Trading activities and the Performance of Dutch SMEs'

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Abstract:

Nowadays, due to technological and political changes de facto all companies, even SMEs, face a world with global competition. Since the 1980s micro economic studies have been conducted by a multitude of scientist in order to describe the relationship between internationalization and a firm's performance. In general terms the empirical evidence supports that internationalization, by export and import, is positively related to performance (Hagemejer and Kolasa 2008). Particularly, two causal relations have been proposed. The first relates to a 'self-selection' of better performing companies into international markets, whereas the second relates to the ex post performance enhancing effect of trading activities. The research is based on the EIM policy panel dataset including a sample of approximately 3,000 Dutch SMEs, which has been gathered by means of telephone interviews. The focus of this study is to asses if there is a positive relationship between internationalization modes (importing and exporting) and firm performance and if this relationship is due to self-selection, the performance enhancing effect, or both. Details aside, exporters are found to have higher profits than non-exporters. Furthermore we found evidence for a self-selection mechanism at the core of the better performance of exporting versus non exporting companies, whereas no support for the performance enhancing effect could be found. In addition, no empirical evidence for the positive relationship between import and performance has been found.

Key Words: Exports, Imports, Internationalization, SMEs, Performance

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1 Introduction

Firm-level internationalization has experienced an exceptional growth since the latter part of the twentieth century. Driven by the revolutionary changes in their external environments, companies, large and small, have increasingly chosen to engage in international activities in order to leverage technological, organizational and inter-organizational resources, and reduce business costs as well as risks (Carter, Jones-Evans 2006). Today, due to technological and political changes de facto all companies, even SMEs, are facing a world with increasing global competition. As a result of these extraordinary highly integrated markets almost all companies can be labeled international (whether or not the firm's activities extend beyond national borders), because the environment that tempers strategy, business models and performance is an international one (Majocchi and Zucchella 2003). Extending its activities by importing from, or exporting to, foreign countries is an important strategic option, which involves different levels of commitment and risk depending on the internationalization mode (Beamish, 1990).

In this context a significant development within the broad internationalization trend has been the increasingly active role played by small and medium-sized enterprises in international markets (Oviatt and McDougall 1994, 1999). Moreover it has been researched that geographic expansion is one of the most important paths to be taken in order for firms to grow (Lu and Beamish, 2001 et al). By broadening customer bases trough entering new markets, firms are able to achieve a larger volume of production and growth, but it is not clear if such a strategy will result in better performance. Moreover, by sourcing inputs from international markets a variety increase, cost and risk reduction, quality increase as well as knowledge spill over can be achieved.

The purpose of this paper is to investigate if by pursuing a strategy of internationalization, by importing or exporting, an increase in performance can be obtained, or if the positive relationship found in previous studies such as Bernard and Jensen (1999), Clerides, Lach and Tybout (1998) or The International Study Group on Exports and Productivity (2007) stems from the so called self-selection hypothesis or if both effects are at work.

Since the 1990's micro economic studies have been conducted by a multitude of scientists in numerous countries using firm level data in order to investigate the relationship between international trade and firm performance[3]. A finding that is common to all research is the fact that the internationalized companies differ from the non internationalized companies in various characteristics[4]. However, when it comes to the relationship of internationalization modes (import and export) and performance almost all studies mention at least one of the following two possible directions of causality (Wagner 2007). The first relates to an ongoing self-selection of better performing companies into international markets. This hypothesis connects the positive relationship to the fact that only the best performing firms engage in imports and/or exports[5] and as a consequence importing and/or exporting companies have been found to perform better in a multitude of performance measurements. The second hypothesis relates to the performance enhancing effect of importing and/or exporting. This effect is connected to the learning experience and knowledge acquisition of internationally active companies and is commonly called "learning by doing". It is important to mention that most of the previous studies on this topic used productivity as a performance measurement rather than profitability. Accordingly, the internationalization process was hypothesized to give the companies the possibility of learning how things could be done more efficiently. Since this paper has profits as dependent variable the use of the term "learning by doing" would be ambiguous, because the increase in profitability could, for instance, be attaint by more sales only, rather than by an increase in productivity. For this reason, we will refer to this effect as the performance enhancing effect of internationalization.

This paper contributes to the existing literature by elaborating on both internationalization modes rather than solely on export activities - as Bernard et al (2007) stated: "… the empirical literature on firms in international trade has been concerned almost exclusively with exporting. As a result, the new theories were developed to explain facts about firm export behavior and yield few predictions (if any) for firm import behavior." Furthermore, both hypotheses (self-selection and performance enhancing) will be investigated.

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[3] Many of this studies focused on firm level productivity
[4] These companies have been found more productive, paying higher wages, more profitable etc.
[5] Most of the studies describe the relationship export and performance

Additionally, with this paper we would like to give a contribution to the decision making process of an SME, when looking for opportunities and possibilities of a strategy of internationalization. We also hope to establish a framework for policy makers by providing them with sufficient evidence regarding the importance of internationalization, to make sure that the correct decisions can be taken as well as the right stimuli to the economy be given.

The research is based on the SME Policy Panel of the Dutch research institute EIM Business and Policy Research (PANTEIA). The data was gathered by telephone interviews and consists of Dutch companies with less than 320 employees. The quantitative analysis will be performed by estimating regressions to analyze the internationalization modes (import and export) relationship with "Net Profits", which is used as a proxy for profitability.

This paper is organized as follows: section 2 will elaborate on the literature on internationalization and performance including academic findings on both internationalization modes. In order to provide a holistic overview on the topic, the literature review will go into further detail discussing trade theories as well as why SMEs internationalize. Moreover in this section we will elaborate on the existing literature in order to follow into the research question and conclude with the hypotheses. Section 3 introduces the empirical analysis including sample selection, descriptive statistics as well as the variable description. This section concludes with the research method used and the presentation of the results of the regressions. In section 4 the results of the previous section will be discussed leading to an interpretation of the outcome of the regressions. Finally, section 5 will conclude the paper with the answer to the research question, the limitations of the research and the directions of further research.

2   Literature review

In order to give a holistic view on the concept of internationalization we will first discuss the traditional trade theories and the new trade models as well as the

heterogeneous firm trade theories. Then, we will elaborate on the definition of internationalization before introducing the static and dynamic theories. In general it could be said, that the traditional trade theories elaborate on the reason behind international trade; new trade models elaborate upon these including intra-industry trade in a world with imperfect competition under economies of scale and the heterogeneous firm trade theories focus on the heterogeneity of firm characteristics. Additionally, static theories put the micro-economic level and especially the reason why companies would choose the path of internationalization in the spotlight and dynamic theories focus on the process of internationalization.

2.1 Traditional Theories or "Old Trade Theories"

The traditional theories reach back as far as in the 18th century when Adam Smith (1776) in his work "An Inquiry into the Nature and Causes of the Wealth of Nations" first introduced his theory of absolute advantage. The theory states that a country has an absolute advantage in producing a good if it can produce that good using fewer resources than other countries. Hence, in the presence of structurally different countries, trade and the subsequent specialization make both parties better off[6]. An extension of this theory is the theory of comparative advantages attributed to David Ricardo (1817) which states that even when an absolute advantage exists trade can be equally beneficial. Accordingly, it is beneficial for both countries to trade and specialize, even if one country has an absolute disadvantage in all products, as long as the opportunity cost (in terms of other goods lost) is lower in the country with absolute disadvantage. As specialization in comparative advantages maximizes efficiency, trade can make every country better off.

More than 100 years later Heckscher and Ohlin described a further reason for countries to trade. In the Heckscher-Ohlin Theorem (Heckscher, 1919; Ohlin 1933) they state that labor abundant countries would export labor intensive goods and vice versa. This model is capable of explaining why prices for the goods produced with the abundant resource would be lower in comparison to the goods in the other country and, if trade is allowed, why firms would trade their goods in the market with the higher prices.

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[6] Note that this argument has also been used for individuals when the structural differences are represented by different abilities.

The mentioned theories all share one key implication which is the "no intra-industry trade". This would mean that countries export a set of goods from a few industries and import goods from different industries. Yet, a large share of international trade is common between similar countries and apparently within industries (Grubel and Lloyd 1975). A common example used in this instance is the international car market where cars from the USA, for example, are traded with cars from Germany and vice versa. Due to the acknowledgement of a substantial trade between relatively similar trading partners, the so called "New Trades Models" have been developed.

