

A Three-Stage Model of Exporting: New Insights into SMEs' Internationalization-Performance Relationship

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Abstract

The article presents the results of an empirical analysis on the relationship between exporting and profitability in a sample of 1,231 manufacturing SMEs. A sigmoid relationship between the degree of internationalization, measured by Export Sales Ratio (ESR), and the profitability of the firms (measured by Return on Sales, ROS) is hypothesized. The results indicate that exporting can be beneficial to SMEs, but only in the second stage of the process, when a certain degree of international commitment is achieved. In the first and in the third stage, when the incidence of sales internationalization is respectively lower and higher, the incremental costs of exporting exceed the related benefits, determining a declining performance. This research contributes to existent literature by deepening the internationalization and performance (I&P) relationship within a context of exporting small and medium enterprises.

Keywords: Internationalization, exporting, three-stage model, small and medium enterprises, firm performance, s-curve, Italy.

Introduction

The relationship between performance and internationalization is far from being clear and linear and this is witnessed by more than 40 years of studies of internationalization and performance (I&P), which have not reached true convergence in their findings (Glaum & Oesterle 2007). To explain this inconsistency in I&P literature, researchers propose varied reasons, from the need for a more in-depth discussion of the theoretical bases of studies (Hennart 2007), or the strategic motivations that push a firm to internationalize (Glaum & Oesterle 2007; Verbeke, Li & Goerzen 2009), to more practical issues such as the selection of variables used to represent performance (Hult et al. 2008) and internationalization (Oesterle & Richta 2013) in empirical studies.

A recent manifestation of quantitative research adopts three-stage theory (Contractor, Kundu & Hsu 2003; Lu & Beamish 2004) and argues that the process of internationalization is characterized by three phases: In the earliest stage, internationalization costs and liabilities overcome its benefits, producing a negative I&P relationship. In the second stage, firms achieve an optimal presence abroad, such that they can maximize the benefits of economies of scale and scope and exploit specific, foreign market knowledge. However, after a certain degree of internationalization, in the third stage, problems and costs of coordination and information management intensify, such that excessive international engagement induces a new negative impact on performance. The proponents of three-stage theory argue that previous findings relating to linear and U-shaped I&P relationships actually might represent only one portion of a complete sigmoid S-curve.

The large majority of studies on I&P are referred to Multinational Enterprises (MNE) from developed countries, which are usually engaged in higher forms of internationalization, such as Foreign Direct Investment (FDI). Only a small part of studies are devoted to SMEs (Lu & Beamish 2001, 2006; Nguyen, Le & Bryant 2013) from developed rather than new emerging economies (Chiao & Li 2009; Chiao, Yang & Yu 2006; Xiao et al. 2013; Zang et al. 2014). These studies tend to focus on exporting strategies (Lengler et al., 2015), because export might be the only form of internationalization for SMEs, due to their resource constraints which likely prevent them from engaging directly in FDI (Lu & Beamish 2001; Zahra, Neubaum & Huse 1997).

This article contributes to existing literature by deepening the studies on I&P in SMEs, by hypothesizing a sigmoid relationship between exporting and profitability and by controlling for different sets of firm resources such as capital intensity and intangible intensity. The resource constraints of SMEs and their limited access to international relationships can limit their possibilities to implement internationalization strategies, and consequently to benefit from their positive impact on performance; we demonstrate that even only exporting can be beneficial to SMEs, but this occurs when the foreign market engagement has a certain relative importance on the whole business, because for lower and higher degree of exporting the relationships is not favourable. The article is organized as follows: the next section summarizes previous research examining the I&P relationship, first from a general standpoint and then by considering export as a specific strategy. On this basis, we formulate our hypothesis of a three-stage model of exporting. After describing our sample and method, we present the results of our empirical analysis. Finally, we discuss the main findings of our study, highlighting its contributions, implications and limitations.

