

Discussion Paper No. 07-069

**Exports and Productivity –
Comparable Evidence for 14 Countries**

The International Study Group on
Exports and Productivity

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Non-technical Summary:

The extent and causes of productivity differentials between exporters and their counterparts which sell on the domestic market only is a core topic frequently addressed in the literature. Two alternative but not mutually exclusive hypotheses about why exporters can be expected to be more productive than non-exporting firms are discussed and investigated empirically: The first hypothesis points to self-selection of the more productive firms into export markets. The reason for this is that there exist additional costs of selling goods in foreign countries. The second hypothesis points to the role of learning-by-exporting. Knowledge flows from international buyers and competitors help to improve the post-entry performance of export starters. Summarizing the results from a comprehensive survey of the empirical literature, the big picture that emerges after some ten years of micro-econometric research in the relationship between exporting and productivity is that exporters are more productive than non-exporters, and that the more productive firms self-select into export markets, while exporting does not necessarily improve productivity. However, this big picture hides a lot of heterogeneity. Cross-country comparisons, and even cross-study comparisons for one country, are difficult because the studies differ in details of the approach used.

In this paper, we use comparable micro level panel data for 14 countries and a set of identically specified empirical models to investigate the relationship between exports and productivity. Our overall results are in line with the big picture: Exporters are more productive than non-exporters when observed and unobserved heterogeneity are controlled for, and these exporter productivity premia tend to increase with the share of exports in total sales; there is strong evidence in favour of self-selection of more productive firms into export markets, but nearly no evidence in favour of the learning-by-exporting hypothesis. We document that the exporter premia differ considerably across countries in identically specified empirical models. In a meta-analysis of our results we find that countries that are more open and have more effective government report higher productivity premia. However, the level of development *per se* does not appear to be an explanation for the observed cross-country differences.

Exports and Productivity – Comparable Evidence for 14 Countries

The International Study Group on Exports and Productivity*

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Abstract:

We use comparable micro level panel data for 14 countries and a set of identically specified empirical models to investigate the relationship between exports and productivity. Our overall results are in line with the big picture that is by now familiar from the literature: Exporters are more productive than non-exporters when observed and unobserved heterogeneity are controlled for, and these exporter productivity premia tend to increase with the share of exports in total sales; there is strong evidence in favour of self-selection of more productive firms into export markets, but nearly no evidence in favour of the learning-by-exporting hypothesis. We document that the exporter premia differ considerably across countries in identically specified empirical models. In a meta-analysis of our results we find that countries that are more open and have more effective government report higher productivity premia. However, the level of development *per se* does not appear to be an explanation for the observed cross-country differences.

Keywords: Exports, productivity, micro data, international comparison

JEL classification: F14, D21

* The International Study Group on Exports and Productivity consists of teams working with firm (establishment or enterprise) level data from 14 countries. Substantial contributions to the results reported in this paper were made by the following members of the teams: Austria (Leonhard Pertl, Stefano Schiavo), Belgium (Mirabelle Muuls, Mauro Pisu), Chile (Roberto Álvarez, Patricio Jaramillo, Ricardo A. López), China (Johannes Van Biesebroeck, Loren Brandt, Yifan Zhang), Colombia (Ana M. Fernandes, Alberto Isgut), Denmark (Rasmus Jørgensen, Ulrich Kaiser), France (Flora Bellone, Liza Jabbour, Patrick Musso, Lionel Nesta), Germany (Helmut Fryges, Joachim Wagner), Italy (Davide Castellani, Francesco Serti, Chiara Tomasi, Antonello Zanfei), Republic of Ireland (Stefanie Haller, Frances Ruane), Slovenia (Joze P. Damijan, Crt Kostevc, Saso Polanec), Spain (Jose C. Fariñas, Liza Jabbour, Juan A. Máñez, Ana Martín, Maria E. Rochina, Juan A. Sanchis), Sweden (Martin Andersson, Sara Johansson), and the United Kingdom (David Greenaway, Richard Kneller, Mauro Pisu). Ana Fernandes, Holger Görg and Alberto Isgut contributed to the meta-analysis. Joachim Wagner (wagner@uni-lueneburg.de) co-ordinates the group and serves as the corresponding author for this international comparison paper. Special thanks go to Brigitte Scheiter who took care of collecting all the results and preparing the voluminous Tables in an excellent way.

1. Motivation

In 1995 Bernard and Jensen published the first of series of papers that use large comprehensive longitudinal data from surveys performed regularly by official statistics in the United States to look at differences between exporters and non-exporters in various dimensions of firm performance, including productivity (see Bernard and Jensen 1995, 1999, 2004). These papers started a new strand of economic literature, as researchers all over the world began to use the rich data sets collected by the statistical offices to study the export activity of firms, its causes, and its consequences. The extent and causes of productivity differentials between exporters and their counterparts which sell on the domestic market only is one of the core topics addressed.

In this literature two alternative but not mutually exclusive hypotheses about why exporters can be expected to be more productive than non-exporting firms are discussed and investigated empirically (see Bernard and Jensen 1999; Bernard and Wagner 1997): The first hypothesis points to self-selection of the more productive firms into export markets. The reason for this is that there exist additional costs of selling goods in foreign countries. The range of extra costs include transportation costs, distribution or marketing costs, personnel with skills to manage foreign networks, or production costs in modifying current domestic products for foreign consumption. These costs provide an entry barrier that less productive firms cannot overcome. Furthermore, the behaviour of firms might be forward-looking in the sense that the desire to export tomorrow may lead a firm to improve performance today to be competitive in the foreign market. Cross-section differences between exporters and non-exporters, therefore, may in part be explained by ex-ante differences between firms: The more productive firms become exporters. The second hypothesis points to the role of learning-by-exporting. Knowledge flows from international buyers

and competitors help to improve the post-entry performance of export starters. Furthermore, firms participating in international markets are exposed to more intense competition and must improve faster than firms who sell their products domestically only. Exporting makes firms more productive.

Summarizing the results from a comprehensive survey of the empirical literature that covers 45 studies with data from 33 countries published between 1995 and 2006 Wagner (2007) argues that, details aside, the big picture that emerges after some ten years of micro-econometric research in the relationship between exporting and productivity is that exporters are more productive than non-exporters, and that the more productive firms self-select into export markets, while exporting does not necessarily improve productivity.¹ However, this big picture hides a lot of heterogeneity. Cross-country comparisons, and even cross-study comparisons for one country, are difficult because the studies differ in details of the approach used. Therefore, the jury is still out on many of the issues regarding the relationship between exporting and productivity, including the absolute size of the productivity advantage needed to clear the export market hurdle and the reasons for differences in this size between countries, the reasons for the existence or not of learning-by-exporting effects in some countries, the determinants of ex-ante productivity premia of export starters, and the mechanisms by which learning from exporting occurs.

One promising approach to generate stylised facts in a more convincing way suggested in Wagner (2007) is to co-ordinate micro-econometric studies for many countries ex-ante, and to agree on a common approach and on the specification of the empirical models estimated. The outcome of such a joint effort would be a set of results that could be compared not only qualitatively (i.e. with regard to the signs and

¹ For contemporaneous but less comprehensive surveys of this literature with a partly different focus see López (2005) and Greenaway and Kneller (2007).

the statistical significance of the estimated coefficients) but with a view on the magnitude of the estimated effects, too.

This paper reports the results of an effort to proceed just like this. Teams working with micro level data for 14 countries joined to form The International Study Group on Exports and Productivity, with the aim of producing a set of internationally comparable results based on identically specified empirical models and using the same computer programmes. The paper reports the results of this exercise and also provides an attempt to explain cross-country differences in the productivity premia using meta-analysis techniques.

The rest of the paper is organised as follows: Section 2 provides information on the countries included, the data used, and descriptive statistics on export participation. Section 3 reports the so-called exporter productivity premia, defined as the ceteris paribus percentage difference of productivity between exporters and non-exporters. Section 4 and Section 5 present the results of empirical investigations of the two hypotheses mentioned above, namely self-selection of more productive firms into export markets, and learning-by-exporting. Section 6 performs robustness checks of the results. Section 7 concludes.

2. Countries, data sets, and descriptive evidence on export participation

A list of the 14 countries involved in this international comparison study, and some information on the data sets used, are given in Table 1. While most of the countries come from the European Union, Chile and Colombia from South America and China from Asia are included, too.²

² The composition of the sample of countries included is the result of a call for participation sent out by Joachim Wagner early in 2005 to all authors of studies covered in Wagner (2007). Unfortunately, not all of them agreed to participate, but, fortunately, others joined later when they heard of the project. Researchers from countries not yet represented in the group are cordially invited to join – please contact Joachim Wagner by mailing to wagner@uni-lueneburg.de.

[Table 1 near here]

The data are either at the level of the establishment (the plant, the local production unit) or at the level of the firm (the legal unit). Unfortunately, it was neither possible to aggregate all establishment level data to the firm level, nor was it possible to split up firm level information to the establishment level. This different level of aggregation is one dimension in which the results reported in this study are not truly comparable across all countries. The other dimension is due to the different years covered. If we had limited the data used to years that are covered in all data sets, we would have ended up with a reduced set of countries and a small number of years. Therefore, we decided to use all the information at hand, and to control for the different years covered in the estimation of the empirical models. For any details of the data sets used, and how to access them, readers may contact the persons listed in Table 1.

Some of the data sets cover units with at least 20 employees, some with at least 10 employees, and some have information on all units. Results reported in this paper are for units with at least 20 employees; for those countries whose data sets cover units with at least 10 employees, comparable results are shown in a set of Tables in Appendix III. Furthermore, all computations are limited to units from manufacturing industries with NACE 2 letters code DA to DN (or ISIC code 15 to 36); a list of these industries is given in Appendix I.1.

The exporter participation rate (defined as the percentage of exporting firms) and the export intensity rate (defined as the average share of exports in total sales for exporting firms) in the 14 countries³ are reported for both the first and the last year covered in the data set used here for all units and for units from four size classes (20

³ Given that there are still large differences between West Germany and the former communist East Germany, results are reported for both parts of Germany individually.

– 49 employees; 50 – 249 employees; 250 – 499 employees; 500 and more employees) in Table 2.

[Table 2 near here]

Table 2 documents that both the exporter participation rate and the export intensity differ widely across the countries covered in this study. Looking at the figure for all firms,⁴ and the most recent year covered, the exporter participation rate ranges from 26.6 percent for Colombia to 83 percent for Sweden. Note that this participation rate is loosely decreasing in the size of the domestic markets of the countries (with China and Germany being outliers here). Furthermore, it did not increase over the period covered for all countries; for instance, the share of manufacturing firms active in exporting did not grow for Belgium, Denmark, Slovenia, and the UK. The export participation rate tends to be higher among firms from the larger size classes, although there is no strict relationship in this for Denmark, Italy, the Republic of Ireland, Slovenia, and Sweden. Looking at export intensity, there are again remarkable cross-country differences. While exports cover only a small share of all sales of exporters from Colombia (18 percent), France and East Germany (24 percent), this share is rather high in Austria, Belgium and Sweden (44 percent), the Republic of Ireland (53 percent), and especially China (60 percent), and it increases with firm size in more than half of the countries covered.⁵

3. Empirical results I: Exporter productivity premia

To investigate differences in productivity between exporters and non-exporters we start with the computation of the so-called exporter productivity premia, defined as the ceteris paribus percentage difference of productivity between exporters and non-

⁴ From now on we will use the term ‘firm’ to refer to the unit of analysis irrespective of whether the data are collected at the establishment or the enterprise level.

exporters. Productivity is measured in a number of different ways in the literature, including labour productivity (defined as sales, or value added, per employee, or per hour worked) and several variants of total factor productivity. Given that information on value added, hours worked, and the capital stock used in the firm is available for some of the countries included in this international comparison project only, we have to rely on the simplest measure of productivity, i.e. sales per employee (measured in constant prices).⁶

The exporter labour productivity premia are computed from a regression of log labour productivity on the current export status dummy and a set of control variables

$$(1) \quad \ln LP_{it} = a + \beta \text{Export}_{it} + c \text{Control}_{it} + e_{it}$$

where i is the index of the firm, t is the index of the year, LP is labour productivity, $Export$ is a dummy variable for current export status (1 if the firm exports in year t , 0 else), $Control$ is a vector of control variables that includes the log of number of employees and its squared value to measure firm size, the log of wages and salaries per employee (in constant prices) to proxy for human capital, and a full set of interaction terms of 4-digit industry-dummies⁷ and year dummies to control for industry-specific differences in capital intensity and shocks, and e is an error term. The exporter productivity premium, computed from the estimated coefficient β as

⁵ Appendix I.2 documents that both the exporter participation rate and the export intensity differ widely between industries in a country, and between countries in an industry.

⁶ For a robustness check of the results based on different measures of productivity for some countries see Section 6 below. Note that value added is not necessarily a better basis to measure productivity than sales, turnover or gross output. The reason is that value added does not track production in a year as closely as gross output or turnover would do (cf. Oulton and O'Mahony (1994, pp. 25ff.)). Bartelsman and Doms (2000, p. 575) point to the fact that heterogeneity in labour productivity has been found to be accompanied by similar heterogeneity in total factor productivity. Furthermore, Foster, Haltiwanger and Syverson (2005) show that productivity measures that are based on sales (i.e., quantities multiplied by prices) and measures that are based on quantities only are highly positively correlated.

⁷ 3-digit industry-dummies had to be used in the case of Italy and Spain.

$100 \cdot (\exp(\beta) - 1)$, shows the average percentage difference in labour productivity between exporters and non-exporters controlling for the characteristics included in the vector Control. To control for unobserved plant heterogeneity due to time-invariant firm characteristics which might be correlated with the variables included in the empirical model and which might lead to a biased estimate of the exporter productivity premia, a variant of (1) is estimated including fixed firm effects, also.

Results for the estimated exporter productivity premia from empirical models with and without fixed firm effects for each of the 14 countries are reported in Table 3 for samples covering all firms with more than 20 employees, and firms from the four size classes.⁸

[Table 3 near here]

Looking at the results for all firms we find that the estimated premia are always statistically significantly different from zero, and often rather large, for pooled data. If fixed firm effects are added to control for unobserved heterogeneity the estimated premia are still statistically significant in all countries but Sweden,⁹ but the point estimates are much smaller compared to the results based on pooled data only. Unobserved firm heterogeneity does matter, and, therefore, we will concentrate on the results from the model including fixed effects.

Table 3 gives new insights on the relative magnitude of the export premia across countries. For a large majority of countries (6 over the 13 for which export

⁸ To control for the effects of extreme observations that are often found in these data from official statistics due to reporting errors or idiosyncratic events, the firms with the bottom / top one percent labour productivity in a year are excluded from all computations for this and all following Tables in this study. Furthermore, firms are classified into size classes according to the median of the number of employees over the years covered.

⁹ There is no definite reason for the insignificance of the productivity premia in the Swedish case. One plausible explanation is that Sweden has a limited domestic market and entry costs to the neighboring countries (Denmark, Norway and Finland) are supposedly low (cf. Andersson 2007). Another is that many Swedish firms belong to multinational corporations with established trading networks to foreign countries. Andersson, Johansson and Löf (2007) show that about 35 % of Swedish manufacturing firms belong to MNEs and that MNEs are responsible for over 90 % of the total value of Sweden's exports.

premia are found statistically significant), the premia lie in a range of 6.6 to 8.1 percent. Two subgroups of countries emerge however which display relatively high and relatively low export premia. The first subgroup includes Colombia (16.4 percent) and Belgium (9.8 percent) while the second subgroup includes Austria (5.3 percent), UK (3.9 percent), Italy (3.6 percent), Slovenia (5 percent), and East Germany (5.6 percent). Interestingly, the size of the premia seems to be unrelated to the degree of economic development of the countries - the order of magnitude is the same for Chile and China on the one hand, and France, West Germany, the Republic of Ireland and Spain on the other hand. This is illustrated in Figure 1 where the estimated exporter premia are plotted against GDP per capita. If Colombia and Sweden (where the exporter premium is not statistically different from zero) are disregarded, the scatterplot reveals a rather flat structure.¹⁰

[Figure 1 near here]

Looking at results by size class we do not find a clear-cut pattern for the magnitude of the premia. For some countries, including Austria, Belgium, Italy, the Republic of Ireland, Slovenia and the UK, the point estimates are statistically insignificant at the usual confidence level of five percent for the largest size class, and sometimes for the firms from the second largest size class, too.¹¹ This is not the case for the least developed countries in our sample (China, and Colombia), but it is also not the case for Denmark, France, Germany, and Spain. Again, there is no apparent link between the size of the premia and the degree of economic development of the countries. Note, furthermore, that the exporter participation rate

¹⁰ Using firm-level data for 5 East Asian countries, Hallward-Driemeier et al. (2002) find that the magnitude of the export premia is larger in countries with lower per capita income. They argue that less developed countries have less-integrated markets, which allows non-exporters with low levels of productivity to survive. In contrast, in more developed economies domestic markets are more integrated, making more difficult for low-productivity non-exporting firms to survive. The meta-analysis presented later in this paper confirms that more open economies have higher export premia.

in the size classes does not appear to be related to the statistical significance or otherwise to the estimated exporter premia – a case in point are Austria and France that have rather similar participation rates among the firms from the highest size class (see Table 2) but totally different results for the estimated exporter productivity premia.

To investigate how the premia vary with export intensity, a modified version of the empirical model (1) is used where the dummy variable indicating the export status is replaced by the share of exports in total sales and its squared value. The results are reported in Table 4.

[Table 4 near here]

Given that the results differ considerably when fixed firm effects are added to the model estimated with pooled data, we again focus on the results from the empirical model controlling for unobserved firm heterogeneity. From the results reported in Table 4 for all firms we conclude that the share of exports in total sales matters for the size of the exporter productivity premia in all countries but Slovenia¹² because at least one of the two estimated coefficients (for the share of exports in total sales, and for its squared value) is statistically different from zero at the five percent level. Looking at the pattern of the signs of the estimated coefficients, and focusing on point estimates that are statistically different from zero at the five percent level, we find that the exporter productivity premium varies with the share of exports in total sales as follows:

¹¹ This is likely caused by the fact that most large firms do export, so that there is not enough variation in the sample to yield a statistically significant coefficient; see Table 2.

¹² This is in line with findings from other studies using Slovenian firm data; for a discussion see Damijan, Polanec and Prasnicar (2004) and Damijan and Kostevc (2006).

- it increases (either both estimated coefficients have a positive sign, or the coefficient with a negative sign is statistically insignificant) in Austria, West Germany, East Germany, Italy, Republic of Ireland, and the UK;¹³

- it increases at a decreasing rate (the coefficient of the share of exports in total sales is positive, the coefficient of the squared value is negative, and the estimated maximum is reached for a value of the share of exports that is either higher than 100 percent, or very high compared to the average share of exports in total sales of the exporting firms according to Table 2) in Belgium, Chile, Colombia, Denmark, France, and Spain;

- it increases, reaches a maximum at around 50 percent, and decreases afterwards in China; and

- it decreases (the positive coefficient of the squared term is statistically insignificant) in Sweden.

As in the case of the exporter productivity premia estimated from the exporter status dummy variable, the degree of economic development of the countries does not appear to matter for the pattern of the relationship between export intensity and productivity when eyeballing the data. Note that the sign pattern often differs between the size classes, and that for some size classes the results point to no relationship between export intensity and productivity at all even when there is a statistically significant relationship for all firms taken together.

While eyeballing the results gives us some idea of what may or may not drive the differences, we also pursue a more rigorous approach by conducting a meta-regression analysis based on the coefficient estimates reported in Tables 3 and 4. Meta-analysis is a tool that can be fruitfully used to summarise, and explain

¹³ In the UK data the sign pattern is “- / +”, but the estimated minimum of the parabola is 8.3 percent, so this indicates that the exporter premium is increasing in the share of exports in total sales in general.

variations in results of a number of similar empirical studies concerned with one research topic.¹⁴ To be more precise, we estimate an equation of the form

$$(2) \quad \text{coefficient}_j = \beta X_j + \varepsilon_j$$

where the dependent variable is the coefficient reported in Tables 3 or 4 and X is a vector of potential explanatory variables, including both variables relating to the estimation method and country characteristics. We allow the error term to be correlated within but not across countries. A detailed list of variables included in our analysis is provided in Appendix II.

The results for a meta-regression analysis on the results from Tables 3 and 4 are provided in Table 5. Columns (1) to (3) provide results based on the coefficients in Table 3. In the first column we use as explanatory variables some characteristics of the estimation method, i.e., whether the estimation is fixed effects or not, the number of observations used, and dummy variables for the size class for which the estimation was carried out.¹⁵ Also, we include a full set of country dummy variables with Slovenia being the baseline country. The results show that the estimation technique matters – unsurprisingly, fixed effects estimates are, on average, lower than those obtained from OLS. The number of observations and size class does not seem to matter, however. As for the country dummies, we find that all countries except Sweden have a positive and statistically significant coefficient, i.e., the export premium is, all other things equal, higher in these countries than in Slovenia. However, the point estimates vary substantially, from 1 (UK) to 21 (Belgium).

[Table 5 near here]

¹⁴ Görg and Strobl (2001) is a recent example of a meta-analysis in the international economics literature.

¹⁵ The baseline category is large firms with more than 500 employees. Note that we do not include as dependent variables in the meta-analysis regressions the coefficients obtained based on all firms, we only include the coefficients obtained by size class.

We then try to explain the strong differences across countries that were indicated by the dummies. In a first step (column 2) we replace the dummies by two characteristics of the different datasets: a dummy to proxy whether or not the data is at establishment (vs. firm) level and the midpoint year of the country's sample. However, neither of these two variables returns a statistically significant coefficient.

