The Internalization of Exports: Firm- and Location-Specific Factors in a Middle-Income Country

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Firms make strategic choices about foreign market access on the basis of location factors in the home and export countries, as well as on their ownership advantages. The empirical analysis is based on a sample of 837 manufacturing companies in a typical middle-income country (Spain), in which firms are starting to internationalize through investments or alliances in distribution. Following theoretical expectations, the greater the level of such ownership factors as intangible technological assets, product variability, and resource availability, the higher the likelihood of internalization, and in particular internalization by proprietary distribution instead of by commercial alliance. But most importantly, location factors in the home country and in the export market have an independent effect on the likelihood and mode of internalization. Proprietary distribution channels are preferred when the firm's competitors are based in richer countries than the home country, and when the export market is well known to the firm.
(*Strategy*; *Exports*; *Internalization*; *Ownership and Location Factors*)

1. Introduction

This paper deals with the strategic options open to a firm that exports products manufactured in its home country. Exporting firms need to design their degree of downstream vertical integration into the foreign market, i.e., the extent to which they locate distribution, sale, and service activities in the foreign countries in which their products are sold. This decision is strategic because it affects the allocation of resources, entails more difficulties than downstream integration in the domestic market, is likely to shape future foreign expansion, and may enhance the firm's competitive advantages (Johanson and Vahlne 1977, Dunning 1993, pp. 92–94).

We approach the internalization of exports as a process driven by firm- and location-specific factors and test it empirically with a cross-industry sample of Spanish firms. We consider not only whether firms internalize their exports or not, but also the specific mode of internalization chosen by the firm, distinguishing between commercial alliances with a foreign partner and wholly owned proprietary distribution abroad. This choice between shared-control and fully internalized arrangements represents one of the key issues in strategic management today, as firms explore new ways to leverage their competitive advantages in different locations without necessarily exercising complete and exclusive managerial control over them (Borys and Jemison 1989, Kogut 1988, Oliver 1990). As

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a form of internationalization, forward integration into foreign markets provides an interesting topic for research because it is a "leading" indicator of the competitive advantages of firms.

This paper contributes to the existing empirical literature on the internalization of marketing and distribution value-adding activities in two distinct ways. First, by including location factors, it builds on existing research dealing with forward integration in domestic markets, typically using U.S. data (Anderson 1985, John and Weitz 1988), as well as on recent studies designed meticulously to test the various firm-specific aspects associated with transaction cost theory (Klein et al. 1990, Klein and Roth 1990, Anderson 1985, Anderson and Coughlan 1987). Only one previous study on cross-border trade in services has examined location factors (Agarwal and Ramaswami 1992). Second, by focusing on firms based in a middle-income country, this paper allows us to examine the full range of effects of location-specific factors operating in the home country of the firm when compared to the location of its international competitors, both in lower- and in higher-income countries. Most prior research on the internalization of export sales in foreign markets has looked at foreign investment decisions by relatively large and established firms based in the most advanced countries, and usually in high-technology fields (Coughlan 1985, Anderson and Coughlan 1987, Coughlan and Flaherty 1983). In particular, most studies of cross-border internalization have collected information for firms located in such a high-income country as the United States or in other similarly wealthy countries like Canada (Klein et al. 1990, Klein and Roth 1990). Only two previous studies have looked at a middle-income country, Israel, but location factors were not explored as predictors of export internalization (Hirsch and Bijaoui 1985, Ayal and Hirsch 1982).

Studying forward integration into foreign markets by firms based in countries other than the most advanced represents an important research topic. It is primarily by means of export internalization that these relatively small and unknown firms tend to start a process of becoming multinational in character. Table 1 shows the ratio of foreign subsidiaries' sales to home country's exports for selected countries. In the row appears the country of origin while the column indicates the region of destination. Although these data have been drawn from different sources and must therefore be interpreted with caution, stunning differences arise. While the sales of foreign subsidiaries of multinationals headquartered in the European Union (EU), the U.S., or Japan amount to between three and six times the value of their home country's exports, the ratio for Spain is just 0.07. As Spanish outward foreign direct investment accelerated since the mid-1980s, the ratio increased to 0.13 by 1992 (Campa and Guillén 1996). Countries slightly more developed than Spain, such as Italy, have relatively low ratios as well, except in regions like Latin America, where Italian multinationals have traditionally made large investments in both manufacturing and distribution (Onida and Viesti 1988).

In the case of Spain, recent outward foreign direct investment (FDI) flows have heavily focused on export distribution. It is useful to compare the available data for periods before and after Spain's entry into the European Union in 1986. Spanish outward FDI was five times greater in the 1988–92 period than in 1975–78 (Campa and Guillén 1996). Spain's outward FDI in distribution between 1975 and 1978 accounted for 13% of the total value of outward FDI and 36% of all FDI transactions, compared to 18% and 46%, respectively, between 1988 and 1992. About 40% of all FDI by manufacturing firms has to do with the foreign distribution of home-country exports, a pattern that has also been reported for other middle-income countries (Dunning and Narula 1994, p. 13). Thus, manufacturing firms in a middle-income country such as Spain are focusing their attention and resources on the internalization of exports as they take their first steps abroad.

The rest of the paper is organized as follows. The next section approaches the internalization of export activities, and the specific institutional arrangements used, from a transaction cost perspective. The third section describes the data and variables used in the analysis. The fourth section presents the empirical results. The final section discusses conclusions and

Table 1 Internalization of Exports by Home Country of the Firm and Area

	Ratios of Foreign Subsidiaries' Sales to Home Country's Exports in:				
Home Country of the Firm (Year):	EU	USA	Japan	Latin America	Total World
EU (1990)[a]	—	5.10	1.25	na	na
USA (1990)	6.30	—	1.25	na	na
Japan (1990)	4.25	3.50	—	na	na
Spain (1986)[b]	0.08	0.14	0.01	0.14	0.07
Italy (1986)[c]	0.17[d]	0.16	na	1.75	0.19

Notes. [a] EU includes the twelve member countries as of 1990. [b] Data for Spain include in the numerator sales of exported goods by all types of foreign subsidiaries. [c] Data for Italy include in the numerator total sales of foreign manufacturing subsidiaries. [d] For Italy, EU includes the nine member countries as of 1982. Sources: Encarnation (1994, p. 212), Secretaría de Estado de Comercio (1989, pp. 225–226), Onida and Viesti (1988, pp. 7, 9, 51, 54).

implications, and suggests some avenues for further research.