2.2 The "New" Trade Models

The new trade models were first created by Paul Krugman (1979), Elhanan Helpman (1981) and William Ethier (1982). As mentioned above, the traditional trade theories could only give explanations for international trade if countries were structurally different. However, most of the international trade is between countries which are structurally similar. A major contribution of these new models is the amplification of the importance in trade of increasing returns to scale. Until Krugman 1979, economics was heavily dominated by what he called the "Ricardian simplification". The underlying simplification was due to the assumption of constant returns of scale and perfect competition. Krugman (1979) is essentially the founder of the new-trade theory that includes an explanation for the intra-industry trade. In his model, an extension of the Dixit-Stiglitz model (1977), he provides an analysis of imperfect competition under economies of scale. The new trade theories use a combination of economies of scale and consumer love for variety that lead otherwise identical firms to "specialize" in distinct horizontal varieties, spurring two-way or intra-industry trade between countries. Krugman's model of trade between structurally similar countries was introduced in 1979 in an article of the "Journal of International Economics". In his model consumers prefer a diverse choice of brands, but companies prefer to focus on economies of scale, which in turn would decrease variety. The presence of these consumers' preference for diversity is the reason for the survival of different versions of products (e.g. clothing, cars). However, due to economies of scale, efficient production must be carried out in limited establishments, in the extreme case all located in one country. This explains why countries may specialize in the production of certain goods.

Today, when performing analyses in the internationalization field, the standard paradigm mostly referred to is the one of Helpman and Krugman (1985). The Helpman and Krugman model, in addition to horizontal product differentiation, integrated transport costs and increasing returns to scale in the old endowment based model with comparative advantages. The welfare gains from trade in the Helpman and Krugman setting arise from the ability to sustain a wider variety of goods and services in a larger market as a result of increasing returns to scale. After being modified to allow for technological differences, factor price inequality and trade costs, this integrated framework provides a reasonably successful explanation of aggregate international trade patterns (Helpman 1999).

A common, later challenged assumption of both, the old and the new trade theories is the representative firm hypothesis. In fact, both theories assume that firms are homogeneous at least within the industry; this eases the equilibrium analysis which is the core of international trade. However, this assumption is inconsistent with the considerable variety of performance, capital intensity, skill intensity etc. observed even within industries (Bernard et al 2003). Obviously the observation of heterogeneity is a signal for these trade theories, that the assumption of homogeneous firms could be an unrealistic simplification.

2.3 Heterogeneous-Firm Trade Theory

Recent empirical work from a number of countries has overpoweringly shown the reality of large and unrelenting performance differences among companies, even when they operate in the very same industry. Furthermore, these performance discrepancies have been found strongly correlated with a company's export status (the better performing firms are more likely to export) (Bernard et al 2003). Obviously, these empirical results cannot be explained without incorporating firm heterogeneity in a trade model. Acknowledging this fact Melitz (2003) includes firm productivity heterogeneity within Krugman's model of trade under monopolistic competition and increasing returns. His model is based on Hopenhayn's (1992) work on endogenous selection of heterogeneous firms in an industry. Just like Hopenhayn, Melitz derives the equilibrium distribution of firm productivity from the profit maximizing decisions of initially identical firms, who are uncertain of their initial and future productivity, but

uses a monopolistically competitive industry rather than a completely competitive industry. In the model, firms are viewed on a productivity continuum ranging from "border to exit (or not enter)" to "high productivity". The companies are forward looking when making the entry decision and face sunk market entry costs. Accordingly, on the continuum only the better performing firms expose themselves to exporting activities because when entering a market firms face uncertainty of different kinds, especially in relation to its future performance. Furthermore, the entry decision involves significant irreversible costs, which need to be added to the other fixed costs, resulting in an increasing return to scale of production and because of the fixed cost of entry, medium profitable firms will refrain from entering such markets and operate in the domestic market only, given that they do not expect the revenues from its exports to be sufficient to face these costs. At the same time the internationalization of the more profitable companies would decrease the profits of non exporting companies because the expanding companies would drive up input prices (including wages). This increase in input prices will lead to the exit of those companies that were producing at the profitable edge (least profitable companies). In addition, as low profitability companies exit the industry, medium profitable company's contract and high profitability companies expand their activities, the average profitability of the industry increases. As Melitz (2003) put it "… the exposure to trade thus generates a type of Darwinian evolution… the most efficient firms thrive and grow their export and increase both their market share and profits". In this model, a firm that does not engage in export activities in the open economy foregoes a potential profit since its revenue, and hence variable profit, is lower. Besides, the model predicts that profits are also reallocated towards more productive firms, which makes it consistent with evidence from business research that describes how exposure to trade enhances the growth opportunities of some firms while simultaneously contributing to the downsizing of other firms within the very same industry.

It is important to mention, that the paper also shows that the existence of costs to trade does not affect the welfare enhancing properties of trade (internationalization will lead to welfare gains), but shows how export costs significantly affect the distribution of the gains from trade, where only the more efficient companies will obtain benefits from trade in the form of both, gains in market share and profit. In addition, the exposure to export and import by efficient firms leads to reallocations towards these firms. This is

the reason why trade may improve the average productivity of an industry without necessarily improving the productivity of single firms (Melitz 2003).

2.4 Definition of Internationalization

When it comes to defining the concept or internationalization many different definitions have been proposed in the recent literature. The most suited for the purpose of this paper is the one articulated by Beamish (1990) where internationalization is defined as "…. the process by which firms, both increase their awareness of the direct and indirect influence of international transactions on their future, establish and conduct transactions with other countries."

Additionally, internationalization is commonly subdivided in the following five modes: import, export, foreign licensing, foreign direct investment and international cooperation, where this paper will merely focus on importing and exporting activities.

In order to better understand why firms would internationalize it is important to understand their incentives to do so. Various static theories elaborate on these firm level incentives; in the following paragraphs some of these will be described.

2.5 Theory of Internationalization

As stated earlier, internationalization is an important option for SMEs with the desire to grow. *The theory of the growth of the firm* by the British economist Edith Penrose (1959) describes the processes within the firm that lead to economic expansion. In particular, he points out the optimal rates of power and prestige of the managers that can be attained by product excellence and maximum growth. Managers in his theory radically pursue these goals and thus internationalization is one method to reach them.[7]

The resource-based view on internationalization introduced by Wernerfelt (1984) shifts the focus to the resources of a company when giving reasons for internationalization. In this framework resources are more valuable if they are unique, costly and/or hard to copy and must be crucial to attain and keep an advantageous position in the market. The

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[7] Note that this theory is classified static because the internationalization is regarded to be a static choice in the dynamic process of growth.

resources are assumed to be crucial in order to acquire a competitive advantage which is needed for internationalization. However, firms might opt to internationalize in order to develop new resources by e.g. vertical co-operation with foreign companies or by entering into new network relations.

These theories as well as the ones outlined in section 2.1, 2.2 and 2.3 provide some theoretical incentives for companies to internationalize. We can further elaborate on this by distinguishing two distinct sets of incentives for SMEs to engage in import and/or export activities. Firstly, a strategy of internationalization can be aimed at the growth of the SME, especially when the expansion of production is not possible in the current domestic market. Good examples for such situations are companies in the luxury goods sectors or niche market businesses, where due to the limited market the best expansion strategy calls for geographical expansion. The eagerness to grow can be influenced by the competitive advantage a firm has, or wants to obtain. Such an advantage can be achieved through patents or innovative products or processes. If a firm possesses such resources it can have the urge or strategy to exploit this advantage in the most effective way and "International expansion provides new and potentially more profitable markets, helps increase the firm's competiveness, facilitates access to new product ideas, manufacturing innovations, and the latest technology" (Cavusgil and Zou, 1994). In addition internationalization can be used as a tool to protect a company's competitive advantage. As Porter (1990) and Zahra (1996) argue, due to increasing global competition the product cycle tends to shrink, implying that if an SME is reluctant to internationalize for a too long period of time it can lose all its competitive advantage for the foreign as well as for the domestic market.

The second reason why an SME would want to internationalize can be attributed to business difficulties. We can describe two kinds of business difficulties: external and internal difficulties. An example of an external difficulty is a declining market share or customer base whereas internal difficulties are problems within the firm, for example decreasing sales, increasing costs, no diversification in products etc. (Chen and Martin 2001).

Moreover, Mascarenhas (1986) indicates that firms go abroad to avoid domestic competition and Knickerbocker (1973) and Vernon and Wells (1986) indicate that firms use foreign expansion to reduce costs (Aharoni, 1966), diversify business risks, and

increase business scale and scope (Ghoshal, 1987). These studies combined argue that internal and/or external business difficulties can cause a firm to internationalize in order to resolve these problems. It is important to mention, that not every company which is faced with such internal or external problems will internationalize to face them. "Whether or not to use foreign expansion depends on a firm's internal characteristics" (Chen and Martin, 2001). The firm characteristics are shown through the firm's strategies; some of the strategies a firm can pursue are innovation, diversification, domestic expansion and foreign expansion. An SME often has to choose one of these strategies because they are not able to pursue more than one due to limited resources. An important aspect of foreign expansion is that "small companies that already have foreign operations are more likely to use foreign expansion to deal with the threats" (Chen and Martin, 2001). This again shows that the characteristics of a firm and also an already chosen strategy can have a significant impact on the method a firm uses to deal with these problems.

