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Product portfolio performance in new foreign markets: The EU trademark dual system

Alicia Barroso[a], Marco S. Giarratana[b,*], Martina Pasquini[b,1]

[a] Universidad Carlos III, Madrid, Spain
[b] IE Business School, IE University, Madrid, Spain

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ABSTRACT

How do intellectual propriety rights (IPRs) help firms profit from their innovation? Innovation literature frequently turns to patents to measure innovative IPR, but more recent work shifts focus to the other side of IPR, namely, trademarks. This article therefore discusses the effects of trademark strategies when companies decide to introduce their product portfolios in a new foreign market. Entrants might opt for a common trademark across different country markets (integration) or use several country-specific trademarks (responsiveness). This empirical study exploits the quasi-natural experiment created by the tariff shock that affected Spain when it joined the European Union in the 1990s. Data from the automotive industry reveal how non-European companies that already operated in other European countries sought to enter Spain rapidly, using various trademark strategies. The product portfolio characteristics are fixed at entry, so this study can specify how and when trademark responsiveness versus integration affects firm performance. The results reveal that trademark responsiveness increases firm performance if the firms suffer high liabilities of foreignness or newness.

1. Introduction

Trademarks constitute intellectual property rights (IPRs) that confer an exclusive right to use the brand attached to a product or service sold in a specific market (Castaldi, 2018). According to WIPO (2004) trademarks refer to a "distinctive sign, which identifies certain goods or service as those provided by a specific person or enterprise". Similar to patents, trademarks provide a measure of the innovative output produced by companies (Mendonça et al., 2004). In this respect, growing interest centers on how trademarks can proxy for strategic downstream assets (Ceccagnoli and Jiang, 2013), and help firms profit from their innovations (Fosfuri et al., 2008). Together with patents (e.g., Cantwell, 1992; Patel and Vega, 1999), trademarks could be a complementary source of data that inform extant research on the internationalization of innovative activities. By establishing trademarks, firms can enter foreign markets and protect better their innovative knowledge (De Faria and Sofka, 2010).

Granted, trademarks can reveal novel insights into the relationship between IPRs and product innovation for multinational enterprises (Golovko and Valentini, 2011). For example, Giarratana and Torrisi (2010) show that trademarks are a particular attractive measure of how firms can profit from their innovative products when they compete in multiple international markets. Particularly, trademarks can offer opportunities for brand expansions and diversification abroad because they can represent a strategic means to establish a premium price position for innovative products, by increasing differentiation (Mendonça et al., 2004; Gao and Hitt, 2012). As sources of international competitive advantages (Sandner and Block, 2011), trademarks enable firms to capitalize on their advertising investments (Krasnikov et al., 2009), which is especially critical for small enterprises (Block et al., 2015).

Up to date, most studies on internationalization of R&D adopt supply-side theoretical arguments, focusing the analysis on foreign R&D subsidiaries and their patent activities (Cantwell, 1992; Alcacer and Chung, 2002). We instead adopt a demand-centered approach, by applying a global integration versus local responsiveness perspective (Barlett and Ghoshal, 1989; Doz and Prahalad, 1991) focused on how

* Corresponding author.
E-mail addresses: alicia.barroso@uc3m.es (A. Barroso), marco.giarratana@ie.edu (M.S. Giarratana), martina.pasquini@ie.edu (M. Pasquini).

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companies market their innovative products in foreign markets. According to this framework, firms might expand internationally by standardizing their activities (*integration*) or instead engage in strategic adaptations to local pressures (*responsiveness*). In this line, trademarks become strategic channels of communication between customers and firms, since they embed specific cultural features (Mendonça et al., 2004).

Specifically, we theorize that a common trademark across different country markets represents trademark integration, whereas ownership of multiple, country-specific trademarks implies a trademark responsiveness strategy. If firms use the same, unique trademark across countries, they can exploit economies of scale. If they vary them, they can protect their products with trademarks tailored to local languages and cultures. The strategic decision to engage in trademark responsiveness might mitigate cultural and preference gaps among foreign customers, but it also increases managerial, administrative, and registration costs (Luo, 2001).

The relationships among trademark strategy choices, innovation, and economic returns become especially evident when the firm attempts to introduce its product portfolio in a new, foreign market. Therefore, we turn to data from the global automobile industry, which is marked by substantial R&D investments, heterogeneous trademark strategies, and varied product offerings (Townsend et al., 2009). It also offers a compelling quasi-natural experimental scenario. That is, before Spain entered the European Union (EU), its automobile industry had been subject to significant tariff and non-tariff protections. After it joined the EU, these tariffs dropped substantially and rapidly. We exploit this tariff shock as an exogenous identification tool, to single out its effects on IPRs and trademark strategies. Firms already selling their products in other European countries also moved quickly to introduce their product portfolios into Spain. This quasi-exogenous demand shock helps control for several strategic factors, such as the structure of the product portfolio, because it was marked by such rapid speed of entry.

Furthermore, the EU offers an ideal setting for this research, due to its dual system. That is, companies may market their product portfolios under a global, European trademark, valid in all member countries, or else with several, country-specific trademarks. In addition, all trademarks are registered with the European Patents and Trademarks office, so we can determine readily whether non-European firms entering Spain used European trademarks that also were valid in other European countries, or if they used trademarks specific to the Spanish market.

The resulting findings offer novel insights to literature that investigates how firms can profit from innovation (Liebeskind, 1996; Teece, 1986) by leveraging their IPRs in internationalization contexts (Cantwell, 1992; Golovko and Valentini, 2011; Patel and Vega, 1999) in the specific case of trademarks (Mendonça et al., 2004; Sandner and Block, 2011). Our research reveals first the presence of heterogeneity in the trademark approaches of companies, and subsequently the environmental conditions under which different IPRs strategies produce more profits, as well as their interactive effects with the structure of the firm's product portfolio (Castaldi, 2018; Giarratana and Torrisi, 2010). In particular, the results show that a trademark responsiveness strategy enhances the performance of firms that suffer liabilities of foreignness or newness. By distinguishing trademark integration from responsiveness, we further specify how each trademark strategy helps firms capitalize on their innovative capital, in the form of their product portfolios. The results also have important policy implications, in terms of IPRs, innovation incentives (Dosi et al., 2006), and coordination between country-specific trademark offices and a central, common market office. The discussion of trademark integration versus trademark responsiveness strategies can inform policy about whether centralized or decentralized offices are more effective and efficient for encouraging innovation without incurring too many administrative costs.

2. Theoretical background

2.1. IPRs and trademarks

Trademarks are "any signs capable of being represented graphically, particularly words, including personal names, designs, letters, numerals, the shape of goods or of their packaging, provided that such signs are capable of distinguishing the goods or services of one undertaking from those of other undertakings,"[2] such that they characterize and legally protect a brand name, image, symbol, or identity. They serve several other functions as well. First, trademarks provide objective information about the outcomes of a firm's branding efforts in a specific product category (Krasnikov et al., 2009). Second, they establish and offer accurate product and service descriptions (Fosfuri and Giarratana, 2009). Third, because trademark data are updated constantly, and firms may introduce or cancel trademarks at any time, they represent a good proxy of firms' downstream assets (Ceccagnoli and Jiang, 2013). We propose another function herein, by arguing that trademarks constitute an alternative form of IPRs that innovative firms use to appropriate the returns on their innovative activities. Although both patents and trademarks might serve this function, "patents tends to rank lower…. In contrast, marketing activities and assets [like trademarks] tend to play a wider and more significant role" (Mendonça et al., 2004, p. 1391). We also predict that this function is particularly pertinent for innovative firms' international expansion efforts.