1. Literature review on the relationship between I&P

Previous studies of the relationship between I&P present mixed results with regard to the direction of the relationship (positive or negative) and the form of the function (linear, curvilinear). For example, some studies indicate a positive IP relationship (Bühner 1987; Geringer, Beamish & da Costa 1989; Grant 1987), whereas others cite a negative relationship (Collins 1990; Kumar 1984). Such contradictory findings started with the first studies and have persisted to the most recent (e.g., positive: Hsu, Chen & Cheng 2013a; Lee & Habte-Giorgis 2004; Tsao & Lien 2013; negative: Lin, Liu & Cheng 2011). A basic explanation suggests that internationalization invokes both costs and benefits, and the prevalence of one over the other determines the positive or negative slope of the performance function; when costs and benefits occur at different times, the function could take a U-shaped or inverted U-shaped form. Evidence for a U-shaped relationship (Capar & Kotabe 2003; Ruigrok & Wagner 2003; Yang, Martins & Drieffield 2013) implies that the first stage of internationalization is characterized by the liability of foreignness, so only in the second stage do the benefits of the expansion abroad exceed the costs. This shape often arises in empirical research that focuses on non-U.S. firms or uses measures other than the ratio of foreign sales to total sales (FSTS) (Yang & Drieffield 2012). Research that indicates an inverted U-shaped relationship (Aulakh et al. 2000; Chiao & Li 2009; Li, Qian & Qian 2012; Qian et al. 2008) instead suggests that moderate degrees of international commitment lead to economies of scope and enable the firm to leverage its resources across different markets. Then greater degrees of diversification lead to higher costs, as posited by transaction cost theory. Initial geographic diversification usually centres on culturally or physically proximate countries, but further expansion necessarily extends to culturally, socially, and economically diverse market regions. The increasing number of subsidiaries and host countries also leads to increasing issues and costs of coordination. Thus, an inverted U-shape seems likely, and empirical studies have found it in particular when the firms' country of origin is a large economy with relatively moderate trade (Elango & Sethi 2007) or when the sample consists mainly of large firms (Yang & Drieffield 2012).

Contractor (2007) argues that a portion of the contradictory results of 30 years of empirical studies, can be explained by a different perspective on international expansion, based on three-stage theory (Contractor, Kundu & Hsu 2003; Lu & Beamish 2004). This theory predicts that the benefits and costs of internationalization are located differently along the three main stages of the process. For most of the range (i.e., the second stage), the benefits of incrementally increasing the degree of internationalization outweigh the incremental costs, leading to a positive relationship. However, in the first, early stage of internationalization and the third, late stage of excessive internationalization, the incremental costs grow greater than incremental benefits, due to the liabilities of foreignness and to increasing managerial, information, and global coordination costs, respectively. Thus, studies based on three-stage theory offer evidence of a sigmoid (horizontal S-shaped) curve (Contractor, Kundu & Hsu 2003; Li 2005; Lu & Beamish 2004; Thomas & Eden 2004).

2. The studies on exporting and profitability

Exporting provides a rapid means to access foreign markets and gain international experience (Sullivan & Bauerschmidt 1990; Zahra, Neubaum & Huse 1997). Its benefits include the diversification of trading risk across several markets (Dominguez & Sequeira 1993); increased economies of scale and scope (Grant, Jammine & Thomas 1988; Kogut 1985); a means to transfer knowledge and experience accumulated in one market to other, similar markets; enhanced capabilities for appealing to diverse customers (Bartlett & Ghoshal 1989); greater market power (Kim, Hwang & Burgers 1993); and diversification of revenues (Ramaswamy 1992). However, exporting to many dissimilar markets increases the costs of managing diversity (Aulakh et al. 2000; Geringer, Beamish & da Costa 1989; Gomes & Ramaswamy 1999). Firms incur information costs associated with each market (Hitt, Hoskisson & Kim 1997), including transaction costs, tariffs, and trade barriers that differ in each market (Chiao & Li 2009).

In the field of international business and international management, empirical studies of the exporting and performance relationship predict different directions, from linear positive (Lee & Habte-Giorgis 2004) and linear negative (Lu & Beamish 2001, 2006) to U-shaped (Chiao, Yang & Yu 2006; Thomas 2006) and inverted U-shaped (Aulakh et al. 2000; Chiao & Li 2009), to sigmoid (Xiao et al. 2013) and even to no relationship (Majocchi & Zucchella 2003; Singla & George 2013). The prediction of a sigmoid function reflects the idea that exporting firms face three different stages in their process of sales internationalization.

In the earlier stage of exporting, firms face sunk export fixed costs (Abor 2011), such as the expenses of gathering information on foreign markets, upgrading product quality, changing packaging and establishing market channels. These costs are related to knowledge disadvantages. On one side, these disadvantages are in terms of the reduced knowledge of the exporting firm about foreign markets, the law and trade terms of different countries, and customers' preferences and needs.

On the other side, these disadvantages relate to the foreign market's reduced knowledge about the exporting firm and its products; cultural differences; managerial inexperience; transportation and logistical challenges; and marketing, brand and technological disadvantages (Thomas 2006).