Due to the fact that these static reasons only describe why firms internationalize and omit the underlying process of internationalization (or how they internationalize), dynamic theories have been developed. These theories elaborate on the dynamic process that internationalization entails and include the so called stages approach, which describes internationalization as a process with increasing commitment. Two theories are especially worth mentioning, namely the Uppsala Internationalization model and the Innovation related models.

In *the Uppsala model* (U-model) firms will internationalize in incremental steps in order to establish themselves in a foreign market. This process is often called the establishment chain and has been described by various authors identifying a variety of different stages (see Andersen 1993). However, most of the authors share the following outbound internationalization stages: start with regular export; export via agents; subsidize sales and own foreign manufacturing establishment. These steps are taken with regard to the commitment associated with them; this provides an explanation why especially SMEs with often limited resources start with export activities. Furthermore, the U-Model describes in which markets the propensity of entrance is higher, namely in those markets where the geographical and physical distance is the smallest; physical

distance meaning language barriers, different business practices, cultural diversities and dissimilar education.

The Innovation related models (or I-models) focus on each subsequent stage as an innovation for the firm. As with for the U-model different authors elaborate on it with different stages. One of them, Cavusgil (1980), identified 5 stages. In stage one (domestic marketing) companies are only interested in the domestic market and are too busy or uninterested to handle export orders. In stage two (pre-export) firms evaluate the feasibility of exporting but are still only active in the domestic market. In stage three (experimental involvement) the company starts exporting on a small scale in order to gain experience and information. After this the company engages in active international involvement (stage four) where a suitable organizational structure and a systematic sales effort for the foreign markets are created. Finally, the company reaches the stage of committed involvement (stage five) where it relies heavily on foreign markets and is highly active in international markets. The applicability for SMEs of Cavusgil's stage model was tested by a number of scholars, e.g. Bell (1995) who found empirical evidence for the stage model for small software companies in Finland, Norway and Ireland.

The internationalization process has been extensively analyzed especially when it comes to export behavior. Most of the pertinent literature reported this process as being undertaken in incremental steps. More recent empirical findings, however, challenge this view. It has been demonstrated that some firms, the so called Born Globals, do not follow the incremental involvement pattern when engaging in international activities. These firms are reported to start international activities right from their birth; to enter very distant markets right away and to enter multiple countries at once (Rasmussen Madsen 2002). The relevancy of this phenomenon was clear even to the founder of a stage model Tamer Cavusgil, who in one of the first article about Born Globals in 1994 wrote:

"There is an emerging new breed of exporting companies, which contribute substantially to a nation's export capital. The emergence of these exporters reflects 2 fundamental phenomena of the 1990s: 1. Small is beautiful. 2. Gradual internationalization is dead."

(Cavusgil, 1994)

2.6 Research Question

The positive relationship between internationalization and performance has been extensively studied, especially for exporters and productivity (Wagner 2003). However, the issue of causality between trading activities and performance is still debate. Of the research that has been done on export and productivity, the overwhelming majority documents a positive relationship, examples include for Belgium (Muuls and Pisu 2007), Chile (Kasahara and Rodrigue 2005); Kasahara and Lapham 2008), Hungary (Halpern, Koren and Szeidl 2005; Altomonte and Békés 2008), India (Tucci 2005), Indonesia (Sjöholm 1999), Italy (Castellani, Serti and Tomasi 2008), Poland (Hagemejer and Kolasa 2008), Sweden (Andersson, Lööf and Johansson 2008), and the U.S. (Bernard et al. 2007). When it comes to the casual relationship, Bernard and Jensen (1999) for US based companies, Clerides, Lach and Tybout (1998) for Columbian, Mexican and Moroccan companies have found substantial evidence for the self-selection hypothesis[8]. In 2007, an international group of researchers (The International Study Group on Exports and Productivity) found evidence for the self-selection effect in 13 out of 14 countries observed, whereas only for one country (Italy) the performance enhancing hypothesis was accepted. Furthermore Baldwin and Gu (2003), Clerides, Lach and Tybout (1998), Bernard and Wagner (2001), Bernard and Jensen (1999), Blalock and Gertler (2004), Hahn (2004), Farinas and Martin-Marcas (2003), Liu, Tsou and Hammitt (1999) as well as Girma, Greenaway and Kneller (2004) find evidence for both, a better ex ante performance and higher growth or gap widening (between exporters and non exporters) ex post. Whereas, Aw, Chen and Roberts (1997) find support for the performance enhancing effect and no support for the self-selection hypothesis. Nonetheless, the evidence for the performance enhancing effect is scarcer than for the self-selection effect. This effect has been specifically reported in De Loecker (2005) examining Slovenian companies, Kraay (1999) examining Chinese companies and Van Biesebroeck (2005) for companies based in the Ivory Coast and Girma.

When it comes to the relationship between import and performance, Bernard, Jensen and Schott in 2005 still argued that "there is virtually no research documenting and

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[8] Most of the studies support the hypothesis that ex ante better performing companies self select into export markets

analyzing importing firms". Although it has been proven that international operations are often associated with better performance (Beamish, Lu 2001) the relationship between importing and performance in the past has been documented in various ways. Some studies found a non-linear relationship (Hitt, Hoskisson, Kim 1997) while others found a negative relationship and some did not find any statistically significant relationship, such as Majocchi and Zucchella (2001). However, in the last years several studies elaborated upon it and Muuls and Pisu (2007), Kasahara and Rodrigue (2005), Halpern, Koren and Szeidl (2005), Altomonte and Bekes (2008), Castellani, Serti and Tomasi (2008) and Bernard et al (2007) documented the positive link between importing and a company's performance. Furthermore, some of these studies documented that firms that engage in both import and export are more productive than firms that engage in either one alone. Thus, today the positive relationship of internationalization and performance is commonly acknowledged, but the search for the direction of causality between profitability and especially import status is still in its early stages[9].

Interestingly, a common finding in the relevant literature is that studies using the internationalization status to approximate exporting or importing activities tend to find no performance enhancing effect, whereas studies that use the share of exports or imports on total sales (export/import intensity) tend to find positive performance enhancing effect (Castellani 2002). An exception for this is Clerides et al. (1998) who, when examining export volumes found no evidence for the performance enhancing effect. As already stated earlier, most of the mentioned studies focused on productivity whereas this study focuses on financial performance. Accordingly, we will shed more light on this relationship by searching for and analyzing the connection between internationalization and profitability of SMEs by answering the main research question:

Does international trade (importing and/or exporting) have a positive association with a firm's financial performance and is this positive relation due to self-selection, the performance enhancing effect of exporting and importing, or both?

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[9] For a more extensive summary of the empirical literature see Wagner (2007)

2.7   Link between internationalization and performance

As introduced in the preceding paragraph, on the one hand researchers have stressed the difficulties firms are faced with, when entering in foreign markets, such as the fiercer competition in international markets and the initial investment and in doing so they implied a self-selection mechanism to be at work. On the other hand, the direction of causality can be reversed since firms that entered foreign markets can increase sales and profit, such as from new knowledge and expertise, which allows them to increase their performance. Whereas the self-selection argument is mainly based on the assumption that the ex ante better performing firms are more inclined to enter new markets, there are several reasons why we could think of a performance enhancing effect of importing and/or exporting.

Importing:

Importing could result in a strategic advantage in the domestic market due to decreasing costs or/and increasing quality and it enhances the competitiveness of an SME in the globalized economy (Snowdon, Stonehouse 2006). Particularly, if a firm aims for cost leadership, importing can be a very powerful competitive weapon to achieve this goal. Imports can also decrease the uncertainty (due to more suppliers) and increase the diversity (new inputs form abroad) potentially leading to a differentiation advantage. Furthermore, being importers from a foreign market can make the company receptive to opportunities in this market, and knowledge created through inward internationalization activities could be exploited to facilitate a firm's efforts of outward international expansion and so lead to superior performance (Chittoor and Ray 2007). This hypothesis is undermined by management literature, policy literature and by the literature on international technology and knowledge diffusion. For import activities this performance enhancing effect has been documented by Andersson, Lööf and Johansson (2008) adding that, by importing a firm can take advantage of global specialization and can use inputs from increased knowledge and technology. Similar explanations are also given by Castellani, Serti and Tomasi (2008), Altomonte and Békés (2008), Halpern, Koren and Szeidl 2005, and Muuls and Pisu (2007).