Patel (1995) introduces a critical perspective on the internationalization of innovation activities and IPRs, according to which internationalization provides critical feedback for innovation (Golovko and Valentini, 2011), but the differences between host and foreign countries can generate substantial adaption costs (Patel and Vega, 1999). Many prior studies (e.g., Cantwell, 1992; Chung and Alcacer, 2002; Patel and Vega, 1999) investigate R&D internationalization and how firms manage their patents across different foreign subsidiaries; we seek to complement this view by focusing on how firms' trademark strategies, related to their foreign market penetration, might affect their performance. In support of this approach, we note that trademarks recently have taken center stage in internationalization literature. For example, Mendonça et al. (2004) exploit trademarks' role as IPR mechanisms that embed cultural facets, and Giarratana and Torrisi (2010) use trademark registration and cancellation data to proxy for foreign market entry and survival in a particular country. More generally, trademarks are IPR strategies that reflect firm decisions; they are worth investigating, not only because they confer exclusive rights to the use of a brand attached to a newly launched product, but also because they represent sources of information about cultural and socio-economic activities (Mendonça et al., 2004). Thus for example, Gao and Hitt (2012) show that trademarks are a good proxy for product differentiation; Block et al. (2015) find significant heterogeneity in small firms' strategic use of trademarks; and Sandner and Block (2011) demonstrate that stock markets assign positive economic value to trademarks.

2.2. Internationalization and diversification

We use trademarks to investigate how IPRs and product innovation might benefit from a firm's internationalization, a process characterized by a development of new capabilities to handle greater organizational complexity (Denis et al., 2002; Hitt et al., 1994, 1997; Wieserman and Bowen, 2008). Multinationals gain exposure to constant knowledge flows from diverse customer bases, which may enable them to broaden their innovation and diversification (Mayer et al., 2015). But internationalization and product diversification efforts also might compete for organizational resources (Kumar, 2009), such that their

[2] Article 2, Directive 2008/95/EC of the European Parliament.

simultaneous execution "may well stretch management resources excessively" (Geringer et al., 2000, p. 57) and produce opportunity costs and hurdles rather than complementarities. Several studies propose contingencies that lead to both positive and negative outcomes, such as the extent to which the diversification is related (Chang and Wang, 2007), marketing and technical assets (Delios and Beamish, 1999), nonlinear relationships (Hashai and Delios, 2012), prior diversification experience (Mayer et al., 2015), or time effects (Geringer et al., 2000). In this respect, Ambos (2005) finds that most R&D internationalization processes go hand-in-hand with new market penetration by production and marketing, to exploit existing knowledge generated at home. Thus, the structure of the product portfolio matters for internationalizing firms, and trademarks can proxy for product portfolios in new markets, because "every new trademark is not connected to a new innovative product" (Mendonça et al., 2004, p. 1391). In some, "trademarks and brands are highly intertwined […] The former represents the legal basis upon which the latter builds" (Block, Fisch, and Sandner, 2014: 152).

Trademark strategy decisions for entering foreign countries in turn are critical to the firm's overall IPR strategy (Steenkamp et al., 2003; Townsend et al., 2009) and can inform an existing debate. According to the integration and responsiveness (I–R) paradigm (e.g., Barlett and Ghoshal, 1989; Doz and Prahalad, 1991), firms might standardize their activities across nations to achieve efficiency (integration, Winter and Szulanski, 2001) or else adapt them strategically to local pressures (responsiveness, Birkinshaw et al., 1995; Devinney et al., 1998; Roth and Morrison, 1990). Each firm's I-R choices may differ across its distinct functions, because the "I-R pressures may vary considerably across … product, price, place, and promotion" (Devinney et al., 2000, p. 678). Applied to trademarks, integration implies a single, global brand used in all countries, which should have cost-related benefits but provide poor institutional and cultural fit. That is, trademark integration offers strong international consistency, exploits economies of scale, reduces complexity (Cleveland et al., 2011; Levitt, 1983), and enables cost savings (Schilke et al., 2009). But integration also might generate negative feedback if the positioning is not consistent with the host country's cultural characteristics (Yip, 2003). The more expensive trademark responsiveness strategy instead promises integration with each foreign environment's unique characteristics (Townsend et al., 2009), offering benefits in terms of cultural sensitivity, authenticity, and responsiveness to local needs (Steenkamp et al., 2003; Taylor, 2010).

3. Hypotheses development

Product portfolio diversification is a visible measure of the outcomes of firms' investments in innovation. For example, in the drug industry, Bottazzi et al. (2001) explain the relationship between R&D and firm growth according to product diversification patterns. Diversification implies the simultaneous presence of products from the same firm in different submarket niches (Sakhartov and Folta, 2014; Wu, 2013; Zahavi and Lavie, 2013). When diversification is high, firms offer a wider array of products, which should reduce pressures to increase their local responsiveness (Hitt et al., 1994; Luo, 2001). When customers evaluate whether to include a product offer by a foreign firm in their consideration set, it requires them to invest time and attention (Roberts and Lattin, 1991). A more diversified foreign firm creates scale economies in these evaluation costs, because it is more efficient to evaluate two products from the same foreign firm than two products from two different, specialized foreign firms. Thus, companies that target different niches simultaneously can increase the probability that their products appear in the host country customers' consideration sets. A wider array of products also may increase customers' attention, minimize their search costs, and capture the needs of the average customer more effectively (Sappington and Wernerfelt, 1985). Thus, firms with diversified portfolios should have an advantage, especially if customers prefer simplified shopping options (Barroso and Giarratana, 2013; Dhingra, 2013; Ye et al., 2012).

In contrast, a firm with a less diverse product portfolio specializes in particular niches and seeks to satisfy a precise set of preferences with its unique product attributes. The quality of these attributes likely determines the legitimacy and success of each product (Negro et al., 2010). On average, in foreign environments, a specialized firm confronts more risk than a diversifier does, because its success depends on a particular combination of product attributes, which may lower its probability of being included in a consideration set. That is, it faces greater risk that its offerings are distant from the preferences of the average customer in the host country.

Hypothesis 1. All else being equal, entrants with higher (lower) diversification achieve better (worse) performance in a new foreign country.

Firms expanding internationally also encounter various challenges that affect their performance (Ghemawat, 2001). For example, the liability of foreignness refers to the institutional and cultural gaps that arise between the home and the host country that produce a "lack of legitimacy of foreign firms" (Zaheer, 1995, p. 343). Trademarks can solve the typical information asymmetry in the market (WIPO, 2013) because they fulfill a signaling function (Ramello, 2006; Castaldi and Giarratana, 2018) to distinguish a product offered by other competitors (Castaldi, 2018). The trademarking activity is usually driven by marketing investments (Schautschick and Greenhalgh, 2016); particularly the use of brands that are formally protected by IPRs can flag a new market and persuade consumers not only regarding the economic value of a product, but also its emotional and cultural attributes . This intangible capital becomes protected, and more valuable, when trademarked. In this sense, trademark responsiveness might help firms dealing with the liability of foreignness by signaling familiar products' cues to consumers (Ramello and Silva, 2006), in conjunction with promotions that are well adapted to the host environment (Steenkamp et al., 2003; Taylor, 2010). In order to register a new trademark adapted to the local environment, companies have to scan and collected information on the live trademarks registered by home-based competitors in the focal trademark office. This process is not only needed to avoid infringements, but it is also an important channel for learning ad-hoc marketing communication languages and cues in a particular country. Moreover, the interactions with local trademark officers imply engaging in the specificities of the focal country procedures and laws.