These factors characterize the first step of foreign market entry in a similar manner to the liability of foreignness, newness and outsidership that multinational corporations experience, as shown in many multinationality and performance studies (Hymer 1976; Stinchcombe 1965; Johanson & Vahlne 2009). As the firm and its products become more well-known and its foreign relationships are consolidated, increased sales abroad should lead to an increase in profits—mainly due to economies of scale and scope (Grant, Jammine & Thomas 1988; Kogut 1985). If exporting implies an increase in the volume of sales, the unitary incidence of fixed costs is reduced, while the accumulation of learning determines brand name recognition, new managerial and advanced technological knowledge, and new skills to operate in diverse and competitive environments (Thomas 2006). However, further increasing exporting activities usually implies spreading to new, more distant markets and less welcoming countries, usually requiring specific capabilities to export to (Bortoluzzi et al. 2014). This is characterized by deep cultural, economic and social differences, which can cause the marginal costs to exceed the marginal revenues, so that a raise in exports results in a reduction in profits. In this third stage, logistics, coordination and communication costs surpass the benefits of the expansion in export intensity (Chiao & Li 2009; Vogel & Wagner 2009) because this has to be done by excessively diversifying customers and markets. Using Italian data and with a foundation in prior research, we investigate the relationship between I&P according to exporting activities, in an effort to test our research hypothesis:

Hypothesis 1: The relationship between exporting and performance is sigmoid (S-shaped), such that performance declines at low and high levels of internationalization but increases at moderate levels.

3. Research method

3.1. Sample and data sources

Italy is marked by the predominance of SMEs: 99.9 per cent of its firms are SMEs, and 94.6 per cent are micro-firms, employing fewer than 10 people. As a form of internationalization, exporting is easier, achievable even by small and micro-firms. In the period of our analysis the number of manufacturing firms in Italy engaged in exporting was 88,451 (data from Istat Coeweb database), whereas the number engaged in FDI was only 3,773 (Mariotti & Mutinelli 2012).

The sample for this study consists of 1, 231 manufacturing companies located in Italy. To construct the dataset, we merged the financial reports from the AIDA (Bureau van Dijk) database with a database of exporters and the value of their exports based on Istat (the Italian Institute of Statistics) micro-data. The latter database includes firms in the following manufacturing sectors (two-digit NACE classifications): machinery and equipment; beverages (mainly wine); leather and related products; fabricated metal products; food products; cutting, shaping and finishing of stone; basic metals; paper and paper products; apparel; motor vehicle trailers and semi-trailers; furniture; textiles and wood (see Table 1).

The total number of observations was 3,499 because we used export data for a three-year period, and related them to firms' performance of the corresponding subsequent years (one-year lag) to form a panel.

Table 1. Industry classification of sample

N.	ATECO/Nace Code	Industry	N. firms
1	C28	machinery and equipment	211
2	C11	beverages	50
3	C15	leather and related products	49
4	C25	fabricated metal products	328
5	C10	food products	109
6	C237	cutting, shaping and finishing of stone	134
7	C24	basic metals	18
8	C17	paper and paper products	41
9	C14	wearing apparel	79
10	C29	motor vehicles, trailers and semi-trailers	36
11	C31	furniture	98
12	C13	textiles	28
13	C16	wood	50

3.2. Dependent variable: firm performance

Previous studies of the relationship between I&P adopt different approaches to measure firm performance. Among accounting-based measures, most previous studies use the ROA (Hsu, Chen & Cheng 2013a; Lin, Liu & Cheng 2011; Ruigrok & Wagner 2003), because of its comparability across studies but also its ability to indicate economies of scope and scale among the most important motivations for internationalization (Kim, Hwang & Burgers 1989).

Some similar indicators include return on invested capital (Hsu, Lien, & Chen 2013b), return on capital employed (Kylaheiko et al. 2011), return on average assets, return on average equity (Lee & Habte-Giorgis 2004), return on sales (ROS) (Chiao & Li 2009; Li 2005; Thomas 2006; Yang, Martins & Drieffield 2013), and ROE (Chiang & Yu 2005; Thomas & Eden 2004). However, ROA is sensitive to capital structure differences (Hitt, Hoskisson & Kim 1997; Li 2007; Qian et al. 2008; Yang, Martins & Drieffield 2013), because the value of total assets is a sum of current values and book values (Chiao & Li, 2009). Furthermore, accounting-based values of assets do not include intangibles, which could lead to apparently higher profitability for firms that invest less in research and development (R&D) or other factors not included in their asset and liabilities statements (Hennart 2007). ROE appears even more sensitive to capital structure, and it expresses performance as a function of financial and other non-operating costs and incomes. Nonetheless, some studies use it because it often serves as the measure of managerial effectiveness and to determine rewards (Han, Lee & Suk 1998).