2. Export Internalization: Ownership and Location Factors

What triggers a firm's investment in foreign distribution activities? Building on transaction cost analysis, the international management literature has highlighted that firms do business abroad on the basis of different combinations of three types of advantages: *location*-specific, *ownership*-related (intangible assets such as technology and product differentiation), and *internalization*-related, i.e., those deriving from hierarchical managerial coordination within the firm (Dunning 1993, Dunning and Narula 1994, see also Caves 1996).

Firms tend to start their international investments by deciding whether to internalize exports or not. They can access foreign markets in a range of ways, depending on the degree of control exercised over the foreign assets necessary for the distribution of their products. Leaving aside "indirect" exports through home-country intermediaries, one can envision a continuum going from exports through foreign independent agents who do the distribution and sale of the final product abroad to complete internalization of the marketing and distribution process by a wholly owned sales subsidiary abroad. Between these two extremes, the firm can choose any combination of home-based export marketing capabilities, joint ownership of foreign distribution assets, strategic alliances in distribution with firms located in the foreign market, and direct investment in proprietary marketing and distribution abroad (Borys and Jemison 1989; Root 1987, pp. 53–170; Keegan 1989, pp. 291–306; Terpstra 1987, pp. 333–373).

The downstream integration problem is a strategic one for most emerging export firms, and will almost surely have an impact on the sustainability of ownership advantages in foreign markets. An internalized export channel will be chosen over arm's length market transactions when, broadly defined to include organizational overstretch and managerial attention as well as financial commitments, the expected total *costs* of internalizing are compensated by the expected *benefits* of direct managerial control (Root 1987, pp. 160–161). The existing theoretical explanations for this internalization or integration decision tend to focus on ownership factors to the detriment of location ones. Transaction-cost research has compared the administrative costs of internalized distribution and the cost of negotiating and monitoring contracts with independent distributors or with end-users (Hennart 1982, pp. 81–83; Buckley et al. 1990). Business historians, organizational theorists, and marketing researchers have argued that managerial control over distribution ac-

tivities provides better market feedback, enhanced learning, greater customer satisfaction, or smoother coordination of the different stages of the value-added chain, i.e., sourcing, manufacturing, assembly, wholesaling, retailing, and after-sales service. (Chandler 1977; Stopford 1991; Nicholas 1983; Wilkins 1970; Thompson 1967; Keegan 1989, pp. 291–306; Root 1987; Terpstra 1987). Finally, industrial organization theorists argue that internalized distribution is a better way of using and/or protecting the firm's ownership assets and capabilities from imitation by potential competitors (Caves 1996).

These various aspects affecting the likelihood of internalization can be pulled together and further developed to include location factors (Caves 1996, Agarwal and Ramaswami 1992). Internalized managerial or organizational control of export activities may be needed, depending on: (1) the degree to which competitiveness in foreign markets is based on *ownership* advantages; and (2) whether the competitive, economic, and institutional situation in the foreign market favors the *location* of proprietary marketing, advertising, storage, distribution, retail, credit, and/or after-sale service activities close to the customer. Ownership and location factors also affect the *mode* of internalization, i.e., they help determine which particular institutional arrangement will be used by the firm to internalize its export activities.

2.1. Ownership Factors

Ownership factors refer to firm-specific features which, independent of the location of the firm's value-adding activities or of the characteristics of the export market, might affect the likelihood and mode of internalization of value-adding activities. Drawing on transaction cost analysis and other organizational approaches, the international management literature has focused on a number of these factors, mainly: the intangible assets that help the firm differentiate its products, the need to adapt products to customer specifications, the level of resources available to implement forward internalization, and the level of commitment by the firm to export activities.

Some degree of managerial control over downstream activities will be preferred over arm's length transactions in the presence of such intangible assets as technology and product differentiation through branding and advertising, which tend to have the characteristics of a public good (Dunning 1993, Caves 1996, Agarwal and Ramaswami 1992, Hennart 1982, Kogut 1988). A firm is expected to internalize exports so as to prevent intermediaries from appropriating the rents generated by its proprietary intangible assets. In addition, firms with high levels of intangible assets tend to make sophisticated products which are likely to widen the informational gap between buyer and seller, particularly if they are located in different countries. Previous studies have found robust effects of intangible assets on both the likelihood and mode of internalization of exports using aggregate data for U.S. manufacturing industries (Benvignati 1990, Siddharthan and Kumar 1990). One should expect firms based in middle-income countries to respond even more readily to the accumulation of intangible assets given that, when compared to firms in more developed settings, an increase in the stock of intangible assets generates overproportional growth in outward foreign investment (Dunning and Narula 1994, pp. 12–14). We therefore predict that

Hypothesis 1. *The larger the level of the firm's intangible assets, the higher the likelihood of internalization of export activities.*

The nature of the product sold by the firm in foreign markets is the second ownership factor relevant in measuring the costs and benefits of export internalization. All other things constant, the firm will benefit more from internalization the greater the need to adapt the product to customer or, in general, national market characteristics. Product adaptation will generally increase production costs, but such an action may pay off if, by using internalized distribution activities, the firm is able to reduce transaction costs enough to offset the increase in production costs. In other words, the firm will arrange transactions so as to minimize its total costs, i.e., the sum of production and transaction costs.[1] Under conditions of intense uncertainty,

[1] Transaction costs relevant to a foreign sales operation include: (1) ex ante costs related to informational problems between buyer and seller in establishing contact, knowing reciprocal preferences and wants, and agreeing over price (Casson 1985); and (2) ex post costs

bounded rationality, and market failure, however, the costs associated with monitoring arm's length transactions in the market may become so onerous that it will compensate to internalize, i.e., to trade off an increment in production cost resulting from transacting internally rather than through the market for a reduction in transaction costs (Williamson 1985).

