# IBERIAN MULTINATIONALS DRIVING THE CRISIS RECOVERY

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# PROLOGUE

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It is an honour and pleasure to present you the results of the productive and interesting 10th Iberian International Business Conference (IIBC), which takes place in Spain in September 2014, being hosted by the *Facultad de Economía y Empresa* from the Universidad de Zaragoza.

The main theme is "IBERIAN MULTINATIONALS DRIVING THE CRISIS RECOVERY". We really believe that the Iberian firms and specifically those that have internationalized have played (and continue to play) an important role in the recovery of the Portuguese and Spanish economies. Fortunately, the latest figures and news about those economies are quite positive, but we need to continue working on them.

This conference has provided a privileged forum to discuss this situation along with the recent work on such an important subject. Furthermore, it has allowed us to share our research about other topics related to Foreign Direct Investment and Exporting with regard to both large firms and SMEs, cultural aspects or new ventures among others.

In particular, this book includes 17 papers grouped into 6 parts of general topics:

- ❖ Macroeconomic, Financial and Political Aspects of FDI
- ❖ International Management and Cultural Topics
- ❖ Determinants of Export Performance
- ❖ International Networking
- ❖ SMEs and Exporting
- ❖ New Ventures and Entrepreneurship

These current topics are analyzed from different perspectives such as finance, marketing, economy or management; and also from different research streams or theories and different contexts or countries (authors come from Universities from Portugal -8-, Spain -8-, the United Kingdom -1- and Hungary -1-). All of that leads to enrich the debate and contribute to improve our international knowledge.

On behalf of the Editors team, I would like to express our gratitude to the authors for sharing with all of us their research. I would also like to thank the Universidad de Zaragoza (Spain) and the DGA-FSE (COMPETE Research Group, S125) for its financial support, without which this book would have not been possible.

Finally, we hope that you find this book interesting and a source of inspiration to new studies that help to improve our internationalization knowledge.

Marisa Ramírez-Alesón
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Zaragoza, September 2014

# PART 1:   MACROECONOMIC, FINANCIAL AND POLITICAL ASPECTS OF FDI

# ON THE EFFICIENCY OF INTERNATIONALIZATION: HOW DO CORPORATIONS PERCEIVE BARRIERS TO DIRECT INVESTMENT ABROAD?

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## Abstract

This paper intends to develop a framework to better understand how corporations perceive the barriers to foreign direct investment. The approach followed still needs to be matured, since the empirical test of the model is still preliminary. International business (IB) theory highlights the differences between home country and host country and perceptions on the part of managers. Drawing from Hymer and building on IB literature, we developed a model in which companies' in-house endowments (resources and capabilities)
and market power, together with the use of external support incentives provided by the home and host country during the process of internationalization impinge upon companies' perception of barriers to direct investment abroad. This, in turn, is expected to influence the amount of direct investment abroad. .. Analysing a sample of foreign expansions through direct investments by Portuguese companies, our preliminary results corroborate the hypothesis that the corporations' endowment has a negative impact on perceived strength of barriers. Similarly, market power is found to reduce the perception of barriers, However, the role of public support incentives, supposedly applied to overcome the barriers, relates negatively with the strength of barriers. This suggests that it is likely that public internationalization support incentives apparently are used under a logic that differs from the objective of overcoming the difficulties
resulting of the perception of barriers. This will, however, require further work, in
order to investigate the rationale for using such incentives as well as its relationship to the perception of barriers to invest abroad.

**Keywords:** foreign direct investment; barrier; difficulty; distance; perception; public support.

**JEL:** F21; F23; H23.

# THE EFFECT OF BITS ON FDI INFLOWS. A HYSTERESIS MODERATOR FACTOR

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## Abstract

The FDI decision implies high sunk costs which creates a hysteresis problem. From the conceptual framework proposed by Dixit (1989) we analyzed the effect BITs on this hysteresis process. It has been verified that it is necessary that economy will reach a minimum level of institutional development so that the BIT can be have a positive effect on inflow FDI. This effect is moderated by country-of-origin FDI agglomeration.

**Keywords:** BITs; FDI; Institutional Development; Hysteresis; Real Options.

**JEL:** F21; F23.

# 1. Introduction

A large number of bilateral investment agreements have been signed in the last two decades. According to UNCTAD information on its latest report on global investment (World Investment Report 2013), the total number of BITs signed in the world in 2012 was 2857. However, in 2011-2012 period, only 20 new agreements were signed. In fact, most of these agreements were signed in the 90s.

In recent years, in an economic recovery framework, countries' interest on those variables which influential in economic growth have increased, as foreign trade and FDI, could help offset the loss of domestic demand. According to this assumption, it seems important to identify those factors which may be determinants of FDI inflows.

The localization factors of FDI inflows have been analyzed from different perspectives. The contributions of neoclassical model are based on different endowment of production factors. However, the fact of not considering transaction costs and market failure severely limits the explanatory power of such models (Lucas, 1993). The International Business contributions have identified the so-called traditional localization factors, such as market potential and size, economic stability and relative factor endowments (Caves, 1974; Dunning, 1980). The New Trade Theory develops the concepts and economic implications of vertical and horizontal FDI (Helpman, 1984; Markusen, 1984; Krugman & Venables, 1995). Economists and management scholars have found that these economic factors may provide only a partial explanation, and that we should focus more attention on the influence of institutions (Charkrabarti, 2001; Henisz, 2000; Jensen, 2003; North, 1990; Mudambi & Navarra, 2002; Pajunen, 2008; Rodrik et al., 2004).

The institutional theory differences the effects on inflow FDI of policy variables (Rodrik et al. 2004), legal framework (Busse & Hefeker, 2007), corruption, political stability, labor regulation, justice and judicial system in a society, political rights and civil liberties, security of property rights, taxation policies[1]. In this sense, Pajunen (2008) suggests that "in general, institutions seem to have an influence on FDI […], but we have limited and fairly inconsistent knowledge of which institutions and what kinds of

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[1] Pajunen (2008) makes an appropiate revision of contradictions that are presented in the empirical evidence available, besides, he analyzes complex relationships of underlying causality between the institutional framework and the FDI entry.

institution (i.e., causal factors) attract or do not attract the long-term investments of MNEs (i.e., outcome)".

In this context, the goal of governments should be focused on the improvement of its location factors. Certain policies or international agreements can contribute to make investment more attractive to foreign investors. Improving its institutional framework, host countries can reduce the risk linked to investment on its territories. This risk, related to expropriation or political and legal uncertainty, becomes one of the key points for countries trying to attract FDI. Precisely, due to this reason, Bilateral Investment Treatments (BITs) were created. The signature of this kind of agreement, which implies legal protection of foreign investors in host country, could be seen as a solution for countries with high levels of risk.

However, this relationship between BITs and FDI inflows is unclear in the empirical evidence. As there is evidence of a significant positive relationship between bilateral FDI flows (Neumayer and Spess, 2005; Banga, 2003; Swenson, 2005; Guerin 2011), there is also a part of the literature which found no significance of BITs or even, in high levels of political risk, a negative effect on FDI inflows.

Moreover, there is also empiric evidence which shows BITs as a complementary instrument of institutions, without being significant by themselves (Hallward-Driemeier, 2003). This result may imply that the positive effect of BITs on FDI inflows could be conditioned by the host country's institutional framework.

This paper examines this relationship from the point of view of regulation quality. We propose that the effect of BIT on FDI inflows could be largely conditioned by the regulation quality offered by host country. From the model of Dixit (1989) we propose that the BIT, under some institutional circumstances, reduces the hysteresis of FDI decision. If the country reaches a minimum institutional development the BIT should increase the FDI inflows. However, if the country does not reach this institutional level, the BIT can reduce the barriers of capital mobility thereby facilitating the divestment of MNCs.