To measure the performance of our sample of companies, we adopted ROS, calculated as the ratio between pre-tax operating profit and sales. Previous studies also rely on ROS (Chiao & Li 2009; Chiao, Yang & Yu 2006; Li 2005; Qian 2002; Thomas 2006; Yang, Martins & Drieffield 2013), because it offers updated values of costs and incomes. Geringer, Beamish and da Costa (1989) argue that ROS is appropriate in international business studies because it gets reported in foreign exchange spot rates, thus reflecting current operations.

3.3. Independent variable: exporting

Various scholars take different positions in the debate about the best indicator in quantitative models. This debate is not only a conceptual issue because some argue that the inconsistency in extant results stems from the inadequacy of indicators adopted by models (Hennart 2007). Studies devoted to the effect of international trade on firms' performance express the degree of internationalization in terms of export activities, measuring the Export Sales to Total Sales (ESTS) or Export Sales Ratio (ESR).

The export intensity ratio can be used as a measure of the degree of internationalization because it expresses the extent to which the turnover is realized in foreign countries rather than in the country of origin. The use of ESTS is more common when internationalization is at an early stage, such as in emerging economies (Chiao & Li 2009; Xiao et al. 2013) or in studies of SMEs; in these cases FDI engagement is generally low, overseas subsidiaries' sales tend to zero and so FSTS tend to be equal to ESTS (Almodovar and Rugman 2014).

Italian firms are mostly SMEs; thus, ESTS appears to be a pertinent measure of internationalization. Exporting might represent the fastest and less expensive route to internationalize, and could also be used to highlight the extent to which an increasing presence in foreign markets can be beneficial to profitability, in particular when the internal market shrinks or is saturated (Lee & Habte-Giorgis 2004).

3.4. Control variables

The control variables usually considered in international business research and in SMEs studies (Blackburn et al. 2013) are size, age and industry; in this study we also add leverage, capital intensity, intangible asset intensity and past performance. Size relates to firm performance (Contractor, Kundu & Hsu 2003; Hitt, Hoskisson & Kim 1997; Lu & Beamish 2004); this variable can control for the potential effect of economy scale differences. Although the most popular measure of size is the number of employees (Elango & Sethi 2007; Geringer et al. 2000) or its natural logarithm (Chiao & Li 2009; Contractor, Kundu & Hsu 2003; Hsu, Lien, & Chen 2013b; Qian et al. 2008), we instead use the log of sales (Hsu, Chen & Cheng 2013a; Kylaheiko et al. 2011; Li, Qian & Qian 2012; Xiao et al. 2013), to correspond with our choice of measuring performance on the basis of ROS (Lu & Beamish 2006), and because employees data are not completely covered by the database. Age is the number of years the firm has been in operation, which controls for the effect of organizational life cycle on performance (Xiao et al. 2013), because performance might depend on the accumulated experience of the firm (Hsu, Lien, & Chen 2013b) or the risk taking that tends to characterize younger firms (Lin, Liu & Cheng 2011). Firm performance may be significantly influenced also by industry-specific factors (McGahan & Porter 1999). Therefore, we divided our sample of manufacturing firms into 13 sectors, corresponding to two-digit NACE classifications, with machinery as a reference sector for the 12 industry dummies (see Table 1).

Leverage can affect firm performance and operational risk (Hitt & Smart 1994; Jensen 1986). Most research measures it as the ratio of total debt to total assets (Chiao, Yang & Yu 2006; Elango & Sethi 2007; Hsu, Lien, & Chen 2013b; Li 2005) or long-term debt to total assets (Geringer et al. 2000; Li, Qian & Qian 2012; Qian et al. 2008; Tsao & Lien 2013) to control for variation in firm performance due to changes in capital structures (Xiao et al. 2013); We use the comparable ratio of total assets divided by equity. The ratio was divided by 1,000 in order to have a scale comparable to that of the other variables. Capital intensity represents the relative size of investments in fixed capital stocks, a kind of tangible resources devoted to sustain the long-term functionality of firms, enabling them to pursue their core activities in accordance with strategic aims. Some studies envisage these resources by measuring their real book value (Abor 2011; Amendolagine, Capolupo & Petragallo 2010) or their relative effect considering the firm's size, thus creating a ratio with total assets (Lee & Habte-Giorgis 2004; Ural & Acaravci 2006); this indicator offers a proxy of the technical investment made to reach the planned production capacity, to enhance productivity and flexibility in order to better meet the differentiation requests of domestic and foreign customers, to increase products and process quality, and to comply with different countries' requests of quality and environmental certifications (Chandran & Rasiah 2013).