Several industry-specific studies in advanced countries provide empirical support for the argument that product variability results in export internalization (Anderson and Coughlan 1987, Anderson 1985, Klein and Roth 1990, Klein et al. 1990, Erramilli and Rao 1993, John and Weitz 1988). Research on middle-income countries has documented that exporting firms based in such countries try to reduce product variability to a minimum and to implement mass production technologies in order to maximize the opportunities for learning-by-doing and incremental improvement over time (Amsden and Hikino 1994, Dunning and Narula 1994, p. 12). Thus, such firms are not expected to pursue strategies of export internalization. In our empirical analysis we distinguish between firms manufacturing standardized products in large batches and firms making products to variable specifications. We posit that transaction costs will be relatively lower in the case of standardized products, and therefore expect that

Hypothesis 2. *Firms manufacturing standardized goods with mass production technologies are less likely to internalize export activities than any other type of firm.*

The last two ownership aspects typically covered in the international management literature, resource availability and commitment to exports, affect the choice of *modes* of internalization of export activities as well as the likelihood of internalization in general. A firm can obtain the necessary resources for these investments internally through the use of its own cash flows or externally from the financial markets. The financial costs of these alternative sources in a frictionless world should be approximately the same. However, empirical evidence suggests that investment by firms is highly constrained by their ability to generate internal cash flows (Grilchrist and Himmelberg 1995). Access to external funds is particularly difficult in middle-income countries with underdeveloped financial markets or bank-dominated financial systems (Steinherr and Huveneers 1994).[2] Thus, the presence of market failure in the financial sector makes it easier for firms with more internal resources to incur larger investments in export markets. Since creating a proprietary distribution channel generally requires a larger investment than internalizing through a commercial alliance, we expect the size of the firm to increase the likelihood of both export internalization and the use of proprietary distribution channels versus commercial alliances (Agarwal and Ramaswami 1992, pp. 6–7; Erramilli and Rao 1993, p. 25; Terpstra 1987, pp. 158–159; Anderson 1985; Klein et al. 1990). Thus, we predict that

Hypothesis 3. *Resource availability increases the likelihood of internalization in general, and of internalization by wholly owned proprietary foreign sales subsidiaries over shared-control institutional arrangements.*

In addition to sheer size, the extent to which the firm is committed to export markets for sales is directly related to the use of wholly owned, internalized distribution abroad. Firms that have high export intensities are more likely to internalize, and if they do internalize, to prefer wholly owned modes over shared-control arrangements. The strategic management and organizational literatures have long emphasized that managers respond to an increasing commitment to a product or market by internalizing the activities involved so that they do not become a source of uncertainty and constraint (Chandler 1977, pp. 287–314; Thompson 1967; Perrow 1967; Pfeffer and Salancik 1978; see also Buckley et al. 1990, pp. 32–33). As exports become more important for the firm, managers will tend to increase their grasp over foreign distribution and sale activities so as to be in a better

accruing from the opportunistic behavior of the other party (the end-user, agent, wholesaler, or retailer), which encourage the firm to engage in activities to monitor and enforce the contract.

[2] In Spain, for example, during the 1978–1990 period, the financial costs of manufacturing firms have averaged more than their average return on investment (Maroto Acín 1990).

position to manage the increasing commitment to foreign markets. Hence,

Hypothesis 4. *Commitment to exports increases the likelihood of internalization in general, and of internalization by wholly owned proprietary foreign sales subsidiaries over shared-control institutional arrangements.*

2.2. Location Factors

While many strategic decisions can be understood purely in terms of a firm's capabilities and proprietary assets, location factors tend to play a more central role when the problem at hand is of an international nature and when the home country of the firm is not an advanced one. Location factors due to segmented geographical markets or differences in regulations, culture, and institutional arrangements become relevant when the firm operates across countries. These cross-national differences arguably play a larger role in internalization decisions when the firm comes from a middle-income country, primarily because there is more variation in institutional and competitive structures among these countries than among more developed countries. Therefore, the decision to internalize exports will be affected by the differences in institutional and competitive structures between the home and the host countries and how they are perceived by the firm.

The role that location factors play in the internalization of exports has not been addressed in the extant literature on manufacturing firms.[3] The literature on foreign investment, however, has long observed the effect of home country location advantages on the likelihood of international investment, emphasizing that the incentives to internalize international activities are highly correlated with the level of development of the home country. The reason is that firms located in lower-income countries face a series of constraints when selling internationally that discourage them from attempting to improve product quality and internalize exports, including high rates of seller turnover, low entry costs, and negative country of origin effects (Lall 1991, Choi 1992, Esfahani 1991). By contrast, exporting firms based in the most developed countries emphasize quality to a much greater extent and tend to invest heavily in proprietary distribution channels and foreign marketing activities (UNCTD 1995, pp. 191–225). Thus, a strong link exists between level of development of the home country and the likelihood of foreign investment. When looking at the actions of a sample of firms from the same home country, the likelihood to internalize exports will depend on location factors either in the competition's home country or in the export market. Let us analyze them in turn.