However, the value that comes from this process also induces costs. Strategies of trademark responsiveness incur higher marketing costs, especially if the firm has a diversified product portfolio. With greater diversification, the firm must process more information to create and manage new trademarks, so firms targeting many countries with various product niches would confront demands on their financial resources (Degraba and Sullivan, 1995). Specialized firms instead might benefit more from a trademark responsiveness strategy, because their product portfolios are less varied and the costs of adaptation are relatively more limited. In turn, trademark integration strategies across countries might expose specialized competitors to a greater liability of foreignness, because the narrow set of product attributes they offer does not match any "average" customer in the host country. Therefore, our second hypothesis reads:

Hypothesis 2. All else being equal, entrants with lower diversification achieve better performance when they opt for a trademark responsiveness strategy in a new foreign country.

In addition, the liability of newness refers to the level of fit between the firm and a particular setting, reflecting the idea that its "existing competitive environment induces it to develop certain strategies and resources to compete against other firms within a particular industry structure. When the firm moves to another country, the competitive environment often differs" (Cuervo-Cazurra et al., 2007, p. 718). Whether the firm is just starting or is established but seeks to penetrate a new foreign country, it may be subject to the liability of newness

(Singh et al., 1986), which "is not a result of foreignness" (Mezias, 2002, p. 270).[3] Rather, the liability of newness is associated with the type of competition that exists in a new market (Cuervo-Cazurra et al., 2007; Luo, 2001).

More generally, specialized competition, as occurs among niche-specialized producers, differs from the competition generated by diversified companies. If competition is highly specialized, companies tend to compete on the basis of tangible differentiation efforts, to offer superior, tangible features relative to competitors (e.g., Negro et al., 2010; Santaló and Becerra, 2008; Zahavi and Lavie, 2013). Tangible product attributes also can increase customer awareness, interest, and demand (de Figueiredo and Kyle, 2006; Greenstein and Wade, 1998; Ruebeck, 2005; Stavins, 1995), which should enhance the firm's legitimacy and loyalty (Hui, 2004). In contrast, diversified competition prompts firms to exploit economies of scale and scope (Zahavi and Lavie, 2013), learning spillovers (Stern and Henderson, 2004), or entry barriers (Fosfuri and Giarratana, 2009). Such diversification can impinge on demand synergies, due to consumers' one-stop shopping preferences (Ye et al., 2012).

Misalignments between the firm's innovation approach and the foreign competitive environment in turn invoke a higher liability of newness. A diversified firm competing in a specialized environment, or a specialized producer in a diversified market, thus may be less viable (Barroso and Giarratana, 2013; Negro et al., 2010). In specialized competition settings, customers are more (less) likely to buy foreign products from specialized (diversified) producers, because they perceive those products as offering less (more) liabilities of newness. Therefore, we can state that:

Hypothesis 3. All else being equal, entrants with higher (lower) fit with the local competitive environment achieve higher (lower) performance in a new foreign country.

Finally, we link firm trademarks with the liability of newness. On the one hand, foreign companies that already have a product portfolio that fits the local competitive structure do not need to adopt their trademark strategy too. Instead, a trademark responsiveness strategy might hinder their performance, by increasing the costs they incur to reduce a liability of newness that is already minimal. On the other hand, trademark responsiveness may offer benefits that are more significant for companies with poor competitive fit (Chabowski et al., 2013; Steenkamp et al., 2003). With IPRs protection on their country specific brands, firms could adjust the emotional and psychological perceptions on their product portfolio, reducing the barriers between their products and the new foreign customers. Thanks to country-specific trademarks, diversified foreign companies might connect better with local, niche-loyal customers because they can address the indigenous narratives associated with a particular combination of product attributes. Trademark responsiveness also could help specialized companies signaling general, broad qualifications for their products and therefore appeal to the local, diversified context. For example, a diversified firm (i.e., Nissan), accustomed to competing in niches dominated by diversified large companies in its own home market (e.g., Honda, Toyota), may realize that in some niches in a foreign market, it will face more specialized competitors (e.g., Simca, Talbot, Seat) and suffer a liability of newness. This company could fruitfully use trademarks adapted to the local tastes and cultures to counteract this hurdle. It will act on the emotional and cultural perception of its products that it could modified with a set of tailored trademarks. In sum, firms have to opportunity to use a responsiveness approach when the costs generated from liabilities of newness are higher than the investment needed to customize their portfolios of trademark to local tastes. This argument is fundamental to our theory because it highlights the heterogeneity of IPRs approaches: not only diversified and specialized companies differ, but also two diversified (specialized) firms could face distinct levels of the liability of newness, because they could enter different niches that feature different types of competition. Thus, our last hypothesis reads:

Hypothesis 4. All else being equal, entrants with lower fit with the local competitive environment achieve higher performance if they opt for trademark responsiveness in a new foreign country.

Table 1 offers a holistic view of our hypotheses, according to the different possible combinations of high and low liabilities of foreignness and newness and representative company cases. Assuming that trademark responsiveness is more profitable when these two liabilities are greater, we predict that trademark responsiveness is a better option in Quadrant I, whereas trademark integration is preferable in Quadrant IV. For Quadrants II and III, the hypotheses predict marginal impacts of trademark responsiveness on performance, and the overall effect depends on the joint level of the two liabilities. Therefore, the prediction is a stylized fact left to the empirical estimation. Finally, despite the generality of the marginal effects predicted in the hypotheses, we note that the main effect depends on the context, pertaining to both country and industry characteristics.

4. Methods

4.1. Setting

The automobile industry is an appropriate empirical setting for testing our theory. On the one hand, the industry is a consolidated, global market, characterized by a high variety of firms from different countries operating on an international scale (Townsend et al., 2009). On the other hand, each foreign market features several competing products marketed in different niches.

Our empirical analysis focuses on the European automobile market, specifically on the Spanish automobile market between 1990 and 2000. In doing so, we follow Frésard and Valta (2016) who use import tariff changes as an experimental scenario to examine how companies modify their competitive investments. Precisely, after Spain joined the EU, the sudden tariff reductions significantly increased the number of non-European foreign firms that entered Spain. Specifically, the number of competitors increased during the 90s from 19 to 30, following the arrival of 11 non-European foreign firms: Chrysler, Honda, Hyundai, Mazda, Mitsubishi, Nissan, Subaru, Suzuki, Toyota, Kia, and Galloper. These 11 firms is our estimation sample. All these firms were already competing in the neighbor European countries; thus, this internationalization process is generated by a sudden reduction in entry tariff barriers that allow firms moving quickly their product portfolios in the new country without significant changes. For example, Mitsubishi introduced in the Spanish market products in the compact, intermediate, and minivan niches, but not in the luxury or sport categories, precisely the same niches in which it was competing in the other European countries. All the non-European firms entered the Spanish market using green-field investments.