According to this proposal, a sample of flows sent by 4 developed countries to 119 developing host countries for a period of 15 years (1996-2011) was created, based on data provided by UNCTAD, OECD and the World Bank. FDI flows by country pairs

was the dependent variable. The effect of BIT has been controlled with a dummy variable.

To resolve the endogeneity problems, common in FDI determinant's analysis, we opted for the generalized method of moments (GMM) estimation. Moreover, we used threshold regression to test the proposed nonlinearity between regulation quality and the effect of BITs. Finally, in order to analysis the moderating effect of country-of-origin FDI agglomeration we used the quantile regression.

The obtained results show that BITs not have a linear impact on FDI. Additionally, the results with threshold regression revealed that the effect of BITs was conditioned by the level of regulation quality observed in host country. We found evidence about the existence of a minimum level of regulation quality for the BITs to have a positive effect on FDI. Also, we have verified country-of-origin FDI agglomeration is a necessary condition for the BIT to have a positive effect on FDI flows. Moreover, the confidence generated by country-of-origin FDI agglomeration can remove the effect of BITs on FDI inflows. Also, for countries with low institutional development the BIT reduces the FDI inflows, since enhances the capital mobility.

The structure of this paper is the following: first a brief overview about the definition and the scope of these agreements will be discussed; then a review of literature that captures this relationship between BITs and foreign investment will be presented. Subsequently, the methodology and sample used is warranted. Finally, the results are described and the conclusions reached are presented.

## 2. A review of literature

Investing in a foreign country means to immobilize financial resources in the long run, to the risk taken for investing abroad also must be added the exchange rate risk and country risk. The latter goes up when the investment is made in a low developed country and it is remarkable that politic risk also takes special relevance (Benácek et al., 2014; Busse and Hefeker, 2007; Nordal, 2001; Sánchez-Martín et al., 2014). 'Political risk can be associated with exposure to losses due to man-made institutional constraints that discriminate among economic agents, striking a bias in the allocation of resources. Thus, it is a factor that acts beyond traditional economics as an interference of political institutions in market-based economies' (Benácek et al., 2014). Surveys to managers

confirm that institutional development is a relevant factor in location decisions (Harms, 2002). However, the empirical evidence provides mixed results (Benácek et al., 2014).

The FDI involves taking the investment irreversibility this problem deepens when there may be limitations to capital mobility (Pyndick 1991; Li and Rugman; 2007). Bilateral investment treatments (BITs) are reciprocal agreements which are composed of a series of measures and provisions for the protection and promotion of foreign direct investment between two countries. Outstandingly, these agreements are based on a post-establishment protection, ie, the investor is protected in his operations once established. These agreements provide a double benefit. First, an appropriate security environment to foreign investors is created. Furthermore, the signing of such an agreement provides gain competitiveness to attract foreign investment flows (Banga, 2003; Spess and Neumayer, 2005; Swenson, 2005; Guerin 2011).

The BIT can be seen as political risk coverage instrument. A review of the available empirical evidence related to the impact of BITs on FDI inflows it is not conclusive. Although there is evidence about a significant and positive influence of bilateral agreements on FDI flows (Banga, 2003; Neumayer and Spess , 2005; Swenson, 2005; Guerin 2011); is also true that there are evidences of a non-significant an even negative relationship between these two variables (Tobin and Ackerman, 2005; Hallward-Driemeier, 2003). Additionally, the result of the agreements may be different depending on the source country with which the agreement is signed, as it is shown in Banga (2003), where the BITS are only significant when they are signed with developed countries or in the case of Salacuse and Sullivan (2005), which shows a greater impact of BITs signed with USA.

The results obtained by Hallward-Driemeier (2003) show that the impact of BITs could be conditioned by the existence of previous regulatory framework. The author found that only the interactions of governance indices with BITs have a positive effect on FDI flows. In the same way, Tobin and Ackerman (2005), decomposing the political risk into levels, showed that the impact of the BIT is only positive and significant for countries with low levels of political risk, nevertheless, those with high levels of risk obtained a negative effect of BIT on FDI flows. BIT's efficiency will be largely conditioned by host country's institutional quality. Taking into account the results obtained above, we propose that there may exist a minimal institutional quality ($i^*$) in order to make the BITs be significant over the political risk perception.

The work of Benácek et al. (2014) confirms that institutional development has ability to attract FDI in these countries which are low developed, however, it loses its relevance when, instead of low developed countries, we analyze developed. The homogeneity and institutional stability reduce the politic risk considerably. For that reason we propose the introduction of a new threshold ($i^{**}$) in which BIT has not any incidence over politic risk. As a summary, we can show our proposal by the following way, reflecting the impact of a BIT over the risk related to a specific location:

$$\frac{d\sigma}{db} = \begin{cases} si\ i \leq i^* \to \dfrac{d\sigma}{db} = 0 \\ si\ i^{**} \geq i > i^* \to \dfrac{d\sigma}{db} < 0 \ (1) \\ si\ i > i^{**} \to \dfrac{d\sigma}{db} = 0 \end{cases}$$

Where $b$ represents the existence of a BIT, $\sigma$ is the risk associated to an investment abroad, $i$ means the level of institutional development, $i^*$ shows the minimum level of institutional development to allow the BIT to reduce politic risk, $i^{**}$ is the level of institutional development from which politic risk stops being relevant.

The irreversibility of FDI leads to a sunk cost which generates a situation of hysteresis. Basing on Dixit's model (1989)[4] we are going to analyze the effect of BIT on FDI inflows. Assuming that in each moment of time a company has the option to entry, remain or leave the market. Thus, a company should invest in a particular location if the following condition holds:

$$\int_0^\infty (P_t - w)e^{-\rho t}dt = \frac{P_0}{\rho - \mu} - \frac{w}{\rho} \geq k \ \ (2)$$

Where $P_t$ is the selling price of the good at time t, $\mu$ is the drift of prices which shows the market potential, $w$ represents the costs of the goods, $\rho$ is the discount rate and $k$ is the initial investment. The only stochastic variable that is considered is the behavior of prices, which describes a Brownian's motion $\frac{dP}{P} = \mu dt + \sigma dz$, being $dz$ a Wiener's process and $\sigma$ the volatility of prices, which also can be defined as the risk of the investment.

According to equation (1) a company invests when prices reach $P_{WH}$ level, obviously achieving that price implies an economic and institutional development of the host

country. In that sense, Dixit (1989) proposes the option to put the investment off reaching the following equation:

$$\frac{P_H}{\rho - \mu} - \frac{w}{\rho} - \frac{P_H}{(\rho - \mu) \times \beta(\sigma)} = k \quad (3)$$

Being $P_H$ the critical value of price that triggers entry, $\beta(\sigma)$ is a known function of $\sigma$ volatility framework or taken risk.

Therefore, high level of country risk rises the option's value for postponing the investment and increases entry's threshold $P_H$, being $P_H > P_{WH}$. Due to the previous result, even if there were many location advantages, companies would prefer to delay their investment waiting for a decrease of the uncertainty. If we considered that $\sigma$ encompasses political risk, among other factors, an increase of it would reduce FDI entry.