Rivalry in international markets involves not only competition between a foreign seller and domestic firms but also competition among several foreign sellers that can have the same or different home countries. In export markets, a firm's strategy must respond to the characteristics of all of its competitors, regardless their country of origin. The theory of foreign investment has recognized this distinction and has long argued that a firm invests internationally either to limit access to a foreign market by its competitors or to match their foreign moves. A considerable amount of evidence provides support for this effect (Caves 1996). Recent research has extended this argument to export activities, emphasizing that firms will be more likely to invest in export internalization in response to similar actions by competitors (Kotabe 1992, Aulakh and Kotabe 1997). When an exporting firm confronts competition from companies based in countries at a lower level of development than its own home country's, the firm will be less likely to internalize operations since the competitors are less likely to have engaged in foreign investment themselves. On the other hand, if the firm is facing competition from more advanced countries, it will more likely need to engage in export internalization so as to match or preempt its competitors. While this effect is distinct from the product and firm factors included under ownership determinants, the competitive matching that we are describing here as a locational factor is often driven by the competitors' decision to internalize based on their own ownership characteristics. As Porter (1990, pp. 610–611) argues, it is precisely when a firm faces the most sophisticated competitors that it

[3] Agarwal and Ramaswami (1992) have examined location factors in a study on cross-border trade in services. They considered both foreign market potential and risk, which we address.

feels compelled to, among other actions, internalize marketing operations so as to leverage product quality and build long-term relations with customers. Thus,

Hypothesis 5. *The higher the level of development of the country where the firm's international competitors are located, the greater the likelihood of internalization of export activities by the firm, and of internalization by wholly owned proprietary foreign sales subsidiaries over shared-control institutional arrangements.*

Having argued for the relevance of location factors in the home country, it is important to deal with location advantages related to the export market. These foreign-market location factors can be divided into those having to do with the potential of the foreign market and those describing how easy it is for the firm to export and sell in it. Export market potential is a key driver of international strategic decisions. The international product cycle theory (Vernon 1979, Johanson and Vahlne 1977) suggests that firms will start deploying assets in foreign locations as the potential and attractiveness of the export market relative to the home market increases. It is important to realize that a firm's willingness to commit resources to foreign markets is expected to be an increasing function of the potential of those markets as perceived or actually experienced by each firm. Thus, two firms in the same country and industry may perceive or experience the potential of export markets in general, or of specific export markets, in radically different terms. Accordingly, their likelihood of devoting resources to internalize foreign distribution and sale activities would be different. It is also conceptually plausible to argue that, as the export market potential grows, the firm will first consider intermediate modes of internalization and then commit to wholly owned sales subsidiaries only when the market potential reaches some critical level that justifies the costs and risks of the investment in order to achieve control over the distribution channel. The amount of resources that a firm is willing to commit to a foreign market, controlling for ownership and other location advantages, will be a positive function of the perceived or experienced potential of that market for the firm. We therefore hypothesize that

Hypothesis 6. *The higher the export potential of foreign markets to the firm, the greater the likelihood of internalization of export activities, and of internalization by wholly owned proprietary foreign sales subsidiaries over shared-control institutional arrangements.*

Besides the potential of the export market, a firm's strategic approach to exports will also be affected by how easy it is to realize that potential, i.e. to penetrate the market. Foreign firms, especially those from a middle-income country, are generally subject to a "liability of foreignness" (Zaheer 1995) because distributors and consumers in the export market will have doubts about the newly offered good, or will be reluctant to change established patterns of behavior. The literature has referred to the lack of business contacts, knowledge about consumer habits, and market reputation as possible obstacles preventing the exporting firm from realizing the potential of a foreign market even if it enjoys ownership advantages or location advantages in its home country relative to the competition (Agarwal and Ramaswami 1992).

These diverse obstacles have been classified either as institutional access barriers to entry or as perceived lack of knowledge about the foreign market (Dunning 1993, p. 196). Thus, controlling for ownership and home-country location advantages, the absence of institutional and cognitive constraints is expected to favor the internalization of marketing and distribution activities by means of wholly owned subsidiaries. As these constraints tighten, the "go-it-alone" strategy loses its appeal, and institutional arrangements in which control is shared with a local partner in the export market become more effective in dealing with uncertainty and ignorance (Kogut 1988; Oliver 1990; Agarwal and Ramaswami 1992, pp. 6–7; Terpstra 1987, pp. 159–160). Commercial alliances will be more likely than proprietary subsidiaries if by teaming up with a foreign partner the firm acquires capabilities or resources that reduce perceived institutional and cognitive constraints (Borys and Jemison 1989). Thus,

Hypothesis 7. *In the presence of strong institutional and cognitive constraints such as perceived market access disadvantages or perceived lack of knowledge about foreign markets, the firm will prefer a shared-control mode of*

internalization over internalization by establishing a proprietary distribution subsidiary, or no internalization at all.

3. Data and Methods

Our empirical analysis is based on a comprehensive survey representing the universe of manufacturing exporting firms incorporated in Spain. The survey was conducted in 1992 and gathered information for 2264 firms on a wide range of topics related to exports and foreign market access. The sample is probabilistic and stratified by industry, province, and firm size. It represents firms which engaged in exports of merchandise during 1990 or 1991. The information was collected by a well-respected survey research company under the auspices of the Instituto Español de Comercio Exterior (ICEX), an agency of the Ministry of Commerce charged with promoting exports. New firms were sampled to substitute for nonresponding firms within each stratum in a way that guaranteed the statistical representativeness of the target sample of 2264. Thus, nonresponse bias does not accrue from industry, province, or firm size. A 92-item questionnaire was administered on-site by professional interviewers. The interviewee was the firm's manager responsible for exports, who answered the entire questionnaire, including both factual and perceptual questions. If the firm had multiple lines of business, answers were provided for the most important one only.

Our regression results are based on a subset of 1175 firms, after excluding all firms with fewer than 25 employees and all firms with 50% or higher foreign ownership. Very small firms were excluded because there were more missing data on the key variables than average, and the resulting information was incomplete and less reliable. Firms with a foreign ownership participation of 50% or more were also dropped because the existence of commercial alliances or proprietary distribution channels in these cases would be at least partly determined by their association with the foreign parent company, and the independent variables should be measured at the parent firm level, a piece of information not available from the survey. Due to missing data problems on the independent variables, the final sample for analysis was 837 firms. The mean size of the firms in the final sample for analysis was around $30 million (U.S.) in annual sales, reflecting that the average Spanish exporting firm is smaller than the average firm in more developed countries even after deleting firms with fewer than 25 employees. Of these 837 firms, 81 had formed a commercial alliance but not established proprietary distribution channels in a foreign market, and 172 had invested in proprietary distribution channels. Based on various correlation analyses, there is no evidence that our final subset of 837 firms is biased in any consequential way when compared to the sample of 1175 firms with 25 or more employees and less than 50% foreign ownership.

