

A1. Measuring globalisation: factors influencing the commodities exports of SMEs and large enterprises

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1.1 Introduction

Even though large (multinational) enterprises control the bulk of economic transactions, the vast majority of the enterprise population consists of small and medium-sized enterprises (SMEs). In 2007, approximately 99 percent of all Dutch enterprises belonged in this category¹⁾. SMEs are an important source of entrepreneurship and are increasingly recognised as a driving force of economic growth, innovation, productivity and employment (OECD, 2008). In addition, internationalisation is not only a reality for large enterprises but for SMEs as well. However, most of our knowledge of international transactions is based on the activities of MNEs, leaving the international activities of SMEs relatively underexposed.

Statistics Netherlands can make an important contribution in the research of SME internationalisation because of its unique ability to analyse (almost) the entire population of enterprises, and by linking enterprise data at the micro level on trade with other indicators. In 2008, the first (provisional) match was established between enterprises that engage in international trade in commodities and the general business register (GBR). This linked dataset makes it possible to analyse trade patterns per enterprise type, size class and activity code, for instance in terms of commodities and trading partners, thereby shedding light on the role of both large and SME firms in Dutch international trade.

The remainder of this chapter is constructed as follows. The second section of this chapter will provide some background information on the exporting behaviour of enterprises based on existing research. Section 1.3 briefly describes the methods used to assign Dutch commodities exports to the Dutch enterprise population (i.e., the data linking exercise), distinguishing between SMEs and large enterprises. Section 1.4 reports the first empirical results and shows in which economic sectors the share of exporting enterprises is highest, and how the export intensity of exporting SMEs and large enterprises varies across industries. In addition, based on several descriptive tables, we relate enterprise exports with other key economic variables, including labour productivity and turnover, while controlling for firm size and economic activity. Analysis of causality between these variables is not yet

possible due to a lack of time-series data – at this point in time, export data on enterprise level is only available for 2007. Hence, testing e.g. the ‘learning-by-doing’ hypothesis (which states that due to internationalisation, firms increase their productivity) is outside the scope of this chapter, but it will certainly be part of future research.

1.2 *Background: firm characteristics and propensity to export*

There are many factors that influence an enterprise’s decision to start trading internationally. The reason why an enterprise decides to engage in international trade often boils down to achieving long-term objectives such as firm expansion or increasing profitability. Trading allows an enterprise to gain access to a foreign market, for instance to sell its products to new consumers or to be able to make use of scarce or low-priced factors of production. Accessing foreign markets, knowledge and technology are most often mentioned as a motivation for trading internationally (European Commission, 2004). Onkelinx and Sleuwaegen (2008) identified several drivers of SME internationalisation, including for instance firm-specific advantages in terms of resources, knowledge or technology, and the (managerial) expectation, experience and commitment to exploit these advantages. External factors that may drive internationalisation include government regulations and trade policies, the (international) activities of competitors in the same industry or the specificity of consumer demand.

However, especially SMEs can experience significant barriers to internationalise. Research carried out by Berenschot (2009) showed that SMEs experience trade impediments particularly with respect to bureaucracy, differences in legislation, and issues concerning currency or payment. Research carried for the European Commission (The Gallup Organization, 2007) showed that European SMEs regard the lack of knowledge of the foreign market and the cost of exporting (e.g. an internal or external lack of capital or finance, or existing tariffs and regulations in the foreign market) as the most important constraints.