If we consider the losses that a company must face if it leaves the country $(l)$, the company should leave it if the following equation holds:

$$\int_0^\infty (P_t - w)e^{-\rho t}dt = \frac{P_0}{\rho - \mu} - \frac{w}{\rho} \geq -l \quad (4)$$

Thereby, if prices fall until a $P_{WL}$ level complying with the equation from above, the company should take over the losses and leave the country. Nevertheless, we may assess the possibility for recovering, if prices go up again avoiding losses during the next economic period. Thus, if we introduce another option, which is waiting and seeing what happen with prices, we will obtain the following expression:

$$\frac{P_L}{\rho - \mu} - \frac{w}{\rho} + \frac{P_L}{(\rho - \mu) \times \propto (\sigma)} = -l \quad (3)$$

Where $P_L$ is the critical value of triggers abandonment, $\propto (\sigma)$ is a known fuction of $\sigma$ economic and instititional environment volatility, $l$ is the value of the loss in the case the company decides to leave the country. Logically, $P_L < P_{WL}$, but the higher difference between each other the grater will be the uncertainty of the environment. In other words, taking into consideration of implicit real options of a FDI project amplifies the hysteresis, then, the higher the uncertainty the greater the hysteresis. .

BIT effect over country risk is influenced by the level of institutional development (i), thus, if the country is inside the interval $(i^*, i^{**})$ a reduction of political risk will take place. The impact on tigger prices is opposed. On the one hand, a lower volatility

decreases the value of the waiting option and the price that triggers entry $P'_H$ will help FDI entry. On the other hand, the of dropping out the country also gets down that provokes a reduction in triggers abandonment $P'_L$, thus, the exit of the FDI will be facilitated. Therefore, the BIT makes a hysteresis reduction at business level or micro-hysteresis (See Figure 2). Nevertheless, we should compute the effect of the BIT at macroeconomic level.

**Figure 1: BIT effect on micro-hysteresis if the level of institutional development is inside the interval $(i^*, i^{**})$.**
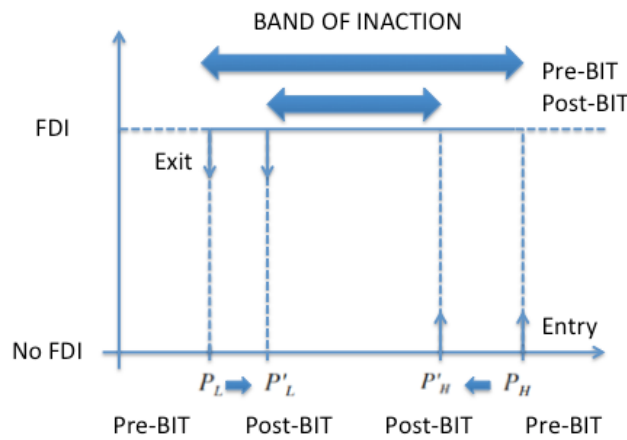


Source: Adaptation from Belke and Göcke (2005)

The firm heterogeneity causes an aggregation problem when we analyze the effect of micro-hysteresis reduction at macroeconomic level (Amable et al., 1995; Belke and Göcke, 2005; Cross, 1993). Each company takes different sunk costs $(k_j)$, production costs $(w_j)$ and exit costs $(l_j)$. Therefore, we have different thresholds for decision to entry and exit of a foreign country.

According to Belke and Göcke (2005), Figure 2 shows a graph in which the horizontal axis represents the price that triggers entry $P_H$ and the vertical axis represents the price that triggers abandonment $P'_L$. Each company is characterized by this ratio $\frac{P_L}{P_W}$, thus, all potential companies will be addressed above the bisector which show the absence of hysteresis $(P_L = P_W)$, the shaded area is the set of EMN that have invested in the country $(S^+)$ for a certain level of prices $P_0$. Specifically, Figure 2a picks these companies which decide to invest in a country without taking into account its implicit

real options for FDI. . The consideration of waiting options rises micro-hysteresis in the same proportion for all firms $\left(\frac{1}{\left(1-\frac{1}{\beta(\sigma)}\right)}\right)^2$. Graphically, this would imply a reduction of the investing companies' number and as a result, a new line should be traced in parallel to the bisector (See Figure 2b).

If the host country of the FDI has achieved a suitable level of development the presence of the BITs reduces the micro-hysteresis because political risk $\downarrow \sigma$ as well as the value of the options also decreases, thus, this would be traduced graphically into an increase of number of companies that decide to invest in the country, in other words, the bisector moves in parallel to the right. (See Figure 2b)

**Figure 2: BIT effect on micro-hysteresis if the level of institutional development is inside the interval $(i^*, i^{**})$.**

a) Without uncertainty



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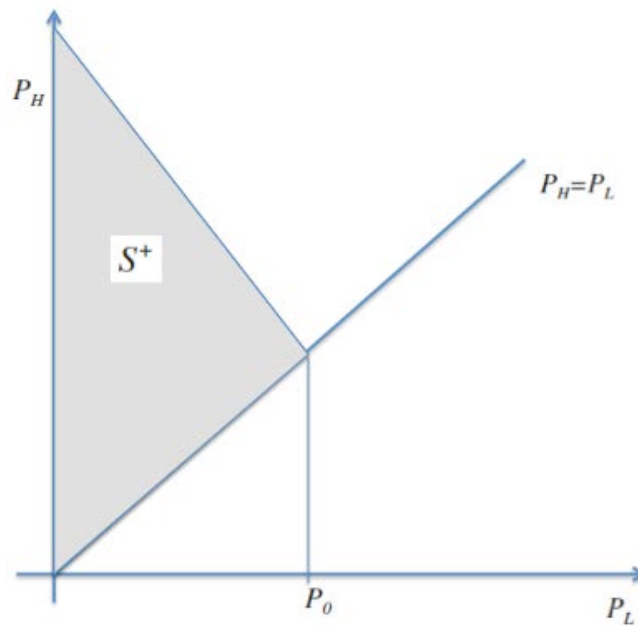
[5] From equation 2 and equation 4 it is deducible that $P_H = \frac{P_{WH}}{\left(1-\frac{1}{\beta(\sigma)}\right)}$ and that $P_L = \frac{P_{WL}}{\left(1-\frac{1}{\alpha(\sigma)}\right)}$, respectively.

b) After introducing uncertainty
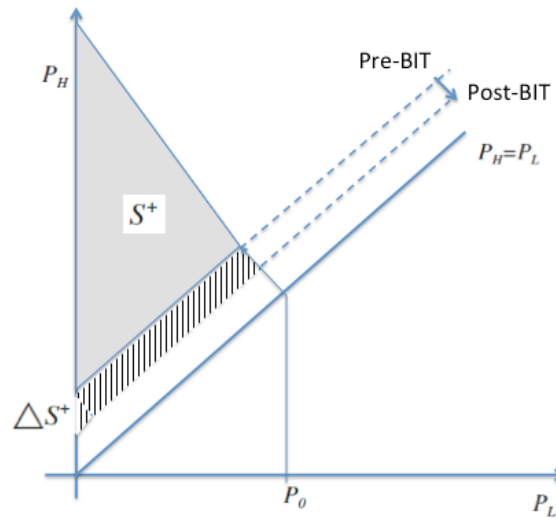


Source: Adaptation from Belke and Göcke (2005)

BIT signaling also has an impact on the exit of FDI, because it gets down the value of the waiting option. The BIT also has an impact on the exit decision of MNC, as it reduces the option value of waiting-and-see in the divestment decision.  v. In addition, these agreements have a specific section dedicated to reduce the limitations on capital mobility. Reducing exit costs should cause an increase in equity outflows derived of profit repatriation or divestitures.

The existence of country-of-origin FDI agglomeration reveals the presence of observable or unobservable location advantages. We can also consider the country-of-origin FDI agglomeration reduce the liability of outsidership, because facilitates access to contextual knowledge[3] (Johanson and Vahlne, 2009). When a company perceived political risk is more valuable knowledge offered by country-of-origin FDI agglomeration (Tan and Meyer, 2011). We therefore propose that the presence of FDI influences the BIT's effect. In a country with a high political risk, a minimum country-of-origin FDI agglomeration is necessary so that the BIT can effect in hysteresis. Overtaken this threshold, the country-of-origin FDI agglomeration and BIT are complementary both reinforce the localization advantage. However, the country-of-origin FDI agglomeration reduces the effects of political risk, this would diminish the need of BITs as a trust generator factor. Therefore, we propose that from a country-of-origin FDI level the BITs would cease to have effect on FDI flows.