Ownership factors are measured as follows. Intangible assets are approximated by two frequently used indicators, the ratio of R&D expenditures over sales (R&D) and the percentage of exports in value that the firm sells in foreign markets without a brand (Unbranded). Product variability is captured by a dummy with a value of one if the firm manufactures standardized products in large batches (Mass Producer), and zero otherwise. Resource availability to invest in distribution is measured by the log of total firm revenues in billion Spanish pesetas (Log Revenues) for each firm. Finally, commitment to export sales is measured by the ratio of exports to sales (Export Intensity) for each firm. All ownership measures refer to 1992.[4]

Location-specific factors in the home market are captured by a measure of the relative level of economic development of the countries where the firm's competitors are located. Thus, we compare the characteristics of the firm's home base to those of the competition. We calculated a competitor location development index (Competitor Development Index) as the GNP per capita in 1992 adjusted by purchasing power (World Bank 1994, pp. 220–221) for the country or trade bloc which was mentioned by the firm's manager responsible for exports as being the location of the firm's competition in export markets. If two or three country locations were mentioned, this variable equals the mean of GNP per capita for these countries,

[4] For R&D (Log Revenues), midpoint values were allocated to each of five (eight) intervals.

weighted by their population size. The index was divided by the level for the United States and multiplied by 100.[5] In addition, we used a dummy variable indicating whether a country situated on the Mediterranean Sea was mentioned as being the location of the firm's competition in export markets (Mediterranean Competitor). The reason for including this dummy is that Mediterranean countries have comparative location advantages similar to Spain's and tend to compete with each other in many export markets.

Indicators of location-specific factors in export markets include the growth potential of the market abroad, measured by the firm's export intensity growth rate between 1987 and 1992 (Export Growth), and two measures of institutional and cognitive constraints. First, we gauge access barriers to foreign markets with a three-point decreasing measure of the perception by the firm's manager responsible for exports that the firm's level of access to foreign markets represents an advantage relative to the competition (value of Access Disadvantage equals one), neither an advantage nor a disadvantage (two), or a disadvantage (three). Second, a dummy variable is given the value of one when the firm's manager responsible for exports perceives lack of knowledge about export markets as a limitation (Lack of Knowledge) and zero otherwise. Thus, while Access Disadvantage measures institutional entry barriers such as the difficulty in penetrating distribution channels, Lack of Knowledge measures cognitive constraints on the part of the firm. Finally, we use a control dummy variable to denote firms with foreign ownership participation greater than zero but less than 50% (Foreign Ownership). Table 2 presents the sample descriptive statistics and correlations, which are generally low.

We specify dichotomous and multinomial logit models to analyze the predictors of the internalization of exports and the mode of such internalization. Logistic regression is a standard method for assessing the individual effects of multiple regressors on discrete choice dependent variables. We have run three kinds of regressions on our data. A first dichotomous logit model compares firms with either commercial alliances or proprietary distribution to all other firms, i.e. firms with no internalization of exports. In this model the dependent variable equals one if the firm has internalized export activities, and zero otherwise. We report the marginal effects of each independent variable representing the values of the partial derivative of the logit probability that a firm will internalize export activities evaluated at the sample mean.[6] We do not report marginal effects for the probability of no internalization because they are exactly the complement to zero of the probability of internalization.

For the second model, a multinomial logit, we classify firms in the sample into one of three categories: (1) firms with neither commercial alliances nor proprietary distribution in foreign markets; (2) firms with a commercial alliance but no proprietary distribution; and (3) firms with proprietary distribution regardless of whether they have a commercial alliance or not.[7] For each multinomial logit model we report separate marginal effects and significance *t*-tests for each of the three categories. As in the dichotomous case, the marginal effects for each independent variable sum up to zero. The third model, a dichotomous logit, compares firms internalizing by proprietary distribution channels to firms internalizing by commercial alliance. In this model the dependent variable takes the value of one if the firm has internalized exports through proprietary distribution channels, and zero if internalization has occurred through a commercial alliance. For each model we report the log-likelihood, model chi-squared with significance level, the number of observations, and the number of observations correctly predicted. We present five specifications for each of the three models. The first three test for robustness of the full model including both ownership and location variables. The last two specifications include just ownership or location fac-

[5] Spain's GNP per capita in 1992 was about 57% of the U. S. level. Over the last century, Spain's GNP per capita has fluctuated between 45 and 57% of the U.S.'s (World Bank 1994, p. 221; Maddison 1989).

[6] For dummy variables, the reported marginal effect is the change in the logit probability from a change in value of the dummy variable.

[7] Seven percent of all firms accounting for 12% of exports had both proprietary distribution and a commercial alliance.