However, what firms can change is their trademark approach in selling products in a new foreign country. We exploit the introduction of the new EU trademark system in 1996, which grants to firms the opportunity to merge their trademarks registered in individual country offices under the same umbrella of a unique EU trademark, valid in all the designated countries. This represents a firm based decision, because firms could decide to maintain their trademarks specific to each country market. In this sense, the introduction of the EU trademark system represents an additional natural experiment that allows us to identify each firm's current I-R trademark strategy.

[3] Prior literature recognizes the multidimensional structure of these liability constructs, linked to the behaviors of different stakeholders such as investors, suppliers, or government agents (Calhoun, 2002; Johansson and Yip, 1994). For our study context though, we limit these liabilities to the particular features related to foreign customers and competitors.

Table 1
Different company cases derived from the theory development.

		Liability of foreignness	
		High	*Low*
Liability of newness	*High*	I Specialized companies in diversified competitive environments Better performance: Trademark Responsiveness	II Diversified companies in specialized competitive environments Better performance: effect to be empirically determined
	Low	III Specialized companies in specialized competitive environments Better performance: effect to be empirically determined	IV Diversified companies in diversified competitive environments Better performance: Trademark Integration

4.2. Data and sample

Our analysis relies on quarterly panel data from 1990 to 2000 (33 quarters), with every foreign entrant as the unit of analysis. Thus, we gather a 258-observation, unbalanced panel with dissimilar numbers of periods per firm, given their different entry dates. An original data set provides detailed information about prices, sales, niches, advertising expenditures, and model characteristics in the Spanish automobile market, including both European and non-European firms (ANFAC, the Spanish "Guide for Car Buyers," and Spanish research firm Infoadex). From this data set, we obtained information to compute some of the variables in our estimation, as well as industry-level variables. In addition, we extended this data set with trademark information to determine the entry strategies of the new, non-European entrants, gathered from the European Trademark and Design Network.[4]

4.3. Variables

4.3.1. Dependent variable

Various measures of performance have been employed by current literature to evaluate the relationship between foreign entry and performance (e.g., financial and non-financial measure from management evaluation, Brouther 2002; firm survival, Shaver, 1998; ROI, McDougall and Oviatt, 1996). Because our theoretical predictions refer to firm performances in the new foreign market, we define *Performance*[5] as the sum of margins (prices minus marginal costs) for each firm's car models multiplied by the number of units sold in Spain and aggregated at the level of the firm. For example, for Mitsubishi we multiply the margins and quantity sold in 1997 in Spain in the compact, intermediate, and minivan niches and then we sum together these measures. Therefore, *Performance* allows us capturing variations in consumer demand, firm ability to charge higher prices and underlying cost structure in every niche of the new foreign market. The final measure aggregates firm-level profits for each model:

$$Performance_{it} = \sum_{r \in F_{it}} (p_{rt} - mc_{rt})\, q_{rt}\,, \quad (1)$$

where F_{it} is the set of car models offered by firm i at period t; and p_{rt}, mc_{rt}, and q_{rt} are the price, marginal costs, and units sold of car model r during period t, respectively. While prices and quantities are drawn directly from the dataset, we have to estimate the cost in the previous formula. We follow Kadiyali et al. (1999), who use a supply–demand structural model. This model consists of two equations: the demand function for each car model, using a random coefficient logit model (Berry et al., 1995), and the first-order price condition for each model, assuming a multiproduct firm maximization profit problem in an oligopolistic market. To estimate the equations simultaneously, we used a generalized method of moments and controlled for possible heterogeneity in firm resources, which might lead to different cost structures. To account for economies of scale and scope, we regressed the cost of each model on the model attributes, total number of models produced, number of models produced within the corresponding niche, and the number of submarket niches in which the firm simultaneously offers models, as well as firm, year, and month dummies. Note that fixed costs are captured by the firm dummy. The firm margin estimations capture a typical inverse relationship between margins and price (i.e., demand price elasticity) in the automobile market. For example, for models with high prices (20,000–35,000 euros), the average estimated margin is 42.8%, whereas for models with lower prices (less than 7,500 euros), the average estimated margin is 33%. A peculiar strength of this measure is the simultaneous estimation, which accounts for both demand and supply dynamics.

4.3.2. Independent variables

Diversification indicates the firm's portfolio product breadth (i.e., specialization vs. diversification), measured by the number of niches in which a focal firm operates. We prefer this proxy compared to classical concentration indexes, because it depends less on the sales variation in each niche, which tends to show an extremely high variance in the initial stages of a new foreign market entry (Dobrev and Kim, 2006). The product niches (small, compact, intermediate, luxury intermediate, luxury, sport, and minivan) are defined by ANFAC (Spanish Association of Car and Truck Producers), according to their mechanical, design, and equipment characteristics. *Diversification* is also standardized: it counts the number of niches in which the firm operates, weighted by the average number of competitors. Such standardization is required to capture the fit of a firm's diversification with the new competitive environment, and thus the liability of newness (Cuervo-Cazurra et al., 2007), as we explain subsequently. Fig. 1 reveals the evolution of *Diversification* by year, including the median, 25th and 75th percentiles, lower and upper adjacent values, and the presence of outliers (dots). Non-European firms tend to be less diversified than European firms, with a negative value for their average level of *Diversification* across the entire sample period. Critical to our empirical test, we also note the substantial variance in *Diversification*, which implies likely heterogeneity in the liabilities of foreignness and newness. Table 2 contains the descriptive statistics of the variable, with a mean of -0.39 and standard deviation of 1.27. We have also calculated the VIFs score for all the variables; the scores are acceptable for our core variables of interest, but they tend to show high level for control variables. This however, will not biased the coefficient of core interest.

To construct our *Trademark Responsiveness* variable, we turned to trademark information. As previously explained, we exploit the introduction of the new EU trademark system in 1996, which allowed firms to merge their similar trademarks registered in individual country offices under the umbrella of a unique EU trademark, valid in all the designated countries. Firms that adopt trademark responsiveness keep specific trademarks for each separate European nation, while firms opting for integration instead exercise the option of a single EU trademark. For each firm in the sample, we thus downloaded[5] all existing European trademarks (which include company names, car model names, component names, and general advertising). Because the dual EU trademark system was introduced in 1996 and firms that switch to the new EU trademark register most trademarks during the subsequent two years, we focus on the period 1996–1997.[6] We then separated

[4] See https://www.tmdn.org/tmview/welcome.html.
[5] Results are confirmed using Sales or Quantity as dependent variables.
[6] Because the intellectual property is a long-term strategy that has to be considered in a dynamic viewpoint (Pitkethly, 2001), an appropriate timing of the variable that captures such strategy is a difficult task. Our study, however,

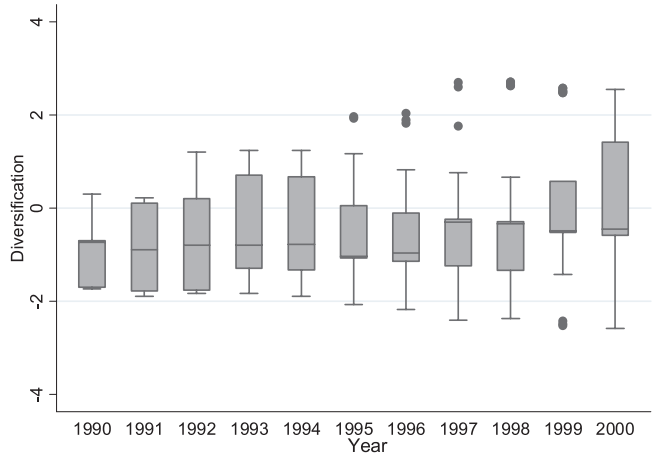

Fig. 1. Evolution of *diversification* by Year.

trademarks that were valid only in the Spanish market from trademarks valid simultaneously in the Spanish and other EU markets. *Trademark Responsiveness* is the proportion of trademarks registered exclusively in Spain divided by the total trademarks registered (i.e., sum of Spanish and all European ones). A firm that scores 95% on the *Trademark Responsiveness* variable thus is highly customized; only 5% of its trademarks are common with other EU countries. The descriptive statistics of the variable reveal a significant heterogeneity with values from 0 to 1, with a mean of 0.38 and a standard deviation is 0.42. We also report the distribution of this variable in Fig. 2, which confirms that the firms in our sample chose different trademark approaches.