Capital intensity can also pose barriers to entry in particular industries (Ravenscraft 1983). Thus, capital intensity should relate positively to performance (Cantele & Campedelli, 2016; Lee & Habte-Giorgis 2004).

The other critical resources needed to exploit competitive advantages in foreign markets are intangible resources, including R&D resources, advertising investments, patents and brands or other intellectual properties whose protection is provided by regulation and whose amount can be considered a proxy of the innovation inputs or outputs and technological capability of the firm (Chandran & Rasiah 2013). Chen and Tan (2012) used the ratio of total intangible assets to total assets to measure intangible resources and capabilities.

Many studies on I&P relationship use R&D and advertising intensity as control or moderating variables (Kotabe et al. 2002). Our intangible asset intensity considers both these kinds of resources (together with patents and brands) and represents the incidence of these intangibles on the total capital of the firm, in order to have a similar variable to match with the other representing the tangible fixed investments (capital intensity); We included these typical control variables in all the regression models together with a last variable, which we consider a synthesis of different firm-specific factors not separately recognizable, such as the previous year's ROS. Past performance actually reflects factors such as implicit knowledge, governance style, managerial capabilities, established relationships, consolidated skills, legitimation and other intangibles that are not measured by specific assets, but reflect the present competitive situation of the firm. Other previous studies included past performance among control variables to assess firm-level unobserved heterogeneity (Chen & Tan 2012; Li, Qian & Qian 2012; Qian et al. 2008; Xiao et al. 2013).

3.5. Descriptive statistics and correlation analysis

Table 2 provides the means and standard deviations for all variables, across the 3,499 observations in our dataset.

Table 2. Descriptive statistics (variables before standardisation)

	N. obs	Mean	SD
ROS	3,499	0.029	0.08
ROS _(t-1)	3,499	0.03	0.07
Size	3,499	14.43	1.65
Age	3,499	20.22	13.03
Leverage	3,499	0.012	0.13
Intan_int	3,499	0.03	0.06
Cap_int	3,499	0.23	0.22
ESTS	3,499	0.14	0.24

To test multicollinearity, we calculated the variance inflation factors of the variables, which were below the normal threshold of 10 (Kutner, Nachtsheim & Neter 2004), with reference to all the regression models, with the exception of ESTS squared and ESTS cubed (tables are available upon request). Variables created by the product of other variables are most probably highly correlated; however, this is not a problem because the multicollinearity between x and x^2 or x and xz has no adverse consequences, and this is one of the situations in which it can be ignored (Allison 2012). Nonetheless, we standardized all the independent variables by subtracting their means and dividing them by their standard deviation. Squared and cubed variables were created by the product of standardized variables (and so were not standardized in turn). Standardizing variables (or mean-centring them) has some advantages—it reduces nonessential collinearity between interaction terms and its components, thereby reducing ill conditioning in the data, and can help interpret the results of the regression (Dalal & Zickar 2012). Table 3 contains the correlation matrix of the standardized variables, which are indicated by a 'z' preceding the variable name.

With a significance threshold of 0.05, the table shows that ROS is significantly related to all variables, except for two control variables (age and leverage). This first insight demonstrates some preliminary results that are different from those expected, particularly with reference to intangibles, which appear to have a negative correlation with ROS. Among the independent variables, a moderate positive correlation is found between size and export intensity, and between export intensity and the firm's age. This may align with some previous studies of export performance, even if the majority did not find significant effects of size and age on export (Ruppenthal & Bausch 2009).