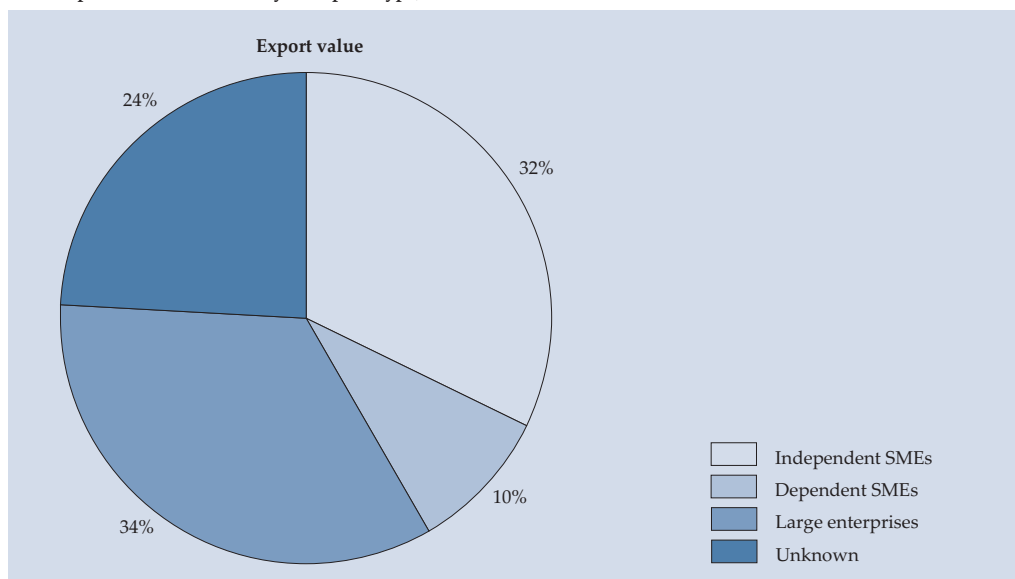
Enterprises that export are different from non-exporters. Existing empirical research shows that enterprises that export are in general more productive and pay higher wages than firms that sell their products domestically. Schank, Schnabel and Wagner (2008) found that German exporting firms paid higher wages than non-exporting firms and that this exporter wage premium already existed in the years before the firm started to export. EIM found that larger enterprises export a larger share of their turnover abroad (EIM, 2007). Wagner (2005) presented a synopsis of empirical research on the topic, in which almost all studies found that exporters have a higher productivity level and often also higher productivity growth than non-exporters, while controlling for firm-specific characteristics such as size and industry. In sum, exporters are expected to be more efficient, larger, more

technology-intensive and capable of generating more profit and turnover than comparable firms that do not export (Bernard and Jensen, 1997) ²⁾. In this chapter we will determine if these differences can also be found in the Dutch context, controlling for enterprise size and industry.

1.3 Methodology and data: linking international trade and enterprise data

Linking the international commodity trade statistics of 2007 to the general business register (GBR) makes it possible to analyse Dutch trade flows at the level of the individual enterprise. This exercise showed that approximately 8 percent of the total active enterprise population had exported commodities in 2007. However, linking trade statistics to enterprises in the GBR did not result in a match for all traders. Graph A1.1 shows that approximately 24 percent of commodities exported by or via the Netherlands could not be linked to an enterprise in the GBR.

A1.1 Exports of commodities by enterprise type, 2007



An important reason why part of Dutch trade cannot be assigned to an enterprise is that a significant part of Dutch trade is carried out by foreign controlled enterprises. Some of these foreign enterprises do not have an establishment in the Netherlands nor any other economic activities in addition to international trade. Such a foreign enterprise is therefore not part of the Dutch enterprise population and not registered

in the GBR, even though its trade *is* part of Dutch international trade³⁾. Muûls and Pisu (2007) found a similar phenomenon in their dataset of Belgian traders. Often, these enterprises were identified as trading platforms of other European firms, using Belgium as a port of entry or exit.

In 2007, over 99 percent of all Dutch enterprises were SMEs. An SME is defined as a company employing less than 250 people. SMEs with exports accounted for approximately 8 percent of the total SME population in 2007. Logically, this percentage coincides with the overall share of exporters in the population, which is due to the strong prevalence of SMEs⁴⁾. The latest survey of the Observatory of European SMEs showed that in some small open economies the export involvement of SMEs was significantly higher than in the Netherlands (The Gallup Organization, 2007). In Estonia, Denmark and Austria respectively 23, 17 and 14 percent of all SMEs reported turnover from exports in 2005. SMEs in larger economies such as Spain and Italy were less active in exporting.