The level of competition also varied substantially over time, and the data indicate a vast increase in the number of car models offered in Spain during the 1990s, from 101 to 229. *Specialized Competition* reflects the number of specialized competitors in the same niches in which the focal firm competes, standardized by the industry average. We thus calculated the number of European and non-European competitors that competed with a specialized offer in all industry niches. This measure draws on Santaló and Becerra's (2008) definition of a firm *i* as specialized in niche *j* if the weight of niche *j* in the firm's product portfolio (i.e., number of car models) is greater than the observed weight of niche *j* in the industry. Therefore, a focal firm *i* specializes in niche *j* at time *t* if $(N_{ijt}/N_{it}) > (N_{jt}/N_t)$. The mean of *Specialized Competition* takes values from -27.29 to 37.33 in our sample. If a focal firm scores a negative number for *Specialized Competition*, it faces less competition from specialized producers than is average in the industry.

Because both *Specialized Competition* and *Diversification* exhibit substantial time- and firm-based heterogeneity, we can statistically identify the effects of our main covariates with a panel data model that accounts for both types of dynamics. We standardize these measures, to capture the fit dimension. In turn, the liability of newness depends on the fit of the focal company with the new, competitive, industrial setting (Cuervo-Cazurra et al., 2007). In our sample, all the entrants have substantial experience, so the liability of newness pertains to the fit of

Table 2
Descriptive statistics and pairwise correlation.

	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1. Performance	1.22	1.32	0.02	6.40	1.00																	
2. Diversification	−0.39	1.27	−2.58	2.71	0.72	1.00																
3. Trademark responsiveness	0.38	0.42	0	1	−0.11	0.19	1.00															
4. Specialized Competition	−3.60	13.10	−27.29	37.33	0.18	0.48	0.24	1.00														
5. General Competition	31.98	0.71	30	33	0.02	0.08	0.04	0.10	1.00													
6. Experience	7.26	3.57	1	14	0.48	0.25	−0.40	0.16	0.25	1.00												
7. Size	35.92	32.76	2.54	155.3	0.38	0.21	−0.17	0.19	0.07	0.42	1.00											
8. Advertising Ratio	1.20	2.85	0	21.62	0.54	0.49	0.03	0.22	0.06	0.15	0.15	1.00										
9. Brand Value	112.6	80.80	0	195	0.42	0.27	−0.54	−0.01	−0.06	0.42	0.48	0.13	1.00									
10. Versioning	1.16	0.26	1	3	0.04	−0.13	−0.02	−0.08	−0.06	0.15	0.35	−0.10	0.17	1.00								
11. Geographic Scope	4.40	1.37	1	6	0.09	0.18	−0.16	0.27	−0.09	0.38	0.29	−0.06	0.61	0.11	1.00							
12. Cultural Distance Experience	23.79	7.33	0	32.67	0.04	0.28	0.57	0.07	0.11	−0.39	−0.47	0.17	−0.46	−0.16	−0.58	1.00						
13. Patents	1,809	3,645.4	0	20,054	0.26	0.15	0.15	−0.14	−0.01	0.28	0.05	0.08	0.17	−0.06	0.07	−0.03	1.00					
14. R&D	0.89	0.07	0	492	0.50	0.18	−0.54	0.17	−0.04	0.50	0.36	0.18	0.52	0.13	0.30	−0.48	0.03	1.00				
15. R&D dummy	0.24	0.43	0	1	0.16	0.43	0.63	0.19	0-09	−0.36	−0.34	0.21	−0.28	−0.01	−0.38	0.92	0.04	0.03	1.00			
16. GDP	43.27	3.87	39.02	50.82	0.37	0.24	0.11	0.12	0.07	0.65	0.02	0.15	−0.13	0.11	−0.09	0.14	0.45	0.09	0.18	1.00		
17. Consumer Price Index	65.91	7.20	51.90	75.90	0.33	0.23	0.11	0.18	0.44	0.70	0.05	0.17	−0.14	0.07	−0.11	0.17	0.35	0.06	0.19	0.88	1.00	
18. NYSE	0.40	0.56	0	2	−0.01	−0.24	−0.20	−0.26	−0.05	0.17	0.43	−0.20	0.55	0.39	0.24	−0.48	0.34	0.22	−0.31	−0.09	−0.10	1.00

Notes: Performance in million (1995) euros.

(*footnote continued*)
exploits the introduction of the EU trademark system as natural experiment assuming that firm trademark registration decisions during the first years allows us to identify each firm's current trademark strategy. In particular, we consider 2 years after the introduction of the EU trademark system. Results do not change if all the sample period (from 1996 to 2000) is considered given that the firm´s proportion of trademarks registered exclusively in Spain for this period respect to the proportion computed for 1996-1998 changes marginally. For example, the most active firm in the registration of trademarks from 1996 to 2000 are Nissan (101 trademarks) and Toyota (107 trademarks). Trademark Responsiveness will change from 1.7% to 1% for Nissan, and from 27,8% to 28% for Toyota.

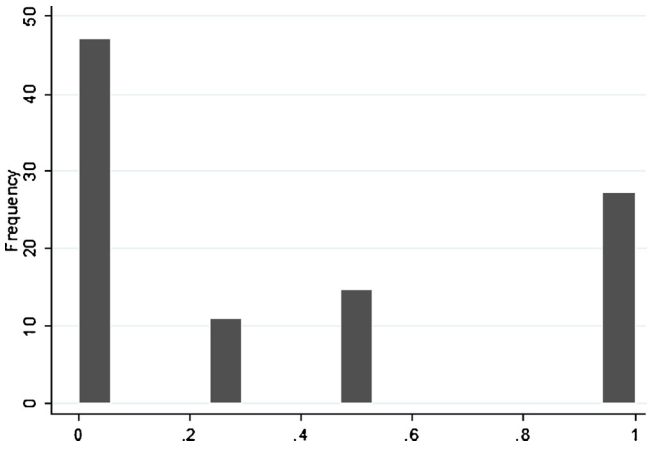

Fig. 2. Distribution of *trademark responsiveness.*
Notes: This variable was computed using registered trademarks by the 11 non-European brands during 1996–1997.

their product portfolio structure with the type of competition in the new market (Singh et al., 1986). That is, cases that feature a high liability of newness suffer from poor fit, such as diversified firms competing in a specialized competitive environment or specialized firms in a diversified competitive environment. Multiplying the standardized values of the *Diversification* and *Specialized Competition* captures this effect precisely: Positive values of the interaction denote an increase in the liability of newness, whereas the opposite interpretation holds for negative values. Finally, the interaction exhibits variability due to not just time and firm dynamics, but also the competitive characteristics of the niches that the focal firm decides to enter.