In column (3) we include a host of other country characteristics that may potentially explain differences in export premia. These include the size of the economy, proxied by the GDP, its level of development, proxied by GDP per capita, the overall openness of the economy, and institutional characteristics. The latter are proxied using indices on the ease of doing business, the effectiveness of government and regulatory quality. We can justify the inclusion of these variables based on recent models of firm heterogeneity (Melitz 2003), where the existence of trade costs explains why only some firm export. We expect more open economies and those with better institutional characteristics to have lower trade costs. In such a case, the productivity differential between exporters and non-exporter would tend to be lower.

Including these variables in the regression shows that, once we control for a number of observable country characteristics and other attributes of the data and estimation technique, estimates from establishment level data are systematically higher than those from firm level data. The meta-regression analysis verifies the lack of a statistically significant relationship between export premia and GDP per capita reported in Figure 1. However, we find that other country-specific variables matter. For instance, we find that country size, proxied by the country's GDP, is positively related to the export premia, although the effect is small. Furthermore, we find that in more open economies exporting firms display larger differentials vis-à-vis non exporters. As for the indicators on institutional quality we find that countries with a

more business friendly environment, and countries with more effective government also show, *ceteris paribus*, higher exporting premia.

In columns (4) to (6) we show the results from similar estimations based on the coefficients in Table 4. There are some differences compared to the meta-analysis for the coefficients in Table 3. Firstly, we now find that “size matters”, with estimates of how the premia vary with export intensity obtained from the samples of small firms (less than 250 employees) being significantly higher than those obtained from the samples of larger firms. Secondly, in column (4) we find that only the dummies for the UK, Ireland and West Germany return statistically significant negative coefficients, while the coefficients for all other country dummies are positive, suggesting that Slovenia – the baseline country – has relative low export intensity premia.¹⁶ Thirdly, in the fully specified model with observable country characteristics we no longer find statistically significant differences between estimates obtained from establishment or firm level data. Fourthly, we find a significantly negative relationship between the effect of export intensity on productivity and level of development, proxied by GDP per capita. Fifthly, of the additional country variables, only government effectiveness remains positive and statistically significant at the five percent level.

4. Empirical results II: Ex-ante exporter productivity premia

The empirical results reported and discussed in Section 3 relate to the correlation between labour productivity and exports. Regarding the direction of causality between these two dimensions of firm performance, there are two not mutually exclusive hypotheses mentioned in the introduction. To shed light on the empirical

¹⁶ Notice, however, that the country dummies from the regressions in Columns (1) and (4) are positively correlated ($r= 0.65$).

validity of the first hypothesis – namely, that the more productive firms sell abroad – the pre-entry differences in labour productivity between export starters and non-exporters are investigated next. If good firms become exporters then we should expect to find significant differences in performance measures between future export starters and future non-starters several years before some of them begin to export. To test whether today’s export starters were more productive than today’s non-exporters several years back when all of them did not export, all firms that did not export between year $t-3$ and $t-1$ are selected, and the average difference in labour productivity in year $t-3$ between those firms who did export in year t and those who did not is computed. More formally, we estimate the empirical model

$$(3) \quad \ln LP_{it-3} = a + \beta \text{Export}_{it} + c \text{Control}_{it-3} + e_{it}$$

where i is the index of the firm, t is the index of the year, LP is labour productivity in year $t-3$, $Export$ is a dummy variable for current export status (1 if the firm exports in year t , 0 else), $Control$ is a vector of control variables that includes the log of the number of employees and its squared value to measure firm size, the log of wages and salaries per employee (in constant prices) to proxy human capital, and a set of 4-digit industry-dummies¹⁷ to control for industry-specific differences in capital intensity and industry specific shocks, and e is an error term. The pre-entry premium, computed from the estimated coefficient β as $100 \cdot (\exp(\beta) - 1)$, shows the average percentage difference between today’s exporters and today’s non-exporters three years before starting to export, controlling for the characteristics included in the vector $Control$.

[Table 6 near here]

¹⁷ 3-digit industry-dummies had to be used in the case of Italy and Spain.

Results are reported in Table 6. As can be seen from the last column of this Table the number of export starters in the data sets used is often rather small. Therefore, it comes as no surprise that the point estimates for the ex-ante labour productivity premia of export starters are nearly always statistically insignificant at a usual error level for Austria, Belgium, Denmark, the Republic of Ireland, Slovenia, Spain, Sweden, and the UK. When the estimated ex-ante premia in these countries are statistically different from zero, however, they are positive.

Convincing evidence for positive and large ex-ante labour productivity premia of export starters is found for Chile (at least before 1998), China, and Colombia (after 1988), the three less developed countries covered in our study. Results for France, Germany, and Italy – the EU-countries with large numbers of export starters in the data sets used here – show that the ex-ante premia are positive and (nearly) always statistically significant in Italy and France, pointing to self-selection of good firms into export markets like in Chile, China and Colombia. Evidence for such a selection process is considerably weaker in West-Germany, and more or less missing in East-Germany (although, again, all statistically significant point estimates for the premia are positive).

To summarize, we find strong evidence in favour of the self-selection hypothesis for the less developed countries in our sample, and for EU-countries with suitable data sets including a large enough number of export starters to investigate this issue – with the exception of the “export world champion” Germany.¹⁸

Table 7 presents a meta analysis of the results in Table 6, similar to the one carried out for Tables 3 and 4 above. We now include an additional variable, namely

¹⁸ The reason for this somewhat strange result for Germany might be related to the unit of analysis. While the data for France and Italy are for firms, the German data are measured at the establishment level. The extra costs of selling goods on foreign markets that provide an entry barrier for less productive units might be covered in part, or even completely, by the enterprise for an establishment starting to export in the case of a multi-establishment enterprise.

the share of export starters over the total number of firms in the sample. Regression results show that, countries for which we have a large number of observations in the estimations also report higher premia. Note, however, that the distinction between establishment and firm level data does not matter for the size of the premium.

[Table 7 near here]

Furthermore, we find that relative to Slovenia (our baseline category) all other countries, with the exception of Austria, report higher ex-ante premia, all other things being equal. Looking at observable country characteristics in column (3) shows that, on average, countries with a higher share of export starters relative to the total number of firms in the sample report higher ex-ante premia. Also, countries with lower levels of GDP, i.e., smaller countries, countries that are less open, and those with business regulations that are less business friendly have higher ex-ante premia for exporters.

5. Empirical results III: Ex-post exporter productivity premia

To test the second hypothesis mentioned in the introduction – namely, that exporting fosters productivity - the post-entry differences in productivity growth between export starters and non-exporters are investigated. This test is based on a comparison of firms that did not export in years $t-3$ to $t-1$, but that exported in year t and in at least two years between the years $t+1$ and $t+3$ – these are the export starters – with firms from a control group that did not export in any year between $t-3$ and $t+3$. The empirical model used is

$$(4) \quad \ln LP_{it+3} - \ln LP_{it+1} = a + \beta \text{Export}_{it} + c \text{Control}_{it} + e_{it}$$

where i is the index of the firm, t is the index of the year, LP is labour productivity, $Export$ is a dummy variable that takes the value 1 for export starters and the value zero for the firms from the control group, $Control$ is a vector of control variables that includes the log of number of employees and its squared value to measure firm size, the log of wages and salaries per employee (in constant prices) to proxy human capital, and a set of 4-digit industry-dummies¹⁹ to control for industry-specific differences in capital intensity and industry specific shocks, and e is an error term. The post-entry premium, computed from the estimated coefficient β as $100 \cdot (\exp(\beta) - 1)$, shows the average percentage difference in the growth of labour productivity between the export starters and non-exporters over the three years after the start, controlling for the characteristics included in the vector $Control$.

[Table 8 near here]

Results are reported in Table 8. Again, the numbers of export starters that can be monitored with the data sets available for this study are too small for most countries to offer a solid basis for a reliable empirical investigation. Overall, the results are mixed, with positive and negative statistically significant estimates for some years in some countries. Looking at the results for France, West Germany, and Italy, where the numbers of starters seem to be large enough for our purpose, we find evidence in favour of the learning-by-exporting hypothesis for Italy only.

Table 9 reports a meta-analysis of the results in Table 8. Unfortunately, this analysis does not prove very fruitful in this case. Apart from a handful of country dummy variables all other variables are statistically insignificant. This may at least be partly due to the small number of observations available for this analysis.

[Table 9 near here]

¹⁹ 3-digit industry-dummies had to be used in the case of Italy and Spain.

6. Robustness Checks

To check the robustness of our results we repeat our empirical analysis with different measures of productivity, and with firms having at least 10 employees included in the samples, for the countries where the data needed are available to us.

6.1 Results for different productivity measures

As a first robustness check, we repeat the calculations in Tables 3, 6, and 8 using two different dependent variables. Subtracting intermediate inputs (which include raw materials and energy where possible) from total sales, we construct value added and divide it by employment as before to obtain a more customary measure of labour productivity (VA/L). Subtracting $(1-s_j) * \ln(K/L)$ from value added per worker, where s_j is the wage share in value added for industry j , we obtain an estimate of total factor productivity (TFP) which is our third dependent variable.

In Tables 10, 11, and 12, we report results for these two new dependent variables. For data availability reasons, the results can be obtained only for a subset of the countries. As the sample size is often reduced due to missing value added or capital information, we report results using all three dependent variables on the same sub-sample for which we observe TFP . As before, we drop the 1% outliers at the top and bottom of the productivity distributions. The reported statistics are calculated exactly as before in Tables 3, 6, and 8, respectively.

The results prove remarkably robust for the new dependent variables. The exporter productivity premia on the full sample, in Table 10, remain positive and significantly different from zero for all countries if we use value added per worker instead of sales per worker. The magnitudes of the effects are uniformly smaller, and the declines range from a factor of seven for Belgium to less than 10% decline for Colombia. Using TFP as dependent variable, some coefficients become insignificant

and some of the OLS estimates even turn negative. The preferred fixed effects results remain positive in each case and significantly different from zero at the 1% level in three of the seven cases. The magnitudes of the export premia are on average 40% lower if *TFP* is used as dependent variable rather than sales per worker.

[Table 10 near here]

Comparing export starters to non-starters three years before they enter the export market, results in Table 11, we find a similar pattern. Most coefficient estimates remain positive using *VA/L* as dependent variable, but their size and significance are lower. The same is true for Belgium, China, and Italy if we use *TFP* as dependent variable. For Colombia, France, and the U.K., negative effects dominate but most of them are not statistically significant.²⁰

[Table 11 near here]

Finally, results in Table 12 revisit the learning-by-exporting question by looking at productivity premia three years after new exporters entered the export market. The flimsy support using sales per worker as dependent variable is mirrored by the estimates in the first column, and support is not overwhelming for the other two dependent variables either. Still, for some countries the support gets slightly stronger using *VA/L* or *TFP* as dependent variable, although the significance tends to be quite low. Positive and marginally significant results remain for Italy most years and weak support gets a tad stronger for Belgium, France, Ireland and the UK. The negative coefficient estimates for China for *S/L* become much smaller for *TFP* and even turn positive in one year. Results for Colombia are never significant. In contrast with the results in the previous two Tables, the *TFP* results are not uniformly weaker. A

²⁰ Negative estimates would suggest that firms invest in new capital equipment prior to entering the export market, as shown by Van Biesebroeck (2005) using data on African firms. The exercise in this paper does not allow examining this idea as we do not follow the same groups of entrants over time.

caveat is in order though. We measure *TFP* assuming the same importance of capital for all firms in an industry.²¹ If exporters and non-exporters operate with a different technology, as Van Biesebroeck (2006) argues, they would face a different capital-labour trade-off. Especially in countries or industries where the majority of firms do not export this will lead to an overestimate of productivity for exporters as they accumulate capital.

[Table 12 near here]

6.2 Results for units with at least 10 employees

In order to ensure comparability across countries the main results had to be restricted to units – firms or establishments – with 20 and more employees. For those countries with a small average unit size this means that up to 50% of their firm population is outside the analysis. Appendix III presents results from repeating the analysis for those countries where information on units with 10 or more employees is available as a second robustness check. The Tables are organised and numbered so that they can be compared directly to those in the main part of the paper. With some qualifications the main results continue to hold.

The descriptive statistics in Appendix III Table 2 indicate that export participation is increasing in unit size, thus when the group of units with 10-19 employees are included the rate of export participation for all units decreases somewhat. The same observation is true in most cases for export intensity, with the exceptions of Colombia where export intensity decreases with firm size as well as

²¹ Estimating productivity econometrically would require the same assumption.

Belgium and Sweden where close to 50% and in some years more of the units with 10-19 employees are exporters.

The results for exporter productivity premia measured by export status in Appendix III Table 3 also indicate that exporters have significantly higher labour productivity than non-exporters. The size of the overall coefficient from the fixed effect regression is slightly larger for almost all countries when compared to the results for units with 20 and more employees. Exceptions here are Colombia where the coefficients are nearly unchanged and Denmark where the premium for exporters is lower in the sample with 10 or more employees.

The relationship between the exporter productivity premium and the share of exports in total sales as described in Section 3 is somewhat more pronounced for most countries when estimated from the sample with 10 or more employees (Appendix III Table 4). It remains insignificant for the UK and Slovenia in the fixed effect regressions. In the case of Belgium the linear term becomes negative and the squared term for export intensity remains statistically significant, but loses its economic significance. For Colombia the size of the coefficient on export intensity is nearly unchanged while the size of the coefficient on export intensity squared is almost halved in absolute value terms.

Where the ex-ante exporter productivity premium was estimated to be positive and significant in the sample with 20 or more employees, this is confirmed by larger and more precise estimates for nearly all cases in the samples with 10 or more employees depicted in Appendix III Table 6. An exception here is Sweden; in the sample with 20 or more employees none of the ex-ante exporter productivity premia are significant. In turn, when the units with 10 or more employees are added the ex-ante exporter productivity premia are negative for all years and nearly all of them are significant at the 5% level.

Finally, the results from Appendix III Table 8 do not provide any more evidence of ex-post exporter productivity premia than in the samples with 20 or more employees apart from the occasional cohort. This is despite the fact that the number of export starters and controls is somewhat larger in this more comprehensive set of units with 10 and more employees.

7. Concluding remarks

The overall results from our study that uses comparable micro level panel data for 14 countries to look at the relationships between exports and productivity using identically specified empirical models are in line with the big picture that is by now familiar from the literature: Exporters are more productive than non-exporters when observed and unobserved heterogeneity is controlled for, and these exporter productivity premia tend to increase with the share of exports in total sales. Furthermore, we find strong evidence in favour of the self-selection hypothesis for the less developed countries in our sample, and for all EU-countries with data sets including a large enough number of export starters to investigate this issue but Germany. On the other hand, we find evidence in favour of the learning-by-exporting hypothesis for Italy only.

However, the paucity of evidence on learning-by-exporting found on this paper should be qualified, as it might be dependent on the specific methodology utilized. For instance, a number of recent works find positive effect of export experience on productivity using more sophisticated estimation techniques and controlling for the bias caused by the self-selection of the most productive plants into exporting (see e.g. Van Biesebrock, 2005; Isgut and Fernandes, 2007; Lileeva and Trefler, 2007; and De Loecker, 2007). Moreover, the positive results on Italy are robust to the use

of more sophisticated techniques such as propensity score matching and difference-in-differences (Serti and Tomasi, 2007). More research is needed on this area.

The main contribution to the literature added by this study is to document that the magnitude of exporter premia differs considerably across countries even in the identically specified empirical models that are used here. We also find that the size of the premia is unrelated to the degree of economic development of the countries – the order of magnitude is the same for Chile and China on the one hand, and France, West Germany, the Republic of Ireland and Spain on the other hand. Conducting a meta-regression analysis of our results we find that this is true even when controlling for other country and sample characteristics. We also find that countries that are more open and have more effective government report higher productivity premia.

Furthermore, although the exporter productivity premia tend to increase with the share of exports in total sales, this pattern is far from identical for the countries covered in our study. And the ex-ante productivity premia for export starters that might be interpreted as the productivity advantage that future export starters must at least have to cover the extra costs associated with becoming an exporter, seem to differ by an order of magnitude between countries as exemplified by the results for France and Italy reported in Table 6.

A next step in the analysis of the relation between exports and productivity should closely focus on these cross-country differences that were shown by our study not to be related to the use of different types of data nor to the application of differently specified empirical models in the econometric investigations. A solid understanding of the nature and the causes of these differences across countries is a pre-requisite for any sound policy-oriented conclusions that might help to foster export-driven growth.

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Table 1: Countries included in the international comparison and data sets used

| Country | Unit of analysis | Coverage | Years | Contact |
|----------|------------------|---|-------------|---|
| Austria | Firm | Manufacturing firms with at least 20 employees | 1999 – 2005 | Stefano Schiavo stefano.schiavo@ofce.sciences-po.fr |
| Belgium | Firm | All firms | 1996 – 2005 | Mauro Pisu mauro.pisu@nbb.be |
| Chile | Establishment | All establishments with at least 10 workers | 1990 – 1999 | Roberto Alvarez ralvarez@bcentral.cl |
| China | Firm | All state firms and all non-state firms with sales above RMB 5 million | 1998 – 2005 | Jo Van Biesebroeck jovb@chass.utoronto.ca |
| Colombia | Establishment | All establishments with at least 10 workers. | 1981 – 1991 | Alberto Isgut isgut@un.org |
| Denmark | Firm | Universe of firms with minimum economic activity | 1999 – 2002 | Ulrich Kaiser uka@sam.sdu.dk |
| France | Firm | All firms (not establishments) with at least 20 active persons | 1990 – 2004 | Lionel Nesta lionel.nesta@ofce.sciences-po.fr |
| Germany | Establishment | All establishments with at least 20 active persons (including owners) plus smaller establishments that are part of a multi-establishment enterprise with at least 20 active persons | 1995 – 2004 | Joachim Wagner wagner@uni-lueneburg.de |
| Italy | Firm | Universe of firms with 20 or more workers | 1989-1997 | Chiara Tomasi c.tomasi@sssup.it |

| Country | Unit of analysis | Coverage | Years | Contact |
|---------------------|------------------|--|--------------|--|
| Republic of Ireland | Establishment | Census of Industrial Production includes all plants with 3 or more employees in NACE Rev 1.1 manufacturing sectors 10-41. Plants are not necessarily dropped if they fall below 3 employees. | 1996-2004 | Stefanie Haller stefanie.haller@esri.ie |
| Slovenia | Establishment | All establishments, including firms with less than 10 employees | 1994 – 2002 | Črt Kostevc crt.kostevc@ef.uni-lj.si |
| Spain | Firm | All firms with more than 200 employees plus a sample of firms employing between 10 and 200 employees selected according to a stratified random sampling procedure. | 1990 – 1999 | Jose C. Fariñas farinas@ccee.ucm.es |
| Sweden | Firm | All firms | 1997 – 2004 | Martin Andersson martin.andersson@ihh.hj.se |
| United Kingdom | Firm | All firms operating in the UK; over representation of large firms because of missing value problems | 1995 -- 2004 | Mauro Pisu mauro.pisu@nbb.be |

