International linkages and sunk costs of exporting

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Abstract

Trade costs and sunk export costs play a crucial role in defining trade flows between countries and, directly, affect firms’ strategic decisions in terms of international expansion. Trade costs include all the costs attached to a delivery of good to a final user and, thus, incorporate transportation costs, policy barriers, information costs, contract costs and currency costs. Sunk costs include costs of packaging, innovations in product quality, accumulating information on foreign markets and establishing new market channels.

The present study closely looks at the patterns of the effects that trade cost, in general, and sunk costs of exporting, in particular, have on firms’ decisions regarding exporting and FDIs. The analysis is based on existing literature contributions to the topic.

The main findings are that intrinsic characteristics of exporters are different from firms operating domestically. Exporters are usually bigger, more productive and efficient than non-exporters. The existence of entry export costs and sunk costs determines a self-selection that allows only more productive firms to export. The decision to export appears to be history-dependent since last years exporters are, generally, more willing to export the next year than non-exporters. Sunk costs and re-entry export costs can cause hysteresis in export participation determining firms’ commitment to the export market even when it would be reasonable to exit. The study also shows that business administration literature contributions can be useful in order to explain and interpret the role played by sunk costs of exporting in firms’ strategic decisions regarding international expansion.

Keywords: Trade costs, sunk costs of exporting, export hysteresis, the Uppsala model
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1. INTRODUCTION

1.1 Background and motivation

A wide range of literature has shown the negative correlation between trade costs and volumes of trade (De 2006). Most of these studies state that economic integration between countries and regions can result in lower transportation costs and, thus, in an increase of world trade and welfare (Anderson and Wincoop 2004). Empirical evidence shows that tariff barriers are now low in most countries, on average less than 5-percent in developed countries and between 10 to 20-percent in developing countries (Anderson and Wincoop 2004, p. 693).

The importance of trade costs and, more particularly, sunk costs faced by exporting firms, has been the subject of a wide literature contribution. The Krugman’s (1980) approach, based on a representative-firm setting and variable trade costs, shows that an increase in trade barriers determines only a change in the sizes of firms’ exports (intensive margin). Chaney (2008) develops a model with asymmetric countries and asymmetric trade barriers with fixed costs of exporting and shows that trade costs determine a change in volumes of exports and in the set of exporters. Melitz (2003) develops a dynamic industry model with heterogeneous firms showing that the exposure to trade generates a sort of “Darwinian selection” within an industry. In particular, Melitz (2003) demonstrates that the exposure to trade persuades only the more productive group of firms to export because of their economic ability in covering sunk export costs. Helpman et al. (2004) shed light on firms’ behavior regarding the choice between two different modes of market access, exporting and horizontal FDIs. Because of different costs related to those two types of market penetration, Helpman et al. (2004) argue that the most productive firms commit with FDIs, less productive firms focus on exporting while the less productive firms exit the market.

Máñez et al. (2008), Campa (2004), Gullstrand (2008), Melitz (2003), among others, show that sunk costs vary with the size of the firms. Export hysteresis due to sunk costs could be explained by using a representative-firm setting (Baldwin (1988), Baldwin and Krugman (1989), Dixit (1989)) or in a context of heterogeneous firms (Melitz (2003), Helpman et al. (2004). Effects of sunk export costs on firms’
performances and behaviours vary according to the setting of the models and affect differently, both, the intensive and extensive margin (respectively, size of exports per firm and set of exporters).

Baldwin and Krugman (1989) demonstrate that large variations of the exchange rates could lead to export entry or exit while small variations do not because previsions on future profits do not cover sunk costs for an entry or a re-entry in the foreign market. Campa (2004), however, argues that the degree of export hysteresis is not directly related to the degree of exchange rate uncertainty faced by exporters.

The importance of trade costs and sunk costs of exporting can be explained, also, through business administration studies. Johanson and Vahlne (1975) argue that, international operations are often developed in “small steps rather than by making foreign investments at single points in time” (Johanson and Vahlne 1975, p. 17). According to the authors, this is due to the necessary time needed in order to acquire enough experiential knowledge about the foreign market and, thus, to overcome profit loses due to high entry and sunk costs.

Analyzing the effects of trade costs and, in particular, the role played buy sunk costs of exporting firms is extremely important in order to be able to interpret and understand firms’ choices regarding international processes and selection of foreign markets. It is a fascinating field of study due to the fact that existence and survival of exporting firms is related to so many other sectors (e.g. wealth, international prestige of a country) that are important contributors to the national economy. Although globalization processes have led to a flattening of the world (Friedman 2005), trade barriers are still considerably high especially between developed and developing countries. Certainly, an analysis based on existing literature on effects of trade costs on firms’ behaviour can help to evaluate trade flows and business decisions that involve foreign expansion of economic activities.

1.2 Objective of the study and research question

The purpose of this master thesis is to review the most important literature contributions related to trade costs and sunk costs of exporting. In particular, the aim of the paper is to underline the important role played by sunk costs of exporting in
strategic firms’ decisions regarding exporting and FDIs and present their empirical evidence.