In terms of control variables, as an additional check for competition, we introduce *General Competition*, measured as the number European and non-European firms that operate in the Spanish automotive market. As Table 2 shows, *General Competition* and *Specialized Competition* are not strongly correlated (0.1); they capture different aspects of the rivalry. *Size* is the total assets of the firm obtained from Bureau van Dijk's OSIRIS, and we use it together with $Size^2$ to account for economies of scale. *Advertising Ratio* is the firm's advertising expenditures, standardized by total expenditures in the industry, to capture firm heterogeneity in advertising investments that could impact on the economic value of trademarks. To capture potential learning effects that could mitigate the liabilities, we introduce *Experience* (Li, 1995) that reflects the number of years since the firm's entry into the Spain market. We also introduce *Cultural Distance Experience* as the average cultural distance experienced by sample firms with other European countries that they entered before Spain. The measure is a classical measure of cultural distance, computed as the average distance on six of Hofstede's dimensions (Hofstede et al., 2010) between the foreign countries and the country of the firm headquarter. This variable measures firm experience in operating in culturally different countries. Since trademarks protect names and logos, we introduce as a control *Brand Value* that proxies different levels of global brand awareness across firms over time. We use the yearly classification of the top 200 most valuable brands, elaborated by *Advertising Age*, for our study period (Roberts and Dowling, 2002). Specifically, we capture the rank of the brands in our sample by (*Max Ranking* – # *Ranking*). We also include the number of car models offered by the firm as a proxy for the size of the product portfolio (*Versioning*) to control for any economies of scope. As far as concerns the total number of car models offered, Non-European firms tend to be less diversified than European firms, given an average number of car models of about 1 for the former, and 5 for the latter. *Geographic Scope* is the number of European countries entered by a focal firm before entering Spain gathered from a data set on the European car market for 1970–1999 (data from Goldenberg and Verboven, 2001). *Geographic Scope* ranges from1 to 6, with mean of 4.4; this evidence confirms the late entry of non-European foreign firms in Spain compared to other European countries. This control variable should capture learning, scale economies, or administrative costs in internationalization processes (Douglas et al., 2001). *Patents* is the number of world patents registered by the sample firms obtained from PATENTSCOPE database provided by the World International property Organization.[7] *Patents* is the complementary IPRs side of trademarks, and it controls for the strength in the protection of firm technology knowledge (Mendonça et al., 2004). As proxy for innovative inputs, we use the expenditures by the firm on research and development (*R&D*). This variable is obtained from COMPUSTAT. Because some R&D data are not available, especially for Japanese firms[8] (23.9%), we set missing value to zero and we include *R&D dummy*, a dummy variable that takes the value of 1 if the information is missing (Giuri and Mariani, 2013). We also introduce general economic controls for Spain: *GDP* in billion euros at constant exchange rates at 1986 and *Consumer Price Index* in 2010 (from INE, Instituto Nacional de Estadística; Spanish Statistical Office). Finally, we used quarterly and annual dummies to control for seasonal components and common market shocks, including variations in market demand due to economic cycles. Table 3 provides a summary of all variables with all the information regarding definitions and sources.

5. Method: IV Approach

We feel safe about the potential endogeneity between diversification and performance (Santaló and Becerra, 2008), because the tariff shock left the structure of product portfolio unchanged during the entry in Spain. However, endogeneity could affect *Trademark Responsiveness*. The underlying source of endogeneity comes from firm self-selection: There could be unobserved variables firm and time dependent (i.e., managerial ability) that are associated with both trademark strategy and performance, causing a biased empirical estimation. Endogeneity in foreign entry modes has been widely identified by previous literature as a critical point in order to assess performance (Martin, 2013; Shaver, 1998; Reeb et al., 2012; Bascle, 2008). To solve this issue, we opt for a two-step least square estimation (2SLS) with instruments that should influence *Trademark Responsiveness,* but not performance. We follow Campa and Kedia (2002) and rely on the New York Stock Exchange (*NYSE*)[9] listing. This discrete variable takes a value of 2 if the company was listed before 1990, 1 if it was listed after 1990, and 0 otherwise. Whereas such a listing tends to increase analysts' attention and coverage, and thus reduce information asymmetries (Campa and Kedia, 2002), it should not affect firm performance in Spain directly, other than making *Trademark Responsiveness* more or less likely. A "key advantage of [NYSE] is the presence of skilled analysts and institutional investors specializing in evaluating […] companies […] inducing higher analyst coverage" (Pagano et al., 2002: 2677). Information asymmetries can have an important effect on trademark strategies because "a cross-listing can be an advertisement for the firm" (Pagano et al., 2002: 2658) without affecting performance in new foreign markets. A simple regression instead would likely overestimate the effect of *Trademark Responsiveness*, because it would fail to acknowledge that a firm with less information asymmetry has less need to

[7] See https://patentscope.wipo.int/search/en/structuredSearch.jsf

[8] Most of the foreign firms in our sample are from Japan and Korea. For the case of Korean firms, R&D data are usually found, while for the case of Japanese firms a significant R&D data is missing. Given the missing dummy of R&D is correlated with the origin of firm and the Hofstede´s dimensions are constant for each country, the cultural distance between Spain and the foreign firm´s home country cannot be included in the model to be estimated together with R &D dummy.

[9] The other instruments of Campa and Kedia (2002) could not be used because we have only one industry, all the companies are all foreign, and no company is listed in the S&P 500 list.

Table 3
Variable definitions and sources.

Variable	Definition	Source
Performance	The sum of margins (prices minus marginal costs in million 1995 euros) for each firm's car models multiplied by the number of units sold in Spain and aggregated at the level of the firm	ANFAC and "Guide for Car Buyers" Spanish magazine
Diversification	The number of niches in which the firm operates, weighted by the average number of competitors.	ANFAC
Trademark responsiveness	The proportion of trademarks registered exclusively in Spain divided by the total trademarks registered (i.e., sum of Spanish and all European ones) in 1996 and 1997.	European Patent and Trademark Office
Specialized Competition	The number of specialized competitors in the same niches in which the focal firm competes, standardized by the industry average.	ANFAC
General Competition	The number European and non-European firms that operate in the Spanish automotive market.	ANFAC
Experience	The number of years since the firm's entry into the Spain market.	ANFAC
Size	The total assets of the firm in 100 billions of dollars	Bureau van Dijk's OSIRIS
Advertising Ratio	The firm's advertising expenditures, standardized by total expenditures in the industry	Infoadex
Brand Value	The rank of the brands in our sample by (Max Ranking – # Ranking)	Advertising Age
Versioning	The number of car models offered by the firm	ANFAC
Geographic Scope	The number of European countries entered by a focal firm before entering Spain gathered from a data set on the European car market for 1970–1999.	Goldenberg and Verboven (2001)
Cultural Distance Experience	The average cultural distance experienced by sample firms with other European countries that they entered before Spain.	Hofstede Index
Patents	The number of world patents registered by the sample firms	PATENTSCOPE, World International property Organization
R&D	The expenditures by the firm on research and development in millions of dollars	COMPUSTAT
R&D dummy	Dummy variable that takes the value of 1 if the R&D information is missing	COMPUSTAT
GDP	Spanish Gross Domestic Product in billion euros at constant exchange rates at 1986	INE, Spanish Statistical Office
Consumer Price Index	Spanish Consumer Price Index in 2010	INE, Spanish Statistical Office
NYSE	Discrete variable takes a value of 2 if the company was listed in the New York Stock Exchange listing before 1990, 1 if it was listed after 1990, and 0 otherwise.	NYSE

communicate with a specific narrative to foreign customers. Indeed, the choice of NYSE is quite fitted in our case: Some works (e.g. Charitou and Louca, 2009) on cross-listing have claimed a direct relationship with performance, but only at the level of the headquarter or in the country of the listing. No correlation should be present in a third different market, i.e. Spain: It is worth to note that the correlation between firm performance and *NYSE* is just -0.01. Our regression takes place at the firm-based (i.e., firm–time) level.