Table 2: Exporter participation rate and export intensity by size class

| Country | Year | Variable | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|---------|------|--------------------|-----------|-------------------|--------------------|---------------------|------------------------|
| Austria | 1999 | Participation rate | 69.2 | 53.1 | 82.2 | 95.0 | 95.9 |
| | | Export intensity | 40.2 | 28.2 | 42.9 | 57.5 | 68.0 |
| | | Number of firms | 3,868 | 1,922 | 1,515 | 260 | 171 |
| | 2005 | Participation rate | 71.4 | 56.1 | 84.6 | 95.0 | 97.0 |
| | | Export intensity | 44.1 | 32.0 | 47.4 | 63.3 | 71.3 |
| | | Number of firms | 3,840 | 1,949 | 1,465 | 261 | 165 |
| Belgium | 1996 | Participation rate | 83.6 | 74.3 | 89.4 | 96.4 | 98.1 |
| | | Export intensity | 39.8 | 33.0 | 43.0 | 45.3 | 53.1 |
| | | Number of firms | 3,110 | 1,387 | 1,368 | 195 | 160 |
| | 2005 | Participation rate | 80.3 | 68.1 | 87.5 | 92.9 | 97.2 |
| | | Export intensity | 44.3 | 37.8 | 47.8 | 45.1 | 51.8 |
| | | Number of firms | 2,403 | 1,014 | 1,076 | 168 | 145 |
| Chile | 1990 | Participation rate | 22.4 | 7.6 | 32.1 | 54.6 | 66.7 |
| | | Export intensity | 30.2 | 25.9 | 32.1 | 28.6 | 28.8 |
| | | Number of firms | 3,230 | 1,610 | 1,304 | 220 | 96 |
| | 1999 | Participation rate | 30.9 | 15.3 | 42.4 | 68.8 | 85.7 |
| | | Export intensity | 27.4 | 25.0 | 27.2 | 29.9 | 33.0 |
| | | Number of firms | 2,709 | 1,428 | 1,041 | 170 | 70 |
| China | 1998 | Participation rate | 24.4 | 10.8 | 20.4 | 32.1 | 45.2 |
| | | Export intensity | 59.9 | 67.3 | 65.4 | 62.3 | 46.5 |
| | | Number of firms | 131,499 | 19,376 | 71,615 | 21,997 | 18,511 |
| | 2005 | Participation rate | 30.4 | 15.5 | 28.8 | 44.9 | 56.9 |
| | | Export intensity | 60.3 | 54.5 | 61.1 | 65.0 | 56.0 |
| | | Number of firms | 241,326 | 48,089 | 144,034 | 29,110 | 20,093 |

| Country | Year | Variable | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|--------------|------|--------------------|-----------|-------------------|--------------------|---------------------|------------------------|
| Colombia | 1981 | Participation rate | 17.4 | 6.5 | 23.1 | 47.1 | 61.8 |
| | | Export intensity | 13.1 | 42.3 | 19.7 | 9.0 | 10.4 |
| | | Number of firms | 3,900 | 1,960 | 1,594 | 210 | 136 |
| | 1991 | Participation rate | 26.6 | 14.2 | 36.9 | 59.1 | 71.9 |
| | | Export intensity | 17.8 | 33.8 | 22.8 | 14.5 | 14.5 |
| | | Number of firms | 4,348 | 2,379 | 1,636 | 198 | 135 |
| Denmark | 1999 | Participation rate | 77.3 | 68.9 | 88.1 | 92.5 | 97.5 |
| | | Export intensity | 29.3 | 21.4 | 33.8 | 50.5 | 54.8 |
| | | Number of firms | 3,888 | 2,277 | 1,331 | 161 | 119 |
| | 2002 | Participation rate | 77.2 | 68.9 | 88.1 | 90.2 | 87.3 |
| | | Export intensity | 30.5 | 22.1 | 39.6 | 50.3 | 52.4 |
| | | Number of firms | 3,326 | 1,902 | 1,161 | 153 | 110 |
| France | 1990 | Participation rate | 69.4 | 60.5 | 78.0 | 90.4 | 95.3 |
| | | Export intensity | 17.6 | 14.5 | 18.8 | 24.7 | 28.6 |
| | | Number of firms | 22,220 | 12,542 | 7,749 | 1,078 | 851 |
| | 2004 | Participation rate | 74.8 | 66.0 | 84.0 | 92.2 | 96.1 |
| | | Export intensity | 23.8 | 18.3 | 26.6 | 35.1 | 39.8 |
| | | Number of firms | 18,124 | 10,203 | 6,184 | 958 | 779 |
| West Germany | 1995 | Participation rate | 66.0 | 52.9 | 72.1 | 87.6 | 92.3 |
| | | Export intensity | 22.8 | 17.7 | 23.0 | 29.1 | 36.6 |
| | | Number of firms | 34,682 | 15,038 | 15,263 | 2,495 | 1,886 |
| | 2004 | Participation rate | 69.3 | 56.0 | 77.4 | 90.0 | 92.0 |
| | | Export intensity | 29.6 | 22.8 | 30.4 | 40.7 | 47.5 |
| | | Number of firms | 33,668 | 15,218 | 14,583 | 2,322 | 1,545 |

| Country | Year | Variable | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-----------------|------|--------------------|-----------|-------------------|--------------------|---------------------|------------------------|
| East Germany | 1995 | Participation rate | 40.3 | 28.4 | 49.8 | 65.2 | 66.5 |
| | | Export intensity | 17.5 | 15.1 | 17.5 | 22.4 | 27.5 |
| | | Number of firms | 6,609 | 3,294 | 2,828 | 302 | 185 |
| | 2004 | Participation rate | 50.9 | 40.3 | 60.9 | 74.5 | 80.1 |
| | | Export intensity | 24.3 | 19.5 | 26.6 | 34.0 | 45.7 |
| | | Number of firms | 7,570 | 4,017 | 3,113 | 294 | 146 |
| Italy | 1989 | Participation rate | 64.3 | 55.1 | 75.7 | 83.4 | 88.5 |
| | | Export intensity | 28.4 | 27.4 | 29.4 | 28.8 | 29.2 |
| | | Number of firms | 19,916 | 11,705 | 6,909 | 772 | 530 |
| | 1997 | Participation rate | 69.3 | 63.2 | 78.5 | 84.2 | 81.1 |
| | | Export intensity | 33.1 | 30.8 | 35.4 | 40.2 | 36.8 |
| | | Number of firms | 15,516 | 9,585 | 4,983 | 545 | 403 |
| Rep. of Ireland | 1991 | Participation rate | 67.7 | 55.7 | 76.1 | 89.6 | 91.5 |
| | | Export intensity | 58.2 | 47.8 | 60.9 | 82.5 | 82.2 |
| | | Number of firms | 1,844 | 866 | 825 | 106 | 47 |
| | 2004 | Participation rate | 69.5 | 57.6 | 83.0 | 95.5 | 91.1 |
| | | Export intensity | 53.1 | 41.1 | 58.8 | 82.3 | 84.3 |
| | | Number of firms | 1,775 | 1,001 | 640 | 89 | 45 |
| Slovenia | 1994 | Participation rate | 85.8 | 74.1 | 91.3 | 94.9 | 98.7 |
| | | Export intensity | 50.9 | 42.7 | 52.6 | 58.2 | 62.9 |
| | | Number of firms | 1,020 | 321 | 506 | 118 | 75 |
| | 2002 | Participation rate | 81.3 | 71.7 | 86.5 | 97.1 | 95.2 |
| | | Export intensity | 54.7 | 47.0 | 56.9 | 66.6 | 64.6 |
| | | Number of firms | 1,185 | 428 | 570 | 103 | 84 |

| Country | Year | Variable | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|---------|------|--------------------|-----------|-------------------|--------------------|---------------------|------------------------|
| Spain | 1990 | Participation rate | 61.7 | 35.3 | 65.6 | 83.7 | 85.6 |
| | | Export intensity | 22.1 | 19.7 | 24.5 | 22.4 | 20.1 |
| | | Number of firms | 1,396 | 487 | 413 | 295 | 201 |
| | 1999 | Participation rate | 74.7 | 50.8 | 80.2 | 95.6 | 96.8 |
| | | Export intensity | 30.8 | 19.6 | 32.6 | 36.0 | 36.0 |
| | | Number of firms | 1,165 | 415 | 388 | 204 | 158 |
| Sweden | 1997 | Participation rate | 82.0 | 75.0 | 90.0 | 97.0 | 100.0 |
| | | Export intensity | 43.0 | 26.0 | 37.0 | 46.0 | 50.0 |
| | | Number of firms | 4,009 | 2,178 | 1,437 | 185 | 209.0 |
| | 2004 | Participation rate | 83.0 | 75.0 | 91.0 | 98.0 | 98.0 |
| | | Export intensity | 44.0 | 28.0 | 40.0 | 44.0 | 52.0 |
| | | Number of firms | 3,907 | 2,129 | 1,408 | 200 | 170 |
| UK | 1995 | Participation rate | 76.0 | 66.2 | 75.2 | 80.4 | 83.7 |
| | | Export intensity | 31.0 | 34.2 | 28.8 | 30.3 | 36.0 |
| | | Number of firms | 4,593 | 671 | 2,513 | 673 | 736 |
| | 2004 | Participation rate | 69.5 | 63.6 | 70.5 | 71.6 | 72.5 |
| | | Export intensity | 32.1 | 34.6 | 31.5 | 31.7 | 31.4 |
| | | Number of firms | 4,225 | 848 | 2,362 | 542 | 473 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees. Participation rate is the percentage share of exporting firms. Export intensity is the average percentage share of exports in total sales for exporting firms. See table 1 for more information on the samples.

Table 3: Exporter productivity premia (percentage) I: Exporter dummy

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|------------------------|----------------------------|-----------------|-------------------|--------------------|---------------------|------------------------|
| Austria 1999 - 2005 | Pooled β p | 17.5 [0.00] | 18.6 [0.00] | 15.8 [0.00] | 23.2 [0.00] | 6.8 [0.26] |
| | Fixed β effects p | 5.3 [0.00] | 4.9 [0.00] | 5.6 [0.001] | 8.9 [0.17] | 1.3 [0.90] |
| | N NxT | 5,176 26,404 | 2,910 13,308 | 1,785 10,171 | 295 1,778 | 186 1,147 |
| Belgium 1996-2005 | Pooled β p | 57.8 [0.00] | 59.5 [0.00] | 58.7 [0.00] | 22.1 [0.00] | 54.7 [0.00] |
| | Fixed β effects p | 9.8 [0.00] | 5.8 [0.00] | 17.8 [0.00] | 8.1 [0.09] | -10.8 [0.22] |
| | N NxT | 4,708 29,035 | 1,746 12,861 | 1,754 13,283 | 242 1,876 | 184 1,563 |
| Chile 1990 - 1999 | Pooled β p | 21.7 [0.00] | 23.7 [0.00] | 15.7 [0.00] | 16.6 [0.00] | 29.9 [0.00] |
| | Fixed β effects p | 7.3 [0.00] | 8.3 [0.00] | 8.4 [0.00] | 7.2 [0.005] | 22.0 [0.001] |
| | N NxT | 5,977 33,869 | 4,226 17,160 | 2,757 13,558 | 562 2,133 | 216 1,018 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-------------------------|----------------------------|---------------------|-------------------|--------------------|---------------------|------------------------|
| China 1998 - 2005 | Pooled β p | 15.7 [0.00] | 15.6 [0.00] | 13.1 [0.00] | 17.6 [0.00] | 22.1 [0.00] |
| | Fixed β effects p | 10.9 [0.00] | 11.2 [0.00] | 9.7 [0.00] | 12.1 [0.00] | 13.4 [0.00] |
| | N NxT | 391,126 1310,771 | 86,457 214,465 | 228,722 760,482 | 45,177 189,673 | 30,770 146,151 |
| Colombia 1981 – 1991 | Pooled β p | 26.9 [0.00] | 38.8 [0.00] | 18.9 [0.00] | 22.6 [0.00] | 15.7 [0.00] |
| | Fixed β effects p | 16.4 [0.00] | 16.5 [0.00] | 12.0 [0.00] | 13.2 [0.00] | 11.0 [0.00] |
| | N NxT | 5,930 46,142 | 3,468 24,882 | 2,098 17,592 | 221 2,230 | 143 1,438 |
| Denmark 1999 - 2002 | Pooled β p | 38.5 [0.00] | 37.7 [0.00] | 31.5 [0.00] | 16.1 [0.00] | 39.4 [0.00] |
| | Fixed β effects p | 6.6 [0.00] | 5.2 [0.00] | 10.6 [0.00] | 7.9 [0.06] | 12.8 [0.01] |
| | N NxT | 5,070 29,161 | 3,015 16,955 | 1,678 9,980 | 221 1,332 | 156 894 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-----------------------------|----------------------------|-------------------|-------------------|--------------------|---------------------|------------------------|
| France 1990 - 2004 | Pooled β p | 20.0 [0.00] | 18.8 [0.00] | 20.8 [0.00] | 33.6 [0.00] | 18.0 [0.00] |
| | Fixed β effects p | 7.6 [0.00] | 6.9 [0.00] | 8.5 [0.00] | 8.3 [0.00] | 17.3 [0.00] |
| | N NxT | 41,513 297,393 | 26,646 165,636 | 12,058 104,464 | 1,576 15,215 | 1,233 12,078 |
| West Germany 1995 - 2004 | Pooled β p | 15.4 [0.00] | 14.1 [0.00] | 15.3 [0.00] | 14.5 [0.00] | 24.9 [0.00] |
| | Fixed β effects p | 7.2 [0.00] | 5.7 [0.00] | 7.9 [0.00] | 13.7 [0.00] | 19.0 [0.00] |
| | N NxT | 44,634 311,625 | 23,285 138,036 | 17,017 135,261 | 2,569 22,571 | 1,763 15,757 |
| East Germany 1995 - 2004 | Pooled β p | 14.3 [0.00] | 14.0 [0.00] | 14.4 [0.00] | 29.8 [0.00] | 35.8 [0.00] |
| | Fixed β effects p | 5.6 [0.00] | 5.6 [0.00] | 4.5 [0.00] | 11.7 [0.00] | 29.4 [0.01] |
| | N NxT | 10,724 61,140 | 6,375 30,998 | 3,852 26,308 | 345 2,620 | 152 1,215 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|------------------------------------|----------------------------|-------------------|-------------------|--------------------|---------------------|------------------------|
| Italy 1989 - 1997 | Pooled β p | 40.3 [0.00] | 44.1 [0.00] | 33.5 [0.00] | 24.7 [0.00] | 12.2 [0.01] |
| | Fixed β effects p | 3.6 [0.00] | 3.8 [0.00] | 3.4 [0.00] | 2.9 [0.07] | 1.7 [0.36] |
| | N NxT | 38,089 175,032 | 26,296 107,842 | 10,093 56,526 | 1,030 6,217 | 670 4,447 |
| Republic of Ireland 1991 - 2004 | Pooled β p | 14.6 [0.00] | 12.5 [0.00] | 19.2 [0.00] | 0.7 [0.93] | 49.7 [0.00] |
| | Fixed β effects p | 7.3 [0.00] | 7.0 [0.00] | 7.9 [0.00] | -1.7 [0.81] | 8.6 [0.37] |
| | N NxT | 3,680 27,232 | 2,244 14,004 | 1,218 11,094 | 148 1,441 | 70 693 |
| Slovenia 1994 - 2002 | Pooled β p | 9.6 [0.00] | 12.2 [0.00] | 8.7 [0.00] | 10.8 [0.05] | -0.7 [0.91] |
| | Fixed β effects p | 5.0 [0.00] | 6.7 [0.00] | 4.3 [0.06] | 8.0 [0.10] | -3.2 [0.58] |
| | N NxT | 1,566 9,909 | 581 3,389 | 746 4,841 | 138 966 | 97 701 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-----------------------|----------------------------|-----------------|-------------------|--------------------|---------------------|------------------------|
| Spain 1990 - 1999 | Pooled β p | 27.5 [0.00] | 31.0 [0.00] | 29.3 [0.00] | 22.0 [0.00] | 6.5 [0.07] |
| | Fixed β effects p | 8.1 [0.00] | 7.1 [0.00] | 6.0 [0.00] | 14.2 [0.00] | 7.8 [0.02] |
| | N NxT | 2,123 12,806 | 809 4,256 | 652 3,930 | 385 2,644 | 277 1,976 |
| Sweden 1997 - 2004 | Pooled β p | 6.7 [0.00] | 6.8 [0.00] | 9.00 [0.00] | -6.8 [0.93] | 3.9 [0.68] |
| | Fixed β effects p | -0.1 [0.85] | -0.5 [0.61] | -0.6 [0.70] | 4.1 [0.44] | 7.3 [0.50] |
| | N (median) NxT | 4,035 31,838 | 2,193 17,381 | 1,471 11,530 | 190 1,510 | 178 1,417 |
| UK 1995 - 2004 | Pooled β p | 9,9 [0.00] | 9,2 [0.00] | 10,6 [0.00] | 8,7 [0.00] | 10,3 [0.00] |
| | Fixed β effects p | 3,9 [0.00] | 7,5 [0.00] | 4,0 [0.00] | 6,9 [0.00] | -3,4 [0.08] |
| | N NxT | 9,450 52,593 | 2,060 9,200 | 5,211 29,367 | 1,073 7,114 | 1,106 6,912 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labor productivity (defined as total sales per employee) in a year are excluded from all computations. Firms are classified into size classes according to the median of the number of employees over the years covered. β is the estimated regression coefficient from an OLS-regression of log (labor productivity) on a dummy variable for exporting firms, controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and a full set of interaction terms of 4digit industry-dummies and year dummies; the fixed effects model adds firm fixed effects. To facilitate interpretation the estimated coefficients for the exporter dummy variable have been transformed by $100(\exp(\beta)-1)$. p is the prob-value. N is the number of firms, NxT is the number of observations.

Table 4: Exporter productivity premia II: Share of exports in total sales and its squared value

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | |
|----------------------|----------------------|-----------|-------------------|--------------------|---------------------|------------------------|--------|
| Austria 1999-2005 | Pooled | β_1 | 0.579 | 0.688 | 0.510 | 0.461 | 0.302 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.07] |
| | | β_2 | -0.295 | -0.401 | -0.270 | -0.079 | -0.054 |
| | Fixed effects | p | [0.00] | [0.00] | [0.00] | [0.45] | [0.72] |
| | | β_1 | 0.229 | 0.305 | 0.136 | 0.036 | -0.234 |
| | | p | [0.00] | [0.001] | [0.13] | [0.87] | [0.57] |
| | N | β_2 | 0.117 | 0.167 | 0.151 | 0.118 | 0.470 |
| | | p | [0.06] | [0.09] | [0.10] | [0.59] | [0.20] |
| | | NxT | 5,176 | 2,910 | 1,785 | 295 | 186 |
| | Belgium 1996-2005 | Pooled | β_1 | 1.397 | 1.456 | 1.328 | 1.235 |
| p | | | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| β_2 | | | -1.000 | -0.970 | -1.000 | -0.970 | -0.772 |
| Fixed effects | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | | β_1 | 0.576 | 0.235 | 0.799 | 1.106 | 0.673 |
| | | p | [0.00] | [0.002] | [0.00] | [0.00] | [0.01] |
| N | | β_2 | -0.365 | -0.071 | -0.560 | -0.795 | -0.473 |
| | | p | [0.00] | [0.33] | [0.00] | [0.00] | [0.02] |
| | | NxT | 4,709 | 1,746 | 1,754 | 242 | 184 |
| | | | 29,035 | 12,861 | 13,283 | 1,876 | 1,563 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | |
|----------------------|---------------|-----------|-------------------|--------------------|---------------------|------------------------|---------|
| Chile 1990 – 1999 | Pooled | $\beta 1$ | 0.882 | 0.762 | 0.931 | 0.175 | 0.129 |
| | | p | [0.00] | [0.007] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.911 | -0.479 | -1.122 | -0.274 | -0.701 |
| | | p | [0.00] | [0.02] | [0.00] | [0.00] | [0.00] |
| | Fixed effects | $\beta 1$ | 0.329 | 0.421 | 0.454 | 0.294 | -0.405 |
| | | p | [0.00] | [0.00] | [0.00] | [0.07] | [0.25] |
| | | $\beta 2$ | -0.223 | -0.340 | -0.300 | -0.167 | 0.210 |
| | | p | [0.001] | [0.03] | [0.001] | [0.36] | [0.58] |
| | N | | 5,977 | 4,226 | 2,757 | 562 | 216 |
| | NxT | | 33,869 | 17,160 | 13,558 | 2,133 | 1,018 |
| China 1998-2005 | Pooled | $\beta 1$ | 0.912 | 0.582 | 0.784 | 1.095 | 1.140 |
| | | p | [0.00] | [0.00] | [0.09] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.914 | -0.480 | -0.778 | -1.114 | -1.182 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | Fixed effects | $\beta 1$ | 0.436 | 0.469 | 0.406 | 0.484 | 0.429 |
| | | p | [0.00] | [0.26] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.432 | -0.425 | -0.399 | -0.473 | -0.473 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | N | | 370,605 | 78,235 | 218,214 | 44,089 | 30,067 |
| | NxT | | 1,076,087 | 167,280 | 620,962 | 161,382 | 126,463 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | |
|-------------------------|---------------|-----------|-------------------|--------------------|---------------------|------------------------|---------|
| Colombia 1981 - 1991 | Pooled | $\beta 1$ | 0.540 | 0.904 | 0.361 | -0.113 | 0.469 |
| | | p | [0.00] | [0.00] | [0.00] | [0.36] | [0.002] |
| | | $\beta 2$ | -0.122 | -0.110 | -0.056 | -0.349 | -0.140 |
| | | p | [0.002] | [0.13] | [0.26] | [0.002] | [0.28] |
| | Fixed effects | $\beta 1$ | 0.620 | 0.720 | 0.616 | 0.053 | 0.048 |
| | | p | [0.00] | [0.00] | [0.00] | [0.62] | [0.82] |
| | | $\beta 2$ | -0.081 | -0.064 | -0.072 | -0.123 | -0.063 |
| | | p | [0.00] | [0.07] | [0.00] | [0.00] | [0.14] |
| | N | | 5,930 | 3,468 | 2,098 | 221 | 143 |
| | NxT | | 46,142 | 24,882 | 17,592 | 2,230 | 1,438 |
| Denmark 1999 - 2002 | Pooled | $\beta 1$ | 0.97 | 1.19 | 0.57 | 0.37 | -0.18 |
| | | p | [0.00] | [0.00] | [0.00] | [0.02] | [0.45] |
| | | $\beta 2$ | -0.64 | -0.78 | -0.35 | -0.29 | 0.07 |
| | | p | [0.00] | [0.00] | [0.00] | [0.04] | [0.74] |
| | Fixed effects | $\beta 1$ | 0.38 | 0.43 | 0.36 | 0.56 | 0.46 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.35 | -0.46 | -0.28 | -0.52 | -0.47 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | N | | 5,070 | 3,015 | 1,678 | 221 | 156 |
| | NxT | | 29,161 | 16,955 | 9,980 | 1,332 | 894 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | |
|-----------------------------|---------------|-----------|-------------------|--------------------|---------------------|------------------------|----------|
| France 1990 - 2004 | Pooled | $\beta 1$ | 0.734 | 0.910 | 0.626 | 0.477 | 0.223 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.565 | -0.831 | -0.404 | -0.225 | -0.007 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.92] |
| | Fixed effects | $\beta 1$ | 0.331 | 0.354 | 0.331 | 0.132 | 0.150 |
| | | p | [0.00] | [0.00] | [0.00] | [0.02] | [0.05] |
| | | $\beta 2$ | -0.120 | -0.153 | -0.119 | 0.065 | 0.092 |
| | | p | [0.00] | [0.00] | [0.00] | [0.36] | [0.34] |
| | N | | 41,513 | 26,646 | 12,058 | 1,576 | 1,233 |
| | NxT | | 297,393 | 165,636 | 104,464 | 15,215 | 12,078 |
| West Germany 1995 - 2004 | Pooled | $\beta 1$ | 0.006 | 0.007 | 0.006 | 0.004 | 0.004 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.00004 | -0.00005 | -0.00004 | -0.00003 | -0.00002 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | Fixed effects | $\beta 1$ | 0.003 | 0.002 | 0.002 | 0.004 | 0.005 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.000002 | 0.00001 | 0.000003 | -0.00003 | -0.00004 |
| | | p | [0.30] | [0.00] | [0.30] | [0.00] | [0.00] |
| | N | | 311,625 | 138,036 | 135,261 | 22,571 | 15,757 |
| | NxT | | 44,634 | 23,285 | 17,017 | 2,569 | 1,763 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | |
|-----------------------------|---------------|-----------|-------------------|--------------------|---------------------|------------------------|----------|
| East Germany 1995 - 2004 | Pooled | $\beta 1$ | 0.007 | 0.008 | 0.006 | 0.02 | 0.009 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.00006 | -0.00008 | -0.00004 | -0.00002 | -0.00007 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.01] |
| | Fixed effects | $\beta 1$ | 0.0031 | 0.0026 | 0.002 | 0.005 | 0.01 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] |
| | | $\beta 2$ | -0.0000007 | 0.00002 | -0.00005 | -0.00004 | -0.00007 |
| | | p | [0.20] | [0.10] | [0.60] | [0.10] | [0.00] |
| | N | | 10,724 | 6,375 | 3,852 | 345 | 152 |
| | NxT | | 61,140 | 30,998 | 26,307 | 2,620 | 1,215 |
| Italy 1989 - 1997 | Pooled | $\beta 1$ | 0.927 | 1.085 | 0.709 | 0.687 | 0.110 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.52] |
| | | $\beta 2$ | -0.552 | -0.626 | -0.436 | -0.593 | 0.013 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.95] |
| | Fixed effects | $\beta 1$ | 0.090 | 0.139 | 0.053 | -0.590 | -0.129 |
| | | p | [0.00] | [0.00] | [0.06] | [0.43] | [0.13] |
| | | $\beta 2$ | 0.036 | 0.019 | 0.047 | 0.076 | 0.159 |
| | | p | [0.05] | [0.46] | [0.11] | [0.34] | [0.08] |
| | N | | 38,089 | 26,296 | 10,093 | 1,030 | 670 |
| | NxT | | 175,032 | 107,842 | 56,526 | 6,217 | 4,447 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | |
|------------------------------------|---------------|-----------|-------------------|--------------------|---------------------|------------------------|--------|
| Republic of Ireland 1991 - 2004 | Pooled | $\beta 1$ | 0.097 | 0.104 | 0.307 | -0.920 | -0.498 |
| | | p | [0.01] | [0.03] | [0.00] | [0.00] | [0.17] |
| | | $\beta 2$ | 0.134 | 0.100 | -0.094 | 1.129 | 1.457 |
| | | p | [0.00] | [0.06] | [0.17] | [0.00] | [0.00] |
| | Fixed effects | $\beta 1$ | 0.220 | 0.229 | 0.279 | -0.415 | -0.240 |
| | | p | [0.00] | [0.00] | [0.00] | [0.12] | [0.47] |
| | | $\beta 2$ | 0.011 | 0.051 | -0.104 | 0.621 | 0.356 |
| | | p | [0.82] | [0.48] | [0.16] | [0.02] | [0.28] |
| | N | | 3,680 | 2,244 | 1,218 | 148 | 70 |
| | NxT | | 27,232 | 14,004 | 11,094 | 1,441 | 693 |
| Slovenia 1994 - 2002 | Pooled | $\beta 1$ | 0.052 | 0.122 | 0.149 | 0.259 | 0.065 |
| | | p | [0.83] | [0.01] | [0.00] | [0.01] | [0.51] |
| | | $\beta 2$ | 0.001 | 0.006 | 0.001 | 0.008 | 0.002 |
| | | p | [0.06] | [0.15] | [0.08] | [0.01] | [0.33] |
| | Fixed effects | $\beta 1$ | 0.009 | 0.011 | 0.043 | 0.179 | -0.088 |
| | | p | [0.34] | [0.77] | [0.10] | [0.02] | [0.17] |
| | | $\beta 2$ | -0.0004 | 0.007 | -0.001 | -0.004 | 0.005 |
| | | p | [0.07] | [0.11] | [0.19] | [0.33] | [0.15] |
| | N | | 1,566 | 581 | 746 | 138 | 97 |
| | NxT | | 9,909 | 3,389 | 4,841 | 966 | 701 |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | | |
|-----------------------|-----------|---------------|-------------------|--------------------|---------------------|------------------------|--------|--------|
| Spain 1990 - 1999 | Pooled | $\beta 1$ | 0.430 | 1.453 | 0.479 | 0.511 | 0.330 | |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.00] | |
| | | $\beta 2$ | -0.283 | -1.325 | -0.437 | -0.605 | -0.161 | |
| | | p | [0.003] | [0.00] | [0.00] | [0.00] | [0.00] | |
| | | Fixed effects | $\beta 1$ | 0.354 | 0.724 | 0.086 | 0.221 | 0.275 |
| | | | p | [0.00] | [0.00] | [0.55] | [0.11] | [0.00] |
| | $\beta 2$ | | -0.179 | -0.555 | 0.128 | -0.051 | -0.164 | |
| | | p | [0.00] | [0.00] | [0.49] | [0.74] | [0.00] | |
| | | N | 2,123 | 809 | 652 | 385 | 277 | |
| | | NxT | 12,806 | 4,256 | 3,930 | 2,644 | 1,976 | |
| Sweden 1997 - 2004 | Pooled | $\beta 1$ | 0.151 | 0.138 | 0.155 | 0.492 | 0.177 | |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.01] | |
| | | $\beta 2$ | -0.016 | -0.015 | -0.015 | -0.199 | -0.077 | |
| | | p | [0.00] | [0.00] | [0.00] | [0.05] | [0.08] | |
| | | Fixed effects | $\beta 1$ | -0.08 | -0.11 | -0.06 | 0.28 | 0.06 |
| | | | p | [0.00] | [0.00] | [0.00] | [0.07] | [0.74] |
| | $\beta 2$ | | 0.001 | 0.003 | 0.004 | -0.17 | -0.03 | |
| | | p | [0.38] | [0.16] | [0.21] | [0.07] | [0.77] | |
| | | N (median) | 4,035 | 2,193 | 1,471 | 190 | 178 | |
| | | NxT | 31,838 | 17,381 | 11,530 | 1,510 | 1,417 | |