Graph A1.1 shows that in 2007, the value of commodities exported by SMEs was approximately 145 billion euros or circa 42 percent of the total Dutch export value in that year. Since the characterisation of SMEs takes place at the enterprise level, it is possible that some SMEs are part of an enterprise group which, as a whole, employs more than 249 people. The individual enterprise is characterised as an SME but since it is part of a large enterprise group, its activities may be influenced by the parent company. Distinguishing between SMEs that are part of large enterprise group and independently operating SMEs (or SMEs which are part of an enterprise group that employs less than 250 workers in total) might provide policymakers additional insight into the composition of the SME population. In absolute numbers, most SMEs are independent, i.e. not part of a large enterprise group. However, in terms of value approximately 10 percent of total exports in 2007 were attributed to such affiliated SMEs.

Finally, at least 34 percent of Dutch exports in 2007 were carried out by large enterprises. This corresponded to a value of approximately 118 billion euros. The share of large exporters in the Dutch population of large enterprises approached 50 percent.

1.4 Results: industry effects

The distribution of exporting enterprises is not equal across all industries. Table A1.1 shows for a selection of industries which part of the enterprise population exported commodities abroad in 2007. For instance, at least 27 percent of Dutch manufacturers exported commodities abroad. This industry inhabited the largest share of exporters in 2007, even though the overall number of enterprises in this industry is relatively modest compared to services sectors. In trade, repair, hotel and restaurants, approximately 16 percent of all enterprises (and SMEs) exported goods abroad.

Circa 26 percent of SMEs in the manufacturing industry exported commodities in 2007, compared to 17 percent in Belgium (Onkelinx and Sleuwaegen, 2008). The majority of large enterprises in this industry reported cross-border deliveries in 2007.

Table A1.1
Share of enterprises with exports in population by industry and enterprise type, 2007

	Total	Large enterprises	SMEs
	%		
Total	8	47	8
Manufacturing industry	27	90	26
Production and distribution of energy and construction	2	56	2
Trade, repair, hotels and restaurants	16	x	16
Transport, storage and communication	6	64	5
Commercial services and real estate	5	40	5
Government, healthcare and public services	2	8	2

The export intensity of exporting enterprises provides an indication of the foreign market orientation of enterprises in an industry. Table A1.2 shows the average export intensity of exporting enterprises in 2007, where export intensity is measured as the export value of an enterprise in 2007 as a share of its turnover in 2005. Enterprises with no employees (e.g. self-employed persons) are excluded from the analysis, as well as incidents where the export intensity is less than 1 or larger than 100.

Table A1.2
Average export intensity of exporting enterprises (export value/turnover) by industry and enterprise type, 2005/2007

	Total	Large enterprises	SMEs
	%		
Total	28	34	27
Agriculture, hunting, fishing, mining and quarrying	22	36	22
Manufacturing industry	32	44	31
Production and distribution of energy and construction	10	14	10
Trade, repair, hotels and restaurants	25	21	26
Transport, storage and communication	20	20	20
Commercial services and real estate	19	11	19
Government and public services healthcare	13	3	15

In 2007, the average export intensity of exporters was approximately 28 percent. As a group, SMEs had a lower export intensity than large enterprises. We also found a positive association between firm size and export intensity, although the export intensity of the largest firms was lower than that of medium-sized to large enterprises.

SMEs had an average export intensity of 27 percent in 2007. EIM found an export intensity of 26 percent for SMEs that year (EIM, 2008). The SMEs in the manufacturing industry and SMEs in trade, repair, hotels and restaurants had the highest export intensity in 2007. The export value of large enterprises is on average 34 percent of their turnover, indicating that larger enterprises derive more revenue from exporting than smaller enterprises. Large exporters in the manufacturing industry reported the highest export intensity.

Table A1.3 shows that roughly 60 percent of exporting enterprises had an export value in 2007 that was less than 25 percent of their turnover. SMEs were more likely to have an export intensity below 25 percent than large enterprises, which is due to the lower average export intensity of many small-sized enterprises. Around 17 percent of large exporters had an export intensity exceeding 75 percent, while 7 percent had an export intensity higher than 90 percent. In comparison, for exporting SMEs these shares were 9 and 3 percent respectively. Mayer and Ottaviano (2007) researched the export intensity of exporting enterprises for a selection of European countries and find similar percentages. Their results showed that a quarter of exporting firms export more than 50 percent of their turnover, compared to 22 percent in our dataset.