1.3 Main findings

Trade costs and sunk costs of exporting are, indeed, very essential when considering trade flows between countries and decisions regarding internationalization processes. In 1986, Das et al. (1986) quantified the size of sunk costs of exporting for three Colombian industries in about 400,000 US $. A large number of empirical studies suggest that intrinsic characteristics of exporting firms are different from firms that do not. Exporters are, usually, bigger, more productive and efficient than non-exporters. The existence of entry export costs and sunk costs determines a self-selection with potential exporters becoming more productive before entry in a new market. Export experience influences positively the decisions regarding exporting. Even though the effects of previous export experience differ across countries, industries and products, last years exporters have, generally, become more willing to export the next year than non-exporters. A wide range of empirical literature has shown that sunk costs are, usually, responsible for export hysteresis, that is, the persistence of exporters in a market even in case of negative profits in order to avoid re-entry costs. The magnitude and perception of sunk costs depends, however, on the size of the firms and on their association to districts. Large firms face smaller sunk costs than small firms. Being part of an industrial district (such as in the textile and fashion industries) makes it easier to learn about foreign markets and, thus, it is easier to predict sunk costs and, consequently, to undertake exports decisions.

1.4 Structure of the study

The rest of the essay is structured as follows. The second section gives an overview of the types of trade costs and their effects on trade costs between countries. The third section is focused on the analysis of heterogeneous firms models and firms’ export and FDI decisions. The fourth section investigates the importance of sunk costs for exporting firms, discussing, also, empirical evidence on how sunk costs change between countries and industries. A review of the Uppsala model is presented in chapter 5. Chapter 6 summarizes and concludes.
2. BACKGROUND ON TRADE COSTS

2.1 Classification of trade costs

Trade costs play an important role in defining trade flows between countries and affect decisions of companies in terms of choice of destination market, entry mode and choice of market servicing. Because of their effects across countries and regions and across goods, it is useful to take them into account when it comes to evaluate trade flows and strategic business decisions. As suggested by Anderson and Wincoop (2004), trade costs matter for a series of reasons. Firstly, because they are large: the 170-percent trade costs “representative” in developed countries (see figure 1) breaks down into 44-percent boarder-related trade barriers, 21-percent transportation costs and 55-percent retail and wholesale distribution costs (Anderson and Wincoop 2004, p. 692). In particular, total international trade costs are about 74-percent (0,74=1,21*1,44-1), thus the 170-percent trade costs “representative” breaks down into 55-percent local distribution costs and 74-percent international trade costs (1,7=1,55*1,74-1) (Anderson and Wincoop 2004, pp. 692-3). Feenstra (1998), using data on production of Barbie doll by Mattel as an example of outsourcing, provides a clear idea of the magnitude of trade costs. The author shows that while production costs per unit of product is of about 1$ (of which 35-percent covers Chinese labor and 65-percent repays the cost of raw materials), Barbie dolls sell for about 10$ in the US of which Mattel earns about 1$. The cost of transportation, marketing, wholesaling and retailing have an ad-valorem tax equivalent of about 800-percent (Feenstra 1998, p. 36).

Furthermore, trade costs are linked to economic policies. According to Anderson and Wincooop (2004) direct policy instruments such as tariffs and duties are less important than investments in transport infrastructures, law enforcements and property rights institutions and regulations (ibid). Moreover, trade costs have strong implications in terms of welfare. Anderson and Wincoop (2002) show that a hypothetical world monetary union would raise trade by only 10-percent but would produce an increase in terms of welfare of 21-percent (Anderson and Wincoop 2002, p. 223). Moreover, trade costs influence economic geography. Under this point of view, Davis (1998) shows that the home market effect hypothesis (a large country is a net exporter of industrial goods – Zeng and Kikuchi 2009) disappears when differentiated and
homogeneous goods have the same transportation costs (Davis 1998, p. 1264). Thus, the home market effect hypothesis hangs “on differentiated goods with scale economies having greater trade costs than homogeneous goods” (Anderson and Wincoop 2002, p. 223).

Figure 1 Estimated trade costs in industrialized countries

The second reason underlined by Anderson and Wincoop (2004) in terms of importance of trade costs, is related to their wide definition. The authors define trade costs as a group including all costs incurred in order to deliver a good to a final user other than the cost of production per unit. Taking into account this definition, by trade costs we denote all the transportation costs (both freight costs and time costs), policy barriers (tariffs and non-tariffs), information costs, contract costs, currency costs (related to trade with different currencies), legal and regulatory costs and local distribution costs (Anderson and Wincoop 2004, p.691).

Overall, an importer or exporter faces trade costs in all the steps of the import or export process starting with gathering information and knowledge about the foreign market and ending with the final payment (De 2006, p. 5). A part of trade costs is variable and depends on the operational efficiency of the importer or exporter and diminishes when the efficiency level of the trader increases (ibid). The other part of trade costs is, instead, fixed and is related to the in-built inefficiencies of the market where the trader is operating. De (2006) includes in this types of inefficiencies institutional bottlenecks (e.g. transports, regulatory and other logistic infrastructures), information asymmetry and administrative power of government officials (De 2006, p. 6). Direct transport costs are related to freight charges and insurance while indirect
transport user costs refer to costs for the goods in transit, inventory cost and preparation costs associated with shipment size (ibid).
3. HETEROGENEOUS FIRMS AND TRADE

An important aspect to be considered when taking into account costs of international trade is related to the effects that high trade costs have on firms’ behaviour. As shown above, trade costs include a large variety of expenses that companies have to cover in each step of the export or import process. Studying how trade costs affect firms’ behaviour is certainly a further attempt in explaining and understanding their role in international trade flows between countries and firms. According to this point of view, important literature contributions are related to industry models with heterogeneous firms that analyse intra-industry effects of international trade.