| Country | Model | All firms | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees | |
|-------------------|---------------|-----------|-------------------|--------------------|---------------------|------------------------|--------|
| UK 1995 - 2004 | Pooled | β_1 | 0.025 | -0.315 | 0.115 | -0.101 | 0.182 |
| | | p | [0.37] | [0.00] | [0.002] | [0.16] | [0.01] |
| | | β_2 | 0.034 | 0.430 | -0.065 | 0.095 | -0.110 |
| | | p | [0.33] | [0.00] | [0.17] | [0.28] | [0.18] |
| | Fixed effects | β_1 | -0.015 | 0.011 | 0.054 | -0.124 | -0.127 |
| | | p | [0.71] | [0.91] | [0.30] | [0.26] | [0.19] |
| | | β_2 | 0.090 | 0.230 | 0.015 | 0.118 | 0.151 |
| | | p | [0.05] | [0.04] | [0.81] | [0.31] | [0.20] |
| | N | | 9,450 | 2,060 | 5,211 | 1,073 | 1,106 |
| | NxT | | 52,593 | 9,200 | 29,367 | 7,114 | 6,912 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labour productivity (defined as total sales per employee) in a year are excluded from all computations. Firms are classified into size classes according to the median of the number of employees over the years covered. β_1 and β_2 are the estimated regression coefficients from an OLS-regression of log (labour productivity) on the share of exports in total sales and its squared value, respectively, controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and a full set of interaction terms of 4-digit industry-dummies and year dummies; the fixed effects model adds firm fixed effects. p is the prob-value, N is the number of firms, NxT is the number of observations.

Table 5: Meta analysis of results in Tables 3 and 4

| | (1) | (2) | (3) | (4) | (5) | (6) |
|--------------------------------|------------|------------|------------|------------|------------|------------|
| | Table 3 | Table 3 | Table 3 | Table 4 | Table 4 | Table 4 |
| Dummy FE regression | -13.085 | -13.085 | -13.085 | -0.231 | -0.234 | -0.231 |
| | (3.011)*** | (2.845)*** | (2.924)*** | (0.076)*** | (0.072)*** | (0.074)*** |
| Dummy size =20-49 | 0.274 | -0.130 | 0.164 | 0.293 | 0.260 | 0.292 |
| | (3.559) | (3.348) | (3.398) | (0.107)** | (0.102)** | (0.103)** |
| Dummy size = 50-249 | -0.540 | -1.229 | -0.728 | 0.220 | 0.165 | 0.218 |
| | (3.308) | (3.140) | (3.155) | (0.082)** | (0.089)* | (0.081)** |
| Dummy size =250-499 | -2.677 | -2.719 | -2.688 | 0.076 | 0.072 | 0.076 |
| | (3.336) | (3.143) | (3.236) | (0.057) | (0.055) | (0.055) |
| No. of observations | -0.000 | -0.000 | -0.000 | -0.000 | 0.000 | -0.000 |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| Dummy Austria | 4.834 | | | 0.184 | | |
| | (0.029)*** | | | (0.001)*** | | |
| Dummy Belgium | 21.193 | | | 0.925 | | |
| | (0.035)*** | | | (0.001)*** | | |
| Dummy Chile | 10.692 | | | 0.255 | | |
| | (0.042)*** | | | (0.002)*** | | |
| Dummy China | 12.152 | | | 0.681 | | |
| | (2.294)*** | | | (0.075)*** | | |
| Dummy Colombia | 12.839 | | | 0.293 | | |
| | (0.064)*** | | | (0.002)*** | | |
| Dummy Denmark | 14.354 | | | 0.379 | | |
| | (0.034)*** | | | (0.001)*** | | |
| Dummy East Germany | 12.444 | | | -0.080 | | |
| | (0.090)*** | | | (0.003)*** | | |
| Dummy France | 11.482 | | | 0.332 | | |
| | (0.507)*** | | | (0.018)*** | | |
| Dummy Ireland | 7.186 | | | -0.235 | | |
| | (0.031)*** | | | (0.001)*** | | |
| Dummy Italy | 10.401 | | | 0.179 | | |
| | (0.291)*** | | | (0.010)*** | | |
| Dummy Spain | 9.646 | | | 0.418 | | |
| | (0.005)*** | | | (0.000)*** | | |
| Dummy Sweden | -2.888 | | | 0.051 | | |
| | (0.039)*** | | | (0.001)*** | | |
| Dummy UK | 0.995 | | | -0.127 | | |
| | (0.075)*** | | | (0.003)*** | | |
| Dummy West Germany | 9.385 | | | -0.063 | | |
| | (0.532)*** | | | (0.019)*** | | |
| Dummy establishment level data | | -0.600 | 3.203 | | -0.212 | -0.147 |
| | | (2.982) | (2.633) | | (0.120)* | (0.106) |
| Average year | | -0.320 | -3.032 | | -0.011 | -0.074 |
| | | (0.259) | (1.028)** | | (0.012) | (0.052) |
| GDP | | | 0.000 | | | 0.000 |
| | | | (0.000)** | | | (0.000) |
| GDP per capita | | | 0.000 | | | -0.000 |
| | | | (0.000) | | | (0.000)** |
| Openness | | | 0.164 | | | 0.004 |
| | | | (0.073)** | | | (0.004) |
| Ease of doing business | | | 11.777 | | | 0.917 |
| | | | (13.120) | | | (0.563) |
| Government effectiveness | | | 21.202 | | | 1.146 |
| | | | (8.862)** | | | (0.562)* |
| Regulatory quality | | | -5.260 | | | -0.496 |
| | | | (5.331) | | | (0.286) |
| Observations | 120 | 120 | 120 | 120 | 120 | 120 |
| R-squared | 0.50 | 0.29 | 0.37 | 0.62 | 0.20 | 0.41 |

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Regression includes constant term

Table 6: Export starters and non-starters three years before the start

| Country | Year of start | Labor productivity premia of export-starters (percent) [p-value] | | No. of observ. | No. of starters |
|----------|---------------|--|--------|----------------|-----------------|
| Austria | 2002 | -0.01 | [0.94] | 811 | 40 |
| | 2003 | 0.04 | [0.60] | 801 | 59 |
| | 2004 | 0.17 | [0.01] | 742 | 38 |
| | 2005 | 0.11 | [0.18] | 725 | 28 |
| Belgium | 1999 | 31.49 | [0.04] | 215 | 14 |
| | 2000 | -1.53 | [0.94] | 245 | 18 |
| | 2001 | 8.50 | [0.55] | 303 | 30 |
| | 2002 | 8.63 | [0.47] | 282 | 34 |
| | 2003 | 2.81 | [0.83] | 289 | 36 |
| | 2004 | 3.51 | [0.82] | 280 | 29 |
| | 2005 | 9.70 | [0.43] | 254 | 19 |
| Chile | 1993 | 20.25 | [0.01] | 1,840 | 81 |
| | 1994 | 12.28 | [0.06] | 1,867 | 84 |
| | 1995 | 20.28 | [0.03] | 1,829 | 62 |
| | 1996 | 6.23 | [0.30] | 1,812 | 76 |
| | 1997 | 33.61 | [0.00] | 1,702 | 49 |
| | 1998 | 11.55 | [0.24] | 1,606 | 45 |
| | 1999 | 12.55 | [0.29] | 1,538 | 33 |
| China | 2001 | 21.34 | [0.00] | 43,430 | 1,012 |
| | 2002 | 28.71 | [0.00] | 46,454 | 1,182 |
| | 2003 | 24.47 | [0.00] | 46,322 | 1,178 |
| | 2004 | 17.18 | [0.00] | 52,060 | 3,325 |
| | 2005 | 12.65 | [0.00] | 57,210 | 3,441 |
| Colombia | 1984 | -0.59 | [0.93] | 2,478 | 53 |
| | 1985 | -3.07 | [0.62] | 2,571 | 68 |
| | 1986 | 7.23 | [0.22] | 2,690 | 77 |
| | 1987 | 16.18 | [0.03] | 2,733 | 55 |
| | 1988 | 11.73 | [0.16] | 2,826 | 59 |
| | 1989 | 18.08 | [0.02] | 2,916 | 88 |
| | 1990 | 13.61 | [0.01] | 2,985 | 125 |
| | 1991 | 20.97 | [0.00] | 2,877 | 204 |
| Denmark | 1998 | 2.09 | [0.95] | 15 | 2 |
| | 1999 | -5.01 | [0.70] | 15 | 2 |
| | 2000 | -23.18 | [0.11] | 16 | 3 |
| | 2001 | 14.25 | [0.62] | 15 | 1 |
| | 2002 | 807.1 | [0.01] | 14 | 4 |
| France | 1993 | 4.52 | [0.01] | 2,915 | 602 |
| | 1994 | 4.98 | [0.02] | 2,778 | 538 |
| | 1995 | 4.53 | [0.02] | 2,620 | 450 |
| | 1996 | 3.48 | [0.16] | 2,406 | 337 |
| | 1997 | 3.33 | [0.15] | 2,466 | 328 |
| | 1998 | 6.38 | [0.01] | 2,543 | 334 |
| | 1999 | 6.97 | [0.00] | 2,664 | 355 |
| | 2000 | 7.20 | [0.00] | 2,690 | 356 |
| | 2001 | 8.55 | [0.00] | 2,656 | 325 |
| | 2002 | 7.29 | [0.00] | 2,643 | 296 |
| | 2003 | 7.73 | [0.00] | 2,592 | 289 |
| | 2004 | 7.25 | [0.00] | 2,593 | 304 |

| Country | Year of start | Labor productivity premia of export-starters (percent) [p-value] | | No. of observ. | No. of starters |
|--------------|---------------------|--|--------|----------------|-----------------|
| West Germany | 1998 | 3.82 | [0.10] | 8,057 | 334 |
| | 1999 | 2.32 | [0.35] | 7,869 | 352 |
| | 2000 | 2.90 | [0.21] | 8,722 | 362 |
| | 2001 | 5.65 | [0.02] | 8,465 | 338 |
| | 2002 | 3.80 | [0.11] | 8,575 | 337 |
| | 2003 | 9.54 | [0.00] | 8,413 | 669 |
| | 2004 | 0.42 | [0.87] | 7,744 | 296 |
| East Germany | 1998 | 1.84 | [0.67] | 2,272 | 103 |
| | 1999 | -1.30 | [0.78] | 2,345 | 117 |
| | 2000 | 5.95 | [0.19] | 2,590 | 94 |
| | 2001 | -2.34 | [0.60] | 2,628 | 103 |
| | 2002 | 7.14 | [0.14] | 2,651 | 126 |
| | 2003 | 7.30 | [0.04] | 2,632 | 185 |
| | 2004 | 4.06 | [0.40] | 2,490 | 109 |
| Italy | 1992 | 18.72 | [0.00] | 2,967 | 353 |
| | 1993 | 21.01 | [0.00] | 2,855 | 353 |
| | 1994 | 13.84 | [0.00] | 2,455 | 261 |
| | 1995 | 21.47 | [0.00] | 2,380 | 249 |
| | 1996 | 21.03 | [0.00] | 2,150 | 283 |
| | 1997 | 10.66 | [0.02] | 1,641 | 144 |
| | Republic of Ireland | 1994 | 15.04 | [0.22] | 306 |
| 1995 | | 4.86 | [0.71] | 308 | 24 |
| 1996 | | 2.31 | [0.83] | 319 | 32 |
| 1997 | | 15.30 | [0.22] | 314 | 32 |
| 1998 | | -6.17 | [0.67] | 315 | 22 |
| 1999 | | 9.08 | [0.26] | 326 | 30 |
| 2000 | | -7.94 | [0.28] | 321 | 31 |
| 2001 | | 24.14 | [0.09] | 318 | 31 |
| 2002 | | 17.58 | [0.22] | 327 | 20 |
| 2003 | | 14.58 | [0.24] | 334 | 26 |
| 2004 | | -6.89 | [0.64] | 296 | 9 |
| Slovenia | | 1997 | 11.97 | [0.01] | 69 |
| | 1998 | -3.83 | [0.88] | 85 | 7 |
| | 1999 | -16.71 | [0.36] | 100 | 18 |
| | 2000 | 4.03 | [0.66] | 95 | 15 |
| | 2001 | -6.50 | [0.62] | 90 | 10 |
| | 2002 | 22.10 | [0.21] | 84 | 14 |
| Spain | 1993 | 16.71 | [0.07] | 282 | 32 |
| | 1994 | 8.62 | [0.47] | 268 | 29 |
| | 1995 | 23.54 | [0.06] | 236 | 22 |
| | 1996 | 20.85 | [0.09] | 234 | 28 |
| | 1997 | 27.73 | [0.07] | 220 | 35 |
| | 1998 | 8.59 | [0.60] | 178 | 24 |
| | 1999 | 27.29 | [0.28] | 173 | 10 |

| Country | Year of start | Labor productivity premia of export-starters (percent) [p-value] | | No. of observ. | No. of starters |
|---------|---------------|--|--------|----------------|-----------------|
| Sweden | 2000 | 6.29 | [0.15] | 4,207 | 64 |
| | 2001 | -0.70 | [0.88] | 4,227 | 48 |
| | 2002 | -1.78 | [0.75] | 4,180 | 42 |
| | 2003 | -1.88 | [0.75] | 4,146 | 37 |
| | 2004 | 5.65 | [0.42] | 4,091 | 39 |
| UK | 1998 | 14.65 | [0.12] | 597 | 29 |
| | 1999 | 4.941 | [0.70] | 663 | 22 |
| | 2000 | 10.54 | [0.39] | 722 | 23 |
| | 2001 | 6.17 | [0.53] | 793 | 48 |
| | 2002 | 15.05 | [0.36] | 852 | 32 |
| | 2003 | 23.47 | [0.05] | 863 | 34 |
| | 2004 | 6.76 | [0.63] | 694 | 28 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labour productivity (defined as total sales per employee) in a year are excluded from all computations. The labour productivity premia are estimated in an OLS-regression of log (labor productivity) on a dummy variable for export starters controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and dummy variables for 4-digit-industries, all measured three years before the start. To facilitate interpretation the estimated coefficients for the exporter dummy variable have been transformed by $100(\exp(\beta)-1)$.