Table 2 **Sample Descriptive Statistics and Correlations** (N = 837)

			Correlation Matrix											
	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10	11	12
1. Internalization (dichotomous)[a]	0.302	0.460												
2. Internalization (multinomial)[b]	0.508	0.813	0.95											
3. R&D[c]	2.446	2.944	0.18	0.16										
4. Unbranded	15.464	34.906	−0.07	−0.07	−0.11									
5. Mass Producer	0.186	0.390	−0.04	−0.04	−0.03	0.07								
6. Log Revenues[d]	0.248	1.415	0.27	0.31	0.16	−0.01	0.07							
7. Export Intensity	0.307	0.234	0.06	0.08	0.10	0.03	−0.02	0.04						
8. Competitor Development Index	69.766	19.302	0.09	0.10	0.16	−0.08	−0.05	0.06	−0.15					
9. Mediterranean Competitor	0.176	0.381	−0.02	−0.01	−0.09	0.02	0.01	−0.14	0.06	−0.16				
10. Export Growth	0.218	0.785	0.08	0.07	0.08	−0.03	−0.04	0.04	0.09	0.14	0.02			
11. Access Disadvantage	2.284	0.742	−0.14	−0.14	−0.05	0.03	−0.01	−0.16	−0.23	0.13	−0.03	−0.03		
12. Lack of Knowledge	0.157	0.364	−0.13	−0.13	−0.02	0.07	−0.03	−0.09	−0.16	0.06	0.01	0.05	0.10	
13. Foreign Ownership	0.087	0.282	0.12	0.12	0.02	−0.03	0.10	0.21	0.05	0.07	−0.06	−0.01	−0.04	−0.03

Notes. See text for variable definitions. [a] Equals one if firm internalized exports by either commercial alliance or proprietary distribution; zero otherwise. [b] Equals one if firm internalized exports by commercial alliance only; two by proprietary distribution; zero otherwise. [c] Midpoint values were allocated to each of four closed intervals. Upper open-ended interval was assigned a value of 10%. [d] Midpoint values were allocated to each of seven closed intervals. Upper open-ended interval was assigned a value of 25,000 million pesetas.

tors so as to test their significance as a bloc. Except where otherwise noted, regressions include the 17 industry dummies used in the generation of the stratified survey sample.

4. Results

Table 3 reports the marginal effects, t-statistics, significance levels, and model statistics for the dichotomous logistic regression on the likelihood of internalization by either proprietary distribution or commercial alliance. The first three regressions provide strong support for the hypotheses regarding ownership factors. Hypothesis 1 on the positive effect of intangible assets (R&D) on the likelihood of internalization is confirmed. A one point increase in R&D raises the probability of internalization by 0.0146. Firms manufacturing standardized products in large batches (Mass Producer) are less likely to engage in export internalization by commercial alliance and/or proprietary distribution than other types of firms, thus confirming Hypothesis 2 about product variability. There is also robust support for Hypothesis 3 on resource availability, since firm size (Log Revenues) is always a positive and significant predictor of internalization. However, the last ownership factor (Export Intensity, Hypothesis 4) is not significant in any of the three models, including both ownership and location variables. Thus, the exporting firms in the sample make strategic choices about export internalization according to the hypotheses stated above.

Our results regarding the different location factors are mixed. Location factors relative to the firm's competitors (Hypothesis 5), as captured by the Competitor Development Index and the Mediterranean Competitor dummy, are not significant. There are, however, robust effects of location factors in the export market and in the direction stated by Hypotheses 6 and 7. The greater the growth potential of export markets (Export Growth), the more likely the internalization of export activities. In addition, the stronger the perceived institutional and cognitive constraints (Access Disadvantage and Lack of Knowledge), the less likely the internalization of export activities. Dropping the insignificant variables Unbranded and Mediterranean

Table 3 Dichotomous Logistic Regressions on the Internalization of Exports: Marginal Effects and *t*-statistics (N = 837)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
R&D	0.0146**	0.0149***	0.0149***	0.0085	
	2.577	2.620	2.627	1.484	
Unbranded	−0.0006	−0.0006		−0.0013**	
	−1.124	−1.140		−2.367	
Mass Producer	−0.0832**	−0.0837**	−0.0861**	−0.1207***	
	−2.010	−2.022	−2.086	−2.881	
Log Revenues	0.0715***	0.0722***	0.0718***	0.0766***	
	5.750	5.788	5.772	5.903	
Export Intensity	−0.0512	−0.0604	−0.0581	−0.1349**	
	−0.775	−0.904	−0.883	−2.132	
Competitor Development Index	0.0002	−0.0002	0.0002		0.0012*
	0.304	−0.299	0.302		1.774
Mediterranean Competitor		0.0412			0.0090
		0.874			0.199
Export Growth	0.0478*	0.0474*	0.0483*		0.0499*
	1.829	1.822	1.852		1.942
Access Disadvantage	−0.0901***	−0.0917***	−0.0924***		−0.1052***
	−4.717	−4.777	−4.860		−5.585
Lack of Knowledge	−0.1360***	−0.1363***	−0.1399***		−0.1425***
	−2.906	−2.910	−3.014		−3.096
Foreign Ownership	0.1080*	0.1100*	0.1091*	0.0749	0.1516**
	1.796	1.820	1.812	1.229	2.541
Log-likelihood	−452.91	−452.53	−453.55	−478.93	−478.16
Chi-squared	119.97***	120.73***	118.68***	67.93***	69.46***
Correctly predicted (%)	72.52	73.24	71.68	71.57	71.21

Notes. *t*-statistics shown beneath marginal effects. The marginal effect of a variable is the partial derivative of the logit probability of a given outcome with respect to that variable evaluated at the sample means. All regressions include a set of 17 industry dummies (not reported). ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$.

Competitor does not change the pattern of significant effects just described.

The specification including only the five ownership variables and the controls confirms the above results except in that R&D ceases to be significant, Unbranded now exerts the expected negative effect, and Export Intensity discourages internalization, contrary to Hypothesis 4. The last specification, including just the five location variables and the controls, confirms Hypothesis 6 on Export Growth and the presence of institutional and cognitive constraints (Lack of Knowledge and Access Disadvantage). In addition, Hypothesis 5 on the Competitor Development Index receives support in the absence of the ownership-specific variables from the regression. Likelihood-ratio (LR) tests confirm that the five ownership (LR = 51.26) and the five location variables (LR = 52.8) make a significant contribution to the full model's explanatory power at the 0.001 level (distributed as χ^2 with five degrees of freedom). Models correctly classify about 70% of the firms in the sample. In brief, the dichotomous logit regressions comparing firms with internalized export activities against firms without such internalized activities provide strong and robust empirical support for the argument that both ownership and location factors are relevant.