Bernard et al. (2003) and Melitz (2003) develop heterogeneous firms level models where productivity of the company is the essential component for overcoming high entry trade costs. In each model, indeed, firms pass through a self-selection process that guides only the more productive companies to engage in export processes because they are the only ones able to cover the entry trade costs. Furthermore, both models show that a decrease in trade costs determines an increase in aggregate industry productivity. In particular, if the level of trade costs decreases then the lower productive non-exporting firms would exit the market whilst more productive non-exporting firms would enter the export market. Consequently, a fall in trade costs corresponds to an increase in the level of export sold by the most productive firms (Bernard et al. 2006, p. 920).

Apart for some differences between the two papers, it is possible to specify common findings that underline the importance of trade costs on export decisions and industry structure. According to Bernard et al. (2006) both models show that a decrease in variable trade costs leads to a gain in aggregate industry productivity, a raise of the probability of firm exit, an increase in the number of exporting firms, an increase of export sales for existing exporters and a reduction of domestic market share of surviving firms (Bernard et al. 2006, p. 920).

3.1 The heterogeneous firms’ models and export decisions

As shown above, Melitz (2003) develops a dynamic industry model with heterogeneous firms in order to analyse the intra-industry effects of the exposure to trade. Focusing in particular on productivity differences among firms within
Krugman’s (1980) approach of trade under monopolistic competition, the author develops a model in order to explain the endogenous selection of heterogeneous firms within industries (Melitz 2003, p. 1696).

Krugman’s (1980) framework considers identical countries trading differentiated goods regardless the presence of trade barriers because consumers have a high predisposition for variety. Due to this assumption, even in presence of low elasticity of substitution between varieties, consumers will buy foreign products even though it would be more expensive; hence the magnitude of trade barriers on bilateral trade flows is negligible. Krugman (1980) also assumes variable transport costs for exporting and identical firms. Under these circumstances, when goods are highly substitutable trade barriers have a strong impact on trade flows.

Melitz (2003) develops an industry model with heterogeneous firms where the exposure to trade generates a type of “Darwinian evolution” within an industry (2003, p. 1714). The author states that, according to different levels of productivity possessed by firms, the entire industry can be divided into groups that gain or lose profits. In particular, the exposure to trade persuades only the more productive groups of firms to export and increase market share and profits (Melitz 2003, p. 1695). However, some less efficient firms continue to export increasing market share but incurring in profit loses, while even less productive ones do not export and incur in loses in terms of market share and revenues. Consequently, the least productive firms will be forced to exit the market. On the other hand, increases of a country’s exposure to trade lead to welfare gains but, because of high export market entry costs, distribution of gains is altered. According to Melitz (2003), in fact, the reason behind the exit of the less productive firms is related to the fact the firms compete for a common source of labour. The more productive firms will be the only ones able to cover the entry costs. Consequently, the increased labour demand from the more productive firms pushes up wages forcing the least productive firms to exit (Melitz 2003, p. 1716).

An important extension to the Melitz’s (2003) model is developed by Chaney’s (2008) study where the author proposes a model with firm heterogeneity in productivity levels and fixed costs of exporting. In his paper the author introduces some important contributions to the Krugman’s (1980) model, widely used in order to predict bilateral trade flows.
Chaney (2008) develops a model with asymmetric countries and asymmetric trade barriers and studies the strategic decision of firms to export or not in relation to the level of trade costs. The study shows that the introduction of fixed costs of exporting determines effects on both the intensive and extensive margins (size of exports per firm and set of exporters, respectively). On the other hand, a change in transport costs levels determines a change in volumes of exports and in the set of exporters (Chaney 2008, p. 1707). Furthermore, the elasticity of substitution between varieties of goods generates opposite effects on each margin. In particular, in a condition of high elasticity of substitution and low trade barriers the less productive firms that can now enter a foreign market will compete in a relatively small environment; thus, the impact on the intensive margin is small. At the contrary, when the elasticity of substitution between varieties is low, less competition between firms allows the new (less productive) entrants to conquer larger market shares; thus the impact on the intensive margin is large (Chaney 2008, p. 1707). In other words, a market with high entry costs will be very selective and will allow only the best performing firms to penetrate into it and sell greater quantities of goods (intensive margin), while, a more open market will be accessible to a larger number of less performing firms exporting smaller quantities (extensive margin) (Chevassus-Lozza and Latouche 2008, p.1).