Table 7: Meta analysis of results in Table 6

| | (1) | (2) | (3) |
|--------------------------------|-----------------------|--------------------|-------------------------|
| No. of observations | -0.001 (0.000)*** | 0.001 (0.000) | 0.004 (0.002)** |
| Dummy Austria | -1.265 (0.156)*** | | |
| Dummy Belgium | 7.751 (0.041)*** | | |
| Dummy Chile | 16.049 (0.378)*** | | |
| Dummy China | 54.978 (11.182)*** | | |
| Dummy Colombia | 10.635 (0.610)*** | | |
| Dummy Denmark | 157.154 (0.016)*** | | |
| Dummy East Germany | 3.174 (0.554)*** | | |
| Dummy France | 6.040 (0.580)*** | | |
| Dummy Ireland | 5.770 (0.052)*** | | |
| Dummy Italy | 17.648 (0.530)*** | | |
| Dummy Spain | 17.307 (0.032)*** | | |
| Dummy Sweden | 2.668 (0.932)** | | |
| Dummy UK | 10.290 (0.149)*** | | |
| Dummy West Germany | 8.219 (1.866)*** | | |
| Share export starters | | 6.584 (5.768) | 10.911 (5.644)* |
| Dummy establishment level data | | 14.094 (25.715) | 16.908 (15.951) |
| Average year | | 1.159 (2.167) | 5.555 (5.036) |
| GDP | | | -0.000 (0.000)* |
| GDP per capita | | | 0.001 (0.001) |
| Openness | | | -0.827 (0.416)* |
| Ease of doing business | | | -273.886 (123.165)** |
| Government effectiveness | | | -73.798 (62.936) |
| Regulatory quality | | | -19.140 (22.208) |
| Observations | 104 | 104 | 104 |
| R-squared | 0.17 | 0.16 | 0.34 |

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Regression includes constant term

Table 8: Export starters and non-starters three years after the start

| Country | Year of start | Labor productivity growth premia of export-starters (percent) [p-value] | | No. of observ. | No. of starters |
|----------------|---------------|---|---------|----------------|-----------------|
| Austria | 2002 | 0.06 | [0.11] | 551 | 16 |
| Belgium | 1999 | 38.27 | [0.02] | 116 | 5 |
| | 2000 | -18.61 | [0.04] | 130 | 7 |
| | 2001 | 18.22 | [0.08] | 167 | 15 |
| | 2002 | 20.29 | [0.15] | 157 | 17 |
| Chile | 1993 | 2.10 | [0.526] | 1,366 | 50 |
| | 1994 | 1.92 | [0.657] | 1,355 | 50 |
| | 1995 | 1.85 | [0.577] | 1,250 | 24 |
| | 1996 | 1.59 | [0.759] | 1,158 | 34 |
| China | 2001 | -4.65 | [0.00] | 24,923 | 475 |
| | 2002 | -4.37 | [0.00] | 24,918 | 602 |
| Colombia | 1984 | -9.96 | [0.03] | 2,053 | 27 |
| | 1985 | -0.06 | [0.99] | 2,164 | 36 |
| | 1986 | -5.10 | [0.37] | 2,254 | 28 |
| | 1987 | 3.42 | [0.46] | 2,263 | 40 |
| | 1988 | 4.60 | [0.36] | 2,188 | 41 |
| Denmark | 1998 | NA | | 2 | 1 |
| | 1999 | NA | | 2 | 1 |
| France | 1993 | 0.08 | [0.94] | 1,385 | 204 |
| | 1994 | 0.02 | [0.99] | 1,427 | 211 |
| | 1995 | 0.38 | [0.67] | 1,423 | 194 |
| | 1996 | -0.64 | [0.51] | 1,350 | 149 |
| | 1997 | -1.12 | [0.33] | 1,409 | 143 |
| | 1998 | -2.30 | [0.05] | 1,464 | 173 |
| | 1999 | -0.22 | [0.86] | 1,532 | 167 |
| | 2000 | -0.05 | [0.96] | 1,526 | 157 |
| | 2001 | -1.60 | [0.11] | 1,550 | 183 |
| Germany (West) | 1998 | -0.46 | [0.80] | 6,517 | 194 |
| | 1999 | -0.32 | [0.87] | 6,180 | 171 |
| | 2000 | 0.24 | [0.90] | 6,719 | 195 |
| | 2001 | 1.15 | [0.53] | 6,524 | 180 |
| Germany (East) | 1998 | -0.76 | [0.75] | 1,764 | 60 |
| | 1999 | 7.94 | [0.02] | 1,866 | 69 |
| | 2000 | -7.13 | [0.02] | 1,968 | 61 |
| | 2001 | -3.71 | [0.19] | 1,981 | 55 |
| Italy | 1992 | 4.15 | [0.03] | 1,279 | 147 |
| | 1993 | 4.32 | [0.05] | 1,128 | 144 |
| | 1994 | 6.06 | [0.06] | 889 | 85 |

| Country | Year of start | Labor productivity growth premia of export-starters (percent) [p-value] | | No. of observ. | No. of starters |
|---------------------|---------------|---|---------|----------------|-----------------|
| Republic of Ireland | 1994 | -5.12 | [0.33] | 196 | 19 |
| | 1995 | 2.41 | [0.57] | 205 | 19 |
| | 1996 | -6.75 | [0.07] | 212 | 16 |
| | 1997 | 8.88 | [0.02] | 201 | 18 |
| | 1998 | 4.07 | [0.53] | 204 | 12 |
| | 1999 | 3.85 | [0.47] | 225 | 16 |
| | 2000 | -6.03 | [0.03] | 228 | 18 |
| | 2001 | -10.03 | [0.03] | 207 | 18 |
| Slovenia | 1997 | -6.85 | [0.47] | 42 | 2 |
| | 1998 | 6.17 | [0.72] | 45 | 4 |
| | 1999 | 21.81 | [0.18] | 50 | 8 |
| Spain | 1993 | 5.23 | [0.14] | 159 | 17 |
| | 1994 | 5.15 | [0.17] | 155 | 21 |
| | 1995 | 5.56 | [0.32] | 133 | 12 |
| | 1996 | -1.07 | [0.66] | 132 | 15 |
| Sweden | 2000 | -1.39 | [0.80] | 3,525 | 57 |
| | 2001 | 5.65 | [0.33] | 3,314 | 46 |
| UK | 1998 | -3.10 | [0.63] | 370 | 20 |
| | 1999 | -13.06 | [0.37] | 425 | 12 |
| | 2000 | 22.60 | [0.001] | 452 | 17 |
| | 2001 | 10.90 | [0.14] | 407 | 24 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labour productivity (defined as total sales per employee) in a year are excluded from all computations. The labour productivity growth premia are estimated in an OLS-regression of the growth rate of labour productivity (computed as the difference of the log of labour productivity in $t+3$ and $t+1$) on a dummy variable for export starters controlling for the log of number of employees and its squared value, log wages and salaries per employee, and dummy variables for 4-digit-industries, all measured at the start year t . To facilitate interpretation the estimated coefficients for the exporter dummy variable have been transformed by $100(\exp(\beta)-1)$.

Table 9: Meta analysis of results in Table 8

| | (1) | (2) | (3) |
|--------------------------------|------------|----------|----------|
| No. of observations | 0.000 | -0.000 | -0.000 |
| | (0.006) | (0.000)* | (0.001) |
| Dummy Austria | -7.165 | | |
| | (3.105)** | | |
| Dummy Belgium | 7.470 | | |
| | (0.595)*** | | |
| Dummy Chile | -5.549 | | |
| | (7.598) | | |
| Dummy China | -19.002 | | |
| | (152.837) | | |
| Dummy Colombia | -9.104 | | |
| | (13.141) | | |
| Dummy Denmark | | | |
| Dummy East Germany | -8.512 | | |
| | (11.361) | | |
| Dummy France | -8.070 | | |
| | (8.639) | | |
| Dummy Ireland | -8.182 | | |
| | (1.008)*** | | |
| Dummy Italy | -2.515 | | |
| | (6.470) | | |
| Dummy Spain | -3.356 | | |
| | (0.609)*** | | |
| Dummy Sweden | -5.924 | | |
| | (20.730) | | |
| Dummy UK | -2.818 | | |
| | (2.260) | | |
| Dummy West Germany | -8.819 | | |
| | (39.565) | | |
| Share export starters | | 0.322 | 0.361 |
| | | (0.384) | (0.763) |
| Dummy establishment level data | | 1.217 | 0.927 |
| | | (2.720) | (2.863) |
| Average year | | 0.351 | 0.612 |
| | | (0.213) | (0.665) |
| GDP | | | -0.000 |
| | | | (0.000) |
| GDP per capita | | | -0.000 |
| | | | (0.000) |
| Openness | | | 0.015 |
| | | | (0.078) |
| Ease of doing business | | | -0.761 |
| | | | (21.434) |
| Government effectiveness | | | 1.504 |
| | | | (10.343) |
| Regulatory quality | | | -3.493 |
| | | | (7.312) |
| Observations | 57 | 57 | 57 |
| R-squared | 0.24 | 0.07 | 0.10 |

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Regression includes constant term

Table 10: Exporter productivity premia (percentage) I: Exporter dummy

| Country | Model | Sales/worker | p-value | VA/worker | p-value | TFP | p-value | N / NxT |
|------------------------------------|----------------|--------------|---------|-----------|---------|------|---------|-----------|
| Belgium 1996-2005 | Pooled β | 60.2 | [0.00] | 8.9 | [0.00] | -0.7 | [0.31] | 4707 |
| | FE β | 10.1 | [0.00] | 1.1 | [0.07] | 2.2 | [0.21] | 28426 |
| China 1998 - 2005 | Pooled β | 11.7 | [0.00] | 1.3 | [0.00] | -2.4 | [0.00] | 351,501 |
| | FE β | 8.8 | [0.00] | 6.6 | [0.00] | 5.2 | [0.00] | 1,138,350 |
| Colombia 1981 - 1991 | Pooled β | 23.7 | [0.00] | 23.7 | [0.00] | 1.9 | [0.00] | 5,837 |
| | FE β | 12.9 | [0.00] | 11.7 | [0.00] | 9.5 | [0.00] | 44,425 |
| France 1990 - 2004 | Pooled β | 19.8 | [0.00] | 5.0 | [0.00] | 1.9 | [0.00] | 41,230 |
| | FE β | 7.4 | [0.00] | 2.6 | [0.00] | 2.1 | [0.00] | 293,196 |
| Republic of Ireland 1991 – 2004 | Pooled β | 13.7 | [0.00] | 8.8 | [0.00] | | | 3,640 |
| | FE β | 6.8 | [0.00] | 4.1 | [0.00] | | | 26,472 |
| Italy 1989 - 1997 | Pooled β | 38.4 | [0.00] | 10.1 | [0.00] | 5.6 | [0.00] | 37,443 |
| | FE β | 3.2 | [0.00] | 0.7 | [0.00] | 0.3 | [0.10] | 169,778 |
| Slovenia 1994 - 2002 | Pooled β | 25.6 | [0.00] | 9.6 | [0.00] | -1.5 | [0.32] | 1,519 |
| | FE β | 4.3 | [0.01] | 5.0 | [0.00] | 2.9 | [0.22] | 9,807 |
| UK 1995 - 2004 | Pooled β | 10.4 | [0.00] | 5.3 | [0.00] | -0.6 | [0.37] | 8,411 |
| | FE β | 5.5 | [0.00] | 2.0 | [0.00] | 0.4 | [0.68] | 4,4475 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of productivity in a year are excluded from all computations. Firms are classified into size classes according to the median of the number of employees over the years covered. β is the estimated regression coefficient from an OLS-regression of log (productivity) on a dummy variable for exporting firms, controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and a full set of interaction terms of 4digit industry-dummies and year dummies; the fixed effects model adds firm fixed effects. To facilitate interpretation the estimated coefficients for the exporter dummy variable has been transformed by $100(\exp(\beta)-1)$. p is the prob-value. N is the number of firms, NxT is the number of observations.

Table 11: Export starters and non-starters three years before the start

| Country | Year of start | Productivity premia of export starters [p-values] | | | | | | No. of observ. | No. of starters |
|----------|---------------|---|--------|--------------------|--------|-------|--------|----------------|-----------------|
| | | Sales/worker | | Value added/worker | | TFP | | | |
| Belgium | All years | 7.5 | [0.14] | 3.7 | [0.18] | -1.0 | [0.83] | 1684 | 160 |
| | 1999 | 29.2 | [0.04] | 13.2 | [0.10] | 9.7 | [0.14] | 202 | 13 |
| | 2000 | 6.6 | [0.68] | 22.1 | [0.01] | 2.2 | [0.84] | 223 | 16 |
| | 2001 | 13.1 | [0.38] | 9.9 | [0.38] | 5.4 | [0.48] | 283 | 26 |
| | 2002 | -1.0 | [0.91] | 5.9 | [0.36] | 13.6 | [0.14] | 267 | 32 |
| | 2003 | 3.0 | [0.83] | -8.2 | [0.24] | 2.0 | [0.78] | 253 | 33 |
| | 2004 | 2.7 | [0.86] | 7.3 | [0.14] | -8.0 | [0.12] | 234 | 24 |
| | 2005 | 6.1 | [0.65] | 3.1 | [0.83] | -0.7 | [0.96] | 222 | 16 |
| China | All Years | 14.7 | [0.00] | 12.6 | [0.00] | 7.9 | [0.00] | 202,498 | 8,738 |
| | 2001 | 17.1 | [0.00] | 13.6 | [0.00] | 3.4 | [0.22] | 34,714 | 863 |
| | 2002 | 21.8 | [0.00] | 14.4 | [0.00] | 7.4 | [0.01] | 36,446 | 999 |
| | 2003 | 19.9 | [0.00] | 12.5 | [0.00] | 4.9 | [0.07] | 38,420 | 999 |
| | 2004 | 13.8 | [0.00] | 11.6 | [0.00] | 5.3 | [0.00] | 44,058 | 2,878 |
| | 2005 | 9.4 | [0.00] | 11.4 | [0.00] | 12.7 | [0.00] | 48,860 | 2,999 |
| Colombia | All Years | 12.3 | [0.00] | 11.4 | [0.00] | -10.2 | [0.00] | 20,504 | 696 |
| | 1984 | -1.9 | [0.80] | 5.4 | [0.46] | -37.4 | [0.00] | 2,275 | 47 |
| | 1985 | -3.3 | [0.58] | 3.5 | [0.56] | -20.3 | [0.05] | 2,375 | 65 |
| | 1986 | 6.3 | [0.30] | 10.9 | [0.07] | -27.5 | [0.00] | 2,497 | 74 |
| | 1987 | 8.2 | [0.27] | 8.0 | [0.27] | 7.5 | [0.56] | 2,537 | 54 |
| | 1988 | 11.2 | [0.12] | 12.8 | [0.06] | -16.8 | [0.10] | 2,636 | 59 |
| | 1989 | 21.7 | [0.00] | 14.6 | [0.01] | -7.4 | [0.39] | 2,711 | 84 |
| | 1990 | 8.8 | [0.11] | 11.9 | [0.03] | -5.2 | [0.48] | 2,777 | 119 |
| | 1991 | 21.9 | [0.00] | 12.6 | [0.00] | 3.0 | [0.61] | 2,696 | 194 |

| Country | Year of start | Productivity premia of export starters [p-values] | | | | | | No. of observ. | No. of starters |
|---------------------|---------------|---|--------------------|-------|--------|------|--------|----------------|-----------------|
| | | Sales/worker | Value added/worker | | TFP | | | | |
| France | All Years | 6.3 | | 1.0 | | -1.3 | | 29,428 | 4,033 |
| | 1993 | 5.8 | [0.00] | 1.6 | [0.12] | -0.6 | [0.59] | 2,678 | 522 |
| | 1994 | 7.0 | [0.00] | 1.3 | [0.25] | -1.1 | [0.37] | 2,579 | 476 |
| | 1995 | 3.9 | [0.04] | -1.2 | [0.34] | -3.0 | [0.05] | 2,447 | 421 |
| | 1996 | 2.9 | [0.21] | 1.1 | [0.41] | -0.5 | [0.72] | 2,220 | 291 |
| | 1997 | 4.7 | [0.05] | -0.4 | [0.80] | -1.6 | [0.31] | 2,291 | 284 |
| | 1998 | 7.3 | [0.00] | 0.4 | [0.78] | -1.2 | [0.43] | 2,370 | 304 |
| | 1999 | 8.5 | [0.00] | 3.4 | [0.01] | 0.7 | [0.57] | 2,475 | 297 |
| | 2000 | 7.8 | [0.00] | 2.4 | [0.05] | -1.8 | [0.19] | 2,522 | 319 |
| | 2001 | 8.8 | [0.00] | 3.2 | [0.02] | 0.4 | [0.79] | 2,483 | 295 |
| | 2002 | 7.5 | [0.00] | -1.0 | [0.52] | -3.1 | [0.06] | 2,462 | 259 |
| | 2003 | 6.7 | [0.01] | -1.3 | [0.43] | -3.9 | [0.02] | 2,443 | 278 |
| | 2004 | 6.2 | [0.01] | 3.0 | [0.06] | 0.3 | [0.89] | 2,458 | 287 |
| Republic of Ireland | All years | 8.9 | [0.00] | 5.3 | [0.09] | | | 3,337 | 269 |
| | 1994 | 13.6 | [0.26] | 15.5 | [0.20] | | | 288 | 24 |
| | 1995 | 0.3 | [0.98] | 10.2 | [0.56] | | | 287 | 21 |
| | 1996 | 1.8 | [0.87] | -1.0 | [0.94] | | | 302 | 30 |
| | 1997 | 12.3 | [0.31] | 8.0 | [0.42] | | | 306 | 32 |
| | 1998 | -5.1 | [0.73] | -7.4 | [0.48] | | | 305 | 22 |
| | 1999 | 11.0 | [0.18] | 11.9 | [0.23] | | | 317 | 29 |
| | 2000 | -8.5 | [0.26] | -21.3 | [0.11] | | | 311 | 29 |
| | 2001 | 23.7 | [0.10] | 30.8 | [0.04] | | | 309 | 30 |
| | 2002 | 27.2 | [0.06] | 28.9 | [0.04] | | | 312 | 18 |
| | 2003 | 14.4 | [0.25] | 8.7 | [0.43] | | | 320 | 25 |
| | 2004 | -2.6 | [0.87] | -4.1 | [0.74] | | | 280 | 9 |

| Country | Year of start | Productivity premia of export starters [p-values] | | | | | | No. of observ. | No. of starters |
|---------|---------------|---|--------|--------------------|--------|--------|--------|----------------|-----------------|
| | | Sales/worker | | Value added/worker | | TFP | | | |
| Italy | All Years | 18.3 | | 4.5 | | 3.0 | | 14,345 | 1,612 |
| | 1992 | 17.6 | [0.00] | 4.0 | [0.01] | 3.1 | [0.03] | 2,920 | 346 |
| | 1993 | 21.5 | [0.00] | 4.4 | [0.00] | 2.9 | [0.04] | 2,819 | 344 |
| | 1994 | 15.3 | [0.00] | 2.8 | [0.09] | 2.1 | [0.20] | 2,433 | 258 |
| | 1995 | 21.6 | [0.00] | 5.7 | [0.00] | 2.8 | [0.10] | 2,370 | 243 |
| | 1996 | 20.4 | [0.00] | 6.9 | [0.00] | 5.1 | [0.00] | 2,145 | 278 |
| | 1997 | 8.8 | [0.04] | 2.4 | [0.29] | 0.8 | [0.68] | 1,658 | 143 |
| UK | All Years | 4.2 | [0.30] | -0.6 | [0.82] | -2.0 | [0.67] | 4080 | 162 |
| | 1998 | 31.9 | [0.03] | -3.4 | [0.60] | -20.0 | [0.01] | 465 | 24 |
| | 1999 | -4.9 | [0.64] | -2.1 | [0.83] | -11.2 | [0.42] | 509 | 15 |
| | 2000 | 13.9 | [0.17] | 5.9 | [0.49] | -8.5 | [0.60] | 561 | 18 |
| | 2001 | -5.5 | [0.55] | -7.7 | [0.31] | -6.3 | [0.58] | 621 | 37 |
| | 2002 | -11.4 | [0.18] | -1.6 | [0.80] | -13.7 | [0.38] | 679 | 24 |
| | 2003 | 19.4 | [0.08] | 11.6 | [0.09] | 38.6 | [0.02] | 696 | 25 |
| 2004 | 23.9 | [0.12] | 9.6 | [0.28] | 14.7 | [0.24] | 549 | 19 | |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of productivity in a year are excluded from all computations. The productivity premia are estimated in an OLS-regression of log (productivity) on a dummy variable for export starters controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and dummy variables for 4-digit-industries, all measured three years before the start. To facilitate interpretation the estimated coefficients for the exporter dummy variable has been transformed by $100(\exp(\beta)-1)$.