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[3] The local knowledge is tacit nature (Lord and Ranft, 2000;Tan and Meyer, 2011).

Summarizing, our main goal it is to consider the different effect that the BITs could have, as determinant of FDI inflows to developing countries, considering that this effect could be conditioned by two factors: the regulatory quality and country-of-origin FDI.

## 3. Data and variables

To determine the sample it seems relevant to maintain a balance between the scope and the heterogeneity. The sample must be large enough to facilitate the results' generalization; however, at the same time, it should try to avoid excessive heterogeneity. The selection of source countries was performed according to certain criteria as the volume and sectoral diversification of FDI flows and the number of BITs signed with developing countries.

A high volume of FDI allows us to avoid one of the main problems when FDI flows to less developed countries (LDCs) are analyzed: the strong temporal concentration, which in many cases is due to specific projects. Geographic diversification facilitates the incorporation in the sample of a sufficiently large number of LDCs. Moreover, a large number of BITS facilitates the generalization of results.

The selected source countries were Germany, France, United Kingdom and the Netherlands. They have a long list of bilateral agreements, as well as, showing generally a position as emitters of investment. These all are countries with highest GDPs in the world and they all belong to the European Union.

Configuration of host countries' sample is crucial for the generalization of results. Only LDCs, whose level of institutional development was lower and the role of BITs was increasingly important as an instrument of protection, were chosen.

The criterion used was the regulation quality index provided by World Bank. Only host countries, where the institutional level has a low rating. (-2.5, 1.5), were included in sample. We have excluded all those countries that could be considered tax havens, where the FDI obey purely to fiscal reasons. The sample is composed of 4 OECD source countries and 119 host developing countries.

The endogenous variable is FDI flows from developed to LDCs, which has been obtained from the OECD's database (OECD iLibrary). FDI flows are expressed in millions of U.S. dollars, and the time period selected was from 1996 to 2011 where most of the variables had available data.

Since the main objective of the study is to analyze the effect of BITs may have on FDI flows, it is important to have a variable that faithfully captures the impact by pairs of countries. One of the explanatory variables more used in literature to capture the effect of BITs is the number of agreements that host countries have (Hallward-Driemeier, 2003; Swenson 2005; Neumayer and Spess, 2004; Tobin and Ackerman, 2005). However if country A wants to invest in country B, would be relevant the agreement signed between A and B and not the agreements signed by B with third countries, which is not setting a correct interpretation of the effect of BIT on the flow between two pairs of countries. Therefore, we created a dummy variable which took the value 0 for the years prior to the signing of the agreement and value 1 from the year of the signature and beyond.

To create this variable, we used the information provided by UNCTAD in its International Investment Agreements Database to identify the agreements signed by the 4 source countries and LDCs. Thus, a total of 335 agreements were included in the sample (Germany 104, United Kingdom 74, France 80 and The Netherlands 77). It is noteworthy that not all agreements formalized by our source countries have been included, since some of these agreements were signed with countries that were not part of our sample.

The main purpose of this paper is to analyze the role of institutional quality as a moderator variable of the impact of the BITs' signing on FDI inflows[4]. Governance indices developed by the World Bank (WorldWide Governance Indicators) were used to appraise the institutional development. From the 6 indices (Government Effectiveness, Regulatory Quality, Rule of Law, Voice and Accountability, Political Stability and Absence of Violence and Corruption Control) we decided on the index of Regulation Quality.[5] This index is an assessment of the government's competence to develop and to implement policies [6] which promote private sector. It takes values between -2.5 to 2.5; representing -2.5 a low regulatory quality and 2.5 high regulatory quality.

Moreover, to capture effectively the result of the BIT on investment flows to host countries in the sample collected, it seems necessary to control the location advantages

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[4] The empirical evidence shows its relevance as location advantage. (Biswas, 2002; Benassy et al, 2007 and Katsaisti and Doulos, 2009)

[5] Similar indices are used by Hallward-Driemeier (2003) and Salacuse and Sullivan (2005).

[6] In detail, the type of policies evaluated are the following: the existence of unfair competition, price controls, discriminatory tariffs , excessive protection , discriminatory taxes , ease of starting a new business, the effectiveness of antitrust policy, investment freedom , financial freedom, etc.

they offer. Control variables used for this analysis are based on location advantages identified by empirical evidence. Description, source and bibliographic references of these variables are given in Table 4 appendix 1.

Moreover, most of the indicators for political risk, institutional development and other endogenous variables are fairly strongly related to income (GNI) per capita (Busse and Hefeker 2007). 'It is an interesting finding implying that economic underdevelopment is reflected in institutional underdevelopment (and vice versa). The interaction between economics and institutions as a sort of circular causality is a form of natural endogeneity of development in the real world.[…] The initial cointegration in our data was so great in one case that even after dropping GDP per capita, we could presume that this variable was implicitly present by means of its functionally allied 'manifest' variables, which would be theoretically justified' (Benácek et al., 2014).

## 4. Methodology

The aim of this paper is to study the impact of the bilateral investment treatments in FDI made by four developed countries in 119 LDCs. Forming a Panel Data, the general specification is as follows:

$$Y_{ijt} = \beta_0 + \beta_1 BITS_{ijt} + \beta_2 X_{it} + \varepsilon_{ijt} \tag{4}$$

Where $Y_{ijt}$ is the endogenous variable representing the flow of FDI received by host country $i$ from the source country $j$ at time $t$. $BITS_{ijt}$, is a dummy variable which takes the value 0 for the years prior to the signing of the agreement between $i$ and $j$ and value 1 from the year of the signature and beyond, $X_{it}$, represents control variables and $\varepsilon_{ijt}$ is the error term.

The analysis of the FDI flows' determinants is well-known by several methodological concerns that should be considered for a correct estimation of our models. We identified two methodological problems: first is the presence of endogeneity problems and second the possible nonlinear relationship between the effect of BITs and FDI flows.

Empirical evidence considers also the existence of an endogeneity problem due to the bilateral relationship between BITs and FDI. On the one hand, as it is explained in Swenson (2005), previous FDI flow can be influential in signing a BIT, which implies a potential selection bias. Thus, BITs would be signed as a result of pressure from foreign investors who have interest in a particular country where they have made a significant

investment. On the other hand, host countries with high regulatory risk could use BITs as an instrument to encourage foreign investment. Thus, we have to consider if greater investment flows explain the existence of these BITs or the existence of them causes an increase in FDI flows.

Roodman (2009) notes that the use of the GMM estimator, used to control the effects of endogeneity, has increased significantly in recent years[7] (Holtz-Eakin et al., 1988; Arellano and Bond, 1991; Arellano and Bover, 1995; Blundell and Bond, 1998). We can mention two reasons for this strong growth:

1. The GMM estimator provides important concerns in the model, for example, controlling the fixed effects and repressors' endogeneity. Thus, a possible bias in dynamic panels is avoided. (Nickell, 1981).
2. GMM estimation can control specific problems arising from unbalanced panels and multiple endogenous variables.

However, a tradeoff problem arises between OLS estimation with variables in differences and GMM. The solution implies using the two methods of estimation and verifying the existence of differences; if such differences are found, the best method of estimation is GMM (Tauchen (1986), Altonji and Segal (1996), Ziliak (1997), Bowsher (2002) and Roodman (2009).