Table A1.3
Average export intensity of exporting enterprises by enterprise type, 2007

	Total	Large enterprises	SMEs
	%		
Total	100	100	100
0– 24 percent	60	53	60
25– 49 percent	18	18	18
50– 74 percent	12	13	12
75–100 percent	10	17	9

1.5 *Economic indicators of exporters versus non-exporters*

Not only industry, but also other economic indicators influence the propensity of a firm to export. Data on enterprise turnover and labour productivity were obtained

from the 2005 structural business statistics and compared to the incidence of exporting in 2007. This diminishes the likelihood of reverse causality between a firm's performance and the activity of exporting, as predicted by learning-by-exporting theories. Whether or not such a causal effect exists is not tested here but in the future such an analysis would be possible. We have used a simple independent t-test to determine whether there existed significant differences in the economic indicators of exporters compared to non-exporters of 2007.

1.5.1 *Turnover of exporting enterprises compared to non-exporting enterprises*

Table A1.4 shows the relationship between firm turnover and export behaviour. Approximately 81 percent of Dutch enterprises without exports in 2007 had a turnover that was less than 5 million euro, compared to 42 percent of exporting enterprises. Roughly 11 percent of exporting enterprises had a turnover larger than 50 million euro in 2005, while only 2 percent of non-exporters attained such revenue.

Circa twice as many non-exporting SMEs had a turnover of less than 5 million euros compared to exporting SMEs. Roughly 7 percent of exporting SMEs had a turnover in excess of 50 million euro. Large exporters were especially capable of generating substantial amounts of turnover through their exporting activities. Circa 28 percent of large non-exporting enterprises generated more than 100 million euro in turnover whereas this percentage is twice as large for large exporters.

In sum, table A1.4 shows that, even while correcting for enterprise size, exporting firms are larger in terms of turnover than non-exporters.

Table A1.5 compares the average turnover of exporters to that of non-exporters in several (clusters of) industries. In general, SMEs that exported commodities in 2007

Table A1.4
Average turnover by enterprise type, 2005

	Enterprises without exports			Enterprises with exports		
	total	large enterprises	SMEs	total	large enterprises	SMEs
	%					
Total	100	100	100	100	100	100
0– 4.9 million euro	81	9	82	42	1	44
5– 9.9 million euro	8	5	8	18	1	19
10– 49.9 million euro	8	39	8	29	17	30
50– 99.9 million euro	1	19	1	5	24	4
100–249.9 million euro	1	15	1	4	33	2
Over 250 million euro	0	13	0	2	24	1

had a turnover in 2005 that was four times higher than the sales of non-exporting SMEs. Large exporters generated more than twice as much turnover in 2005 than large non-exporters.

Using an independent t-test, we compared the mean turnover of non-exporters to that of exporters, for each type of firm and industry. Especially for the SMEs, the turnover of exporters is significantly larger than that of non-exporters in each industry. The average turnover of large exporters is also higher than that of large non-exporters, although differences among companies that produce and distribute energy, construction companies and the government, healthcare and public services are only significantly at the 10 percent level. This could indicate that a large turnover has a stronger effect on the propensity to export for SMEs than for large enterprises. In conclusion, even when correcting for enterprises size and industry, the turnover of exporters was consistently higher than the turnover of non-exporters.

Table A1.5
Average turnover by enterprise type and industry, 2005

	Non-exporters	Exporters	T-stat ¹⁾
	<i>million euro</i>		
Total	8	41	112.38***
Manufacturing industry	8	35	40.28***
Production and distribution of energy and construction	13	65	16.34***
Trade, repair, hotels and restaurants	13	42	47.52***
Transport, storage and communication	7	101	21.20***
Commercial services and real estate	3	26	29.71***
Government and public services healthcare	5	24	9.92***
Large enterprises	148	343	13.60***
Manufacturing industry	105	308	6.68***
Production and distribution of energy and construction	203	306	1.96*
Trade, repair, hotels and restaurants	222	368	4.89***
Transport, storage and communication	139	505	3.54***
Commercial services and real estate	69	280	5.82***
Government and public services healthcare	67	132	1.77*
SMEs	5	20	110.97***
Manufacturing industry	6	13	37.86***
Production and distribution of energy and construction	9	15	13.68***
Trade, repair, hotels and restaurants	10	27	46.33***
Transport, storage and communication	4	38	17.77***
Commercial services and real estate	2	8	29.27***
Government and public services healthcare	4	7	9.13***

¹⁾ Independent t-tests carried out on log turnover per enterprise type and industry.