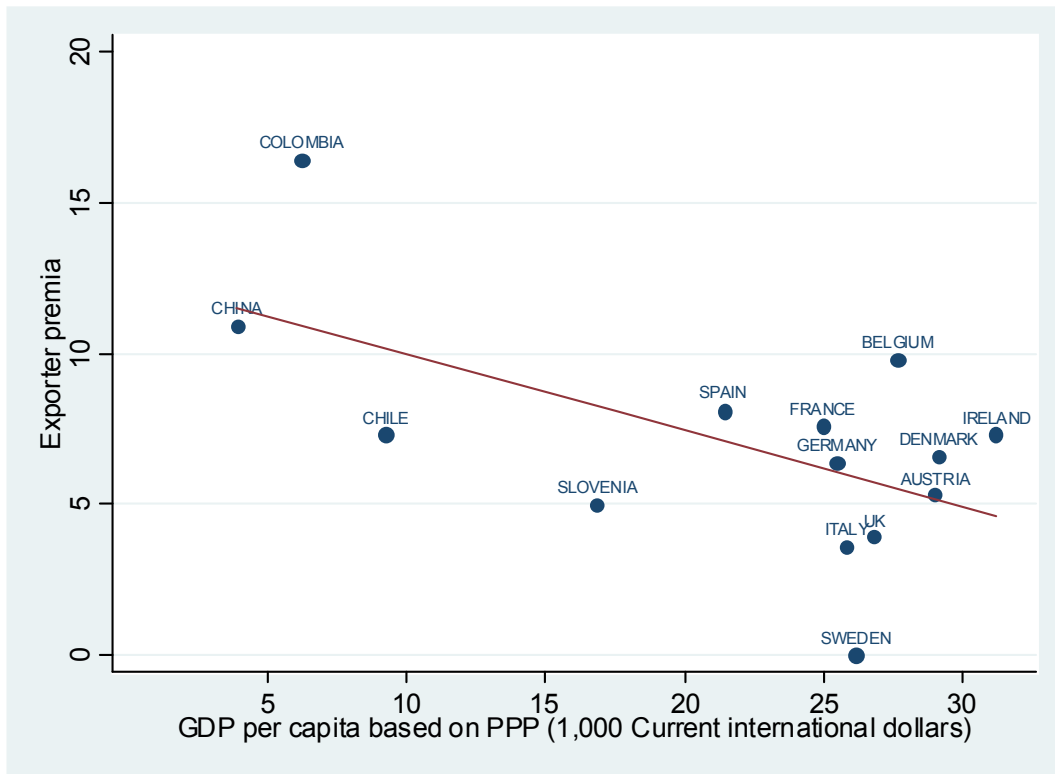
Table 12: Export starters and non-starters three years after the start

| Country | Year of start | Labor productivity growth premia of export-starters (percent) [p-value] | | | | | | No. of observ. | No. of starters |
|----------|---------------|---|--------|--------------------|--------|-------|--------|----------------|-----------------|
| | | Sales/worker | | Value added/worker | | TFP | | | |
| Belgium | All Years | 8.8 | [0.23] | 11.5 | [0.14] | -13.4 | [0.37] | 457 | 39 |
| | 1999 | 6.7 | [0.80] | 26.5 | [0.42] | 16.0 | [0.66] | 97 | 6 |
| | 2000 | -8.2 | [0.72] | -9.8 | [0.34] | -14.5 | [0.28] | 104 | 6 |
| | 2001 | 24.0 | [0.05] | 13.4 | [0.01] | 15.8 | [0.11] | 132 | 12 |
| | 2002 | 22.0 | [0.15] | 23.6 | [0.11] | 38.4 | [0.07] | 124 | 15 |
| China | All Years | -3.4 | [0.00] | -2.1 | [0.14] | -1.2 | [0.51] | 37,723 | 893 |
| | 2001 | -3.8 | [0.01] | -4.2 | [0.04] | 0.2 | [0.94] | 18,476 | 390 |
| | 2002 | -3.1 | [0.04] | -0.9 | [0.66] | -1.2 | [0.57] | 19,247 | 503 |
| Colombia | All Years | 0.7 | [0.66] | -1.0 | [0.61] | 1.1 | [0.58] | 9,705 | 157 |
| | 1981 | 2.8 | [0.49] | 4.7 | [0.36] | 0.9 | [0.85] | 1,805 | 26 |
| | 1982 | 2.0 | [0.60] | -4.7 | [0.30] | 1.6 | [0.69] | 1,910 | 33 |
| | 1983 | -2.0 | [0.59] | 0.2 | [0.97] | 0.4 | [0.94] | 1,997 | 26 |
| | 1984 | 0.8 | [0.83] | -1.7 | [0.70] | -3.4 | [0.42] | 2,024 | 37 |
| | 1985 | 0.4 | [0.92] | -2.4 | [0.57] | 5.7 | [0.25] | 1,969 | 35 |
| France | All Years | -0.4 | | -0.7 | | -0.6 | | 12,496 | 1,529 |
| | 1993 | 0.3 | [0.76] | -0.9 | [0.37] | -0.9 | [0.36] | 1,268 | 189 |
| | 1994 | -0.1 | [0.95] | 2.1 | [0.03] | 1.8 | [0.06] | 1,338 | 201 |
| | 1995 | 1.0 | [0.29] | -0.5 | [0.64] | -0.7 | [0.51] | 1,348 | 189 |
| | 1996 | -0.1 | [0.91] | 0.1 | [0.94] | 0.1 | [0.89] | 1,313 | 151 |
| | 1997 | -1.0 | [0.37] | -1.9 | [0.10] | -1.3 | [0.29] | 1,358 | 138 |
| | 1998 | -2.0 | [0.08] | -1.4 | [0.20] | -1.7 | [0.13] | 1,418 | 165 |
| | 1999 | -0.6 | [0.64] | -1.2 | [0.37] | -0.4 | [0.75] | 1,481 | 163 |
| | 2000 | -0.4 | [0.67] | -1.9 | [0.05] | -0.3 | [0.77] | 1,482 | 150 |
| | 2001 | -0.9 | [0.33] | -1.5 | [0.12] | -1.9 | [0.10] | 1,490 | 183 |

| Country | Year of start | Labor productivity growth premia of export-starters (percent) [p-value] | | | | No. of observ. | No. of starters | | |
|---------------------|---------------|---|--------|--------------------|--------|----------------|-----------------|-------|-----|
| | | Sales/worker | | Value added/worker | TFP | | | | |
| Republic of Ireland | All Years | 0.7 | [0.61] | -0.4 | [0.83] | | 1,604 | 131 | |
| | 1994 | -4.6 | [0.38] | -6.8 | [0.34] | | 184 | 17 | |
| | 1995 | 3.2 | [0.46] | 8.6 | [0.23] | | 197 | 18 | |
| | 1996 | -6.7 | [0.07] | -11.0 | [0.32] | | 206 | 16 | |
| | 1997 | 7.5 | [0.07] | 6.9 | [0.15] | | 195 | 18 | |
| | 1998 | 4.0 | [0.54] | 4.2 | [0.47] | | 193 | 12 | |
| | 1999 | 2.8 | [0.56] | 4.1 | [0.42] | | 212 | 15 | |
| | 2000 | -5.5 | [0.04] | -4.8 | [0.13] | | 221 | 18 | |
| | 2001 | -7.2 | [0.02] | -2.5 | [0.62] | | 196 | 17 | |
| Italy | All Years | 4.7 | | 1.0 | | 1.3 | | 8,172 | 948 |
| | 1992 | 4.1 | [0.03] | 1.2 | [0.07] | 2.1 | [0.05] | 1,276 | 144 |
| | 1993 | 4.3 | [0.05] | 0.5 | [0.09] | 0.5 | [0.23] | 1,126 | 143 |
| | 1994 | 6.1 | [0.07] | 1.9 | [0.08] | 1.5 | [0.09] | 826 | 79 |
| | | | | | | | | | |
| UK | All Years | 3.2 | [0.51] | 1.7 | [0.75] | 4.6 | [0.39] | 1,222 | 56 |
| | 1998 | 2.5 | [0.77] | 1.2 | [0.87] | 13.7 | [0.12] | 264 | 16 |
| | 1999 | -30.1 | [0.19] | -35.1 | [0.15] | -37.4 | [0.07] | 311 | 7 |
| | 2000 | 24.1 | [0.01] | 17.6 | [0.13] | 17.4 | [0.13] | 338 | 14 |
| | 2001 | 9.2 | [0.33] | 9.5 | [0.29] | 4.8 | [0.40] | 309 | 19 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 20 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of productivity in a year are excluded from all computations. The productivity growth premia are estimated in an OLS-regression of the growth rate of productivity (computed as the difference of the log of productivity in t+3 and t+1) on a dummy variable for export starters controlling for the log of number of employees and its squared value, log wages and salaries per employee, and dummy variables for 4-digit-industries, all measured at the start year t. To facilitate interpretation the estimated coefficients for the exporter dummy variable has been transformed by $100(\exp(\beta)-1)$.

Figure 1
 Exporter premia and GDP per capita



Footnote:

The exporter productivity premium shows the average percentage difference in labour productivity between exporters and non-exporters. It is computed for each country from the β coefficient estimated of model (1) in the text, including a whole set of fixed firm effects. The estimate of Germany is the simple average of the estimates of East and West Germany. Gross Domestic Product per capita (GDPpc) corresponds to year 2000. It is based on purchasing-power-parity (PPP) values and expressed in 1,000 current international dollar. It has been obtained from: International Monetary Fund, World Economic Outlook Database, April 2007. The estimated equation of the fitted regression line is:

$$\text{Export Premia} = 12.48 - 0.25 \text{ GDPpc}; R^2 = 0.35 \quad (\text{p-value in parenthesis})$$

(0.00) (0.03)

If Colombia and Sweden are excluded, the estimated equation is:

$$\text{Export Premia} = 9.34 - 0.11 \text{ GDPpc}; R^2 = 0.18 \quad (\text{p-value in parenthesis})$$

(0.00) (0.16)

Appendix I.1: Definition of Industries

| NACE 2 letters code | ISIC code | Industry |
|---------------------|----------------|--|
| DA | 15, 16 | Manufacture of food products, beverage and tobacco |
| DB | 17, 18 | Manufacture of textile and textile products |
| DC | 19 | Manufacture of leather and leather products |
| DD | 20 | Manufacture of wood and wood products |
| DE | 21, 22 | Manufacture of pulp, paper and paper products, printing and publishing |
| DF | 23 | Manufacture of coke, refined petroleum products and nuclear fuel |
| DG | 24 | Manufacture of chemicals, chemical products and man-made fibres |
| DH | 25 | Manufacture of rubber and plastic products |
| DI | 26 | Manufacture of other non-metallic products |
| DJ | 27, 28 | Manufacture of basic metal and fabricated metal products |
| DK | 29 | Manufacture of machinery and equipment n. e. c. |
| DL | 30, 31, 32, 33 | Manufacture of electrical and optical equipment |
| DM | 34, 35 | Manufacture of transport equipment |
| DN | 36 | Manufacture n. e . c. excluding recycling |

Appendix I.2: Exporter participation rate and export intensity by industry

| Country | Year | Variable | Industry | | | | | | | | | | | | | |
|---------|------|--------------------|----------|--------|-------|-------|--------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | | DA | DB | DC | DD | DE | DF | DG | DH | DI | DJ | DK | DL | DM | DN |
| Austria | 1999 | Participation rate | 36.0 | 89.3 | 83.8 | 60.5 | 77.1 | NA | 92.7 | 89.1 | 53.6 | 71.6 | 90.7 | 82.1 | 87.5 | 63.1 |
| | | Export intensity | 16.2 | 50.2 | 63.3 | 36.6 | 24.0 | NA | 44.1 | 43.6 | 26.3 | 40.0 | 54.7 | 54.6 | 56.5 | 31.5 |
| | | Number of firms | 626 | 224 | 37 | 319 | 310 | NA | 109 | 193 | 239 | 612 | 440 | 273 | 88 | 398 |
| | 2005 | Participation rate | 38.8 | 93.4 | 91.3 | 67.1 | 79.2 | NA | 91.7 | 89.4 | 55.4 | 71.3 | 91.2 | 84.3 | 90.3 | 67.9 |
| | | Export intensity | 22.5 | 56.6 | 61.9 | 41.5 | 26.1 | NA | 54.6 | 50.4 | 32.4 | 41.8 | 58.3 | 56.9 | 58.4 | 32.6 |
| | | Number of firms | 662 | 152 | 23 | 283 | 284 | NA | 108 | 208 | 224 | 669 | 489 | 299 | 103 | 336 |
| Belgium | 1996 | Participation rate | 82.9 | 84.3 | 81.8 | 78.1 | 75.3 | 66.7 | 96.2 | 95.8 | 80.9 | 75.9 | 88.4 | 84.9 | 89.7 | 85.9 |
| | | Export intensity | 37.5 | 56.7 | 43.8 | 33.2 | 29.7 | 16.7 | 44.3 | 45.8 | 28.3 | 34.6 | 42.0 | 39.2 | 35.7 | 42.0 |
| | | Number of firms | 480 | 383 | 11 | 96 | 299 | 12 | 239 | 167 | 209 | 494 | 242 | 186 | 107 | 185 |
| | 2005 | Participation rate | 79.8 | 88.0 | 85.7 | 85.9 | 71.1 | 73.3 | 96.0 | 94.7 | 72.0 | 66.9 | 83.9 | 84.5 | 88.1 | 83.2 |
| | | Number of firms | 43.7 | 62.0 | 55.6 | 39.4 | 31.9 | 32.1 | 46.8 | 52.3 | 38.1 | 41.5 | 46.5 | 43.5 | 41.5 | 42.5 |
| | | Export intensity | 371 | 183 | 7 | 71 | 235 | 15 | 224 | 152 | 186 | 441 | 168 | 148 | 101 | 101 |
| Chile | 1990 | Participation rate | 16.7 | 12.0 | 22.4 | 20.8 | 18.0 | 47.1 | 41.0 | 23.3 | 18.0 | 41.9 | 11.8 | 20.6 | 9.1 | 17.6 |
| | | Export intensity | 34.5 | 3.7 | 10.5 | 18.5 | 3.3 | 1.3 | 9.3 | 1.7 | 1.6 | 36.0 | 2.8 | 4.4 | 16.4 | 15.7 |
| | | Number of firms | 1,509 | 591 | 156 | 409 | 178 | 17 | 205 | 206 | 122 | 62 | 490 | 63 | 88 | 34 |
| | 1999 | Participation rate | 18.9 | 20.9 | 24.5 | 23.5 | 29.4 | 53.8 | 55.4 | 32.5 | 20.8 | 47.2 | 17.4 | 40.6 | 29.1 | 23.3 |
| | | Export intensity | 34.2 | 6.0 | 2.9 | 24.0 | 4.2 | 2.3 | 14.0 | 4.8 | 3.2 | 27.7 | 7.4 | 7.0 | 26.6 | 19.2 |
| | | Number of firms | 1,410 | 421 | 94 | 387 | 170 | 13 | 166 | 212 | 130 | 53 | 534 | 64 | 55 | 30 |
| China | 1998 | Participation rate | 13.1 | 49.2 | 56.2 | 20.4 | 9.8 | 8.1 | 20.2 | 28.4 | 10.1 | 21.4 | 21.0 | 33.3 | 14.7 | 46.2 |
| | | Export intensity | 55.1 | 73.1 | 81.8 | 66.3 | 50.6 | 30.2 | 41.1 | 64.2 | 51.4 | 57.7 | 36.0 | 60.3 | 36.9 | 72.7 |
| | | Number of firms | 18,060 | 16,846 | 3,023 | 2,149 | 7,591 | 939 | 13,835 | 7,084 | 13,347 | 12,372 | 14,854 | 10,853 | 5,995 | 4,551 |
| | 2005 | Participation rate | 22.1 | 44.8 | 59.8 | 25.7 | 13.4 | 7.6 | 22.0 | 31.2 | 19.0 | 23.2 | 27.5 | 49.2 | 23.9 | 61.3 |
| | | Export intensity | 47.9 | 71.7 | 81.7 | 67.2 | 42.4 | 19.6 | 37.7 | 62.5 | 46.8 | 57.2 | 50.4 | 65.7 | 44.6 | 80.5 |
| | | Number of firms | 22,232 | 33,758 | 6,127 | 5,235 | 11,822 | 1,796 | 23,440 | 14,451 | 19,643 | 24,363 | 43,953 | 12,160 | 10,990 | 11,356 |

| Country | Year | Variable | Industry | | | | | | | | | | | | | |
|--------------|------|--------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | DA | DB | DC | DD | DE | DF | DG | DH | DI | DJ | DK | DL | DM | DN |
| Colombia | 1981 | Participation rate | 9.9 | 13.3 | 20.5 | 12.2 | 17.1 | 5.3 | 33.2 | 18.8 | 15.9 | 19.1 | 30.6 | 28.3 | 19.7 | 17.9 |
| | | Export intensity | 17.4 | 15.8 | 18.8 | 12.2 | 9.3 | 39.5 | 5.7 | 7.1 | 15.8 | 9.0 | 13.9 | 7.8 | 15.0 | 16.3 |
| | | Number of firms | 739 | 882 | 171 | 74 | 257 | 19 | 262 | 218 | 245 | 382 | 173 | 173 | 132 | 173 |
| | 1991 | Participation rate | 13.2 | 26.1 | 54.4 | 18.1 | 24.4 | 26.1 | 38.5 | 35.6 | 21.3 | 27.6 | 33.5 | 34.5 | 22.3 | 24.8 |
| | | Export intensity | 25.5 | 20.8 | 33.7 | 13.9 | 9.4 | 14.9 | 12.3 | 8.8 | 18.8 | 25.0 | 18.2 | 11.2 | 5.0 | 23.3 |
| | | Number of firms | 828 | 923 | 204 | 83 | 287 | 23 | 322 | 270 | 249 | 391 | 200 | 194 | 148 | 226 |
| Denmark | 1999 | Participation rate | 60.4 | 83.1 | 100.0 | 72.8 | 69.4 | 66.7 | 92.6 | 89.9 | 71.7 | 71.6 | 86.1 | 84.5 | 87.6 | 84.8 |
| | | Export intensity | 18.1 | 35.0 | 38.1 | 23.7 | 11.8 | 21.2 | 41.6 | 31.1 | 20.1 | 20.3 | 41.0 | 44.0 | 48.7 | 37.9 |
| | | Number of firms | 578 | 242 | 19 | 180 | 399 | 3 | 108 | 198 | 145 | 571 | 567 | 368 | 129 | 381 |
| | 2002 | Participation rate | 56.5 | 91.9 | 100.0 | 69.6 | 61.4 | 100.0 | 90.8 | 92.4 | 61.1 | 72.4 | 92.4 | 87.3 | 91.8 | 85.0 |
| | | Export intensity | 20.3 | 41.8 | 52.0 | 16.0 | 10.0 | 17.5 | 46.7 | 35.7 | 15.0 | 20.1 | 46.5 | 46.6 | 54.2 | 38.6 |
| | | Number of firm | 476 | 124 | 6 | 148 | 345 | 4 | 98 | 198 | 126 | 588 | 525 | 324 | 97 | 267 |
| France | 1990 | Participation rate | NA | 66.6 | 78.7 | 58.4 | 61.1 | 80.0 | 87.6 | 78.3 | 54.8 | 63.1 | 79.4 | 73.1 | 76.4 | 75.7 |
| | | Export intensity | NA | 22.2 | 18.5 | 14.8 | 8.9 | 11.7 | 23.5 | 14.0 | 17.5 | 13.9 | 22.1 | 20.7 | 21.1 | 16.2 |
| | | Number of firms | NA | 3,240 | 587 | 765 | 2,565 | 50 | 1,094 | 1,270 | 928 | 4,934 | 2,338 | 2,287 | 842 | 1,320 |
| | 2004 | Participation rate | NA | 77.5 | 79.3 | 54.9 | 68.6 | 88.0 | 90.5 | 81.8 | 58.7 | 67.9 | 82.7 | 78.6 | 81.9 | 81.2 |
| | | Export intensity | NA | 27.2 | 24.6 | 18.6 | 11.8 | 19.0 | 34.8 | 20.5 | 22.9 | 18.7 | 30.3 | 31.7 | 28.1 | 19.5 |
| | | Number of firms | NA | 1,646 | 276 | 607 | 2,016 | 25 | 1,092 | 1,482 | 767 | 4,498 | 2,038 | 1,935 | 803 | 939 |
| West Germany | 1995 | Participation rate | 33.7 | 74.4 | 89.1 | 48.6 | 56.4 | 74.6 | 89.3 | 80.0 | 46.7 | 64.5 | 82.6 | 70.4 | 76.9 | 74.7 |
| | | Export intensity | 14.6 | 20.2 | 19.9 | 13.2 | 12.8 | 21.1 | 29.9 | 18.9 | 18.9 | 19.3 | 32.6 | 28.1 | 26.9 | 18.7 |
| | | Number of firms | 3,717 | 1,988 | 294 | 1,319 | 3,354 | 67 | 1,322 | 2,424 | 2,030 | 5,898 | 5,383 | 3,897 | 1,050 | 1,939 |
| | 2004 | Participation rate | 32.0 | 85.3 | 91.7 | 58.0 | 60.9 | 76.3 | 92.0 | 82.6 | 58.2 | 68.8 | 83.7 | 72.0 | 81.7 | 79.4 |
| | | Export intensity | 17.9 | 30.1 | 33.0 | 22.8 | 15.9 | 25.5 | 41.5 | 26.4 | 25.4 | 23.8 | 39.1 | 35.8 | 32.3 | 26.6 |
| | | Number of firms | 4,117 | 1,134 | 168 | 892 | 3,123 | 59 | 1,417 | 2,465 | 1,549 | 6,140 | 5,645 | 4,347 | 1,233 | 1,379 |

| Country | Year | Variable | Industry | | | | | | | | | | | | | |
|-----------------|------|--------------------|----------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|------|-------|
| | | | DA | DB | DC | DD | DE | DF | DG | DH | DI | DJ | DK | DL | DM | DN |
| East Germany | 1995 | Participation rate | 21.5 | 58.8 | 54.7 | 15.6 | 39.0 | 63.6 | 74.4 | 42.4 | 23.1 | 32.8 | 54.1 | 49.6 | 47.4 | 54.1 |
| | | Export intensity | 15.5 | 14.6 | 18.4 | 15.8 | 17.0 | 15.5 | 26.1 | 11.3 | 20.8 | 11.0 | 21.3 | 20.6 | 18.1 | 15.4 |
| | | Number of firms | 912 | 374 | 53 | 256 | 410 | 11 | 234 | 384 | 588 | 1,126 | 845 | 750 | 287 | 380 |
| | 2004 | Participation rate | 20.8 | 67.7 | 61.5 | 46.0 | 45.2 | 62.5 | 79.8 | 66.5 | 41.9 | 47.6 | 63.6 | 55.1 | 68.9 | 61.8 |
| | | Export intensity | 16.9 | 24.9 | 29.9 | 21.0 | 18.5 | 40.6 | 37.2 | 23.4 | 26.1 | 17.6 | 25.9 | 31.5 | 26.1 | 20.2 |
| | | Number of firms | 1,144 | 269 | 26 | 224 | 465 | 8 | 282 | 525 | 506 | 1,462 | 977 | 1,039 | 360 | 283 |
| Italy | 1989 | Participation rate | 52.0 | 56.6 | 77.1 | 45.4 | 51.1 | 29.1 | 78.6 | 74.3 | 54.8 | 57.8 | 83.8 | 66.3 | 68.4 | 71.9 |
| | | Export intensity | 16.1 | 26.2 | 48.5 | 21.0 | 12.8 | 9.8 | 20.0 | 25.7 | 33.0 | 23.0 | 37.2 | 26.8 | 28.7 | 30.8 |
| | | Number of firms | 1,418 | 3,361 | 1,077 | 526 | 1,105 | 86 | 796 | 1,018 | 1,418 | 2,925 | 2,562 | 1,452 | 684 | 1,488 |
| | 1997 | Participation rate | 65.3 | 59.3 | 72.3 | 59.6 | 61.7 | 44.8 | 83.6 | 79.3 | 60.9 | 63.1 | 82.5 | 70.3 | 71.3 | 79.3 |
| | | Export intensity | 19.0 | 34.1 | 51.3 | 22.4 | 14.7 | 17.1 | 26.7 | 28.5 | 34.6 | 27.6 | 45.6 | 34.4 | 34.9 | 38.4 |
| | | Number of firms | 1,066 | 2,158 | 611 | 413 | 931 | 67 | 639 | 922 | 963 | 2,561 | 2,120 | 1,331 | 526 | 1,208 |
| Rep. of Ireland | 1991 | Participation rate | 53.3 | 71.4 | 76.5 | 58.9 | 56.8 | NA | 86.8 | 81.9 | 54.1 | 67.8 | 72.6 | 84.5 | 62.5 | 71.3 |
| | | Export intensity | 48.3 | 61.0 | 55.5 | 27.6 | 34.1 | NA | 72.0 | 54.3 | 39.8 | 50.8 | 69.1 | 81.8 | 70.2 | 56.0 |
| | | Number of firms | 392 | 227 | 17 | 56 | 185 | NA | 129 | 105 | 98 | 143 | 124 | 226 | 48 | 94 |
| | 2004 | Participation rate | 71.9 | 87.9 | | 44.6 | 59.5 | NA | 90.4 | 72.4 | 43.3 | 52.6 | 84.3 | 88.9 | 76.6 | 65.4 |
| | | Export intensity | 47.0 | 60.0 | | 27.2 | 30.3 | NA | 72.4 | 50.3 | 28.5 | 36.2 | 60.4 | 79.1 | 77.1 | 43.1 |
| | | Number of firms | 331 | 69 | | 92 | 205 | NA | 136 | 127 | 120 | 209 | 115 | 217 | 47 | 107 |
| Slovenia | 1994 | Participation rate | 48.8 | 59.5 | 68.4 | 75.1 | 34.0 | 100.0 | 85.9 | 71.7 | 64.2 | 60.8 | 78.0 | 59.3 | 82.1 | 63.2 |
| | | Export intensity | 16.9 | 88.3 | 90.6 | 39.6 | 16.0 | 19.3 | 38.8 | 36.2 | 25.9 | 52.6 | 41.4 | 34.4 | 50.6 | 45.8 |
| | | Number of firms | 160 | 232 | 38 | 173 | 297 | 3 | 71 | 145 | 95 | 424 | 205 | 371 | 56 | 163 |
| | 2002 | Participation rate | 65.0 | 77.6 | 87.0 | 79.5 | 72.2 | 100.0 | 90.1 | 95.9 | 80.6 | 83.4 | 90.5 | 88.7 | 90.2 | 94.4 |
| | | Export intensity | 15.2 | 95.1 | 69.7 | 50.6 | 20.5 | 45.9 | 52.0 | 44.8 | 37.3 | 49.4 | 58.6 | 60.2 | 76.1 | 54.4 |
| | | Number of firms | 100 | 147 | 23 | 78 | 101 | 3 | 55 | 74 | 62 | 223 | 126 | 150 | 41 | 89 |