3.2 The heterogeneous firms’ models and export Vs FDI decisions

Until now the discussion has been focused on the role played by trade costs in export decisions. An interesting expansion of the analysis is to consider how trade costs affect firms’ choice between export and “horizontal” FDI. As shown above, according to the magnitude of trade costs and firms productivity, only the most productive firms opt to export because of their economic capacity in covering entry market costs. Helpman et al. (2004) develop a model that links heterogeneous firms productivity to their choice to serve foreign markets through exports or horizontal FDIs. Introducing heterogeneous firms in a multi-country and multi-sector context, the authors highlight the importance of differences in within-sector firms’ productivity in explaining the structure of international trade and investments. Regressing the US exports and affiliates sales data of 52 manufacturing sectors in 38 countries and focusing on the firm’s choice between exports and horizontal FDI, the authors confirm predictions of the proximity-concentration trade-off. According to Brainard (1997), in fact, FDI
occurs when transportation costs are large and plant-level returns of scale are small. Furthermore, FDI appears to be more likely in industries characterized by a high dispersion in firm size (Helpman et al. 2004, p. 310).

The Helpman’s et al. (2004) model shows results in line with the Melitz’s (2003) findings but sheds light also on firms’ behaviour regarding the choice between two different modes of market access. According to their model, the least productive firms, expecting negative operative profits, exit the market. Other low-productive firms choose to compete in both domestic and foreign markets. In particular, the most productive firms of this group proceed with a direct investment in loco, whilst the less productive firms serve the foreign markets through exporting. Exporting and FDI have, indeed, different relative costs, some of them are sunk (e.g. entry costs) while others fluctuate with sales volumes (e.g. shipping costs and transportation costs). Because of these differences in costs only productive firms are able to cover such an expenses. Less productive firms can only cover costs correlated with exporting (exporting involves lower sunk costs than FDI) while the most productive ones can meet the costs of FDI (Helpman et al. 2004).

Direct evidence in support of the theoretical prediction by Helpman’s et al. (2004) study is provided by Tomiura (2007). The author compares firm’s productivity across globalization modes by using firm-level data of FDI, exports and foreign outsourcing. By analysing 118,300 firms across all manufacturing Japanese industries, the study shows that the average productivity of domestic firms is “distinctively” lower than the ones operating internationally. Furthermore, firms committed with FDI are, on average, more productive than other globalized firms, while exporters show the least productivity among globalized firms (Tomiura 2007, p. 123).

An interesting aspect to examine is the effect that distance plays on FDI flows between countries. According to Obstfeld and Rogoff (2001) cited in Haung (2006), transport costs are the most important value in estimating the physical distance between two countries. Mello-Sampayo (2009) states that the FDI theory uses the “distance-incentive” concept by considering the distance of two countries as a incentive to overcome transport costs with a direct investment in loco since it will be more preferable than exporting (Mello-Sampayo 2009).
It is important to underline, however, that decisions concerning the location of FDI is usually meant as a process including two-stages. The first stage is correlated to the identification of a set of potential markets to invest in, while the second refers to the choice of the host-market from the set of markets selected. As suggested by Blonigen (2005) the process of selection refers to the choice of the ‘best’ low-cost host at the expense of other potential host locations.

An innovative point of view in the application of the gravity model to explain flows of FDIs between countries is given by the study by Mello-Sampayo (2009). The author expands the classical gravity model employed to study FDIs flows by considering also a competition factor that captures the gravity of rival countries candidate for FDIs. According to Mello-Sampayo (2009) the classical gravity model applied to the empirical analysis of FDI ignores the attractiveness of alternative host-markets (ibid). Conversely, the competition factor included in the so-called share gravity model allows studying FDI flows considering also the ability of third countries to attract FDIs (2009, p. 2239). By analyzing the US FDIs between 1990 and 1996, the author shows that competition of potential competing countries has a strong influence on destination of the US FDIs especially when the firm is assumed to be confronted with the choice of proximity to consumers and concentration of production (Mello-Sampayo 2009, p. 2250). Overall, findings are in line with the previous studies carried out employing the classical gravity model. In fact, the US’ FDIs show an increase in presence of high transportation costs, trade barriers, FDI openness, population, taxes and decreasing competition from other countries (Mello-Sampayo 2009, p. 2251).
4. THE IMPORTANCE OF SUNK COSTS OF EXPORTING

4.1 Why sunk costs of exporting matter?

In the previous section we have analyzed how trade costs affect trade flows between countries and we have underlined their effects on exporting and FDI decisions. This section is focused, instead, on the importance of sunk exporting costs for firms’ behaviours. As discussed above, trade costs occur in each step of the export or import process and they may be sunk in the sense that they can be independent of the export volumes. In other words, these costs can be irreversible. Entering a foreign market means to adapt products to foreign customers’ needs, to respect technical and administrative standards and to create new distribution channels.

Furthermore, before taking any decision, the destination country has to be analysed in terms of market share, potential customers and competitors. Gathering information about a distant country (in terms also of culture and language) can represent not only a time consuming process but also a very expensive activity. Advertisements and marketing activities represent very important as well as expensive requirements in order to succeed in a new market (Sutton 1991). All these activities generate costs that firms have to cover in order to enter a foreign market.