* p<0.10; ** p <0.05; *** p <0.01.

1.5.2 Labour productivity of exporters versus non-exporting enterprises

Finally, we explored differences in labour productivity of exporting enterprises versus non-exporters. In table A1.6, enterprises are divided into labour productivity categories depending on their size and export activity. Results clearly showed that exporters had a consistently higher labour productivity level in 2005 than non-exporters.

Almost 40 percent of SME exporters had an average labour productivity in 2005 of less than 50 thousand euro, while 12 percent had a labour productivity exceeding 125 thousand euro. For non-exporting SMEs, these fractions were 60 and 8 percent. Onkelinx and Sleuwaegen (2008) also concluded that SME exporters have higher levels of productivity than SMEs that do not export. Wagner (2005) found that exporters consistently outperformed non-exporters, in terms of higher levels and growth rates of productivity.

Almost a third of large exporters had an average labour productivity between 50 thousand and 75 thousand euro and roughly 13 percent of large exporters have a labour productivity over 125 euro, compared to 6 percent of non-exporting large enterprises.

Table A1.6
Labour productivity by enterprise type ¹⁾, 2005

	Non-exporters			Exporters		
	total	large enterprise	SMEs	total	large enterprise	SMEs
	%					
Total	100	100	100	100	100	100
1– 24 999 euro	23	21	23	7	4	7
25 000– 49 999 euro	37	38	37	32	27	32
50 000– 74 999 euro	21	22	21	29	31	29
75 000– 99 999 euro	8	10	8	14	15	14
100 000–124 999 euro	4	3	4	7	9	7
Over 125 000 euro	8	6	8	12	13	12

¹⁾ Enterprises with a labour productivity of 1 million euro or less in 2005.

Table A1.7 shows that exporting enterprises had a consistently higher labour productivity than non-exporters in 2005, irrespective of firm size and industry. In our sample, the average labour productivity of an enterprise with exports was 79 thousand euro, compared to 62 thousand euro of enterprises without exports. But since labour productivity differs strongly across industries, not controlling for industry differences would distort the comparison of exporters versus non-exporters.

For both SMEs and large enterprises, the productivity advantages of exporters were significant and consistent across every industry. The differences between large exporters and non-exporters were most significant in the manufacturing industry, commercial services and real estate, trade, repair, hotels and restaurants. Especially in the manufacturing industry, the trade, repair, hotels and restaurants, the commercial services and in real estate the differences were quite significant.

Table A1.7
Average labour productivity by enterprise type and industry ¹⁾, 2005

	Non-exporters	Exporters	T-stat ¹⁾
	<i>1,000 euro</i>		
Total	62	79	48.14***
Manufacturing industry	73	75	12.82***
Production and distribution of energy and construction	58	74	6.22***
Trade, repair, hotels and restaurants	69	83	27.51***
Transport, storage and communication	70	82	5.63***
Commercial services and real estate	57	76	14.44***
Government and public services healthcare	61	69	3.53***
Large enterprises	59	85	11.12***
Manufacturing industry	66	94	3.70***
Production and distribution of energy and construction	71	93	1.97*
Trade, repair, hotels and restaurants	63	62	2.75***
Transport, storage and communication	77	84	1.78*
Commercial services and real estate	48	88	7.57***
Government and public services healthcare	52	97	2.17**
SMEs	62	79	45.94***
Manufacturing industry	73	74	11.79***
Production and distribution of energy and construction	57	70	4.70***
Trade, repair, hotels and restaurants	69	84	27.43***
Transport, storage and communication	70	82	4.81***
Commercial services and real estate	57	75	13.14***
Government and public services healthcare	61	64	2.13**

¹⁾ Enterprises with a labour productivity of 1 million euro or less in 2005.