6. Results

Table 4 shows the series of regressions that test our hypotheses. Specification 1 is the full model, estimated with an OLS without the instrumental variable estimation. The other columns instead present the results of our 2SLS with the instrumental variable. The large coefficient of determination obtained in all the models (pseudo-$R^2 = 0.87$) is probably due the ability of our controls to explain the variation in the dependent variable. In particular, it is worth noting that we insert quarterly and annual dummies, which control for important seasonal components and common market shocks (such as the general economic downturn in 1992) in the Spanish market, as well as fixed effects at the level of the firm. The standard F-statistic test of the first stage rejects the assumption that *NYSE* is a weak instrument; it correlates negatively and significantly with *Trademark Responsiveness* (F- test = 62.22, significant at 1%). The Wald test equals 16.38, with 5% significance. The power of our instrument is also responsible for changes in the estimated coefficients between the fully specified simple regression (Model 1) and the instrumented ones (Models 2 and 5).

In Table 4, Models 2–5 progressively introduce the variables of interest. It is important to follow the changes in signs of the coefficients when we add multiplicative factor in order to understand the contingencies under which our hypotheses hold. The empirical evidence supports Hypothesis 1, revealing a positive, significant effect of *Diversification* on performance ($p < 0.01$). To test Hypothesis 2, we interact *Diversification* with *Trademark Responsiveness* and uncover a negative effect (significant at 1%), such that specialized firms benefit from adapting their trademark image across countries, as we predicted. Although *Trademark Responsiveness* has a significant negative effect on performance in Model 2, the coefficient becomes positive when we include its interaction with *Diversification* (Model 3). Therefore, including diversification as a covariate is necessary to determine the effect of trademark responsiveness; more precisely, we can single out the effect of trademark decisions, given a certain level of diversification. For example, the threshold level of *Diversification* in the Model 3, that determines a positive or negative effect of *Trademark Responsiveness* on performance, is 0.22; the effect of trademark responsiveness on performance will be negative only for levels of diversification higher than 0.22. With Model 4, we test Hypothesis 3 by interacting *Specialized Competition* and *Diversification*, which captures the liability of newness. In support of our prediction, the interaction effect is negative and significant at a 1% level. A lack of fit between firm product portfolio and the type of competition evokes a higher liability of newness that in turn hinders performance.

Alone, *Specialized Competition* has a negative, significant effect ($p < 0.01$) consistent with Santaló and Becerra (2008). Finally, Model 5 adds the interaction among *Trademark Responsiveness*, *Diversification*, and *Specialized Competition* to test Hypothesis 4. That is, we investigate how much trademark responsiveness contributes to reducing the liability of newness (*Diversification x Specialized Competition*). As expected, the three-way interaction relates positively to performance ($p < 0.01$): A greater liability of newness makes trademark responsiveness a more important strategic tool. In terms of the elasticities of the estimated coefficients in Model 5, we find the following values: *Diversification* about 34%, *Diversification x Trademark Responsiveness* 27%, *Specialized Competition x Diversification* about 15%, and *Diversification x Trademark Responsiveness x Specialized Competition* about 17% (all significant at 1%). Keeping all variables at their means, poor competitive fit thus could decrease performance by about 15%, but firms that choose a trademark responsiveness strategy could respond with a positive 17% bump, significantly recovering from the negative effects of their liability of newness. However, using trademark responsiveness when it is not needed could decrease their performance by about 27%.

As far as the control variables are concerned, *Experience* exerts a positive and significant effect (1% level) on performance, which suggests the presence of learning effects. As expected given the type of industry, firms with higher advertising and R&D expenditures, relative to their competitors, achieve better performance (*Advertising Ratio*, $p < 0.01$, *R&D*, $p < 0.01$), while *Geographic Scope* surprisingly

Table 4
Predicting performance, with and without instruments.

	Model 1 NO IV	Model 2 IV	Model 3 IV	Model 4 IV	Model 5 IV
Diversification	0.55**	0.43**	1.50**	1.22**	0.90**
	[0.10]	[0.07]	[0.20]	[0.15]	[0.14]
Trademark Responsiveness	−0.31	−0.84†	1.03†	0.59	−1.87**
	[0.33]	[0.44]	[0.53]	[0.43]	[0.55]
Specialized Competition	−0.03**	−0.02**	−0.07**	−0.06**	−0.07**
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
Diversification × Trademark Responsiveness	−0.34		−4.61**	−3.24**	−1.72**
	[0.21]		[0.69]	[0.48]	[0.54]
Diversification × Specialized Competition	−0.002			0.009*	−0.085**
	[0.005]			[0.004]	[0.017]
Diversification × Trademark Responsiveness × Specialized competition	0.02†				0.25*
	[0.01]				[0.05]
General Competition	−0.14†	−0.18*	0.22*	0.10	−0.09
	[0.08]	[0.08]	[0.09]	[0.09]	[0.09]
Experience	0.05	−0.17	1.21**	0.85**	0.65**
	[0.10]	[0.11]	[0.25]	[0.17]	[0.17]
Advertising Ratio	0.07**	0.06**	0.05*	0.05*	0.24**
	[0.02]	[0.02]	[0.02]	[0.02]	[0.04]
Size	0.03**	0.05**	−0.04†	−0.01	0.01
	[0.01]	[0.01]	[0.02]	[0.01]	[0.01]
Size²	−18e-05**	−27e-05**	15e-05	2.6e-05	−0.1e-05
	[5.4e-05]	[6.7e-05]	[10e-05]	[7.4e-05]	[7.2e-05]
Brand Value	0.001	0.001	0.008**	0.005**	−0.013**
	[0.002]	[0.002]	[0.002]	[0.001]	[0.004]
Versioning	0.02	0.12	−0.43*	−0.28	0.015
	[0.17]	[0.17]	[0.21]	[0.21]	[0.20]
Geographic Scope	−0.04	0.35	−2.13**	−1.33**	−0.70*
	[0.18]	[0.23]	[0.49]	[0.31]	[0.31]
Cultural Distance Experience	0.29*	0.43**	0.23	0.24	0.41**
	[0.12]	[0.14]	[0.14]	[0.15]	[0.14]
Patents	0.02	0.03†	0.03†	0.03*	0.01
	[0.01]	[0.01]	[0.01]	[0.01]	[0.01]
R&D	0.41**	0.45**	0.11	0.21**	0.26**
	[0.04]	[0.05]	[0.08]	[0.06]	[0.05]
R&D dummy	−0.45	−1.68†	5.10**	3.76**	1.39
	[0.88]	[0.91]	[1.37]	[1.16]	[1.17]
GDP	0.04	0.07	−0.03	−0.02	−0.06
	[0.04]	[0.05]	[0.05]	[0.05]	[0.05]
Consumer Price Index	−0.01	0.06†	−0.40**	−0.27**	−0.14*
	[0.04]	[0.03]	[0.08]	[0.05]	[0.06]
Constant	−5.01	−13.56†	16.69†	9.93	6.44
	[6.37]	[7.38]	[9.36]	[7.96]	[7.77]
Observations	258	258	258	258	258
R-squared	0.86	0.84	0.86	0.86	0.87