As introduced before the self-selection hypothesis relates to the fact that only the more profitable companies expand into the international markets due to barriers of internationalization, such as sunk costs. This hypothesis is in line with the assumptions

made in the theoretical literature of international trade with heterogeneous firms. Castellani, Serti and Tomasi (2008) as well as Andersson, Lööf and Johansson (2008) acknowledge that import activities involve a variety of additional costs such as transportation costs, information costs, distribution and marketing costs, skilled personnel costs, negotiation costs, contract formulation costs, adaption costs (product adaption to foreign standard) etc. Less profitable companies are supposed not to make the investment because they do not expect to be able to recover the costs incurred. Furthermore, it can be argued that firms that want to internationalize might acknowledge the need to decrease costs or increase revenues in order to succeed in its intent, leading to an ex ante increase in profitability.

Thus:

Hypothesis 1a: The profit performance of SMEs is positively related to import activities.

Hypothesis 1b: The positive relation between import activities and performance is explained by self-selection and by the performance enhancing effect of import activities

Exporting:

Exporting activities involve a higher degree of risk and a higher potential return than importing activities and it could be hypothesized that the self-selection effect is stronger due to more substantial barriers to entry. Exporting gives the company a better access to the foreign market, increases revenues and decreases risks through geographic diversification. According to Cavusgil and Zou (2002) firms can increase their performance by engaging in exports due to new and potentially more profitable markets; the increase in competiveness; the facilitated access to new product ideas; manufacturing innovations; the latest technology and the exploitation of economies of scale. Moreover, exporting can be an essential part of an SME competitive strategy of differentiation, cost leadership or a mix of both.

Using the same argumentation as in the previous hypotheses for importing activities, we also speculate that the positive relationship between export and performance is explained by both the performance enhancing and the self-selection effect. That is, that due to additional costs companies self-select into the export markets and exporting leads

to an ex-post profitability boost. When it comes to returns on assets and returns on sales as well as profits there is contradictory research output (Lu and Beamish 2001), leading us to conclude that the relevant literature is not homogeneous in its implications for profits. Because of the factors mentioned in this paragraph, we expect that in our sample of Dutch SMEs the exporting companies perform better than the non-exporters.

Thus:

Hypothesis 2a: The profit performance of SMEs is positively related to export activities

Hypothesis 2b: The positive relation between export activities and performance is explained by self-selection and the performance enhancing effect of export.

Exporting & Importing:

Chittoor and Say (2007) found strong evidence for a positive, linear relationship between export activities and firm performance. Furthermore, she found that exporting and the diversity achieved in conjunction with inward sourcing of international resources has a positive impact on performance. Due to the fact that the knowledge embodied in imports can be used to facilitate the export efforts, imports might have a positive impact on the profitability of export. Furthermore, earlier import or export can provide the important network to increase the positive effect of new importing or exporting activities respectively.

Thus:

Hypothesis 3: SMEs engaged in both, importing and exporting, at the same time enjoy a performance premium compared to their counterparts engaged only in one of the two activities.

3 Empirical analysis

In this chapter the following will be discussed: firstly, a description of the dataset that has been used in order to perform the empirical analyses will be given. Secondly, the selection and the construction of the different variables will be motivated and explained. Thirdly, we will give a short overview of the descriptive statistics and finally the methodology, which is used to test our research question, will be explained.

3.1 Sample selection

The research is based on the SME Policy Panel of the Dutch research institute EIM Business and Policy Research (PANTEIA). The data was gathered by telephone interviews and consists of Dutch companies with less than 320 operating employees (Small Medium Enterprises). This survey is a multi-scope survey and is used widely by Dutch researchers. It covers an extensive array of topics, ranging from entrepreneurship, innovation, internationalization, finance, sustainability etc. Because of firms that did not continue to participate in the panel study (stopped answering the questionnaire) over the years (2002-2008) the number of participants varies across the years but stays close to 3000 respondents.

3.2 Variable description

For the purpose of this paper the relevant information provided by the Dutch research institute EIM Business and Policy Research concerns exports, imports, number of employees, age of the firm and profits. Unfortunately, the same questions have not been asked in the panel study each year. Therefore, not all the balance sheet information is available yearly; this imposes some restrictions on the empirical investigation.

– Insert table 1 about here –

3.2.1 Dependent variables

The goal of the research is to analyze the impact of trading activities on SMEs financial performance. As a measure of performance we use profitability, where there are a number of ways to measure it, such as net margin, return on assets (ROA), return on equity (ROE), net income per employee and net profits - these are common parameters for profitability. Net margin measures a firm's net income relative to its total sales and therefore is an excellent indicator for profitability. The ROA is one of the most popular indicators in the economic literature. Although there is a large variation in measurements of profitability, we are forced to look to the content of the dataset. The parameters of profitability which were available in the dataset of the EIM policy panel are net profit, revenue and net-margin. Due to the substantial amount of missing values, even regarding total revenues, we used net profit as the dependent variable.

When examining the direction of causality between trading activities and performance, different analyses have to be completed and thus different dependent variables had to be selected.

To explore the self-selection hypothesis, the analysis focused on firms who have switched from a non-trading status to a trading status. If better performing firms become traders then we would expect to find significant differences in the ex ante performance between future trading starters and future non-traders before they engage in trading activities. The dependent variable used is the probability to become an exporter or importer (dichotomous variable).

The other direction of causality (performance-enhancing effect) has been tested by the post-entry differences in profit-growth between trade starters and non-traders. The dependent variable profit-growth was calculated by the profit in year t minus the profit in year t-1, divided by the profit in year t-1 and represents the profit change as a percentage of profits in year t-1.

3.2.2 Independent variables

In order to test the effect of trading activities on the performance, different independent variables that measure trading activities under different definitions have been selected.

Furthermore, we include several control variables in order to account for other aspects influencing a company's performance.

The independent variables used throughout the paper are "import", "export", "ImpExp", profit in year t-1 ("lagprofit") and the export status in year t-1 ("lagexport"). Within the seven years of the policy panel, only 4 years include information about the export status, so we are forced to restrict our analysis to only those four years. Concerning the import status we are dealing with the same issue. Information regarding the import activities is available only for the years 2003 and 2006. The dichotomous variables "import" and "export" attain the value 1 if the company engages in internationalization (exporting or importing activities respectively) and 0 in all other cases.

Moreover, also the explanatory dummy variable "ImpExp" has been constructed to test hypothesis 3, which tests if companies that engage in both importing and exporting activities perform better than companies that only import or only export. This variable indicates if a company is participating in both trading activities exhibiting the value 1, or the value 0 if the company does not participate in either export or import or does not participate in both.

3.2.3   Control variables

In our empirical research we control for a set of variables in order to correctly analyze the relationship between trading activities and performance. These control variables are necessary to test for other factors that could affect profitability. In accordance with previous studies such as Buckley, Dunning and Pearce, 1984; Gomes and Ramaswamy, 1999; Majocchi and Zucchella, 2001, two control variables have been introduced in the models:

- Size of the firm

- Age of the firm

Firm size is measured as a logarithmic function of the total number of employees within the firm. The age of the firm was given in the dataset by the year of establishment. The year of establishment has been deducted from the year of research to use it in a correct manner.

Furthermore, we run panel estimation regression with firm level fixed effects which controls for any other firm specific factors.

3.3 Descriptive Statistics

Before talking about the econometric analyses, it is worth describing the data. Table 2 provides descriptive information about the dependent-, independent- and control variables to give an impression of the data used.

When looking at the age of the firm we can see that it varies a lot across firms. The oldest firm is 408 years old and the standard deviation is 34.5 years. The average number of employees is 22 with a maximum of 320 employees (only SMEs).

Observing the mean of the export- and import status it can be noticed that most companies are not importing (mean = 0.0687831) nor exporting (mean = 0.2191358) and exporting is more common than importing. Furthermore the average net profit of a firm in this research is € 253,191.

Table 2: Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Year of Research	15,478	2005	2	2002	2008
Age of the firm	15,478	28.46653	34.53861	0	408
Size of the firm (number of empl) (log)	3,513	2.074564	1.484554	0	5.768321
Size of the firm (number of empl)	3,513	21.64162	31.99718	1	320
Import	2,268	0.0687831	0.2531407	0	1
Export	2,268	0.2191358	0.4137521	0	1
IMPEXP	2,268	0.0193681	0.2207995	0	1
Profit	1,278	373,191.2	2,683,305	-1,000,000	8,890,000

A closer look at the descriptive statistics shows that the exporting/importing firms have higher average profitability than non exporting/importing companies. As can be seen in table 3 the mean profit of a non-importing firm is € 281,347 compared to a mean profit of more than € 1,000,000 for importing firms.