Table 3. Correlation matrix (standardised variables)

	z_ROS	z_ROS _(t-1)	z_Size	z_Age	z_Leverage	z_Intan_int	z_Cap_int	z_ESTS
z_ROS	1							
z_ROS _(t-1)	0.48*	1						
z_Size	0.06*	0.07*	1					
z_Age	0.02	0.03	0.37*	1				
z_Leverage	-0.01	-0.01	-0.02	-0.02	1			
z_Intan_int	-0.05*	-0.07*	-0.10*	-0.16*	0.01	1		
z_Cap_int	0.05*	0.01	-0.08*	0.18*	-0.01	-0.11*	1	
z_ESTS	0.04*	0.03	0.40*	0.22*	0.04*	-0.02	-0.07*	1

3.6. Regression models

We analysed our data using OLS regressions (e.g. Chiao & Li 2009; Chiao, Yang & Yu 2006; Xiao et al. 2013). We used a panel of 1,231 firms over a three-year period, which resulted in 3,499 observations; only those firm-year observations with complete data on all variables were retained and used to run the regressions, so there are no missing data. In order to deal with heteroscedasticity and possible problems in error terms typical of panel data, we ran the regressions in Stata with the option of robust standard errors considering intragroup correlation (*clustvar* command: clustering by firm ID). We derived two models. Model 1 contained all the control variables and ESTS. Model 2, which we used to test our prediction of an S-shaped relationship between I&P (hypothesis 1), included ESTS, ESTS squared and ESTS cubed.

To facilitate causal inferences, we lagged all the independent variables by one year. This one-year lag is consistent with previous studies (Lu & Beamish 2001, 2004, 2006) that indicate that this gap reflects a typical planning cycle (Geringer et al. 2000). As already stated in the description of the control variables, ROS_(t-1) was included in order to consider serial correlation and firm-level unobserved heterogeneity (Xiao et al. 2013). Table 4 presents the estimates for the models.

Table 4. Regression models

	Model 1	Model 2
z_ROS(t-1)	.03866772***	.03850434***
z_Size	.00172672	.00303379
z_Age	-.00075629	-.00070062
z_Leverage	-.00018648	-.000111
Industry_1 (omitted)		
Industry_2	-.00809254	-.00908571
Industry_3	-.02314159***	-.02365222***
Industry_4	.00133719	-.00017936
Industry_5	-.01176981**	-.01273747***
Industry_6	-.01192785**	-.01149482**
Industry_7	-.00222544	-.0026961
Industry_8	-.00120536	-.00166042
Industry_9	-.02526688***	-.02593359***
Industry_10	-.01245223	-.01260867
Industry_11	-.00781061	-.00749358
Industry_12	.00227705	.00138325
Industry_13	-.01337564**	-.01518564***
z_Intan_int	-.00147737	-.00145935
z_Cap_int	.00380141**	.00373987**
z_ESTS	.00244991*	-.00631568**
z_ESTS_squared		.0141035***
z_ESTS_cubed		-.00338806***
_cons	.0351291***	.02737615***
N	3,499	3,499
R ²	.246947	.24910567