We have verified the existence of the causal link, since the variable representing the BITs is a binary variable. Although the alternative to solve the above described problems of causality is estimating the coefficients by GMM, in this paper we have carried out, a priori, a Probit model that will help us control the existence of endogeneity. The expression is as follows:

$$PBITs_{ijt} = Prob\left(y_i = 1 \middle| \begin{array}{c} \beta_1 \, FDI_{it-1} + \beta_2 \, EX_{RATE_{it}} + \beta_3 \, INFLA_{it-1} \\ +\beta_4 \, INF_{it-1} + \beta_5 \, REG.QUA_{it-1} + \beta_6 \, GDP_{GR_{HOST_{it-1}}} \\ +\beta_7 \, OILPRO_{it-1} + \varepsilon_{ijt} \end{array}\right)(5)$$

Where $PBITs_{ijt}$ is the propensity of BIT's signature. The endogenous variable is $PBITs_{ijt}$ and the exogenous variables are (CITAS): $FDI_{it-1}$, represents the previous FDI inflows; $EX.RATE_{it}$ exchange rate, $INF_{it-1}$ inflation rate; $REG.QUA_{it-1}$

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7 See Roodman (2009) pp. 136. Figure 1 "Citations *of Arellano and Bond (1991) and Blundell and Bond (1998) per year, 1991–2006*"

regulation quality; GDP growth (anual %) and $OILPRO_{it-1}$, representing energy production. $\varepsilon_{ijt}$ is the error term.

According to probit model's results, only inflation and regulatory quality appeared significant to BITs signature (see Table 3 appendix 1). The regulatory quality reduces the propensity to Bits' signature; therefore these agreements are mainly signed with low regulatory quality countries. Previous FDI inflows are not a BIT's determinant, hence the potential selection bias is lessened and also the endogeneity problem.

The proposed non-linearity relationship is based on Tobin and Ackerman (2005). These authors show that the effect of BIT on FDI flows may be different depending on the risk linked to investing in that country. It is noted that in countries with a higher level of risk, BITs have a lower or even a negative impact on investment flows they receive from other developed countries. As the level of risk decreases, the impact of BITs on FDI flows is more significant.

Thus, it is necessary to consider a non-linear relationship between signing BITs and FDI flows, since the impact of the BIT on the flow of investment can be different depending on the level of risk or, in our case, the level of institutional or regulatory quality. That is, there may be a level of regulatory quality which makes more sense to sign a BIT and therefore signing these BITs have effect only for certain countries with certain level of regulatory quality.

The econometric method most suited to represent this relationship is nonlinear Threshold Estimation by Hansen (2000). With this technique, we can identify what level of institutional quality, BIT may have more impact on FDI flows.

## 4.1. Threshold estimation:

Hansen's proposal comes from the specification of Tong's model (Tong, 1983; 1990) known as the Threshold Autoregressive model (TAR), in which nonlinearities are handled through the identification of the threshold values defining the groups. Other models in this line are the exponential AR (EXPAR) model of Haggan and Ozaki (1981) and the smooth transition AR (STAR) model of Granger and Teräsvirta (1993).

Thus, we use this methodology to identify sets of countries, in our case by the level of institutional quality, that have a homogeneous behavior within the group but differentiated from the other groups. For this it is necessary to identify a vector with $\alpha$ significance thresholds to segment the sample.

The specification of our model is:

$$FDI_{ijt} = \beta_0 + \beta_1' X_{it-1} + \gamma_l' BITS_{ijt}\, I(REG.QUA_{it-1} \geq \alpha)$$
$$+ \gamma_2' BITS_{ijt}\, I(REG.QUA_{it-1} < \alpha) + \mu_{ijt} \qquad (6)$$

Where $FDI_{ijt}$ is foreign direct investment received by recipient countries $i$ the issuing country $j$ at time $t$; $X_{it}$ is a vector that collects the control variables; $I(.)$ is the indicator function; $BITS_{ijt}$ is a dummy variable that takes value 1 if there has been a bilateral agreement at time $t$, and 0 otherwise; $REG.QUA_{it-1}$ regulatory quality is the host country of FDI; $\alpha$ is the vector of n threshold, and $\mu_{it}$ is the error term.

If we don't incorporate the thresholds, the condition of linearity and, therefore, the parameters estimated with *OLS* are not efficient. If we incorporate a threshold, $\alpha_0$, we divide the sample in two groups based on the Bilateral Investment Treatments signed by countries. However, we don't know if $\alpha_0$ resolves the problem of heterogeneity, and as such if the estimation with *OLS* minimizes the errors to the square $\{S_n[\hat{\beta}(\alpha_0), \hat{\gamma}(\alpha_0)]\}$. If we add, step by step, the distinct values of BITs $(\alpha_i)$, we can identify the $\alpha_i$ that generates minimums in the sum of the square's errors. That is to say, we will look for the following thresholds:

$$\hat{\alpha} = \arg\min_{\alpha} S(\alpha) \qquad (7)$$

Having identified the possible thresholds, we need to determine how many $\alpha$ we should incorporate into Eq. (03). To this end, we propose the following null hypothesis: $H_0: \gamma_1 = \gamma_2$.

In accordance with the contrast method developed by Hansen (1996, 2000), we propose three steps to contrast the null hypothesis and determine the adequate number of thresholds:

*First*. Estimate the threshold model Eq. (03), and use the errors $(\hat{\mu}_{ijt})$ to obtain the Lagrange Multiplier (LM) test statistic under the null hypothesis of no threshold effects, the result we designate $LM^*$.

*Second*. Estimate a panel data model with fixed threshold effects without restrictions, with the following linear equation:

$$Logs\, FDI'_{ijt} = \beta_0 + \beta_1' X_{it-1} + \gamma_1' BITs_{ijt-1} + \mu_{ijt}' \qquad (8)$$

where $\mu_{it}^{'}$ permits us to obtain the Lagrange multiplier (LM) test statistic under the null hypothesis of no threshold affects, the result we designate $LM^{'}$.

*Third.* Through the bootstrapping technique[8] and repeating steps one and two, we generate the statistics $LM^{'}$ and $LM^{*}$.

To reject the null hypothesis $H_0: \gamma_1 = \gamma_2$ means to confirm that $LM^{'} > LM^{*}$; for this, the Likelihood Ratio Test (LR)[9] is used:

$$LR_n(\alpha) = n \frac{S_n(\alpha) - S_n(\hat{\alpha})}{S_n(\hat{\alpha})} \qquad (4)$$

We repeat the procedure, progressively incorporating additional thresholds until the LR Test ceases to be significant. However, in the threshold model $LR_n(\alpha)$ is not distributed as a chi-square; for this Hansen (2000) derives the function of adequate distribution. The homoscedasticity has been verified according to the procedure developed by Hansen (2000).

### 4.2. Quantile Regression:

It is important to consider the dispersion of FDI flows as a variable of analysis, since, unlike others, it depends on a lot of factors and not generate a constant flow between the two countries. In other words, that there is even evidence that foreign investment has made in developing countries, this entry might be a particular investment or isolated case. Moreover, by separating the total flow between the two countries, it would be seen a heavy concentration of FDI in a few specific projects, which reflects individual determinants that are difficult to control with macroeconomic variables. Therefore, in this work atypical control is especially relevant.

Thus, we estimate if a particular point or level of foreign direct investment from which BITs contribute to boost FDI flows. Since the OLS estimator provides an approximation of the mean function of the conditional distribution of the dependent variable, it does not provide a complete picture of the true underlying behavior of the distribution.

