with an international presence.

13 See Cunningham, M.T., Culligan, K.: Competitiveness Through Networks of Relationships in Information Technology Product Markets. In: Paliwoda, S.J. (Hrsg.): New Perspectives on International Marketing. London 1991, 251–275; Johansson, J., Mattsson, L.-G.: Internationalization in Industrial Systems—A Network Approach. In: Hood, N., Vahlne, J.E. (Hrsg.): Strategies in Global Competition. New York 1988, 287–314; Johansson, J., Mattsson, L.-G.: Network Positions and Strategic Action—An Analytical Framework. In: Axelsson, B., Easton, G. (editors): Industrial Networks. A New View of Reality. London 1992, 206–217.

Model estimation results confirm the importance of size and innovative capabilities

The importance of company size for the internationalization of East German manufacturing-sector SMEs is confirmed by model estimation results that take all the aforementioned determinants into consideration simultaneously. The more employees a company has, the more likely it is to operate internationally (see Table 4). As in the descriptive analysis, the results show that the tendency among SMEs in research-intensive industries to be exporters is significantly above average.

In addition, the results make clear that innovative capacity—measured by four variables—affects the form of foreign activity chosen in different ways. While the introduction of completely new products, applying for a patent, and issuing licenses (three innovation-output factors) foster the export activities of SMEs, the likelihood of a company to relocate production or other operations abroad declines slightly as the share of employees in R&D in total employment (an innovation-input variable) increases.

Among external factors, main competitors are a key determinant of SME internationalization. Companies with foreign main competitors are more likely to export and to relocate production or other operations abroad. By contrast, of the SMEs with main competitors located in the firm's proximity, few act internationally. Plausible explanations for this negative relationship are that these firms operate mainly in regional markets or that they lack innovative products that would allow them to build a presence on foreign markets. To the extent this is true, it may be that having primarily regional competitors is not the cause but the result of a lack of international competitiveness.

Among locational conditions, proximity to research institutions and support from regional authorities and organizations have the greatest influence on international activities. The better the company assesses these locational conditions to be, the higher the probability that they are exporters and the lower the probability they relocate production or other activities abroad.

Furthermore, the availability of good supraregional transportation links facilitates relocations abroad.

One surprising finding is a significant negative relationship between a company's assessment of the regional availability of qualified workers and their

Table 4

Determinants¹ of international activities for East German SMEs², 2003/2004

	Export activities	Relocation abroad
Internal factors		
Company size (reference: less than 10 employees)		
10 to 49 employees	0.1104***	0.0001
50 to 99 employees	0.3043***	0.0395**
100 or more employees	0.3881***	0.0906***
Company age (reference: less than 3 years old)		
3 to 15 years old	0.0048	0.0017
15 or more years old	-0.05	0.0034
Innovation indicators		
Deployment share in R&D	0.0008	-0.0006***
Introduction of completely new products to the market (yes=1)	0.1469***	0.0124
Patent applications (yes=1)	0.1656***	0.004
Issuing licenses (yes=1)	0.1463*	0.0306
Affiliation to a research-intensive industry (yes=1)	0.1346***	-0.0013
External factors		
Locational conditions		
Regional availability of qualified workers	-0.0150*	-0.0009
Proximity to research facilities	0.0248***	-0.0038**
Supraregional transportation links	-0.002	0.0019*
Support from regional authorities and other organizations	0.0189*	-0.0035*
Main competitors...		
... located abroad (yes=1)	0.2226***	0.0174***
... located in the firm's proximity (yes=1)	-0.2445***	-0.0125***
Frequent cooperation activities... (yes=1)		
... in product development	0.0006	-0.0056
... in process development	-0.0419	0.0254**
... in distribution	0.0222	-0.0113**

N = 3063 companies; log likelihood = -1739.12; Rho (ρ) = 0.321 ***

1 Marginal effects on the mean; in the case of dummy variables for a discrete change from 0 to 1.

2 Small and medium-sized independently owned companies in manufacturing industries.

3 Company assessments of importance and quality on a 6 point scale: 0 (not important), 1 (important and very bad) to 5 (important and very good).

*, ** and *** indicate probabilities of error of 10, 5 and 1 percent for significant determinants.

Source: Fall 2004 survey carried out by DIW Berlin.

DIW Berlin 2010

The larger the company, the larger the probability it exports or relocations abroad.

export activities. Still, the share of highly qualified workers in total employment is significantly higher for exporting SMEs than for companies that operate in domestic markets only.¹⁴ This may imply that for exporting SMEs, nonlocal or extra-regional labor markets are more important sources of acquiring skilled workers.

Finally, collaboration appears to be less significant for the foreign activities of manufacturing SMEs—especially when it comes to exporting. Frequent cooperation in process development slightly increases the probability of relocating production processes abroad. In contrast, SMEs that collaborate more often in the field of distribution are somewhat less likely to relocate abroad.

14 On average, the share of employees with a university degree out of all employees at exporting SMEs is 24.4 percent; at non-exporting SMEs, 19.7 percent.

Conclusion

Based on survey data of East German manufacturing SMEs from 2004, this study shows that, in addition to in-house expertise and resources, external factors such as locational conditions and competition can also have an important impact on the expansion of a company's international activities. Output-oriented innovation activities—such as introducing new products, applying for patents, and issuing licenses—boost export activities. At the same time, manufacturing SMEs that exhibit a high R&D intensity are less likely to relocate aspects of production processes abroad. Proximity to universities and research institutions as well as support from regional authorities, chambers of commerce and associations facilitate export activities among East German manufacturing SMEs. Firms that assess these locational factors as important and good are less likely to relocate production or other operations abroad.

The results of this study provide insight into how regional policy can help to boost the presence of SMEs in international markets: Efforts should be made to increase the innovative capabilities of companies by assuring that regional authorities, chambers of commerce, and industry associations undergird the regional economy with assistive services and guidance programs.

(First published as "Innovation stärkt Auslandsaktivitäten kleiner und mittlerer Unternehmen", in: Wochenbericht des DIW Berlin Nr. 7/2010.)

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ISSN 1860-3343
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