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

4. Results and Discussion

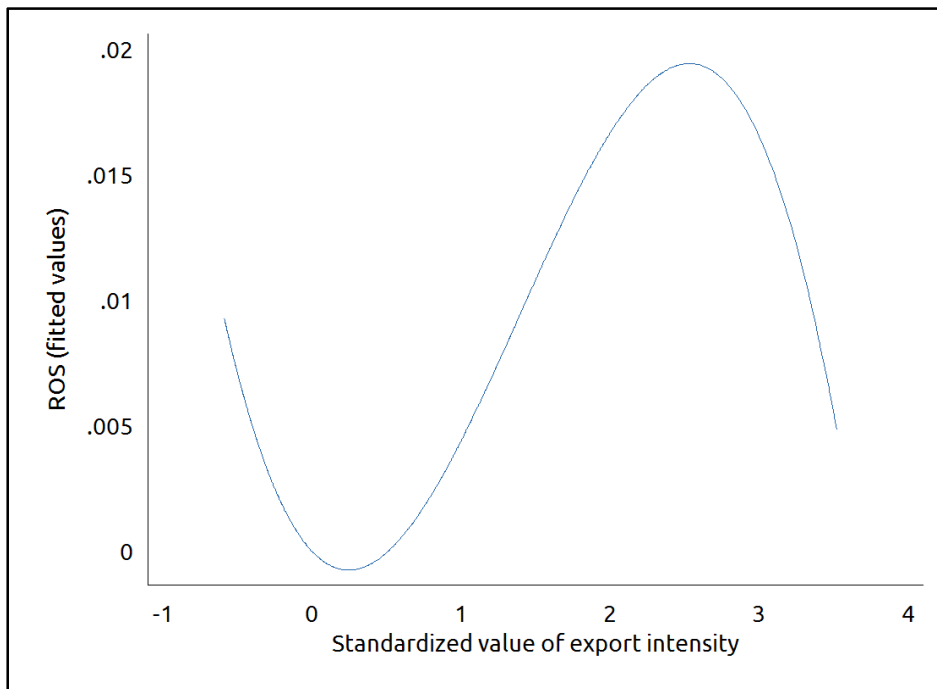
In Model 1, past performance, capital intensity and export intensity both had positive, significant effects on profitability, while, for intangible intensity, the negative correlation with profitability already found in the correlation matrix appeared not to be significant when tested in a multiple regression model. Other variables usually considered as determinants of firm performance do not appear to be significant in either of the models: size, age and leverage do not have significant coefficients. In the correlation matrix, size appeared to be slightly positively related to ROS, but its coefficient is no more significant in the regression model; this could be ascribed to the fact that the impact of some structural features of firms that usually do not change heavily in the short time, such as size and age, are implicitly considered in past performance, which in fact appears to be one of the most significant variables in the model. As for industry, in some cases it altered firms' performance: the omitted industry in the regression is machinery and equipment, and the regression coefficients show that some business sectors—namely, leather, food, cutting, shaping and finishing of stone, wearing apparel and wood—have profitability significantly lower than that of the reference industry. According to Model 2, we found support for our research hypothesis because the form of the relationship between exporting and performance was sigmoid. The coefficient of ESTS was negative, those associated with ESTS squared were positive, and the coefficients of ESTS cubed were negative. Thus, in the first stage of exporting, the costs of internationalization exceed the benefits, which generate a negative effect on profitability (measured by ROS). This means that, in the very first approach to foreign markets, firms have to bear some costs (such as generating knowledge and complying to new rules of commercial, administrative, tax and banking practices required when operating abroad) that are fixed and not dependent on the sales volume, and so presumably cannot be covered by a limited foreign turnover. In other words, starting to export is similar to starting a new venture, in which, before breaking even, the economic results are negative (and correspond to the part of fixed costs not covered by the contribution margin), thereby determining the negative effects on profitability hypothesized for the first stage of export commitment. This is consistent with studies arguing that international expansion increases risks and exposes firms to initial disadvantages often referred to as liabilities of foreignness (Hymer 1976), newness (Stinchcombe 1965), or outsidership (Johanson & Vahlne 2009). When a firm enters a foreign market for the first time, it must overcome difficulties associated with a lack of credibility, market-specific business knowledge, and relevant network positions (Schweizer 2013).

In the second stage, increased export engagement improves profitability because, in this intermediate stage, the initial disadvantages of entering new foreign markets are overcome by the firm's more established presence. Through foreign involvement, firms gain opportunities to expand the scope of their operations by extending their businesses (Rugman 1981), exploiting intangible assets in international markets (Buckley 1988), taking advantage of economies of scale and scope through internationalization (Caves 1996), and relocating activities to reduce costs (Yang, Martins & Drieffield 2013). Other benefits might stem from increased flexibility and arbitrage (Hennart 1982), better portfolio management, and increased learning (Barkema & Vermeulen 1998; Zahra, Ireland & Hitt 2000) obtained through their international experience.

So this phase is characterized by economies of scale, generated by the increase in output necessary to supply foreign markets, which reduces the effect of overheads on unit costs. The benefits of this stage also depend on the exploitation of acquired knowledge, thus constituting the learning-by-exporting effect (Martins & Yang 2009; Serti & Tomasi 2008). Firms benefit from the first knowledge and experience and exploit them mainly to expand into already-reached countries. Previous literature has witnessed that firms usually expand to the nearest or most similar markets, where the strategy is probably to leverage market share in order to take advantage of the knowledge acquired, and to benefit from economies of scale without bearing the further costs of investing or adapting to new market situations. For all these reasons, export intensity can increase with a positive effect on profitability.

Finally, in the third stage, firms reach an excessive degree of internationalization. The possibilities of exploiting already-reached foreign markets would be lower, thus pushing firms to explore new countries thus exacerbating problems of coordination and control (Oesterle & Richta 2013); differences between home and host countries increase transaction costs and uncertainty (Calhoun 2002), as well as the challenges related to foreign exchange fluctuations (Kostova & Zaheer 1999; Sundaram & Black 1992).