Quantile regression is based on the segmentation of the sample by using a quantile or put another way, a value b of the sample above stop ($\theta$) and below (*1- $\theta$*) the same proportion of observations. There segmentation in different quantile regression, where the quantile itself that differentiates regression. Quantile regression is the most

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[8] A bootstrap with 1000 distinct samples has been used.
[9] The estimation of the LR statistic demands an asymptotic behavior of the LM estimates

commonly used segmented Quartile divides the sample into four identical parts. Moreover, we can find the deciles that divide the sample into ten; centiles or percentiles that consist of one hundred. In this line, highlight a type of quantile regression is the "medium" that divides the sample into two and corresponds to the second quartile and the fiftieth percentile[10] (Koenker and Basset, 1978; Girma and Wakelin, 2007).

To do this, we employ the quantile regression technique introduced by Koenker and Bassett (1978). Denoting the vector of regressors in Eq. (5) by Z, the quantile regression model can be written as:

$$FDI_{ijt} = Z_{it}\beta_\theta + \mu_{\theta ijt}, \quad Quant_\theta\big(FDI_{ijt}\big|Z_{it}\big) = Z_{it}\beta_\theta \tag{5}$$

Where $Quant_\theta\big(FDI_{ijt}\big|Z_{it}\big)$ denotes the conditional quantile of $FDI_{ijt}$ and $Z_{it}$ is a matrix of control variables[11]. The distribution of the error term $\mu_{\theta ijt}$ is left unspecified, so the estimation method is essentially semiparametric[12]. The $\theta^{th}$ quantile regression, $0 < \theta < 1$, solves:

$$\underset{\beta}{Min} \quad \frac{1}{n}\left\{\sum_{i,j,t:\,FDI\geq Z'\beta} \theta\big(FDI_{ijt} - Z_{it}\beta\big) + \sum_{i,j,t:\,FDI\geq Z'\beta} 1 - \theta\big(FDI_{ijt} - Z_{it}\beta\big)\right\} \tag{5}$$

Thus, quantile regressions allow us to focus attention on specific parts of the FDI distribution, and help us identify the number of percentiles of FDI. This is an important question, since different responses to FDI may be expected from BITs at different points of the FDI distribution.

Since the sample set contains a finite number of observations, only a finite number of quantiles are distinct. In this paper, we consider regression estimates at ten different quantiles, to 50th (median) percentiles of the FDI distribution.

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[10] La especificación más simple de la regresión cuantílica es:

$$\underset{b\,\in\,R}{Min}\left[\sum_{Y_i\geq b} \theta|Y_i - b| + \sum_{Y_i\leq b}(1 - \theta)|Y_i\right.$$

where the value of $b$ left an equal proportion above ($\theta$) and below (1- $\theta$), being $\theta$ a value between 0 and 1 for the quantile estimated.

[11] GDP growth in source country, Inflation.CPI, Real effective exchange rate, Log. Energy production, Trade openness, Regulation quality and the Bits – threshold.

[12] See Buchinsky (1998) for an overview of quantile regression models.

## 5. Estimation Results

### 5.1 GMM estimates

The results from the three specifications suggested in this paper are presented in Table 1. In the first column the impact of BITs on FDI inflows is analyzed, in the second one interaction of BITs with regulatory quality is included and in the third one the threshold estimation is shown.

**Table 1**: **GMM estimation.**

|  | (1) | (2) | (3) |
|---|---|---|---|
| C | 6.462*** | 6.468*** | 6.464*** |
|  | (0.067) | (0.000) | (0.067) |
| LNFDI(-1) | 0.274*** | 0.274*** | 0.274*** |
|  | (0.007) | (0.000) | (0.007) |
| BITS | 0.000 | -0.003 |  |
|  | (0.000) | (0.003) |  |
| TCEXCHANGE_RATE | 0.007*** | 0.007*** | 0.007*** |
|  | (0.002) | (0.002) | (0.001) |
| INFLATION(-1) | -0.000*** | -0.000*** | -0.000*** |
|  | (0.000) | (0.000) | (0.000) |
| REGULATION_QUALITY (-1) | 0.014** | 0.009 | 0.013*** |
|  | (0.005) | (0.006) | (0.004) |
| BITS*REGULATION_QUALITY (-1) |  | 0.007 |  |
|  |  | (0.005) |  |
| GDP_GROWTH_HOST (-1) | 0.000 | 0.000 | 0.000 |
|  | (0.000) | (0.000) | (0.000) |
| GDP_GROWTH_ SOURCE (-1) | 0.000** | 0.000** | 0.000** |
|  | (0.000) | (0.000)** | (0.000) |
| TRADE_OPENESS (-1) | -0.000 | -0.000 | -0.000 |
|  | (0.000) | (0.000) | (0.000) |
| OIL_PROD (-1) | 0.001 | 0.002 | 0.002 |
|  | (0.001) | (0.001) | (0.001) |
| CRISIS | 0.002*** | 0.002*** | 0.002*** |
|  | (0.000) | (0.000) | (0.000) |
| UE | 0.003** | 0.004** | 0.004*** |
|  | (0.013) | (0.002) | (0.001)** |
| BITS* THRESHOLD($\alpha \leq 0.56$) |  |  | 0.000 |
|  |  |  | (0.000) |
| BITS* THRESHOLD($\alpha > 0.56$) |  |  | 0.002* |
|  |  |  | (0.000) |
| Total observations: 2724 |  |  |  |
| R-squared | 0.804 | 0.804 | 0.804 |
| Adjusted R-squared | 0.777 | 0.777 | 0.777 |
| S.E. of regression | 0.009 | 0.009 | 0.009 |
| Durbin-Watson stat | 1.813 | 1.813 | 1.812 |
| Second-Stage SSR | 0.202 | 0.202 | 0.202 |

GMM cross-section fixed effects.
***Significant at 1%   ** Significant at 5%     * Significant at 10%

The coefficient of one year lagged FDI seems positive and significant in all the models, this confirm the path-dependence of FDI inflows (Tan and Meyer, 2011). Therefore, previous FDI flows are seen as a source of trust for foreign investors. Local currency appreciation is a sign of economic strength. All models confirm that this signal

increases FDI inflows (Froot and Stein, 1991; Chakrabarty, 2001; Buckley et al. 2007). As it is expected, the inflation's effect on FDI inflows is positive and significant (Buckley et al. 2007; Katsalis and Doulos, 2009; Mody and Srinivasan 1998). The economic growth of host country is revealed as not significant in the three models. However, the economic growth of source countries is positive and significant, confirming the FDI cyclical behavior (Guerin, 2011). The coefficients of trade openness and oil production are not significant. The economic crisis dummy is positive and significant, since the market seeking in LDCs has been one strategic decision in crisis' years. The control dummy used for countries joined to EU is significant and positive, this confirm that EU membership is a localization advantage.

The regulation quality's coefficient is positive and significant (Biswas, 2002; Benassy et al, 2007 and Katsaisti and Doulos, 2009). However in the first model BITs appeared not significant. The host countries' heterogeneity could explain this result. In second model, the interaction between BITs and regulation quality is not significant, which is inconsistent with Hallward-Driemeier (2003) results. In model 3, the threshold regression confirms that only for countries with a regulation quality above 0.56, the BITs increase FDI inflows[13]. This confirms the initial proposed hypothesis, the absence of identification of the second threshold is justified by the sample of host countries of FDI, which show low institutional development

## 5.2 QR estimates

The sample was divided in 10 quantiles in order to identify different behavior's patterns depending on the FDI inflow. In Table 2, as the FDI inflow quantile level changes, the coefficients of interactions between BITs and threshold indicator vary widely in sign, magnitude, and significance. These coefficients, for countries with a regulatory quality below 0.56, are significantly negative in quantiles above 0.6. However, for those countries with regulatory quality above 0.56, the coefficients appeared significantly negative in 0.1 quantile. Moreover, they arose significantly positive only for 0.4 and 0.5 quantiles.