Das et al. (2007) suggest that sunk costs have a direct impact on the firm’s predisposition to exporting because of two reasons. First, because coverage of sunk costs needs a precise evaluation of future market conditions in terms of demand trend, performance and export-friendly policies. Second, because entry costs make volume of exports dependent on the previous exporting status. In fact, a firm that is already exporting can increase the volume of its supply at marginal production costs, while a firm that is just approaching exporting must cover also sunk entry costs (Das et al. 2007, p. 838).

Sunk costs have a direct implication on the volume of exports since they can be covered only by a limited number of firms: Melitz (2003) suggests that, because of sunk costs, only the most productive firms engage in export while the less efficient ones operates domestically. Baldwin and Krugman (1989) argue that sunk costs can
lead to export hysteresis that is the persistence of firms in the export market even when they witness negative operating profits. Using a representative-firm setting, Baldwin and Krugman (1989) show asymmetry in the effects that variations of the exchange rate has on export entry and exit. In particular, a large variation of the exchange rate could change a firm’s export status while small variations do not determine export entry or exit because previsions on future profits do not cover sunk costs for an entry or re-entry in the foreign market. Since the model is developed using a representative firm, all firms in the same industry are supposed to act identically.

Evolutions of the traditional trade theories based on the representative-firm setting originate from the consciousness that not all firms react identically. Empirical analyses have shown that intrinsic firm and plant characteristics play an important role in export behaviour. Characteristics such as age, size, productivity, corporation, foreign ownership, R&D and advertising intensity, have a positive effect on the probability of exporting (Mañes et al. 2004, p. 669).

As discussed above, Melitz (2003) develops a heterogeneous firms model capable to estimate direct effects that sunk costs have on the extensive margin of trade (number of exporters). According to Melitz (2003) only the most productive firms will decide to export because they are the only ones able to cover sunk entry costs related to the export activities (self-selection hypothesis). There exist a large number of empirical studies confirming that exporters are characterized by a higher level of efficiency in comparison to firms operating domestically (Tomiura 2007). Under this point of view, Clerides et al. (1998) investigate whether there is any evidence that firms become more efficient after becoming exporters. Furthermore, the authors clarify whether exporters generate indirect benefits to other firms in terms of knowledge or improvements in international transport and export support services (Clerides et al. 1998, p. 904).

4.2 Empirical evidence on the importance of sunk costs

The following section of the chapter will proceed with an analysis of the most important empirical evidence on the significance of sunk costs in exporting decisions and activities.
By analysing plant-level data on sales revenues and production costs of three Colombian industries in 1986, Das et al. (2007) quantify the size of sunk export costs in about 400,000 US $. Furthermore, the authors show that sunk costs are also responsible for hysteresis in export participation. In particular, results show that firms do not begin to export unless previsions on future profits are enough to cover sunk entry costs. Colombian exporters tend to remain in the export market even in presence of negative profits, thus avoiding the re-entry costs in the same market when economic conditions improve (Das et al. 2007, p. 867). Roberts and Tybout (1977) show that already after two years since a firm leaves the exporting status the “re-entry costs are not significantly different from those faced by a new exporter” (Roberts and Tybout 1977, p. 560).

Bernard and Jensen (2004) obtain similar conclusions analysing the export decisions of continuously operating US plants from 1984 to 1992 taking into account effects of barriers to entry, individual plant attributes, exchange rates, spillovers and export promotion (Bernard and Jensen 2004, p. 569). The study shows that sunk entry costs are significant for the US plants and their magnitude explains the reasons why only a subset of firms is able to export being able to cover those irreversible costs (ibid).

Using firm-level data from a sample of Spanish manufacturing firms, Campa (2004) finds that sunk costs are an important factor in determining export market participation and can lead to export hysteresis. Campa (2004) shows, however, that the degree of hysteresis is not directly related to the degree of exchange rate uncertainty faced by exporters. In particular, the author underlines that the role played by sunk entry costs in exporting is greater than the effects of the exchange rates on export volumes. In fact, 10-percent pesetas depreciation corresponds to an increase in the number of exporting firms by only 1.4-percent of export volumes (Campa 2004, p. 546). In other words, variations in the exchange rates determine variations of export volumes by existing exporters rather than variations in the number of exporting firms (ibid).

In line with Campa’s (2004) study, Máñez et al. (2008) test the sunk costs explanation for hysteresis in export analysing firm-level data from Spanish manufacturing firms from 1990 to 2000. Findings are in line with previous empirical studies on sunk costs but Máñez’s et al. (2008) analysis shows some important innovative issues. In
particular, authors show that sunk costs are mainly responsible for hysteresis in firms’ behaviour but the magnitudes of sunk costs vary with the size of the firms. According to their analysis large firms face lower sunk costs than small firms, but both groups witness a rapid decrease in terms of export experience if they leave the export market (Máñez et al. 2008, p. 274). Furthermore, in line with Melitz’s (2003) findings, the authors show that large and more productive firms, characterized also by strong investments in R&D, have a higher probability of exporting (ibid).