– Insert table 3 about here –

Also exporting firms have a significantly higher average profitability than non-exporting firms. Additionally, firms which are both importing and exporting make higher average profits than firms which are active in one of those trading activities alone.

3.4 Research Method

In this section the methodology that has been used to test the relationships between trading activities and performance will be elaborated upon. The data was analyzed using two types of regressions: Ordinary Least Squares (OLS) and Logit Regressions.

We run panel estimation regression with firm level fixed effects. Additionally, the OLS-method is used to test for the performance-enhancing effect for importing and exporting firms. To test this hypothesis it was essential to create a dependent variable which describes the profit-growth (see also chapter 3.2.1). The import and export status in year t-1 has been used as the explanatory variable. The performance enhancing effect should be tested by the post-entry differences in profit-growth between trading starters and non-traders.

To explore the self-selection effect, we have to concentrate our analysis on firms who have switched from a non-trading status to a trading status. If better performing firms become traders then we expect increasing levels of profitability to have a positive effect on the probability of switching[10]. To select the firms who are switching the construction of a new variable is necessary. Deducting the trading status in year t-1 (value 0 or 1) from year t (value 0 or 1) we get the difference between those. For example, when a firm is not exporting in year t-1 but starts to export in year t, the difference between those years is 1 (1-0 = 1). Becoming an importer or exporter will get the value 1 and the value of non-switching will stay zero. These new constructed dependent variables are

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[10] This method is comparable to the method which is used in the paper of the CAEPR: Exports and Productivity – Comparable evidence for 14 countries.

labeled "difference_export" and "difference_import". Because these dependent variables are dichotomous, use of the Logit regression has been made. The Logit model is based on the cumulative logistic probability function which is similar to the cumulative normal function but with slightly fatter tails. The logistic distribution constrains the estimated probability to lie between the value 0 and 1. The explanatory variable is Profit in year t-1. Age and size of the firm are included as control variables.

3.5 Results

The literature part of this paper provided evidence based on existing studies, that exporters and importers are expected to perform better than non-exporters or non-importers. In addition, the previous chapter provided descriptive evidence that exporters and importers on average have higher profits than non-traders. In this chapter it will be empirically tested if there is a relationship between trading activities and performance of Dutch SMEs and we will also deal with the causality issue.

In this paper we report the significance for the empirical results for the three most commonly used significance levels: 1%, 5% and 10%.

The number of observations in the models is lower than stated in the descriptive table (table 2) due to missing observations in the dataset.

3.5.1 Trading activities and Performance

Looking at model 1 in table 4, the analysis shows a significant positive relationship between importing and performance. According to this model, SMEs who are importing have higher profits than firms that aren't.

However, only interpreting model 1 can give a wrong impression. Since importing and exporting are positively correlated (see table in appendix D) it could be that one variable is picking up the effect of the other. Hence, in model 3 (table 4) we have included both variables at the same time. In this model it actually seems that only exporting is witnessing a significant positive relation with profits. Therefore, econometric evidence does not support hypothesis 1a.

Table 4: Model 1 – 3

	Model 1		Model 2		Model 3	
	Import and Performance		**Export and Performance**		**Import/Export and Perf.**	
	Dep. variable: Profit		*Dep. variable: Profit*		*Dep. variable: Profit*	
	Coef.	**Std. Error**	**Coef.**	**Std. Error**	**Coef.**	**Std. Error**
Import	637000.2*	340653.3			261045.5	372112.5
Export			1065242***	353344.7	953497.1**	387722.5
Age	133885.1**	63205.17	158294.6***	61154.84	147231.3**	63180.05
Logsize	92319.07	299703.1	485544.28	298667.7	53833.83	298886.7
Constant	-3807635**	1938031	-4534074***	1889006	-4233209**	1937843
* = 10% Sign.	R-squared	0.017	R-squared	0.0258	R-squared	0.0266
**= 5% Sign.	No of Obs.	1095	No of Obs.	1095	No of Obs.	1095
*** = 1% Sign.	Time period = 2003 -2008					

Because differences in performance could also be a consequence of other factors, like age and size, we included these control variables in the regression. Age has a significant positive relation to profitability in this model. This means that firms which are older, have, ceteris paribus, higher profits than younger firms. The beta-coefficients of the import and age variable are rather substantial in this case. A reason for these high beta-coefficients might be the high negative constant term in the model. To test whether the independent variables form a good model to predict the dependent variable, profitability in this case, a look to the R-squared value is relevant. The R-squared in model 1 is rather low, this means that the model can only account for a minor part of the profit variation in the sample.

Results from the OLS-regression for the hypothesis 2a "*The performance of SMEs is positively related to export activities*" are presented in table 4 (see model 2 and 3). As expected, there is a strong significant positive relationship between exporting activities and performance of SMEs. Meaning that when controlling for several other factors, exporting firms have a higher profitability than non-exporting firms. Therefore, model 2 and 3 supports hypothesis 2a. Age of the firm is, in this model, also significant positively related to the performance of a company. However, the R-squared of model 2 is rather low, so the explanatory power of the model is not very strong (0.0258).

In hypothesis 3 it has been stated that exporting and importing combined lead to an additional performance premium. To test the third hypothesis "*The performance of SMEs is stronger related to import and export activities than to either one singularly*", a new variable has been constructed, "ImpExp" (see also 3.2.2). This variable indicates

if a company is participating in both trading activities (import and export) or differently. According to model 4 (table 5), it can be stated that there is no significant positive relationship between "ImpExp" and performance.

Thus, firms that are active in both trading activities do not enjoy a profit premium. Hence, we did not found any support for hypothesis 3.

Table 5: Model 4

	Model 4	
	Export/Import and Performance (OLS)	
	Dependent variable: Profit	
	Coef.	**Std. Error**
Export	804,350.2*	422,001.1
Import	-87,930.73	538,706.8
ImpExp	663,341.3	740,326.7
Age	144,000.5**	63,293.02
Logsize	38,506.23	299,423.9
Constant	-4,089,227**	1,944,805
* = 10% Significance	R-squared	0.022
**= 5% Significance	No of Obs.	1095
*** = 1% Significance	Time period = 2003 -2008	

When examining the effect of the control variables age and size, it should be noted that age is again significant positively related to performance. The R-squared shows an explanatory power of 0.022 which indicates a weak fit of the model.

3.5.2 Self-selection effect

The previous empirical models provided evidence that exporters perform, ceteris paribus, better than non-exporters. Because we did not found econometric evidence that importers perform better than non-importers, it make no sense to investigate the causal relationship for import and performance[11]. Therefore we will examine in this section if the ex ante profitability has an impact on the probability of becoming an exporter.

Model 5a shows the empirical testing for the self-selection effect for export. Does profit in year t-1 determine the probability to become an exporter in year t? It does. The table

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[11] In Appendix D you can find the results for the self-selection effect (Model 5b) and performance-enhancing effect (model 6b) for the Import-status.

shows that there is a significant positive relation between the profit in year t-1 and the dichotomous dependent variable "difference_export". Since we are dealing with a Logit regression it is appropriate to look at the marginal effects instead of the standardized beta-coefficients. The marginal effect of "lagprofit" on the probability to be an exporter suggests that the probability to be an exporter is increasing by 17.6% when profits increase by 1,000,000 Euro.

Table 6: Model 5a

	Model 5a		
	Testing for Self-selection Export (Logit)		
	Dependent variable: Difference_export		Marginal Effects:
	Coef.	**Std. Error**	**dy/dx**
Lagprofit	0.0000335**	0.00000145	0.00000436
Age	-0.0024721	0.002562	-0.0005326
Logsize	0.1191532**	0.0488334	0.0256692
Constant	-1.335865***	0.1189472	
* = 10% Significance	R-squared	0.0325	
**= 5% Significance	No of Obs.	601	
*** = 1% Significance	Time period = 2003 -2008		

Among the control variables, "logsize" (number of employees) is the only significant variable. This means that the log of the size of the firm is positively related to the probability to become an exporter. The bigger the firm, the higher, all other things being equal, the probability that the firm starts exporting. The marginal effect of the log of the size implies that an increase of 1 logarithm in size will cause an increase of 2.6 % in the probability to be an exporter.

3.5.3 Performance-enhancing effect

Model 6a in the table below showcases the results when testing for the post entry differences between starting exporters and non exporters. So, does export behavior boost profit-growth?