The rest of columns in Table 2 show the F tests of equality-of-slope parameters across various quantiles. The comparison shows the differences across countries in various FDI inflows quantiles. In countries with regulatory quality below 0.56 the differences

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[13] The OLS' results seem very similar to GMM.

are significant in two cases: 0.5 vs. 0.6 and 0.6 vs. 0.7. In countries with regulatory quality above 0.56 the differences are significant in some quantiles: 0.1 vs 0.2, 0.3 vs. 0.4 and 0.4 vs. 0.5.

Figure 1 plots the quantile regression's coefficients of interactions between BITs and threshold indicator, for countries with regulation quality below 0.56 with 95% confidence intervals. The corresponding GMM estimation is also shown in the figure comparison. The GMM estimate is one measure of the effect of BITs in FDI inflows, and focused only on average behavior, without explicitly considering the effects in the non-central FDI inflows regions. This figure also shows that, while the coefficient estimates of the BITs variable are insignificant in the central quantile region, the coefficients become significantly negative in the high FDI inflows quantile regions.

The coefficients estimates of the BITs variable are significantly negative for 0.1 quantile, and significantly positive for 0.4 and 0.5 quantiles. Furthermore, the comparison of quantile's results with the GMM's, shows that this estimation may provide a potentially incomplete picture about the effects of BITs on inflows FDI. The negative effect of inflation identified by GMM's results only occurs when the country is in the FDI inflows quantile 0.1 or 0.9.

**Table 2: Quantile Regression.**

| | Coefficients Estimated | | | Quantile Slope Equality Test | |
|---|---|---|---|---|---|
| Quantile | BITS* THRESHOLD ($\alpha \leq 0.56$) | BITS* THRESHOLD ($\alpha > 0.56$) | Quantile | BITS* THRESHOLD ($\alpha \leq 0.56$) | BITS* THRESHOLD ($\alpha > 0.56$) |
| 0.1 | -0.0001 | -0.0008** | 0.1 vs. 0.2 | 0.000 | -0.001 |
| | (0.0001) | (0.0003) | | (0.352) | (0.006)*** |
| 0.2 | -0.000 | -0.000 | 0.2 vs.0.3 | 0.000 | 0.000 |
| | (0.000) | (0.000) | | (0.720) | (0.329) |
| 0.3 | -0.000 | 0.000 | 0.3 vs.0.4 | 0.000 | 0.000 |
| | (0.000) | (0.000) | | (0.663) | (0.024)** |
| 0.4 | -0.000 | 0.0002* | 0.4 vs. 0.5 | 0.000 | 0.000 |
| | (0.000) | (0.0001) | | (0.174) | (0.058)* |
| 0.5 | -0.000 | 0.0004** | 0.5 vs. 0.6 | 0.000 | 0.000 |
| | (0.0001) | (0.0001) | | (0.087)* | (0.415) |
| 0.6 | -0.0003* | 0.0003 | 0.6 vs. 0.7 | 0.000 | 0.000 |
| | (0.000) | (0.002) | | (0.033)** | (0.717) |
| 0.7 | -0.0006** | 0.0003 | 0.7, vs. 0.8 | 0.000 | 0.000 |
| | (0.0002) | (0.0003) | | (0.184) | (0.714) |
| 0.8 | -0.0009*** | 0.0002 | 0.8, vs. 0.9 | 0.001 | -0.001 |
| | (0.0003) | (0.0005) | | (0.255) | (0.557) |
| 0.9 | -0.0016** | 0.0010 | | | |
| | (0.0007) | (0.0015) | | | |

### 5.3 Implications

The results obtained by previous empirical evidence showed that the effect of BITs on FDI flows was conditioned by the host country's trust level (Hallward-Driemeier, 2003; Tobin and Ackerman, 2005). The previous results show that the trust level depends not only on regulatory quality offered by the host country but also by the volume of FDI received.

The BITs, in the best possible scenario, could strengthen the institutional framework and be seen as a generating element of trust. It requires a minimum level of institutional quality (0.56), although the quantile regression shows us that this condition is not enough. It must be also considered that FDI inflows generate trust to foreign firms (Tan and Meyer, 2011). Therefore:

- Below 0.4 quantile, despite institutional quality exceed the threshold (0.56), BITs do not improve host country's location advantages.
- Host country's FDI inflows must be between 0.4 and 0.5 quantiles. Therefore, FDI and regulatory quality are two generating element of trust which mutually reinforce the effect of BITs.
- Above the 0.5 quantile, confidence generated by FDI inflows is enough to attract new businesses, therefore the BIT do not provide additional trust. In this case, FDI inflows and BITs are substitutive.

The results also indicate that in low levels of trust, BITs have no impact or negative effect on FDI flows. A negative effect of BIT on FDI flows is counterintuitive, although also has been identified in previous articles (Hallward-Driemeier, 2003; Tobin and Ackerman, 2005). In highly risk countries the BIT generates a Wating-see option's reduction of value, a capital mobility improvement and exit costs' reduction, therefore negative FDI flows will take place. Thus, in countries with low institutional development and high FDI inflows, BITs generate disinvestment process.

Both results confirm that BITs reduce FDI's macro-hysteresis or inaction band. Moreover, institutional development of host country and FDI from source country are moderate factors of BIT's effect.

The economic growth of host country is not significant for all quantile except for FDI inflows quantiles 0.8 and 0.9. In both cases, the coefficients are significantly negative, the risk associated with economic growth (Chakrabarti 2001, 2003) reduces FDI inflows

in LDCs that receive more FDI. The economic growth of source countries is not significant for all quintile except for FDI inflows quantile 0.9. In this case the coefficient is significantly positive, the FDI inflow is pro-cyclical only for the largest LDCs recipients.

As of 0.5 FDI inflows quantile the trade openness coefficients are significantly positive and growing. This confirm, from 0.5 quantile, the complementarity between FDI and trade (Helpman, 1984; Helpman and Krugman, 1985). Similar results are obtained for the endowment of natural resources (oil_prod). The crisis has reduced the FDI inflows to LDCs received less FDI (quantiles 0.1 and 0.2). However, the FDI inflows have increased to the most important FDI infows receivers among LDCs (quantiles 0.5 to 0.8). The most important FDI inflows receivers (quantiles 0.5 to 0.9) increase the FDI flows after their integration in the UE.

## 6. Conclusions

Bilateral investment treatments (BITs) are reciprocal agreements which are composed of a series of measures and provisions for the protection and promotion of foreign direct investment between two countries. These agreements should reduce political risk and facilitate the entry of FDI in least developed countries. However, empirical evidence is inconclusive.

With the objet to analyze the factors that mitigate BITs incidence over FDI inflows, a theoretical model base on the work of Dixit (1989) has been proposed. Through this point of view, BITs reduces the hysteresis of FDI decision. This will reduce the value of the waiting-and-see options and therefore inaction bands of hysteresis. This should be encouraged FDI entry and facilitate the exit process. However, BITs only have the capacity to reduce political risk if it reaches minimum level of institutional development. Therefore, we propose that if the host country reaches the minimum level of institutional development the BIT should increase the inflow FDI. On the other hand, if countries remain below the threshold of institutional development, the BIT has no effect on the political risk, however it will improve the mobility of capital that could lead to a process of divestment or capital repatriation. Both effects are conditioned by country-of-origin FDI agglomeration.

The selected source countries were Germany, France, United Kingdom and the Netherlands. Configuration of host countries' sample is crucial for the generalization of

results. The criterion used was the regulation quality index provided by World Bank. Only host countries, where the institutional level has a low rating. (-2.5, 1.5), were included in the sample 119 host developing countries.