| Country | Year | Variable | Industry | | | | | | | | | | | | | |
|---------|------|--------------------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | | DA | DB | DC | DD | DE | DF | DG | DH | DI | DJ | DK | DL | DM | DN |
| Spain | 1990 | Participation rate | 40.9 | 53.1 | 71.1 | 54.2 | 49.5 | NA | 79.2 | 64.6 | 54.8 | 63.3 | 83.3 | 78.4 | 76.9 | 55.0 |
| | | Export intensity | 19.8 | 18.2 | 40.2 | 21.0 | 14.2 | NA | 17.5 | 13.7 | 21.5 | 24.7 | 27.1 | 22.6 | 27.0 | 22.0 |
| | | Number of firms | 225 | 145 | 38 | 24 | 99 | NA | 120 | 48 | 104 | 158 | 102 | 125 | 108 | 100 |
| | 1999 | Participation rate | 63.5 | 66.1 | 64.7 | 71.4 | 67.5 | NA | 92.1 | 73.9 | 60.7 | 75.4 | 85.1 | 84.7 | 86.9 | 76.3 |
| | | Export intensity | 19.2 | 24.6 | 35.8 | 19.0 | 20.8 | NA | 31.0 | 29.1 | 35.0 | 32.2 | 37.0 | 34.3 | 46.7 | 26.3 |
| | | Number of firms | 159 | 112 | 34 | 21 | 83 | NA | 89 | 69 | 84 | 142 | 87 | 98 | 107 | 80 |
| Sweden | 1997 | Participation rate | 57 | 95 | 78 | 91 | 75 | 100 | 99 | 95 | 86 | 73 | 87 | 88 | 90 | 93 |
| | | Export intensity | 10 | 47 | 38 | 43 | 40 | 29 | 58 | 45 | 30 | 48 | 44 | 59 | 55 | 33 |
| | | Number of firms | 299 | 113 | 18 | 337 | 504 | 8 | 147 | 215 | 117 | 792 | 611 | 395 | 244 | 209 |
| | 2004 | Participation rate | 58 | 100 | 80 | 84 | 74 | 100 | 97 | 95 | 87 | 76 | 90 | 90 | 91 | 90 |
| | | Export intensity | 15 | 59 | 73 | 40 | 48 | 67 | 65 | 42 | 18 | 52 | 50 | 62 | 43 | 27 |
| | | Number of firms | 329 | 75 | 10 | 309 | 451 | 11 | 145 | 222 | 101 | 859 | 574 | 366 | 273 | 182 |
| UK | 1995 | Participation rate | 57.7 | 80.2 | 84.8 | 64.3 | 47.5 | 80.0 | 90.2 | 82.7 | 70.3 | 80.0 | 88.4 | 87.1 | 80.7 | 77.8 |
| | | Export intensity | 20.1 | 28.2 | 31.9 | 33.4 | 26.5 | 14.1 | 35.9 | 22.5 | 34.1 | 28.0 | 39.2 | 38.9 | 34.3 | 25.7 |
| | | Number of firms | 366 | 258 | 33 | 14 | 632 | 15 | 386 | 260 | 145 | 799 | 380 | 667 | 192 | 446 |
| | 2004 | Participation rate | 46.9 | 78.8 | 81.3 | 25.0 | 43.0 | 69.6 | 86.2 | 74.5 | 57.9 | 77.4 | 85.8 | 83.2 | 67.1 | 68.9 |
| | | Export intensity | 14.0 | 26.6 | 47.7 | 3.9 | 24.3 | 35.5 | 40.3 | 25.7 | 32.0 | 30.5 | 38.8 | 41.4 | 32.0 | 28.8 |
| | | Number of firms | 392 | 189 | 16 | 8 | 632 | 23 | 348 | 267 | 133 | 646 | 324 | 625 | 213 | 4 |

Note: Results are for firms with at least 20 employees. For a definition of industries see appendix 1. Participation rate is the percentage share of exporting firms. Export intensity is the average percentage share of exports in total sales for exporting firms. See table 1 for more information on the samples.

Appendix II: Variables Used in Meta-Analysis Regressions

The regressors included in the meta-analysis regressions are defined as follows:

- 1) Dummy FE regression: dummy variable indicating that the method of estimation of the coefficient used as the dependent variable in the meta-analysis regression is firm fixed effects.
- 2) Dummy size =20-49, Dummy size = 50-249, Dummy size =250-499: dummy variables indicating that the coefficient used as the dependent variable in the meta-analysis regression is obtained for a sub-sample of firms in one of the three size classes: 20-49 workers, 50-249 workers, or 250-499 workers.
- 3) No. of observations: total number of observations used in the regression that produced the coefficient used as the dependent variable in the meta-analysis regression.
- 4) Dummy establishment level data: dummy variable indicating that the coefficient used as the dependent variable in the meta-analysis regression was obtained based on a sample whose unit of observation is an establishment (rather than a firm).
- 5) Average year: midpoint of a country's sample period.
- 6) GDP: average of GDP at Purchasing Power Parity in constant 2000 international USD during each country's sample period [*Source: World Development Indicators database*].
- 7) GDP per capita: average of GDP per capita at Purchasing Power Parity in constant 2000 international USD during each country's sample period [*Source: World Development Indicators database*].
- 8) Openness: average trade (exports plus imports of goods and services) share in GDP during each country's sample period. [*Source: World Development Indicators database*].
- 9) Ease of doing business: aggregate index measuring the quality of business regulations. Higher values represent more business-friendly regulations. The index is obtained as the simple average of country rankings in each of the 10 topics in the Doing Business database (starting a business, dealing with licenses, employing workers, registering property, getting credit, protecting investors, paying taxes, trading across borders, enforcing contracts, closing a business). These country rankings are based on a total of 135 countries and the simple average is normalized by the largest value, so the aggregate index varies between 0 and 1. [*Source: Doing Business 2005 database*].
- 10) Government effectiveness: normally distributed index with mean 0 and standard-deviation of 1 (across a total of 207 countries) whose higher values imply a better institutional

framework. The index measures the quality of public services, the quality of the civil service and its degree of independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. [Source: *Governance Indicators of Kaufmann, Kraay, and Mastruzzi (2007)*].

11) Regulatory quality: normally distributed index with mean 0 and standard-deviation of 1 (across a total of 207 countries) whose higher values imply a better institutional framework. The index measures the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. [Source: *Governance Indicators of Kaufmann, Kraay, and Mastruzzi (2007)*].

General note: for all the country characteristics, values for West Germany were used for East Germany also.

Table III.2: Exporter participation rate and export intensity by size class

| Country | Year | Variable | All firms | 10-19 employees | 20-49 employees | 50-249 employees | 250-400 employees | 500 and more employees |
|----------|------|--------------------|-----------|-----------------|-----------------|------------------|-------------------|------------------------|
| Belgium | 1996 | Participation rate | 76.1 | 53.2 | 73.8 | 89.7 | 96.4 | 98.2 |
| | | Export intensity | 43.6 | 32.8 | 36.8 | 52.4 | 46.2 | 55.1 |
| | | Number of firms | 4,290 | 1,017 | 1,500 | 1,411 | 197 | 165 |
| | 2005 | Participation rate | 74.6 | 46.8 | 70.6 | 88.5 | 93.5 | 97.5 |
| | | Export intensity | 66.2 | 61.0 | 63.6 | 70.2 | 62.3 | 67.7 |
| | | Number of firms | 3,332 | 690 | 1,105 | 1,193 | 185 | 159 |
| Chile | 1990 | Participation rate | 17.1 | 2.8 | 7.6 | 32.1 | 54.5 | 66.7 |
| | | Export intensity | 29.8 | 22.2 | 25.9 | 32.1 | 28.6 | 28.8 |
| | | Number of firms | 4,442 | 1,212 | 1,610 | 1,304 | 220 | 96 |
| | 1999 | Participation rate | 21.9 | 4.8 | 15.3 | 42.4 | 68.8 | 85.7 |
| | | Export intensity | 27.0 | 22.2 | 25.0 | 27.2 | 29.9 | 33.0 |
| | | Number of firms | 4,125 | 1,416 | 1,428 | 1,041 | 170 | 70 |
| China | 1998 | Participation rate | 23.9 | 8.1 | 10.8 | 20.4 | 32.1 | 45.2 |
| | | Export intensity | 60.1 | 71.8 | 67.3 | 65.4 | 62.3 | 46.5 |
| | | Number of firms | 136,289 | 4,790 | 19,376 | 71,615 | 21,997 | 18,511 |
| | 2005 | Participation rate | 29.9 | 10.6 | 15.5 | 28.8 | 44.9 | 56.9 |
| | | Export intensity | 60.3 | 56.5 | 54.5 | 61.1 | 65.0 | 56.0 |
| | | Number of firms | 248,576 | 7,250 | 48,089 | 144,034 | 29,110 | 20,093 |
| Colombia | 1981 | Participation rate | 11.1 | 2.5 | 6.5 | 23.1 | 47.1 | 61.8 |
| | | Export intensity | 14.1 | 81.5 | 42.3 | 19.7 | 9.0 | 10.4 |
| | | Number of firms | 6,792 | 2,892 | 1,960 | 1,594 | 210 | 136 |
| | 1991 | Participation rate | 18.2 | 6.0 | 14.2 | 36.9 | 59.1 | 71.9 |
| | | Export intensity | 19.6 | 82.7 | 33.8 | 22.8 | 14.5 | 14.5 |
| | | Number of firms | 7,304 | 2,956 | 2,379 | 1,636 | 198 | 135 |

| Country | Year | Variable | All firms | 10-19 employees | 20-49 employees | 50-249 employees | 250-400 employees | 500 and more employees |
|-----------------|------|--------------------|-----------|-----------------|-----------------|------------------|-------------------|------------------------|
| Denmark | 1995 | Participation rate | 65.2 | 49.4 | 68.9 | 88.1 | 92.5 | 97.5 |
| | | Export intensity | 22.1 | 12.7 | 21.4 | 38.1 | 50.5 | 54.8 |
| | | Number of firms | 6,859 | 2,971 | 2,277 | 1,331 | 161 | 119 |
| | 2002 | Participation rate | 66.2 | 50.3 | 68.9 | 88.1 | 90.2 | 87.3 |
| | | Export intensity | 23.3 | 12.9 | 22.1 | 39.6 | 50.3 | 52.4 |
| | | Number of firms | 5,604 | 2,304 | 1,902 | 1,161 | 153 | 110 |
| Rep. of Ireland | 1991 | Participation rate | 60.2 | 45.8 | 54.8 | 76.0 | 88.8 | 91.7 |
| | | Export intensity | 51.5 | 34.7 | 44.8 | 61.0 | 82.5 | 82.6 |
| | | Number of firms | 2,859 | 832 | 1,044 | 828 | 107 | 48 |
| | 2004 | Participation rate | 59.2 | 38.1 | 61.4 | 83.5 | 95.5 | 91.1 |
| | | Export intensity | 47.6 | 29.6 | 42.1 | 59.1 | 82.3 | 84.3 |
| | | Number of firms | 2,803 | 1,056 | 983 | 630 | 89 | 45 |
| Slovenia | 1994 | Participation rate | 61.2 | 57.8 | 74.1 | 91.3 | 94.9 | 98.7 |
| | | Export intensity | 47.6 | 32.7 | 42.7 | 52.6 | 58.2 | 62.9 |
| | | Number of firms | 2,433 | 301 | 321 | 506 | 118 | 75 |
| | 2002 | Participation rate | 54.8 | 66.4 | 71.7 | 86.5 | 97.1 | 95.2 |
| | | Export intensity | 39.0 | 28.3 | 47.0 | 56.9 | 66.6 | 64.6 |
| | | Number of firms | 4,130 | 515 | 428 | 570 | 103 | 84 |
| Spain | 1990 | Participation rate | 49.2 | 17.6 | 35.3 | 65.6 | 83.7 | 85.6 |
| | | Export intensity | 21.6 | 17.9 | 19.7 | 24.5 | 22.4 | 20.1 |
| | | Number of firms | 1,952 | 556 | 487 | 413 | 295 | 201 |
| | 1999 | Participation rate | 63.8 | 32.1 | 50.8 | 80.2 | 95.6 | 96.8 |
| | | Export intensity | 29.3 | 19.4 | 19.6 | 32.6 | 36.0 | 36.0 |
| | | Number of firms | 1,564 | 399 | 415 | 388 | 204 | 158 |

| Country | Year | Variable | All firms | 10-19 employees | 20-49 employees | 50-249 employees | 250-400 employees | 500 and more employees |
|---------|------|--------------------|-----------|-----------------|-----------------|------------------|-------------------|------------------------|
| Sweden | 1997 | Participation rate | 71 | 54 | 74 | 88 | 91 | 99 |
| | | Export intensity | 45 | 19 | 26 | 38 | 45 | 50 |
| | | Number of firms | 7,001 | 2,794 | 2,296 | 1,506 | 200 | 205 |
| | 2004 | Participation rate | 71 | 56 | 76 | 91 | 98 | 98 |
| | | Export intensity | 46 | 21 | 28 | 40 | 43 | 52 |
| | | Number of firms | 6,704 | 2,981 | 2,007 | 1,352 | 186 | 178 |
| UK | 1995 | Participation rate | 75.1 | 58.7 | 66.4 | 74.9 | 80.4 | 83.7 |
| | | Export intensity | 31.1 | 36.4 | 33.8 | 28.7 | 30.3 | 36.0 |
| | | Number of firms | 4,824 | 172 | 729 | 2,517 | 672 | 734 |
| | 2004 | Participation rate | 68.8 | 55.1 | 64.0 | 70.5 | 71.8 | 72.4 |
| | | Export intensity | 32.3 | 36.1 | 34.9 | 31.5 | 31.6 | 31.4 |
| | | Number of firms | 4,490 | 247 | 862 | 2,364 | 543 | 474 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 10 employees. Participation rate is the percentage share of exporting firms. Export intensity is the average percentage share of exports in total sales for exporting firms. See Table 1 for more information on the samples.

Table III.3: Exporter productivity premia (percentage) I: Exporter dummy

| Country | Model | | All firms | 10 - 19 employees | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-------------------------|---------------|---------|-----------|-------------------|-------------------|--------------------|---------------------|------------------------|
| Belgium | Pooled | β | 58.548 | 51.886 | 66.571 | 59.656 | 23.110 | 54.586 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | Fixed effects | β | 10.174 | 6.697 | 8.059 | 19.164 | 9.210 | -10.850 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.046] | [0.220] |
| | N | | 6,661 | 2,270 | 2,235 | 1,730 | 241 | 185 |
| | NxT | | 39,292 | 9,013 | 13,453 | 13,281 | 1,924 | 1,621 |
| Chile 1990 - 1999 | Pooled | β | 31.402 | 38.262 | 35.378 | 18.898 | 9.158 | 29.683 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.01] | [0.00] |
| | Fixed effects | β | 9.294 | 10.285 | 13.763 | 8.937 | 4.206 | 7.681 |
| | | p | [0.00] | [0.00] | [0.00] | [0.00] | [0.12] | [0.23] |
| | N | | 7,745 | 2,643 | 2,710 | 1,993 | 280 | 119 |
| | NxT | | 47,820 | 13,810 | 17,109 | 13,828 | 2,084 | 989 |
| China 1998 - 2005 | Pooled | β | 15.658 | 17.969 | 15.553 | 13.098 | 17.510 | 22.130 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | Fixed effects | β | 10.924 | 14.500 | 11.235 | 9.676 | 12.085 | 13.406 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | N | | 408,723 | 17,597 | 86,457 | 228,722 | 45,177 | 30,770 |
| | NxT | | 1,347,097 | 36,326 | 214,465 | 760,482 | 189,673 | 146,151 |
| Colombia 1981 – 1991 | Pooled | β | 31.653 | 51.740 | 38.819 | 18.887 | 22.630 | 15.720 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | Fixed effects | β | 16.416 | 28.018 | 16.532 | 11.963 | 13.202 | 10.960 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.002] |
| | N | | 11,434 | 5,504 | 3,468 | 2,098 | 221 | 143 |
| | NxT | | 75,212 | 29,070 | 24,882 | 17,592 | 2,230 | 1,438 |

| Country | Model | | All firms | 10 - 19 employees | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|------------------------------------|---------------|--------------|-------------------|-------------------|-------------------|--------------------|---------------------|------------------------|
| Denmark 1999 - 2002 | Pooled | β p | 33.754 [0.000] | 27.744 [0.000] | 37.334 [0.000] | 32.691 [0.000] | 17.350 [0.002] | 39.459 [0.000] |
| | Fixed effects | β p | 5.954 [0.000] | 5.459 [0.000] | 4.981 [0.000] | 9.618 [0.000] | 7.380 [0.072] | 7.761 [0.122] |
| | N NxT | | 9,050 50,162 | 3,968 20,938 | 3,026 17,017 | 1,680 9,973 | 221 1,333 | 155 901 |
| Republic of Ireland 1991 - 2004 | Pooled | β p | 11.282 [0.000] | 6.691 [0.000] | 12.679 [0.000] | 16.450 [0.000] | -7.635 [0.248] | 55.993 [0.000] |
| | Fixed effects | β p | 7.677 [0.000] | 6.755 [0.000] | 8.002 [0.000] | 6.939 [0.000] | -3.495 [0.623] | 19.923 [0.067] |
| | N NxT | | 5,645 40,973 | 2,484 12,890 | 1,762 15,016 | 1,182 10,945 | 147 1,434 | 70 688 |
| Slovenia 1994 - 2002 | Pooled | β p | 8.379 [0.000] | 9.571 [0.001] | 12.214 [0.000] | 8.665 [0.000] | 10.781 [0.045] | -0.672 [0.911] |
| | Fixed effects | β p | 5.074 [0.001] | 9.186 [0.007] | 6.707 [0.036] | 4.297 [0.056] | 8.044 [0.100] | -3.214 [0.578] |
| | N NxT | | 2,204 13,755 | 629 3,795 | 581 3,389 | 746 4,841 | 138 966 | 97 701 |
| Spain 1990 - 1999 | Pooled | β p | 31.467 [0.000] | 42.194 [0.000] | 31.035 [0.000] | 29.310 [0.000] | 21.994 [0.000] | 6.465 [0.070] |
| | Fixed effects | β p | 9.274 [0.000] | 11.535 [0.000] | 7.071 [0.000] | 6.014 [0.002] | 14.169 [0.000] | 7.830 [0.022] |
| | N NxT | | 3,001 17,418 | 878 4,612 | 809 4,256 | 652 3,930 | 385 2,644 | 277 1,976 |

| Country | Model | | All firms | 10 - 19 employees | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-------------------|---------------|---------|-----------|-------------------|-------------------|--------------------|---------------------|------------------------|
| Sweden | Pooled | β | 25.734 | 25.609 | 26.617 | 26.871 | 30.604 | -2.955 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.517] |
| | Fixed effects | β | 3.458 | 2.327 | 2.327 | 5.760 | 11.628 | 5.866 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.214] |
| | N | | 11,446 | 6,726 | 4,514 | 2,451 | 403 | 312 |
| | NxT | | 55,015 | 23,548 | 17,171 | 11,385 | 1,526 | 1,385 |
| UK 1995 - 2004 | Pooled | β | 11.271 | 27.950 | 9.173 | 11.056 | 8.724 | 10.317 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | Fixed effects | β | 4.873 | 14.527 | 8.557 | 4.338 | 7.957 | -3.511 |
| | | p | [0.000] | [0.009] | [0.000] | [0.000] | [0.000] | [0.072] |
| | N | | 9,903 | 600 | 1,950 | 5,180 | 1,070 | 1,103 |
| | NxT | | 55,286 | 2,228 | 9,594 | 29,421 | 7,122 | 6,921 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 10 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labor productivity (defined as total sales per employee) in a year are excluded from all computations. Firms are classified into size classes according to the median of the number of employees over the years covered. β is the estimated regression coefficient from an OLS-regression of log (labor productivity) on a dummy variable for exporting firms, controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and a full set of interaction terms of 4digit industry-dummies and year dummies; the fixed effects model adds firm fixed effects. To facilitate interpretation the estimated coefficients for the exporter dummy variable have been transformed by $100(\exp(\beta)-1)$. p is the prob-value. N is the number of firms, NxT is the number of observations.