Table 7: Model 6a

	Model 6a	
	Performance enhancing effect Export	
	Dependent variable: Profitgrowth	
	Coef.	**Std. Error**
Lagexport	-0.63784	1.132436
Age	-0.2634109	0.3414219
Logsize	-0.7994851	1.296199
Constant	176.5638***	11.96836
* = 10% Significance	R-squared	0.0164
**= 5% Significance	No of Obs.	134
*** = 1% Significance	Time period = 2003 -2008	

A first look to the results in model 6a suggests that with all the explanatory variables, no significant effect has been found. Corresponding with a substantial amount of the studies examined in the literature review we did not find any empirical support that export behavior (and import behavior, see appendix D) is positively related to profit-growth.

4 Discussion

Bernard, Jensen and Schott (2005) noted in their comprehensive empirical study of firms in the U.S. that trade goods "that there is virtually no research documenting and analyzing importing firms". This is no longer the case[12].

In the last years, Muuls and Pisu (2007), Kashara and Rodrigue (2005), Halpern, Koren and Szeidl (2005), Altomonte and Bekes (2008), Castellani, Serti and Tomasi (2008) and Bernard (2007) documented a positive link between importing and a company's performance.

The results from the OLS regression regarding the first hypothesis, suggest that import activities and performance are significant positively related. SMEs who are importing have higher profits than firms who don't. This might be caused by decreasing costs and increasing quality and this could result in a strategic advantage as it enhances the competitiveness of a SME in the global economy. However, due to the fact that import and export are correlated (see table in appendix D) and looking to model 3, it can be stated that the significant positive relation between import and performance is likely to be determined by the export variable.

The age of the firm also has a positive association with performance. Assuming that the age of the firm is related to experience, more experienced firms, non-traders or traders, make higher profits than firms with less experience.

In 1995 Bernard and Jensen published the first papers that use large comprehensive longitudinal data to analyze differences between exporters and non exporters in various dimensions of firm performance[13]. Nowadays, a multitude of research has been done on export and productivity. The overwhelming majority documents a positive relationship.

Consistent with these earlier studies, model 2 shows that there is a very strong significant positive relationship between export activities and performance. This means that exporting firms have a higher profitability than non-exporting firms when controlling for several factors.

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[12] Higher productivity in Importing German Manufacturing Firms: Self-selection, learning from Importing, or both? By Alexander Vogel and Joachim Wagner
[13] Export and Productivity – Comparable Evidence for 14 countries.

According to Cavusgil and Zou (1994), firms can increase their performance by engaging in exports due to new and potentially more profitable markets, the increase in competitiveness, the facilitated access to new product ideas, manufacturing innovations, the latest technology and the exploitation of economies of scale. Moreover, exporting can be an essential part of the SME strategy (differentiation, cost leadership, a mix of both). However, a large majority of the sample in the EIM policy panel is still only trading within the national borders.

From the second hypothesis it can be seen that there is a significant profitability differential between firms that export and firms that do not export across national borders. In several studies concerning internationalization and performance, two-way traders are found to be more productive than firms that either only import, or only export, or do not trade at all.

On the contrary to these studies, model 4 (table 5) does not show a significant positive association between the variable "ImpExp" and profitability. SMEs that import and export are not found more profitable than firms who are only active in one of the two activities.

As presented in the first three models, there is some empirical evidence for the positive relationship between trading activities and performance in our sample. Although these results are satisfying, more interesting still is what drives the positive correlation between export and performance. Due to the fact that the significant association between import and performance might be determined by the export variable it makes no sense to investigate the causal relationship for import and performance, therefore we will only discuss the analyses for the self-selection effect and performance-enhancing effect for export.

As already introduced in the beginning of section 2.9 there are two competing hypotheses about the causes of the positive correlation between trading activities and performance. The first one points to self-selection of the more productive firms into export or import markets. Self-selection of the more profitable companies into the international markets can be attributed to barriers of internationalization (constituted by a variety of additional costs) and ex ante differences in performance and is in line with the assumptions made in the theoretical literature of international trade with

heterogeneous firms. Less profitable firms are supposed not to make the investment because they would not be able to recover the costs occurred.

Descriptive evidence in section 3.3 and evidence from a panel-econometric study shows a positive association between exporting and performance for Dutch SMEs. To investigate the hypothesis that more profitable firms self-select into export markets, we studied the effect of profitability on the probability to become an exporter.

Looking to the self-selection effect into export markets, there is a significant relationship between past-performance and the probability to be an exporter. The probability to become an exporter is increasing by 17.6% when profits are increasing by 1,000,000 Euro. Furthermore, the size of the firm also has a significant positive relationship with the probability to be an exporter; the bigger the firm, the higher, ceteris paribus, the probability that the firm will become an exporter.

The other hypothesis of the positive correlation between exporting and performance is referred to as the 'performance enhancing effect'. This hypothesis is undermined by management literature, policy literature and by the literature on international technology and knowledge diffusion. The performance enhancing effect is related to the post-entry increase in revenues or/and decrease in costs as a result of internationalization, mainly due to the increase in technological and managerial knowledge (because of knowledge flows from international buyers and competitors) and the possibility of exploitation of economies of scale by operating in several markets.

According to model 6a there is no significant positive relationship between the export status in year t-1 and the profit-growth in year t. The reason why our study did not find any statistically significant evidence for the performance enhancing effect could be the usage of internationalization status rather than internationalization intensity[14]. Since in the internationalization literature it is a common finding that studies using the internationalization status to approximate exporting or importing activities find no performance enhancing (learning) effects, whereas studies that use the share of exports or imports on total sales (export/import intensity) tend to find positive performance enhancing (learning) effects.

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[14] Castellani argues that the choice of the export variable plays a key role: "Export Behavior and Productivity Growth"

Another explanation why we didn't find evidence for the performance-enhancing effect could be that our dependent variable is profit-growth in year t. To see if trading has contributed to better performance we should look to the profit-growth in the next years such as t+3 or t+5 because exporting and importing involves learning, costs and might be started with less margins, profitability gains are expected to materialize after a few years rather than form the early beginning on. When internationalizing, substantial investments have to be made and fixed costs have to be incurred, which thereafter are sunk, in addition to the prevailing costs before internationalization. Also, companies that enter new markets have been known to operate with lower markups in order to penetrate the market. Companies try to establish themselves in the foreign market by competing on prices which can decrease profits in the short run but enhance profitability in the medium to long run perspective.

5   Conclusion

In this paper, we examined the relationship between internationalization modes (export and import activities) and the profitability as well as profit growth, using the SME Policy Panel of the Dutch research institute EIM with approximately 3000 respondents. In recent years a consistent body of literature has analyzed the relationship between internationalization modes, especially export, and performance. The overwhelming majority is documenting a positive relationship and most find evidence for an ongoing self-selection mechanism[15]. Whereas, the empirical evidence for the performance enhancing effect as well as the research on the import is scarcer.

5.1   Answer to research question

Does international trade (importing and/or exporting) have a positive association with a firm's financial performance and is this positive relation due to self-selection, the performance enhancing effect of exporting and importing, or both?

Exporting has been found to have a positive association with a firms' financial performance. In addition, for exporting activities support for the self-selection hypothesis and no support for the performance enhancing effect has been found. Since

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[15] For a more detailed summary consult Wagner 2007

export status rather than export intensity has been used, this is in line with the relevant literature, which tends to find significant performance enhancing effects only when export intensity is used. When it comes to importing activities the results appear to be determined by the correlation export variable (see appendix D), leading to the conclusion that for the sample used no statistical significant positive relationship could be found.

5.2 Limitations

In this study the relationship between trading activities and performance has been explored. The main restrictions were given by the dataset 'SME Policy panel' of the EIM. Firstly, due to the lack of information common financial performance measurements (e.g.: ROA, ROI) could not be used. Although profits are a good indicator of performance, comparability with other studies is somehow limited. For our research the EIM policy panel dataset is a secondary dataset, which although includes the most important variables, cannot perform as well as a dataset which would have been gathered exclusively for this analysis.

In addition, the data does not provide the export and import intensity. Since it is a common finding that studies using the internationalization status to approximate exporting or importing activities tend to find no performance enhancing effect, whereas studies that use the share of exports or imports on total sales (export/import intensity) tend to find positive performance enhancing effect, the importing and exporting intensity would have been essential to account for this fact[16].

Secondly, because the questions in the panel differ every year, the information that we needed was not always yearly available. Therefore it was difficult to perform the analysis for a high number of observations and for a long time span. Furthermore, innovation could be an important factor in the analyses of trading activities and performance. However, the questions in the survey about innovativeness were formulated in a different way over time; hence it was unfeasible to use innovativeness as a control variable.

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[16] Castellani: Export Behavior and Productivity Growth

Finally, all information in the "SME Policy Panel" is obtained from firms who cooperated on a voluntary basis. This could create a self-selection bias, since the incentive to participate might depend on different factors.