Analysing plant-level panel data of industries in Colombia, Morocco and Mexico, Clerides et al. (1998) show that plants that begin to export have low average variable costs while plants exiting the exporting market are becoming increasingly high cost (Clerides et al. 1998, p. 941). The most important finding, however, is related to the analysis of productivity trajectory after becoming an exporter. As shown in the analysis, the authors witness no improvements in productivity variables (labour productivity) after entering the foreign market supporting the “no-learning-by-exporting” scenario (Clerides et al. 1998, p. 941). With respect to positive externalities created by exporting firms, the authors demonstrate that presence of exporters might facilitate domestically oriented firms to break into foreign markets because of lower production costs domestic firms can enjoy (ibid).

According to Requena-Silvente (2005) the importance of sunk costs of exporting decreases when experience in a foreign market increases. Analysing the dynamics of export decisions by English small and medium sized enterprises from 1994 to 1998, the authors show that even though small and medium sized enterprises (SMEs) consider exporting as an irreversible investment, the importance of sunk costs in exporting falls with the age of the company. The role played by previous experience in international markets in reducing impacts of sunk costs in exporting decisions is supported, also, by an empirical analysis on data from more than 31,000 Italian SMEs between 1982-1999. According to Bugamelli’s and Infante (2003) analysis, sunk costs are significant: an exporting firm, which has already covered sunk costs, has a probability of exporting the next year 70-percent higher than another company that lacks in experience in foreign markets. Furthermore, the role played by industrial districts (e.g. in textile, fashion and in furniture industries) confirms their function of driving force for the export business. In fact, being part of a industrial district makes it
easier to learn about foreign markets and thus it is easier to predict sunk costs and, consequently, to undertake exports decisions. (Bugamelli and Infante 2003, p. 8).

By analysing the Swedish food and beverage sector in terms of sunk costs of exporting, the study by Gullstrand (2008) shows results in line with predictions of theoretical models discussed above. In particular, the author shows that export experience affects firms’ decisions in terms of expansion towards other markets. In other words, the last year Swedish exporters are about 30-40-percent more likely to export the next year (Gullstrand 2008, p. 18). Furthermore, the author suggests that, on average, exporting Swedish firms are likely to be more efficient, and the sunk costs of exporting is also less important for productive firms as well as for bigger markets. A remarkable finding that seems to be in contrast with the previous studies is related to the neutrality of sunk costs to an increase of physical distance between countries. Gullstrand (2008) demonstrates that the importance of sunk costs is perceived higher for countries that are closer to the home market in terms of value and export penetration (Gullstrand 2008, p. 18). According to the author, this characteristic can be explained through the fact that Nordic firms are, usually, less prone to exit their home market in prevision of losses on future revenues (ibid). The latest concept is perfectly in line with some predictions from business administration literature. In order to better understand this point, the next chapter will provide a review of business administration theories and will underline how it is possible to interpret their results with the concept of sunk costs of exporting.
5. EXPORT DECISIONS ACCORDING TO THE LITERATURE IN BUSINESS ADMINISTRATION

As discussed above, the importance of sunk costs of exporting is crucial in defining which firms can cover export costs and decide towards which markets to expand their economic activities. Under this point of view, it is possible to interpret findings of business administration literature with the concept of sunk export costs and their effects on exporting decisions. Relating to Gullstrand (2008) explanation about why sunk costs of exporting are perceived higher from the vital market, the so-called Uppsala model provides a business point of view of the statement. In particular, the prudence of Nordic firms in expanding internationally their activities can be demonstrated through the fear of future loses due to sunk export costs and explained also through the so-called Uppsala model.

5.1 The Uppsala model

The Uppsala model is based on the assumption that market-based knowledge is the most important driver for internationalization and it is possible to relate the need expressed by firms of knowledge about foreign markets as an attempt of reducing entry sunk export costs. In other words, the basic assumptions of the model lies on the consideration that lack of market-based knowledge can be an obstacle to the internationalization process, and hence firms adopt a gradual approach in acquiring market-based knowledge and increase market commitments (Johanson and Vahlne 1997, p. 23). In particular, based on empirical observations about internationalization of Swedish firms, the authors argue that international operations are often developed in “small steps rather than by making foreign direct investments at single points in time” (Johanson and Wiedersheim-Paul 1975, p.17). On other words, the internationalization of four Swedish companies becomes the source of the development of the so-called stage model based on four-stages of progressive development in internationalization (Hadjikhani 1997):

1. No regular export activities
2. Exports via independent representatives
3. Sales subsidiary
4. Production-Manufacturing
The Uppsala model is built on four essential assumptions that Pauwels et al. (2004) have effectively summarized as follows. Firstly, firms maximize their profits by allocating resources in markets expected to be less risky than others (Andersen 1993 cited in Pauwels et al. 2004, p. 4). Secondly, markets-based knowledge is the only asset the firm can employ in order to reduce risks related to foreign investments. Thirdly, market-based knowledge can be gained only through direct experiences in the foreign market. Finally, experiential knowledge is a necessary condition for internationalization. According to this point of view, Huber (1991) identifies five different processes throughout which firms can acquire experiential knowledge: (1) organizational experiments, (2) organizational self-appraisal, (3) experimenting organizations, (4) unintentional or unsystematic learning, and (5) experience-based learning curves.