Table III.4 Exporter productivity premia II: Share of exports in total sales and its squared value

| Country | Model | | All firms | 10 - 19 employees | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|----------------------|---------------|-----------|-----------|-------------------|-------------------|--------------------|---------------------|------------------------|
| Belgium 1996-2005 | Pooled | $\beta 1$ | 0.069 | 0.170 | 0.399 | 0.096 | -0.069 | 0.410 |
| | | p | [0.006] | [0.000] | [0.000] | [0.001] | [0.000] | [0.000] |
| | | $\beta 2$ | 0.000 | -0.001 | -0.002 | -0.001 | 0.000 | -0.002 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | Fixed effects | $\beta 1$ | -0.040 | -0.144 | 0.136 | 0.015 | 0.511 | 0.209 |
| | | p | [0.003] | [0.000] | [0.003] | [0.405] | [0.000] | [0.044] |
| | | $\beta 2$ | 0.000 | 0.003 | -0.076 | -0.001 | -0.181 | -0.051 |
| | | p | [0.296] | [0.639] | [0.000] | [0.021] | [0.000] | [0.049] |
| | N | | 6,661 | 2,270 | 2,235 | 1,730 | 241 | 185 |
| | NxT | | 39,292 | 9,013 | 13,453 | 13,281 | 1,924 | 1,621 |
| Chile 1990 - 1999 | Pooled | $\beta 1$ | 1.422 | 0.743 | 1.071 | 1.011 | 0.150 | -0.653 |
| | | p | [0.000] | [0.112] | [0.000] | [0.000] | [0.504] | [0.043] |
| | | $\beta 2$ | -1.129 | 0.376 | -0.787 | -1.198 | -0.255 | 0.209 |
| | | p | [0.000] | [0.546] | [0.011] | [0.000] | [0.360] | [0.598] |
| | Fixed effects | $\beta 1$ | 0.237 | 0.036 | 0.438 | 0.315 | 0.155 | -0.309 |
| | | p | [0.007] | [0.919] | [0.018] | [0.007] | [0.518] | [0.461] |
| | | $\beta 2$ | -0.145 | 0.578 | -0.269 | -0.241 | -0.060 | -0.004 |
| | | p | [0.184] | [0.170] | [0.331] | [0.078] | [0.821] | [0.991] |
| | N | | 7,745 | 2,643 | 2,710 | 1,993 | 280 | 119 |
| | NxT | | 47,820 | 13,810 | 17,109 | 13,828 | 2,084 | 989 |
| China 1998-2005 | Pooled | $\beta 1$ | 0.848 | 0.211 | 0.517 | 0.725 | 1.034 | 1.136 |
| | | p | [0.000] | [0.125] | [0.000] | [0.000] | [0.000] | [0.000] |
| | | $\beta 2$ | -0.865 | -0.015 | -0.440 | -0.731 | -1.080 | -1.196 |
| | | p | [0.000] | [0.920] | [0.000] | [0.000] | [0.000] | [0.000] |
| | Fixed effects | $\beta 1$ | 0.411 | 0.745 | 0.404 | 0.378 | 0.467 | 0.414 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | | $\beta 2$ | -0.417 | -0.693 | -0.395 | -0.381 | -0.464 | -0.465 |
| | | p | [0.000] | [0.001] | [0.000] | [0.000] | [0.000] | [0.000] |
| | N | | 408,710 | 17,594 | 86,454 | 228,716 | 45,176 | 30,770 |
| | NxT | | 1,347,038 | 36,321 | 214,456 | 760,454 | 189,662 | 146,145 |

| Country | Model | | All firms | 10 - 19 employees | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|------------------------------------|---------------|-----------|-----------|-------------------|-------------------|--------------------|---------------------|------------------------|
| Colombia 1981 - 1991 | Pooled | $\beta 1$ | 0.525 | 0.670 | 0.904 | 0.361 | -0.113 | 0.469 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.362] | [0.002] |
| | | $\beta 2$ | -0.041 | -0.048 | -0.110 | -0.056 | -0.349 | -0.140 |
| | | p | [0.000] | [0.000] | [0.129] | [0.262] | [0.002] | [0.278] |
| | Fixed effects | $\beta 1$ | 0.630 | 0.702 | 0.720 | 0.616 | 0.053 | 0.048 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.620] | [0.815] |
| | | $\beta 2$ | -0.044 | -0.047 | -0.064 | -0.072 | -0.123 | -0.063 |
| | | p | [0.000] | [0.000] | [0.070] | [0.000] | [0.000] | [0.144] |
| | N | | 11,434 | 5,504 | 3,468 | 2,098 | 221 | 143 |
| | NxT | | 75,212 | 29,070 | 24,882 | 17,592 | 2,230 | 1,438 |
| Denmark 1999 - 2002 | Pooled | $\beta 1$ | 1.084 | 1.229 | 1.194 | 0.582 | 0.393 | -0.084 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.009] | [0.723] |
| | | $\beta 2$ | -0.755 | -0.910 | -0.802 | -0.370 | -0.313 | 0.031 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.896] |
| | Fixed effects | $\beta 1$ | 0.420 | 0.528 | 0.394 | 0.342 | 0.559 | 0.486 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.002] |
| | | $\beta 2$ | -0.367 | -0.397 | -0.430 | -0.271 | -0.523 | -0.483 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.002] |
| | N | | 9,050 | 3,968 | 3,026 | 1,680 | 221 | 155 |
| | NxT | | 50,162 | 20,938 | 17,017 | 9,973 | 1,333 | 901 |
| Republic of Ireland 1991 - 2004 | Pooled | $\beta 1$ | 0.053 | -0.010 | 0.155 | 0.226 | -0.999 | -0.264 |
| | | p | [0.089] | [0.874] | [0.001] | [0.000] | [0.000] | [0.472] |
| | | $\beta 2$ | 0.144 | 0.103 | 0.058 | -0.036 | 1.129 | 1.183 |
| | | p | [0.000] | [0.144] | [0.265] | [0.549] | [0.000] | [0.000] |
| | Fixed effects | $\beta 1$ | 0.216 | 0.230 | 0.251 | 0.218 | -0.559 | -0.199 |
| | | p | [0.000] | [0.003] | [0.000] | [0.005] | [0.041] | [0.576] |
| | | $\beta 2$ | -0.010 | -0.160 | 0.057 | -0.063 | 0.690 | 0.429 |
| | | p | [0.814] | [0.084] | [0.409] | [0.402] | [0.008] | [0.223] |
| | N | | 5,645 | 2,484 | 1,762 | 1,182 | 147 | 70 |
| | NxT | | 40,973 | 12,890 | 15,016 | 10,945 | 1,434 | 688 |

| Country | Model | | All firms | 10 - 19 employees | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-------------------------|---------------|-----------|-----------|-------------------|-------------------|--------------------|---------------------|------------------------|
| Slovenia 1994 - 2002 | Pooled | $\beta 1$ | -0.040 | 0.503 | 0.122 | 0.149 | 0.259 | 0.065 |
| | | p | [0.002] | [0.030] | [0.014] | [0.003] | [0.008] | [0.512] |
| | | $\beta 2$ | 0.000 | -0.006 | 0.006 | 0.001 | 0.008 | 0.002 |
| | | p | [0.419] | [0.004] | [0.150] | [0.081] | [0.005] | [0.334] |
| | Fixed effects | $\beta 1$ | 0.002 | -0.006 | 0.011 | 0.043 | 0.179** | -0.088 |
| | | p | [0.893] | [0.897] | [0.771] | [0.104] | [0.018] | [0.166] |
| | | $\beta 2$ | 0.000 | -0.007 | 0.007 | -0.001 | -0.004 | 0.005 |
| | | p | [0.882] | [0.050] | [0.109] | [0.189] | [0.332] | [0.151] |
| | N | | 2,204 | 629 | 581 | 746 | 138 | 97 |
| | NxT | | 13,755 | 3,795 | 3,389 | 4,841 | 966 | 701 |
| Spain 1990 - 1999 | Pooled | $\beta 1$ | 0.520 | 1.321 | 1.453 | 0.479 | 0.511 | 0.330 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | | $\beta 2$ | -0.328 | -1.051 | -1.325 | -0.437 | -0.605 | -0.161 |
| | | p | [0.004] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | Fixed effects | $\beta 1$ | 0.422 | 0.781 | 0.724 | 0.086 | 0.221 | 0.275 |
| | | p | [0.000] | [0.000] | [0.000] | [0.551] | [0.109] | [0.000] |
| | | $\beta 2$ | -0.200 | -0.333 | -0.555 | 0.128 | -0.051 | -0.164 |
| | | p | [0.000] | [0.081] | [0.000] | [0.492] | [0.735] | [0.000] |
| | N | | 3,001 | 878 | 809 | 652 | 385 | 277 |
| | NxT | | 17,418 | 4,612 | 4,256 | 3,930 | 2,644 | 1,976 |
| Sweden 1997-2004 | Pooled | $\beta 1$ | 0.375 | 0.469 | 0.409 | 0.262 | 0.214 | 0.473 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] | [0.000] |
| | | $\beta 2$ | -0.041 | -0.044 | -0.064 | -0.029 | -0.040 | -0.059 |
| | | p | [0.000] | [0.000] | [0.000] | [0.000] | [0.14] | [0.01] |
| | Fixed effects | $\beta 1$ | -0.024 | -0.063 | -0.082 | 0.013 | -0.036 | 0.056 |
| | | p | [0.17] | [0.03] | [0.000] | [0.65] | [0.58] | [0.63] |
| | | $\beta 2$ | -0.008 | -0.011 | -0.006 | -0.001 | -0.017 | 0.056 |
| | | p | [0.000] | [0.000] | [0.04] | [0.59] | [0.39] | [0.03] |
| | N | | 11,446 | 6,726 | 4,514 | 2,451 | 403 | 312 |
| | NxT | | 55,015 | 23,548 | 17,171 | 11,385 | 1,526 | 1,385 |

| Country | Model | | All firms | 10 - 19 employees | 20 – 49 employees | 50 – 249 employees | 250 – 499 employees | 500 and more employees |
|-------------------|---------------|-----------|-----------|-------------------|-------------------|--------------------|---------------------|------------------------|
| UK 1995 - 2004 | Pooled | $\beta 1$ | 0.052 | 0.490 | -0.325 | 0.129 | -0.069 | 0.170 |
| | | p | [0.064] | [0.003] | [0.000] | [0.001] | [0.341] | [0.018] |
| | | $\beta 2$ | 0.017 | -0.330 | 0.450 | -0.080 | 0.062 | -0.110 |
| | | p | [0.638] | [0.085] | [0.000] | [0.098] | [0.487] | [0.213] |
| | Fixed effects | $\beta 1$ | 0.028 | 0.023 | 0.085 | 0.087 | -0.098 | -0.088 |
| | | p | [0.488] | [0.919] | [0.410] | [0.110] | [0.371] | [0.367] |
| | | $\beta 2$ | 0.050 | 0.196 | 0.115 | -0.030 | 0.116 | 0.122 |
| | | p | [0.284] | [0.417] | [0.302] | [0.646] | [0.326] | [0.298] |
| | N | | 9,903 | 600 | 1,950 | 5,180 | 1,070 | 1,103 |
| | NxT | | 55,286 | 2,228 | 9,594 | 29,421 | 7,122 | 6,921 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 10 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labour productivity (defined as total sales per employee) in a year are excluded from all computations. Firms are classified into size classes according to the median of the number of employees over the years covered. $\beta 1$ and $\beta 2$ are the estimated regression coefficients from an OLS-regression of log (labour productivity) on the share of exports in total sales and its squared value, respectively, controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and a full set of interaction terms of 4-digit industry-dummies and year dummies; the fixed effects model adds firm fixed effects. p is the prob-value, N is the number of firms, NxT is the number of observations.

Table III.6: Export starters and non-starters three years before the start

| Country | Year of start | Labor productivity premia of export-starters (percent) | [p-value] | No. of observ. | No. of starters |
|---------------------|---------------|--|-----------|----------------|-----------------|
| Belgium | 1999 | 31.206 | [0.051] | 457 | 28 |
| | 2000 | -1.438 | [0.909] | 476 | 31 |
| | 2001 | 10.256 | [0.289] | 568 | 54 |
| | 2002 | 16.299 | [0.068] | 545 | 50 |
| | 2003 | 15.923 | [0.202] | 526 | 45 |
| | 2004 | 22.569 | [0.078] | 511 | 39 |
| | 2005 | 12.044 | [0.210] | 451 | 23 |
| Chile | 1993 | 25.031 | [0.001] | 2,824 | 89 |
| | 1994 | 14.534 | [0.020] | 2,851 | 92 |
| | 1995 | 23.043 | [0.014] | 2,820 | 65 |
| | 1996 | 7.226 | [0.220] | 2,796 | 88 |
| | 1997 | 25.160 | [0.012] | 2,614 | 57 |
| | 1998 | 5.678 | [0.528] | 2,456 | 50 |
| | 1999 | 14.299 | [0.234] | 2,452 | 38 |
| China | 2001 | 22.624 | [0.000] | 44,272 | 1,017 |
| | 2002 | 29.353 | [0.000] | 47,268 | 1,186 |
| | 2003 | 24.892 | [0.000] | 47,017 | 1,183 |
| | 2004 | 17.308 | [0.000] | 52,745 | 3,339 |
| | 2005 | 13.123 | [0.000] | 58,019 | 3,476 |
| Colombia | 1984 | -1.836 | [0.779] | 3,751 | 55 |
| | 1985 | 3.859 | [0.553] | 3,843 | 76 |
| | 1986 | 10.021 | [0.091] | 3,965 | 86 |
| | 1987 | 17.606 | [0.014] | 4,013 | 61 |
| | 1988 | 13.780 | [0.090] | 4,216 | 69 |
| | 1989 | 18.649 | [0.011] | 4,482 | 101 |
| | 1990 | 17.071 | [0.002] | 4,734 | 151 |
| | 1991 | 24.614 | [0.000] | 4,758 | 236 |
| | Denmark | 1998 | 36.895 | [0.185] | 42 |
| 1999 | | -6.543 | [0.675] | 45 | 4 |
| 2000 | | -17.126 | [0.189] | 47 | 5 |
| 2001 | | 10.875 | [0.490] | 42 | 1 |
| 2002 | | 29.875 | [0.672] | 37 | 5 |
| Republic of Ireland | 1994 | -11.311 | [0.144] | 643 | 42 |
| | 1995 | 11.612 | [0.160] | 645 | 44 |
| | 1996 | 14.770 | [0.053] | 677 | 56 |
| | 1997 | 22.119 | [0.004] | 664 | 53 |
| | 1998 | -2.487 | [0.758] | 665 | 45 |
| | 1999 | 6.891 | [0.355] | 673 | 59 |
| | 2000 | -1.919 | [0.754] | 666 | 70 |
| | 2001 | 6.211 | [0.511] | 626 | 55 |
| | 2002 | -1.181 | [0.901] | 633 | 38 |
| | 2003 | 10.935 | [0.152] | 667 | 41 |
| | 2004 | -2.753 | [0.711] | 641 | 25 |
| Slovenia | 1997 | 24.292 | [0.345] | 130 | 15 |
| | 1998 | -6.778 | [0.703] | 160 | 17 |
| | 1999 | -15.022 | [0.143] | 186 | 35 |
| | 2000 | -0.572 | [0.958] | 193 | 31 |
| | 2001 | 25.961 | [0.156] | 186 | 23 |
| | 2002 | 23.140 | [0.052] | 202 | 31 |

| Country | Year of start | Labor productivity premia of export-starters (percent) | [p-value] | No. of observ. | No. of starters |
|---------|---------------|--|-----------|----------------|-----------------|
| Spain | 1993 | 13.119 | [0.170] | 536 | 43 |
| | 1994 | 25.713 | [0.029] | 529 | 42 |
| | 1995 | 26.407 | [0.009] | 477 | 36 |
| | 1996 | 30.361 | [0.004] | 471 | 41 |
| | 1997 | 25.976 | [0.024] | 439 | 49 |
| | 1998 | 21.451 | [0.111] | 369 | 30 |
| | 1999 | 41.481 | [0.032] | 349 | 21 |
| Sweden | 2000 | -5.918 | [0.072] | 6,857 | 126 |
| | 2001 | -7.133 | [0.059] | 7,171 | 110 |
| | 2002 | -11.308 | [0.001] | 6,945 | 107 |
| | 2003 | -9.787 | [0.005] | 7,097 | 120 |
| | 2004 | -8.881 | [0.014] | 6,827 | 106 |
| UK | 1998 | 8.255 | [0.467] | 652 | 32 |
| | 1999 | 7.296 | [0.571] | 733 | 24 |
| | 2000 | 13.591 | [0.371] | 784 | 24 |
| | 2001 | -9.412 | [0.559] | 851 | 49 |
| | 2002 | 10.749 | [0.452] | 917 | 34 |
| | 2003 | 25.458 | [0.027] | 932 | 36 |
| | 2004 | 5.646 | [0.667] | 767 | 28 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 10 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labour productivity (defined as total sales per employee) in a year are excluded from all computations. The labour productivity premia are estimated in an OLS-regression of log (labor productivity) on a dummy variable for export starters controlling for the log of the number of employees and its squared value, the log of wages and salaries per employee, and dummy variables for 4-digit-industries, all measured three years before the start. To facilitate interpretation the estimated coefficients for the exporter dummy variable have been transformed by $100(\exp(\beta)-1)$.

Table III.8: Export starters and non-starters three years after the start

| Country | Year of start | Labor productivity premia of export-starters (percent) | [p-value] | No. of observ. | No. of starters |
|---------------------|---------------|--|-----------|----------------|-----------------|
| Belgium | 1999 | 9.248 | [0.654] | 231 | 8 |
| | 2000 | 1.447 | [0.852] | 245 | 10 |
| | 2001 | 7.415 | [0.212] | 294 | 22 |
| | 2002 | 12.928 | [0.098] | 274 | 18 |
| Chile | 1993 | 1.758 | [0.600] | 2,055 | 51 |
| | 1994 | 1.910 | [0.675] | 2,034 | 50 |
| | 1995 | 1.763 | [0.585] | 1,895 | 23 |
| | 1996 | 2.660 | [0.576] | 1,768 | 37 |
| China | 2001 | -4.607 | [0.002] | 25,180 | 475 |
| | 2002 | -4.383 | [0.001] | 25,137 | 603 |
| Colombia | 1984 | -10.191 | [0.020] | 2,914 | 27 |
| | 1985 | -0.856 | [0.876] | 3,062 | 36 |
| | 1986 | -2.238 | [0.735] | 3,199 | 31 |
| | 1987 | 5.466 | [0.219] | 3,265 | 45 |
| | 1988 | 3.106 | [0.495] | 3,280 | 48 |
| Denmark | 1998 | NA | | 3 | 2 |
| | 1999 | NA | | 2 | 1 |
| Republic of Ireland | 1994 | -4.619 | [0.213] | 442 | 30 |
| | 1995 | 4.691 | [0.087] | 447 | 31 |
| | 1996 | -0.963 | [0.799] | 448 | 32 |
| | 1997 | 3.308 | [0.345] | 421 | 33 |
| | 1998 | 6.502 | [0.162] | 409 | 25 |
| | 1999 | 0.977 | [0.777] | 439 | 29 |
| | 2000 | -2.116 | [0.271] | 447 | 32 |
| | 2001 | -2.665 | [0.461] | 428 | 30 |
| Slovenia | 1997 | 1.489 | [0.939] | 82 | 8 |
| | 1998 | 6.168 | [0.717] | 89 | 10 |
| | 1999 | 21.813 | [0.176] | 95 | 13 |
| Spain | 1993 | -1.673 | [0.631] | 320 | 23 |
| | 1994 | 2.217 | [0.528] | 316 | 27 |
| | 1995 | 3.081 | [0.429] | 293 | 20 |
| | 1996 | -4.607 | [0.174] | 275 | 20 |
| Sweden | 2000 | -0.001 | [0.950] | 5,214 | 119 |
| | 2001 | 0.016 | [0.257] | 5,201 | 107 |
| UK | 1998 | -2.928 | [0.594] | 403 | 22 |
| | 1999 | -15.397 | [0.275] | 461 | 12 |
| | 2000 | 16.024 | [0.045] | 489 | 18 |
| | 2001 | 10.327 | [0.141] | 441 | 24 |

Note: Results are for firms from ISIC industries 15 – 36 with at least 10 employees at the median over the years covered in the panel. The firms with the bottom / top one percent of labour productivity (defined as total sales per employee) in a year are excluded from all computations. The labour productivity growth premia are estimated in an OLS-regression of the growth rate of labour productivity (computed as the difference of the log of labour productivity in t+3 and t+1) on a dummy variable for export starters controlling for the log of number of employees and its squared value, log wages and salaries per employee, and dummy variables for 4-digit-industries, all measured at the start year t. To facilitate interpretation the estimated coefficients for the exporter dummy variable have been transformed by $100(\exp(\beta)-1)$.