5.3   Directions for further research

As already stated, studies that use the intensity of export and import tend to find significant performance enhancing effects; but the missing aspect in most of the empirical studies that are checking for the performance enhancing effect, is the discovery of the mechanism through which the learning process takes place. How knowledge exactly flows over to internationalized firms is an interesting topic to investigate.

Furthermore, the crucial role of innovation could indicate a positive interaction between innovation and the effect of trading activities and performance. What kind of role does innovation play in an internationalization decision? Do research and development expenditures have a positive effect on the probability to be a trader? And do traders who are more innovative (measured by the share of R&D expenditures to sales) perform better than traders who are less innovative?

References:

- Aharoni, Y., 1966. "The Foreign Investment Decision Process", Harvard Business School, Boston.

- Altomonte, Carlo and Gabor Békés, 2008. "Trading Activities, Firms and Productivity", Bocconi University, Milan, and Hungarian Academy of Science, Budapest.

- Andersen, O., 1993. "On the Internationalization Process of Firms: a critical analysis", Journal of international business studies, 24(2), 209- 231.

- Andersson, Martin, Hans Lööf and Sara Johansson, 2008. "Productivity and International Trade – Firm-level Evidence from a Small Open Economy", CESIS Royal Institute of Technology, Stockholm.

- Aw, Bee Yan, Xiaomin Chen and Mark J. Roberts, 1997. "Firm-level Evidence on Productivity Differentials, Turnover, and Exports in Taiwanese Manufacturing", Pennsylvania State University.

- Balassa, B., 1988. "Outward Orientation". In H. Chenery and T. N. Srinivasan (eds.), Handbook of Development Economics, Volume 2, Part 6, Ch. 31. Amsterdam.

- Baldwin, John R. and Wulong Gu. 2003. "Export-market participation and productivity performance in Canadian manufacturing", Canadian Journal of Economics, 634- 657.

- Beamish, P.W., 1990. "The internationalisation process for smaller Ontario firms: a research agenda". In: Rugman, A.M., Editor, 1990, "Research in Global Strategic Management - International Business Research for the Twenty-First Century: Canada's New Research Agenda", JAI Press, Greenwich, 77–92.

- Beckerman, W., 1962. "Projecting Europe's Growth", Economic Journal, 912- 925.

- Bell, J., 1995. "The Internationalization of Small Computer Software Firms: a further challenge to 'stage theories'", European journal of marketing, 29 (8): 60- 75.

- Bernard, A.B. and B. Jensen, 1999. "Exceptional Exporter performance: Cause, Effect or Both?", Journal of International Economics, 47(1), 1-25.

- Bernard, Andrew B. and Joachim Wagner, 2001. "Export Entry and Exit by German Firms." Weltwirtschaftliches Archiv / Review of World Economics 137, 105-123.

- Bernard, A.B., Jonathan Eaton, J. Bradford Jensen, Samuel Kortum, 2003. „Plants and Productivity in International Trade", American Economic Review, Volume 93, 1268-1290

- Bernard, Andrew B., J. Bradford Jensen and Peter K. Schott., 2005. "Importers, Exporters and Multinationals: A Portrait of Firms in the U.S. that Trade Goods", NBER Working Paper

- Bernard, A.B., Jensen, B., Schott, P.K., 2006. "Trade costs, firms and productivity", Journal of Monetary Economics, 917-937.

- Bernard, Andrew B., J. Bradford Jensen, Stephen J. Redding and Peter K. Schott, 2007. "Firms in International Trade", Journal of Economic Perspectives, 21(3): 105-130.

- Blalock, Garrick and Paul J. Gertler., 2004. "Learning from exporting revisited in a less developed setting." Journal of Development Economics 75, 397-416.

- Baum, Christopher F., 2006. "An introduction to Modern Econometrics Using Stata", Stata Press.

- Carter, S., and Jones – Evans, D., 2006. "Enterprise and Small Business. Principles, Practices and Policy", Pearson Education, Essex.

- Castellani, Davide, Francesco Serti and Chiara Tomasi, 2008. "Firms in International Trade: Importers and Exporters Heterogeneity in the Italian Manufacturing Industry". University of Perugia.

- Castellani, Davide, 2002. "Export Behavior and Productivity Growth: Evidence from Italian Manufacturing Firms", Weltwirtschaftliches Archiv 2002, Vol. 138, 605-628.

- Caves, R. E., 1971. "Export-Led Growth and the New Economic History". In J. N. Bhagwati, R. W. Jones, R. A. Mundell, and J. Vanek (eds.), "Trade, Balance of Payments, and Growth". Papers in International Economics in Honor of Charles P. Kindleberger. Amsterdam.

- Cavusgil, S. T., 1980. "On the internationalization process of firms", European research, 8(4), 273-281.

- Cavusgil, S. T., 1994. A quiet revolution in Australian exporters. Marketing News, 28, (11), 18-21.

- Cavusgil, S. T., and S. Zou, 2002. "The GMS: A broad conceptualization of global marketing strategy and its effect on firm performance", Journal of Marketing, 66(4), 40-56.

- Chen, Rongxin, Martin Marc J., 2001. "Foreign expansion of small firms: The impact of domestic alternatives and prior foreign business involvement", Journal of Business Venturing, Volume 16, Issue 6, Pages 557-574.

- Chittoor, Raveendra, Sougata Ray, 2007. "Internationalization paths of Indian pharmaceutical firms — A strategic group analysis", Indian Institute of Management Calcutta.

- Clerides, K., S., & Saul Lach & James R. Tybout, 1998. "Is Learning By Exporting Important? Micro-Dynamic Evidence From Colombia, Mexico, And Morocco," The Quarterly Journal of Economics, MIT Press, vol. 113(3), pages 903-947.

- De Loecker, Jan. 2004. "Do Exports Generate Higher Productivity? Evidence from Slovenia." Katholieke Universiteit Leuven, LICOS Discussion Paper 151/2004.

- Dixit, Auinash K., and Stiglitz, Joseph E., 1977. "Monopolistic Competition and Optimum Product Diversity", American Economic Review, 67(3), 297-308.

- Ethier, William J., 1982. "National and International Returns to Scale in the Modem Theory of International Trade." American Economic Review, 72(3): 389-405.

- Farinas, José C. and Ana Martin-Marco, 2003. "Exporting and Economic Performance: Firm-Level Evidence for Spanish Manufacturing", Universidad Complutense and UNED, Madrid.

- Ghoshal, S., 1987. "Global strategy: An organizing framework", Strategic Management Journal 8 5, 425–440.

- Girma, Sourafel, David Greenaway and Richard Kneller, 2004. "Does Exporting Increase Productivity? A Microeconometric Analysis of Matched Firms.", Review of International Economics 12, 855-866.

- Grubel H., Lloyd P., 1975. "Intra-Industry Trade", Wiley, New York.

- Hagemejer, Jan and Marcin Kolasa, 2008. "Internationalization and Economic Performance of Enterprises: Evidence from Firm-Level Data", Munich Personal RePEc Archive Paper No. 8720.

- Hahn, Chin Hee, 2004. "Exporting and Performance of Plants: Evidence from Korean Manufacturing.", NBER Working Paper 10208.

- Halpern, László, Koren Miklós and Ádám Szeidl, 2005. "Imports and Productivity", Institute of Economics, Hungarian Academy of Sciences.

- Heckscher, E., 1919. "The effect of foreign trade on the distribution of income", Ekonomisk Tidskriff, 497–512. Translated as chapter 13 in American Economic Association

- Helpman, Elhanan, 1981. "International Trade in the Presence of Product Differentiation, Economies of Scale, and Monopolistic Competition: A Chamberlin–Heckscher–Ohlin model", Journal of International Economics, 11(3):305–340.

- Helpman, Elhanan, 1999. "The Structure of Foreign Trade." Journal of Economic Perspectives, 13(2): 121–44.

- Helpman, Elhanan, and Paul R. Krugman, 1985. "Market Structure and Foreign Trade. Increasing Returns, Imperfect Competition, and the International Economy", Cambridge, MA: MIT Press.

- Hitt, Michael A., Robert E. Hoskisson, Hicheon Kim, 1997. "International Diversification: Effects on Innovation and Firm Performance in Product-Diversified Firms", The Academy of Management Journal, Vol. 40, No. 4, 767-798.

- Hopenhayn, Hugo A., 1992. "Entry, exit, and firm dynamics in long run equilibrium", Econometrica, Vol. 60, 1127-1150.

- Kaldor, N., 1970. "The Case for Regional Policies", Scottish Journal of Political Economy 17 (3): 337-448.

- Kasahara, Hiroyuki and Beverly Lapham, 2008. "Productivity and the Decision to Import and Export: Theory and Evidence", CESifo Working Paper No. 2240, Journal of International Economics.