Table 4 reports the regression results for the multinomial model. A higher R&D significantly reduces the probability of no internalization and increases the probability of a commercial alliance. The other measure of intangible assets, Unbranded, does not significantly contribute to the firm's internalization decision. As stated in Hypothesis 2, Mass Producer increases the probability of no internalization and

Table 4 Multinomial Logistic Regressions on the Internalization of Exports: Marginal Effects and *t*-statistics (N = 837)

	Model 1			Model 2			Model 3			Model 4			Model 5		
Variable	No intern	Alliance	Proprietary	No intern	Alliance	Proprietary	No intern	Alliance	Proprietary	No intern	Alliance	Proprietary	No intern	Alliance	Proprietary
R&D	−0.0137**	0.0076**	0.0062	−0.0140**	0.0075**	0.0065	−0.0140**	0.0077**	0.0064	−0.0039	0.0021	0.0018			
	−2.470	2.116	1.345	−2.501	2.086	1.412	−2.519	2.136	1.390	−0.680	0.621	0.373			
Unbranded	0.0006	−0.0002	−0.0004	0.0006	−0.0002	−0.0004				0.0015***	−0.0005	−0.0010**			
	1.128	−0.520	−0.915	1.133	−0.512	−0.927				2.766	−1.347	−1.980			
Mass Producer	0.1087**	−0.0343	−0.0744*	0.1103**	−0.0348	−0.0755*	0.1122**	−0.0351	−0.0771*	0.1838***	−0.0691	−0.1147**			
	2.187	−0.847	−1.877	2.220	−0.859	−1.902	2.267	−0.865	−1.948	3.395	−1.611	−2.489			
Log Revenues	−0.0654***	−0.0005	0.0659***	−0.0657***	−0.0008	0.0665***	−0.0656***	−0.0006	0.0662***	−0.0743***	0.0002	0.0740***			
	−5.055	−0.067	4.794	−5.052	−0.101	4.818	−5.074	−0.076	4.803	−5.329	0.031	5.147			
Export Intensity	0.1051	−0.0752*	−0.0299	0.1115*	−0.0712	−0.0404	0.1120*	−0.0779*	−0.0341	0.2667***	−0.1719***	−0.0948*			
	1.635	−1.711	−0.565	1.711	−1.606	−0.749	1.748	−1.770	−0.645	4.206	−3.093	−1.662			
Competitor Development Index	0.0006	−0.0008*	0.0002	0.0006	−0.0008*	0.0002	0.0006	−0.0008*	0.0002				−0.0002	−0.0008*	0.0010*
	0.831	−1.678	0.327	0.818	−1.655	0.320	0.835	−1.679	0.324				−0.292	−1.846	1.722
Mediterranean Competitor				−0.0296	−0.0141	0.0437							0.0130	−0.0284	0.0154
				−0.539	−0.557	1.108							0.174	−0.920	0.521
Export Growth	−0.0463*	0.0146	0.0317	−0.0468*	0.0148	0.0320	−0.0467*	0.0148	0.0320				−0.0484*	0.0157	0.0327
	−1.852	0.938	1.408	−1.879	0.944	1.428	−1.874	0.949	1.422				−1.929	0.984	1.428
Access Disadvantage	0.1048***	−0.0359***	−0.0689***	0.1060***	−0.0354***	−0.0707***	0.1070***	−0.0366***	−0.0705***				0.1214***	−0.0378***	−0.0836***
	5.409	−2.647	−3.666	5.438	−2.612	−3.716	5.539	−2.690	−3.730				6.219	−2.796	−4.181
Lack of Knowledge	0.1667***	−0.0382	−0.1284***	0.1663***	−0.0380	−0.1283***	0.1706***	−0.0392	−0.1314***				0.1693***	−0.0306	−0.1386***
	3.107	−0.639	−2.629	3.098	−0.633	−2.628	3.209	−0.656	−2.701				3.144	−0.325	−2.785
Foreign Ownership	−0.1405*	0.0587	0.0818	−0.1420*	0.0581	0.0839	−0.1421*	0.0593	0.0828	−0.0756	0.0234	0.0521	−0.1898**	0.0479	0.1419**
	−1.733	1.025	1.384	−1.748	1.009	1.416	−1.749	1.030	1.399	−0.902	0.329	0.870	−2.339	0.683	2.358
Log-likelihood		−595.39			−594.67			−596.05			−642.81			−628.35	
Chi-squared		152.25***			153.70***			150.94***			57.42*			86.34***	
Correctly predicted (%)		71.92			71.92			71.68			69.89			70.84	

Notes. *t*-statistics shown beneath marginal effects; all regressions include a set of 17 industry dummies (not reported). ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$.

significantly decreases the probability of proprietary distribution. Hypothesis 3 is also confirmed: More resource availability, measured by Log Revenues, increases the probability of proprietary distribution. Export Intensity is only marginally significant and has the opposite sign from that predicted in Hypothesis 4. Hypothesis 5 regarding location factors relative to the firm's competitors is not supported by the model. Finally, Hypotheses 6 and 7 regarding location factors in the foreign country are in general supported by the multinomial results. Higher Export Growth significantly decreases the probability of no internalization, although its contribution to the two forms of internalization is not significant, and Lack of Knowledge and Access Disadvantage both significantly increase the probability of no internalization and decrease the probability of proprietary distribution channels. The results are again robust to changing specifications, as shown by the first three regressions in Table 4. As in Table 3, likelihood-ratio tests for the five ownership variables (LR = 67.36) or the five location variables (LR = 96.28) show that they make a significant contribution as a bloc to the full model's explanatory power at the 0.001 level with five degrees of freedom, and models correctly classify about 70% of the observations.