In this stage, new costs arise - mainly those determined by the specific knowledge required by new markets, together with further investments to adapt the products, but also higher costs of transportation, information and coordination costs. This goes beyond numerous studies that found support for a linear or U-shaped function (Chiao, Yang & Yu 2006; Lee & Habte-Giorgis 2004; Thomas 2006). These studies were probably seeing only part of the more complete S-curve because they analysed firms moving through one or two specific stages, rather than through all three possible steps of the model. Figure 1 illustrates the sigmoid curve, based on the estimations of model 2.

Figure.1. S-curve

It would be interesting to know which levels of exporting intensity appear to be significant thresholds in determining the inversion in the sign of the relationship between export and profitability. As suggested by Xiao et al. (2013), we left the effects of the other independent variables unchanged and took a partial derivative of ROS for exporting based on the coefficient obtained using Model 2. The partial derivative was negative when the export intensity was less than 0.2028 or greater than 0.7560. Therefore, with reference to the sample of firms included in this research, we can argue that, below the level of 20.28% in export intensity, the costs of increasing exporting are higher than the correspondent benefits, resulting in a reduction of profitability. Between 20.28% and 75.60%, a net incremental positive effect of internationalization on firm performance was found, while, if firms over-internationalize—when export intensity exceeds 75.60%—the firm performance begins to decline because coordination and governance costs increase faster than the incremental benefit of further internationalization.

5. Conclusions

We have explored the relationship between degree of internationalization and performance by analysing a sample of Italian SMEs. Consistent with some recent developments (Vogel & Wagner 2009; Xiao et al. 2013), we hypothesized three-stage model of exporting and consequently a sigmoid relationship between export intensity and profitability. When firms begin to sell their products abroad, they face increasing costs from the liability of foreignness (Hymer 1976), but also face the problem of gaining credibility in the foreign market (Stinchcombe 1965) because they lack market-specific business knowledge and strong network positions (Johanson & Vahlne 2009). Thus, the benefits of internationalization can be overcome by increasing costs, and the effect of internationalization on profitability will be negative.

When firms achieve some recognized international position, increasing their exporting intensity can benefit their performance. In the second stage of internationalization, the firm and its products become known in the markets, and relevant relationships have been established with customers and dealers. Thus, the increase in sales abroad grants the firm the advantages of economies of scale. As a result, it can better exploit its productive capacity and the competitive advantages derived from product diversification and a better understanding of customers' needs, attained from the effect of learning-by-exporting.

The S-curve relationship revealed by our regression models also suggests that firms can reach an excessive degree of internationalization, which could be detrimental to performance because, beyond a certain threshold, the costs of coordinating exporting activities increase while the marginal benefit of learning decreases. By hypothesizing a sigmoid relationship between exporting and performance in SMEs we contribute to the extant literature that has previously mainly examined large MNEs engaged in higher-level internationalization strategies, such as FDI. This study contributed to filling this gap by proposing a three-stage process in exporting strategies that characterize internationalization by SMEs in a developed country. Our demonstration is based on a large sample of firms, analysed over a three-year period. Further, we introduce in the model two variables synthesizing the different resources that can be used by SMEs in the international ventures: (tangible) capital assets intensity and intangible assets intensity. We found that capital assets rather than intangible assets could be beneficial to profitability, thus giving a different perspective from the majority of studies showing a positive impact of intangibles on internationalization and performance.

The main implication of this study is that exporting strategies may be beneficial only after some delay. In the meantime, the firm engages in establishing relationships in the foreign markets, thereby gaining credibility for its products and itself. Only after it achieves legitimacy, creates networks and reaches a certain degree of internationalization do the benefits of increasing foreign market presence on performance become evident. However, firms also have to consider their optimal degree of internationalization, as the S-curve model shows that there is an excessive level of export commitment over which profitability falls. Managers must recognize that firms' need financial support to neutralize the losses generated by foreign activities in the first stage of internationalization, and to continue the process until the second profitable stage is reached.

This support can be supplied by specific credit lines or by huge cash-flows generated by healthy activities in the home countries. Policy makers must plan initiatives to support international ventures in their initial stage, giving not only financial but also knowledge and networking support to overcome the liability of foreignness. In spite of the highlighted contributions, this study has some limitations: it includes only Italian firms, potentially reducing the possibility of generalizing our findings; moreover, it does not consider different strategies of internationalization or the multidimensional measure of DOI. Further research should test the S-curve hypothesis in other exporting contexts and with other national databases, and should investigate the effect of other strategic factors that were not available from our dataset. For example, it would be helpful to have insights on potential moderators of the IP relationship, such as the geographic diversification of exports, and to consider complementary forms of internationalization, such as alliances and FDI.

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