5.2 Physical distance and experiential knowledge

In the Uppsala model the extension of the operations in foreign markets depends on the physical distance between the home market and the destination country. In this context, Johanson and Vahlne (1977) define physical distance as the sum of the factors precluding or disturbing flow of information such as languages, education, business practices, cultures, and industrial development (1977 p. 24). In particular, the physical distance between the home and the import/host country affects market selection and choice of entry mode (Johanson and Vahlne 1977). Consequently, in case of little experience in foreign markets firms prefer those that are similar and located at a short physical distance (Eriksson et al. 1997, p. 341).

As firms proceed in the internationalization process, with a consequent increase in foreign market knowledge, they will be more concerned about the market size rather than the physical distance between the two markets (Johanson and Wiedersheim-Paul 1975). Many studies confirmed what argued in Johanson’s and Wiedersheim-Paul (1975) study. Davidson (1983), for instance, studying target of U.S. - based MNCs’ foreign investments, discovered that firms more prefer to make business in English-speaking countries such as Canada, UK and Australia; and at the same time MNCs prefer indirect over direct presence in countries characterized by an high physical distance (Davidson 1983, p. 453). Furthermore, Vernon (1966) and Kogut and Singh (1988) cited in Eriksson et al. (1997) reported a steady expansion of
internationalization from culturally familiar to culturally less familiar countries as experience increased.

Focusing on the export as entry mode strategy Stöttinger and Schlegelmilch (1998) show that physical distance does not totally explain the willingness of firms to expand business in countries that are culturally similar. Focusing, in fact, on the U.S’ FDIs, the authors show that, even though Mexico was ranked by American managers as a country with a higher cultural distance than Germany, exports to Mexico were almost three times higher than exports to Germany. Furthermore, analysing the relationship between geographic and psychic distance, Stöttinger and Schlegelmilch (1998) come to a conclusion in contrast to what predicted by Dichtl et al.’s (1990) study (the relative importance of one country for the other country’s total export volume influences the distance perceptions). In fact, even if Austrian and American managers judged both very similarly, Austria only ranked 38th in terms of total U.S. exports, while the U.S. held the seventh position in the Austrian export statistics.

As shown above, in the Uppsala model, knowledge is assumed to be crucial for two reasons. First of all, because knowledge of opportunities or threats is essential to initiate decisions. Secondly, because knowledge is important when it comes to evaluation of different alternatives (Johanson et al. 1977). In other words, knowledge relates to some of the most important drivers in international processes such as prediction of demand and supply, competition and channels for distribution, payment conditions and money transferability that can vary from country to country (Carlson 1974 in Johanson et al. 1977).

According to Johanson and Vahlne (1990), acquisition of experience depends directly on the position of the firm in the establishment chain. For this reason it is possible that firms in the first step of the internationalization process, probably, will not gain any market experience. From the second step, instead, with the establishment of a direct information channel to the foreign market, firms will start to gain some superficial information about the market with an increase of experience directly correlated to the progression in the stages (Johanson and Vahlne 1990).

As stated above, there are different ways of knowledge acquisition. While different kinds of knowledge are defined in the literature (Huber 1991), according to Johanson and Vahlne (1977), there exist a type of knowledge that can be thought, known as
objective knowledge, and another type that can be assimilated only through direct experience. Experiential knowledge has a crucial role in the Uppsala model because it is only through a deep understanding of the foreign market that opportunities can be discovered and risks can be avoided. In fact, objective knowledge only allows formulating theoretical opportunities while experiential knowledge “makes it possible to perceive 'concrete' opportunities” (Johanson et al. 1977, p. 29).

Eriksson et al. (1997) do not refute the importance of experiential knowledge in internationalization processes but expand the analysis by considering also the cost correlated to the acquisition of market information. Starting from the assumption that managers operate taking into account their cost perceptions based on previous experience (Johansson et al. 1977), Eriksson et al. (1997) examine the “principal components of experiential knowledge that influence management's perception of the cost in internationalization” (Eriksson et al. 1997, p. 339). The authors state that manager’s cost prevision is not only based on considering direct costs such as starting up a new business abroad (e.g. traveling costs and salaries), but they are related also to prevision of costs for acquiring foreign market information (Ibid).

Critics about the consideration that accumulation of experiential knowledge is a necessary condition for international expansion are represented by different empirical studies. Hedlund and Kverneland (1983) suggest that establishment and growth strategies are changing from a gradual and slow internationalization process (and knowledge acquisition) to a faster and more direct entry modes in foreign markets. In fact, analysing all Japanese subsidiaries of Swedish firms, authors pointed out that around half of the companies under investigation jumped directly from sales agent to Greenfield investments (manufacturing) rather than proceed with a sales subsidiary (Hedlund and Kverneland 1983). On the same concept line, Stopford and Wells (1972), by analysing American foreign direct investments in Europe discovered that almost three-quarters of initial ventures were made through wholly owned subsidiaries (Eriksson et al. 1997, p. 342).