- Kasahara, Hiroyuki and Joel Rodrigue, 2005. "Does the Use of Imported Intermediates Increase Productivity? Plant-Level Evidence", University of Western Ontario EPRI Working Paper Series No. 2005-7.

- Knickerbocker, F.T., 1973. "Oligopolistic Reaction and Multinational Enterprise", Harvard University Press, Boston.

- Knight, G., 2000. "Entrepreneurship and Marketing Strategy: The SME under Globalization", Journal of International Marketing, vol. 8, no. 2, 12-32.

- Kraay, Aart, 2002. "Exports and economic performance: evidence from a panel of Chinese enterprises." In Mary-Francoise Renard (Ed.), "China and its Regions. Economic Growth and Reform in Chinese Provinces", Cheltenham etc.: Elgar, 278-299.

- Krugman, Paul R., 1979. "Increasing Returns, Monopolistic Competition, and International Trade", Journal of International Economics 9, 469-479.

- Loecker, Jan De, 2004. "Do Exports Generate Higher Productivity? Evidence from Slovenia". LICOS, Centre for Transition Economics.

- Lu, J.W. and Beamish, P.W., 2001. "The internationalization and Performance of SMEs", Strategic Management Journal, June/July, 22, 565-586.

- Liu, Jin-Tan, Meng-Wen Tsou and James K. Hammitt, 1999, "Export Activity and Productivity: Evidence from the Taiwan Electronics Industry", Weltwirtschaftliches Archiv / Review of World Economcis 135, 675-691

- Majocchi, A. and Zucchella, A. (2001) 'Internationalization and performance: findings from a set of Italian SMEs' Working paper, University of Insubria

- Majocchi, A.; Zucchella, A., 2003. "Internationalization and Performance: Findings from a Set of Italian SMEs"; International small business journal 21 (3), 249-268.

- Mascarenhas, B., 1986. "International strategies of non-dominant firms", Journal of International Business Study 17 1, pp. 1–26.

- Melitz, M. J., 2003. "The impact of trade on intra-industry reallocations and aggregate industry productivity", Econometrica, Vol. 71, 1695-1725.

- Muuls, Mirabelle and Mauro Pisu, 2007. "Imports and Exports at the Level of the Firm: Evidence from Belgium", London School of Economics and Politica Science CEP Discussion Paper No. 801, June.

- Ohlin, B., 1933. "Interregional and International Trade", Cambridge, Mass.: Harvard University Press, 1966.

- Oviatt, B.M. & McDougall, P.P., 1994. "Towards a theory of international new ventures", Journal of International Business 25 (1), 45-64.

- Oviatt, B.M. & McDougall, P.P., 1999. "A framework for understanding accelerated international entrepreneurship", Research in Global Strategic Management 7, Wright R., (ed), JAI Press: Stamford, CT, 23-40.

- Penrose, Edith, 1959. "The Theory of the Growth of the Firm", London.

- Porter, M., 1990. "The competitive advantage of nations", Collier-Macmillan, London.

- Rasmussen, E., S., Madsen, T., K., 2002. "The Born Global concept", Paper for the EIBA conference, University of Southern Denmark.

- Ricardo, D., 1817, "The principles of political economy, and taxation", Reprint, London, Dent, 1976.

- Sjöholm, Frederik, 1999. "Exports, Imports and Productivity: Results from Indonesian Establishment Data", World Development, 27(4): 705-715.

- Smith, A., 1776. "An Inquiry into the Nature and Causes of the Wealth of Nations".

- Snowdon, Brian & George Stonehouse, 2006. "Competitiveness in a globalised world: Michael Porter on the microeconomic foundations of the competitiveness of nations, regions, and firms", Journal of International Business Studies, 37(2), 163.

- The International Study Group on Exports and Productivity, 2007. "Exports and productivity - comparable evidence for 14 countries", Policy Research, Working Paper Series 4418, The World Bank.

- Tucci, Alessandra, 2005. "Trade, Foreign Networks and Performance: A Firm-level Analysis for India". Centro Studi Luca D'Agliano, Development Studies Working Papers No. 199.

- Van Biesebroeck, Johannes, 2003. "Exporting Raises Productivity in Sub-Saharan African Manufacturing Plants", NBER Working Paper 10020.

- Vernon, R. and Wells, L.T., 1986. The Economic Environment of International Business, Prentice-Hall, New Jersey

- Vogel A., Wagner J., 2008. "Higher productivity in Importing German Manufacturing Firms: Self-selection, Learning from Importing, or Both? ", University of Luneburg, Working Paper Series in Economics.

- Wagner, Joachim, 2007, "Exports and Productivity: A Survey of the Evidence from Firm Level Data", The World Economy, 30(1): 60-82.

- Wernerfelt, B., 1984. "A resource-based view of the efficient international transfer of technology", 171–180.

- Zahra, S., 1996. "Governance, ownership, and corporate entrepreneurship: The moderating impact of industry technological opportunities", Academy of Management Journal 39 6, 1713–1735.

- Zhai, F., 2008. "Armington Meets Melitz: Introducing Firm Heterogeneity in a Global CGE Model of Trade", ADB Institute.

Appendix A:

Tabel 1: Variable Overview

Variable	Background	Name	Modification	Sort of Variable
Koppelnr	The number of the firm in the dataset	Firm number	None	
Year of Research	The year of research of the observation	Year_of_research	None	Scale
Age of the firm	The age of the firm in years	Age	Simply derived by the year of research minus the year of establishment	Scale
Size of the firm (log)	Number of employees (fte)	logsize	The logarithm of the total number of employees	Scale
Import	Indicates if a company is importing or not	Import	None	Dichotomous (0 = no, 1 = yes)
Export	Indicates if a company is exporting or not	Export	None	Dichotomous (0 = no, 1 = yes)
IMPEXP	Indicates if a company is importing **and** exporting or only importing or exporting	ImpExp	None	Dichotomous (0 = no, 1 = yes)
Profit	The total profit of the firm in Euro	Profit	None	Scale
Profit growth	The growth of profit according to the year before	new_profitgrowth	Derived by the profit in year t minus the profit in year t-1, divided by the profit in year t-1	Ratio

Appendix B:

Table 3   T-tests: Differences in Profits

Group	Obs.	Percentage	Mean Profit (Euro)	
Non-importing***	1141	89%	€	281,346.70
Importing***	137	11%	€	1,138,115.00
Non-Exporting***	1085	85%	€	261,126.40
Exporting***	193	15%	€	1,003,193.00
No trade or only exp or imp***	1191	93%	€	289,278.40
Both***	87	7%	€	1,645,135.00

* = 10% Significance
**= 5% Significance
*** = 1% Significance

Appendix C:

'Self-selection' effect Import

	Model 5b			
	Testing for Self-selection Import (Logit)			
	Dependent variable: Difference_import			Marginal Effects:
	Coef.	**Std. Error**	**Sign.**	**dy/dx**
Lagprofit	0.00000129	0.00000087	0.882	0.000000176
Age	-0.0040432	0.0040761	0.321	-0.0005527
Logsize	0.2097293***	0.0778475	0.007	0.0286702
Constant	-1.954425***	0.1972021	0.000	
* = 10% Significance	R-squared	0.0222		
**= 5% Significance	No of Obs.	658		
*** = 1% Significance	Time period = 2003 -2008			

'Performance-enhancing' effect Import

	Model 6b		
	Performance-enhancing effect Import		
	Dependent variable: Profitgrowth		
	Coef.	**Std. Error**	**Sign.**
Lagimport	-0.74321	0.98765	0.756
Age	-0.664328	0.5444	0.323
Logsize	-0.988843	1.43214	0.544
Constant	150.323***	13.55332	0.000
* = 10% Significance	R-squared	0.0182	
**= 5% Significance	No of Obs.	89	
*** = 1% Significance	Time period = 2003 -2008		

Appendix D:

Correlation-table

	koppelnr	Year_of_re	Export	Import	impexp	Lagprofit	Profit	Age	Logsize
koppelnr	1								
Year_of_research	0.1393	1							
Export	-0.0412	0.0082	1						
Import	0.0015	0.3597	0.3181	1					
impexp	-0.0404	0.2402	0.5888	0.6678	1				
Lagprofit	0.0803	-0.1364	0.1744	0.0074	0.1029	1			
Profit	0.0916	0.0151	0.2023	0.0705	0.1137	0.5174	1		
Age	-0.1351	-0.0993	0.0806	0.0168	0.0497	0.2108	0.2046	1	
Logsize	-0.1745	-0.1724	0.1549	0.0326	0.1098	0.3527	0.3122	0.5031	1