²⁾ Independent t-tests carried out on log labour productivity per enterprise type and industry.

* p<0.10; ** p <0.05; *** p <0.01.

1.6 Conclusion

A preliminary matching of the international trade in goods statistics to the general business register has made it possible to shed some light on the characteristics of enterprises that engage in international trade. Approximately 8 percent of the Dutch enterprise population had exports of commodities in 2007. For SMEs this percentage was also 8 percent while for large enterprises this share was significantly higher,

approaching 50 percent. In terms of export value, SMEs exported circa 42 percent of the total Dutch export value while at least 34 percent of commodities exports were carried out by large enterprises. At present, the remainder of the export value cannot be assigned to a Dutch enterprise. SMEs are not always independently operating entities; sometimes they are part of a larger parent company. The majority of SMEs are independently operating enterprises, but nevertheless these 'affiliated' SMEs accounted for approximately a fifth of SME exports in 2007.

Enterprises active in the manufacturing industry are quite likely to export commodities abroad. In 2007, the majority of large manufacturers and roughly a quarter of SMEs had reported exports of goods. In addition, the export intensity of manufacturers was the highest of all exporters in 2007, namely 32 percent. On average, exporting SMEs had a lower export intensity than large exporters. However, in most services sectors exporting SMEs generated a higher (or equal) share of their turnover from exports compared to large enterprises.

Theory predicts and empirical studies show that enterprises that export are larger, more productive and that they generate more turnover than comparable enterprises without exports. Only the most efficient firms can afford the extra costs of entering a foreign market. This corresponds to the results presented in this chapter, which showed that Dutch exporting companies, irrespective of size and industry, had on average a higher labour productivity and turnover in 2005 compared to non-exporters. In 2005, exporting enterprises generated on average five times more turnover than non-exporters. Especially large exporting enterprises were often found in the highest turnover categories, but also exporting SMEs outperformed comparable non-exporters. Roughly a third of all exporters (and SMEs specifically as well) had a labour productivity higher than 75 thousand euro, compared to 20 percent of non-exporters (SMEs). For large exporters, the difference in labour productivity was even higher.

The results presented in this chapter provide a primary insight into the population and characteristics of Dutch exporters. More research is necessary to investigate whether or not enterprises (SMEs) that export also manage to increase their productivity even further, as predicted by the learning-by-exporting hypothesis. Economies of scale, knowledge spillovers or access to foreign technology might give a new impulse to productivity growth of internationalising enterprises. However, the possibility of a causal effect of exporting on performance was not analysed in this chapter, but will be part of further research when more data becomes available.

In this chapter, the focus was on exporting enterprises, but importing and re-exporting are also manifestations of a globalising economy. Such information can be found in section B1 of this publication. Tables B1.1 up till B1.8 provide further insight into the international trade pattern of the various types of Dutch enterprises.

Tables B1.2 through B1.5 show per enterprise type, the number of trading partners and the origin/destination of the commodities traded. In which industries the importing and exporting enterprises are active (and their trade value), is the topic of B1.6, while tables B1.7 and B1.8 show which commodities are involved.

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Notes in the text

- ¹⁾ CBS StatLine. Table: Bedrijven; grootte; rechtsvorm en economische activiteit; 2007–2008.
- ²⁾ The presence or direction of a causal relationship will not be tested in this chapter, but will be part of future research.
- ³⁾ If a foreign enterprise decides to engage in other economic activities besides trade and set up a local office, it must register with the Chamber of Commerce. In that case the foreign enterprise establishes a local affiliate and it will be registered in the GBR.
- ⁴⁾ This is somewhat lower than the results published by EIM. EIM (2008) concluded that approximately 9.5 percent of all SMEs had exports in 2007. A reason for this discrepancy might be the fact that EIM included enterprises with exports of services in their analyses. The latest survey of the Observatory of European SMEs (The Gallup organization, 2007) showed a similar percentage as mentioned in the text; 8 percent of all European SMEs had turnover from exports in 2006–2007.