Erramilli (1991), by analysing entry modes of services firms, recognizes that market-based knowledge plays an important role in explaining foreign market entry modes, even if it is not substantial. With high degree of uncertainty firms are more likely to enter a market where they posses the best information leading to an entry in culturally
similar countries (Erramilli 1991). More important, in contrast with the role played by experience in Johanson et al. (1997), Erramilli (1991) states that firms with little or no experience rely on high-control modes in the foreign markets. This preference of control in condition of uncertainty is supported by Williamson’s (1985) analysis. According to the author “integrated modes are more efficient under conditions of high uncertainty because they help to avoid negotiating with and monitoring (…) local agents and partner” (Williamson 1975, cited in Erramilli 1991, p. 494).
6. SUMMARY AND CONCLUSIONS

This study has highlighted the important role played by trade costs and sunk export costs in constraining internationalization choices made by firms and, thus, impeding trade flows between countries. The analysis has been carried out in a form of a review of the most significant literature contributions related to the study of the magnitude of trade costs and sunk export costs and focused on their impact on firms’ behavior. Trade costs are defined as a group including all costs incurred in order to get a good to a final user and, thus, counting transportation costs, policy barriers, information, contracts and currency costs.

Trade costs matter for a series of reasons. Trade costs are large. Anderson and Wincoop (2004) estimate that the 170-percent trade costs, assumed as representative estimation in developed countries, branches out in 21-percent for transportation costs, 55-percent for retail and wholesale distribution costs and 44-percent for border-related trade barriers. Furthermore, they are important because they are linked to economic policies. Anderson and Wincoop (2004) argue that tariffs and duties are less important than investments in property rights institutions and regulations, transport infrastructures and law enforcement. Moreover, trade costs have strong implications in terms of welfare since a hypothetical world monetary union would raise trade by only 10-percent but would produce an increase in terms of welfare of 21-percent (ibid).

Some of the trade costs faced by exporting companies can be irreversible. Analyzing foreign destination markets in terms of market shares, potential customers and competitors, promoting products through advertisements and marketing activities can all express an amount of costs that firms will never repay. Das et al. (2007), among others, suggest that sunk costs have an impact on firm’s export decisions because their coverage needs an exact evaluation of future market conditions (e.g. demand trend, export-friendly policies) and because entry costs make volume of exports dependent on the previous exporting status. Sunk costs can also generate export hysteresis since firms opt to remain exporters also in presence of negative profits in order to avoid re-entry costs. Furthermore, sunk costs determine a “Darwinian selection” of exporting firms since only the most productive firms are able to cover such costs and, thus, engage in international commerce. Hence, sunk costs affect both
the intensive and extensive margin of trade. In other words, sunk costs of exporting affect both the size of exports per firm and the set of exporting firms.

The effects that trade costs and sunk costs of exporting have on trade flows and firms’ behavior has been widely studied. Evolutions of trade theories based on the representative-firm setting originate from the consciousness that firms react differently to external shocks. Mañes et al. (2003) shows that intrinsic firm’ characteristics such as age, size, productivity, R&D and advertising activities have all a positive impact on the probability to exporting. Using asymmetric countries and asymmetric trade barriers, Chaney’s (2008) model shows that trade costs determine a variation in volumes of exports and set of exporters. Melitz (2003), among others, states that most productive firms export since they are the only able to cover sunk export costs. Helpman et al (2004) argue that the most productive firms commit with FDIs, less productive firms focus on exporting while the less productive firms exit the market.

Evidence of the importance of trade costs and sunk export costs is, also, perceivable from business administration studies. Predictions related to the Uppsala model regarding internationalization process especially of Swedish firms, seems to be in line with what predicted by literature contribution with an “economic” flavour. In particular, the slow development of forms of international market servicing could be due to the presence of sunk trade costs that force firms to take small steps rather than immediate direct investments in loco. Furthermore, the experiential knowledge needed in order to develop a direct presence abroad could be meant as evaluation of entry costs in the foreign market and prevision of future profits in order to cover sunk costs. Of particular interest is the concept of physical distance developed in the Uppsala model and how it can be interpreted as presence of trade costs. At an increase of physical distance between countries (e.g. geographical distance, languages, cultures, business cultures) corresponds a decrease of the initial foreign commitment. The later is perfectly in line with the concept of sunk costs shown above regarding to, for instance, the “Darwinian selection” process described by Melitz (2003) and how firms auto-select in presence of high entry sunk costs. Furthermore, the stage development described in the Uppsala model (no regular export activities, exports via independent representatives, sales subsidiary and production in loco) can be explained with the presence of high sunk entry costs. In fact, at the beginning,
cheaper foreign commitments are chosen (e.g. no regular export) and after firms proceed with heavier investments.

This study has looked at the effects that trade costs and sunk export costs have on trade and firms’ behavior based on existing literature. However, a lot more research needs to be done in the field and in particular more detailed empirical studies would be needed in order to deeply understand the trade and sunk costs effects and construct appropriate policies for different geographical areas. It would be important and interesting to study how, for instance, firms operate internationally in presence of high sunk export costs relating their choice to their home country characteristics. In other words, it would be useful to analyze if some firms’ behavior could be explained with the pioneer attitude of their country’s characteristics.
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