Notes: Seasonal and annual effects are included. Heteroskedastic consistent standard errors are in parentheses.
† $p < 0.10$.
* $p < 0.05$.
** $p < 0.01$.

produces a negative sign ($p < 0.01$), implying a potential internalization discount. We interpret this negative effect as a sign of some skeptical feelings among Spanish customers toward international producers, which indeed were mostly perceived as low-cost producers. If foreign companies entered the bottom-end of the market with a low-cost approach, these effects would represent reasonable explanations. This latter argument is also in line with the negative sign of *Brand Value*. Finally, *Patents* when significant has positive effects, stressing the importance of IPRs in this industry; *Cultural Distance Experience* has a positive and significant effect (1% level) on performance, again indicating learning effects.

7. Conclusions

Intellectual Propriety Rights (IPRs) have been always considered as effective tools to appropriate economic returns from innovation (e.g. Teece, 1986; Liebskin, 1996). Although patents have been at the center of investigation; more recently trademarks have been increasingly gained attention as a new measure to assess innovation performance and value (De Faria and Sofka, 2010). This article contributes to the debate on the economic value of trademarks and their strategic use of trademarks by companies and their strategic use and value (Sandnerc and Block, 2011; Mendonça et al., 2004; Ceccagnoli and Jiang, 2013; Gao and Hitt, 2012; Block et al., 2014, 2015). Specifically, it uses an international business scenario (De Faria and Sofka, 2010; Torrisi and Giarratana, 2010) that exploits country-specific variation to identify the impact of different trademark approaches on the corresponding firm performance (Ambos, 2005). Differently from the seminal literature on the internationalization of R&D (e.g. Cantwell, 1992; Chung and Alcacer, 2002; Patel, 1995; Patel and Vega, 1999;) that has adopted predominantly a supply perspective focusing on the role of the R&D subsidiaries and their patenting rate with respect to the headquarter; our work contributes to the understanding of the internationalization of IPRs from a demand-oriented perspective. More precisely, here we focuses on the link between firm performance and foreign market penetration given different types of trademarks exploiting the idea that trademark are IPRs mechanisms embedding a cultural facet, Mendonça et al., (2004).

We apply the I-R paradigm (Barlett and Ghoshal, 1989; Doz and Prahalad, 1991) in an effort to explain how a firm's decision to use a unique trademark across country (integration) or different country-specific trademark (responsiveness) affects the relationships between product diversification and performance in a new foreign country (Hitt et al., 1997; Golovko and Valentini, 2011). Our empirical setting is worth noting: the penetration of non-European car producers into the Spanish market after the tariff reductions that resulted from Spain's entry into the EU. Our results show that trademark responsiveness increases firm performance when firms suffer a high liability of foreignness or newness.

These results contribute to innovation literature, particularly how company can take advantage of protecting innovation via a new emergent measure, like trademarks –. Findings show first that heterogeneity in IPRs strategies can explain the variation of performance of the companies across national boundaries given a portfolio of products. In this respect, when companies exploit their innovative capital in the form of products abroad, firm trademark responsiveness grants managers an effective tool to reduce the impact of different liabilities.

Moreover, trademarks account for historical information about firm names, product niches, countries, trademark life and death dates, and basic characteristics (i.e., words, image, and symbols). Therefore, continued research might enhance trademark information with data about product components, design, distribution, and price, with a more fine-grained classification of integration versus responsiveness. More detailed classifications could adopt, for example, content analyses to differentiate informative versus emotional trademark, as might be pertinent in other industries in which trademarking is not so linked to product attributes (e.g., intangible products).

The findings have implications for practitioners. Trademark protection in specific countries can be a valuable instrument when firms face substantial liabilities of newness and/or foreignness, especially if their promotion activity takes center stage and their R&D outcomes are difficult to modify in the short-term. Because incorporating the cultural narrative of a new country represents a learning process, and it means dealing with local patent offices, top managers would be well advised to prepare their expertise accordingly, perhaps by creating independent trademark taskforces for each foreign country. Recent literature on the strategic use of lobbying with IPRs offices and legislators could be helpful in this respect (Reitzig et al., 2007). A point should be clarified at this stage; as the results of the control variables suggest, our entrants chose a low-end market penetration, rather than pushing for a price-premium strategy. Therefore, trademark responsiveness could also prevent companies from competing exclusively on price, especially crucial for specialized companies. This is a boundary condition of our setting, but in the last ten years, the low cost penetration strategy seems to have characterized different industries (Economist, 2016).

Our study has also important policy implications. Companies competing in European countries have the possibility to register a common trademark valid in all designated countries or several country-specific trademarks valid only inside the focal national market. This means that the presence of a central European office together with national specific ones has an important consequence on the strategic options of the companies. The existence of a common European trademark opens the possibility to exploit fully integration strategies to those companies that suffer low levels of liability of foreignness or newness. For example, for diversified firms, the scale economies derived from trademark were fully possible only in the presence of a unique trademark registration valid across several countries. For specialized companies instead, trademark responsiveness represents an important prerequisite of a successful foreign entry, because these firms are likely to suffer a high liability of foreignness. For these companies, interactions with country-specific offices were most probably highly important. However, also diversified firms in some cases could need to apply trademark responsiveness because of an industrial structure in the host country biased toward specialized competition. In sum, the dual European/national trademark system seems to have provided more strategic flexibility to companies to move successfully their product portfolio across countries. Moreover, the choice of a different policy could have an impact on the industry structure especially if we consider that the competitions depends on the level of barriers to entry that can be represented by a high extent of product portfolio diversification. From our results, it emerges that trademark responsiveness would favor the specialization of product portfolio and thus, market structure would be affected (Shaked and Sutton, 1987).

This study also features some limitations, most of them related to what is also its empirical strength, namely, the particular, ad hoc scenario. Further research could investigate the link between trademarking and diversification more closely. We were agnostic about the economic rationales of firm diversification, which we consider exogenous given the tariff shock; however, a critical driver of diversification results from same-trademark extensions (Wu, 2013). New data could help distinguish the international strategies of diversifiers with or without trademark extension practices, such as considering the decision of diversified firms that only exploit economies of scope at the production level versus those that enjoy synergies at the marketing level.

Trademark responsiveness vs. integration could also be extended outside the European boundaries, using for example the distinction between international WIPO registered trademarks and the trademark registered into the national offices. Therefore, a more general test that adopts a similar approach and apply it to other industries and countries with different characteristics, with a longer time series, may provide better average estimates of the direct and interaction effects of trademark responsiveness and other managerially relevant variables.

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