Finally, we used the subset of 253 firms that had internalized export activity to estimate the dichotomous logit between the two modes of internalization. This subset represents Spanish manufacturing firms with either distribution channels, commercial alliances, or both. We excluded Mass Producer as an independent variable since, according to Hypothesis 2, this ownership factor is not supposed to affect the mode of internalization. Proprietary distribution was the response option and commercial alliance the baseline. The results are reported in Table 5. Industry dummies were dropped from this specification since they were never jointly significant at the 10% level, therefore allowing for a higher number of degrees of freedom. The models clearly and robustly differentiate between the two modes of internalization. Proprietary distribution is more likely the greater the resources available (Hypothesis 3), the higher the commitment to exports (Hypothesis 4),[8] and the greater the Competitor Development Index (Hypothesis 5). These results are robust across the first three specifications, and the various models correctly classify about 70% of the observations.[9] Finally, while the contribution to the full model's explanatory power of the four ownership variables as a bloc is significant at the 0.001 level (LR = 24.46), that of the five location variables as a bloc is only significant at the 0.1 level (LR = 9.68).

5. Discussion and Conclusion

This paper has conceptualized and tested the ownership and location-specific determinants of export internalization, extending previous research to factors having to do with the home country of the firm's competitors and with the export market. Our empirical analysis, though limited in certain respects, is unique in that it uses a large sample representative of a cross-section of the manufacturing sector of a typical middle-income country. Ownership factors such as R&D intensity, product differentiation, and firm size increased the likelihood of export internalization as predicted by the theory. Location factors were found to be a significant predictor of the strategic decision to internalize export activities. Among location-specific factors, those relating to the export market were robust predictors of the likelihood of internalization in general. Location-specific factors comparing the home country of the firm to the home countries of the firm's competitors in export markets were significant in determining the strategy of export internalization, i.e. the choice between commercial alliances and proprietary distribution. In agreement with theoretical expectations, proprietary distribution was found to be more likely than commercial alliances if the firm's

[8] The relationship between Export Intensity and internalization through proprietary distribution may, of course, be simultaneous. Export Intensity promotes proprietary internalization of exports when volume justifies the investment and risk, and this mode of internalization, in turn, may accelerate exports (Yamawaki 1991).

[9] Forty-six of the 172 firms in our sample that reported having proprietary distribution channels also reported having a commercial alliance. We dropped from our sample these "problematic" observations and rerun all the models in Table 5. None of the reported results changed significantly.

Table 5 **Dichotomous Logistic Regressions on the Internalization of Exports by Proprietary Distribution versus by Commercial Alliance: Marginal Effects and t-statistics** (N = 253)

Variable	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	−0.3243*	−0.3771**	−0.3097*	0.0426	−0.0529
	−1.825	−2.048	−1.767	0.692	−0.364
R&D	−0.0123	−0.0106	−0.0131	−0.0067	
	−1.236	−1.056	−1.330	−0.700	
Unbranded	0.0005	0.0005		0.0002	
	0.507	0.511		0.185	
Log Revenues	0.0956***	0.0972***	0.0950***	0.0892***	
	4.297	4.353	4.274	4.139	
Export Intensity	0.3324**	0.3111**	0.3372**	0.2230	
	2.221	2.060	2.254	1.641	
Competitor Development Index	0.0041**	0.0045**	0.0040**		0.0030*
	2.262	2.405	2.215		1.780
Mediterranean Competitor		0.0999			0.0963
		1.216			1.178
Export Growth	−0.0117	−0.0196	−0.0114		−0.0223
	−0.230	−0.381	−0.223		−0.407
Access Disadvantage	0.0291	0.0356	0.0299		−0.0029
	0.773	0.932	0.794		−0.078
Lack of Knowledge	−0.1939*	−0.1858	−0.1904*		−0.1655
	−1.682	−1.619	−1.657		−1.525
Foreign Ownership	0.0440	0.0481	0.0417	0.0320	0.0853
	0.475	0.517	0.451	0.350	0.987
Log-likelihood	−143.76	−142.99	−143.89	−147.83	−155.22
Chi-squared	29.73***	31.27***	29.47***	21.60***	6.81
Correctly predicted (%)	71.14	71.94	71.15	70.36	67.98

Notes. *t*-statistics shown beneath marginal effects. The marginal effect of a variable is the partial derivative of the logit probability of a given outcome with respect to that variable evaluated at the sample means. ***$p < 0.01$; **$p < 0.05$; *$p < 0.10$.

competitors in export markets were located in countries at *higher* levels of economic development.

We have also argued that studying the internalization of export activities is particularly relevant for manufacturing firms based in a middle-income country since export internalization is the initial step in the process of increasing their participation in foreign markets. Firms based in countries at middle stages of development will disproportionately step up their foreign investments (particularly in distribution) as they accumulate stocks of intangible assets, shift away from product standardization and mass production technologies, and generate more resources internally.

The connection between economic development and the sophistication of firms is quite clear in the case of the level of internalization of exports. Moreover, integrating downward into foreign markets may not only allow these firms to increase exports and appropriate value-added activities but also help them accumulate experience and managerial know-how that can be of utmost relevance in the internationalization of other types of value-added activities such as sourcing, manufacturing, and even R&D. Thus, export internalization may provide the firm with strategic advantage not only because it helps extend the firm's capabilities into foreign markets, but also because it leads to the accumulation of new or enhanced competitive capabilities, and to competitive learning. Further studies of export internalization in both advanced and middle-income countries could further refine our understanding of the

processes by which firms learn new competitive capabilities as they expand abroad.

Our theoretical and empirical analysis has not dealt with an important strategic aspect of the problem of export internalization, i.e. the sequential process by which firms take steps towards internalizing export activities. We had no information in the sample regarding the sequence of internalization across foreign markets, product lines, or modes of integration. For instance, one would expect a firm to establish proprietary distribution in markets ripe with uncertainty last, or to internalize exports of products that entail high asset specificity or R&D expenditure before other kinds of products, or to use joint ventures in distribution before they commit resources to wholly owned subsidiaries. Ownership and location-specific factors might affect not only the level of internalization of foreign market activities at any one given point in time but also the sequence of international expansion over time.[10]

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