The threshold regression allowed us to identify the level of institutional development from which the BIT has a positive impact on FDI inflows. This confirms the hypothesis of hysteresis reduction for a given level of institutional development. The quantile regression has allowed us to analyze the moderating role of country-of-origin FDI agglomeration on the effects of BITs. Thus, it was found that for those countries with weak institutional development and strong country-of-origin FDI agglomeration, the BIT generates a capital exit.

In countries with greater institutional development the positive effect of BIT is conditioned by the country-of-origin FDI agglomeration, generating a complementary effect between the two trust factors. However, if country-of-origin FDI agglomeration is high the BIT's effect is not significant. Probably the thrust generated by FDI reduces the effect of BIT.

The theoretical framework and the results complement and explain the available evidence and helping to explain his contradictions. Likewise contributes to the design of economic policies for both origin and host FDI countries. The origin countries should prioritize the BIT's signing with two distinct groups of less developed countries. For one, the LDCs that have exceeded the threshold of institutional development and have not been the primary objective of the home country MNCs, such agreements should contribute to increased FDI flows. On the other hand, are also relevant LDCs with low institutional development and high FDI, since the BIT would help to reduce barriers to the capital mobility.

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**Table 3: Estimación modelo PROBIT para analizar las causas de la firma de un BIT.**

| Variable dependiente: BITS | |
|---|---|
| C | 2.335939 |
| | (0.3723) |
| LNFDI(-1) | -0.218999 |
| | (0.4546) |
| TCEXCHANGE_RATE | -0.047343 |
| | (0.8020) |
| INFLATION(-1) | -0.000637 |
| | (0.0483)** |
| REGULATION_QUALITY(-1) | -0.092025 |
| | (0.0036)*** |
| GDP_GROWTH(-1) | -0.001775 |
| | (0.6803) |
| OIL_PROD(-1) | 2.99E-07 |
| | (0.2709) |

***Significant 1%   ** Significant 5%  * Significant 10%

## Table 4: Variables description

| | Variable | Description | Source |
|---|---|---|---|
| **DEPENDENT** | *FDI* | FDI flows by country pairs. (Millions of U.S. dollars issued by Germany, France, UK and Netherlands) | OCDE ilibrary |
| **TRADITIONAL** | *GDP_GR* | GDP growth  (anual %) | WORLDBANK. Databank. Economy&growth. |
| | *GDP_PC* | GDP per cápita (US$ current prices) | WORLDBANK. Databank. Economy&growth. |
| | *INFLA* | Inflation.CPI (Annual average growth rates). | UNCTADStat |
| | *EX_RATE* | Real effective exchange rate.(Annual variation ) | UNCTADStat |
| | *OILPRO* | Log. Energy production (kt of oil equivalent). | WORLDBANK. Databank. Energy & mining |
| | *TR_OPEN* | Trade openness (Exp.+Imp. As percentage of GDP) | UNCTADStat |
| | *GROW_OR* | GDP growth in source country (annual % ) | WORLDBANK. Databank. Economy&growth |
| | *EDUC_SEC* | School enrollment, secondary (% gross) | WORLDBANK. Databank.Education |
| | *MIN_WAGE* | Minimum wage, changed from local currency to US$. | ILO Global Wage Database. |
| **NON TRADITIONAL** | *REG_QUALITY* | Regulatory quality (Valued between -2,5 and 2,5) | WORLDBANK. Databank. Worldwide Governance Indicators. |
| | *BITs* | Bilateral Investment Treatment by country pairs. Dummy variable: value 1 in case of existing BIT between the countries, otherwise value 0. | IIA Database (UNCTAD) |
| **OTHER** | *FDIt-1* | FDI flows of previous period by country pairs. (Millions of U.S. dollars issued by Germany, France, UK and Netherlands) | OCDE ilibrary |
| | *CRISIS* | Financial crisis' effect.  Dummy variable: value 1  when year>2007,  value 0 when year <2007 | |
| | *UE* | EU Membership. Dummy variable: value 1 when host country was joined to EU, value 0 in previous years. | |

# FDI OR CREDIT? FINANCIAL CHOICES OF HUNGARIAN COMPANIES

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## Abstract

This research is trying to reveal which financing strategies characterized Hungarian companies in the last 20 years: whether the development of the financial intermediary system, the credit supply, or foreign direct investment (FDI) which was considerable compared to the size of the country, was the primary source of financing in corporate investments.

In the model of MM's assuming a perfect capital market and tax-free competitive economy financing decisions are irrelevant and can be separated from the investment decisions. In practice, however - due to market imperfections - the corporate capital structure and financing decisions play a very decisive role in shaping the company's value. Consequently the dual-purpose of financial decisions, namely to maximize the market value of the company and to minimize the cost of capital, i.e. the development of an optimal capital structure, can only be realised by accounting for the tax savings and the costs of financial difficulties.

However, conversion of corporate debt structure is not only a matter of internal decisions. There are several external factors also determining it: so it is affected basically by the development of the capital market. Apart from the microeconomic and macroeconomic inquiry of the potential advantages and disadvantages of these two financing alternatives

I would like to give an overview of the financing strategy typical of Hungarian companies in the last 20 years through an empirical analysis and using financial indicators. The database of Hungarian enterprises was made by ECOSTAT (Hungarian Statistical Office), which represents close to 90% of the firms in the country. The period includes the 17 years between 1993 and 2009, The records contain all relevant information from annual reports, e.g. balance sheets, profit and loss figures, etc. I differentiate among the companies according to their ownership and size.

As a result of this analyse we can state that the role of investment credits in the financing of Hungarian companies was insignificant in the 1990s, and did not become dominant even after the credit expansion after 2000. Throughout the period in question the rate of indebtedness of foreign companies was higher than that of Hungarian companies, but this trend was mainly attributable to loans granted by mother companies. All enterprise types followed a conservative financing strategy, which was due to their preference of self-financing. It partly means the manifestation of the hierarchy theory in Hungary, but it is partly attributable to the low level of financial intermediation. As of 2000 the extent of reinvestment showed a uniform trend in the financing strategy of Hungarian companies, irrespective of the ownership structure, but it dropped radically after the crisis.

Throughout the whole period in question foreign owned companies had higher profitability than Hungarian owned ones.

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## 1. The influence of the credit market on economic growth

According to Schumpeter (1934) the key actor of the economic growth is the innovative entrepreneur who tries to make profit by creating new combination of the production factors. The entrepreneur can obtain the required capital to finance innovation and production in financial market. The financial intermediary sector collects savings form households and allocates them among different investments. In this approach there is a direct connection between financial intermediation and economic growth. Relevant literature background support this finance-growth nexus.

Literature overviews analysing the relation between growth and financial intermediation usually identify different views related to this topic (Mérő 2003).

1. There is no cause and effect relationship between financial intermediation and economic growth.

2. The development of the financial intermediary system follows the processes of real economy.

3. The state of development of the financial intermediary system plays a decisive role in economic growth.

A wide variety of publications are available related to the latter statement.

King- Levine (1993) investigated the financial market in 80 countries between 1960 and 1989, and found that development of financial sector forecasts the extent of economic growth. Levine-Zevros (1998) repeated this empirical research 10 years later and confirmed the previous results. Jayaratne- Straham (1996) revealed that those states of the USA which cancelled the limitation of bank establishment could enjoy a 0,51 % higher economic growth than those ones where this limitation obstructed the financial intermediation between 1972-1991. Guiso, Sapienza és Zingales (2004) compared the different regions in Italy to analyse the effect of financial system on entrepreneurial activity, and they found that plausibility of launching new enterprise increases by 5,6 per cent  if the entrepreneur moved from a region with undeveloped  financial system to another region where the financial intermediary sector was developed.

The concerning literature researched those channels through which financial system can impact on growth. Beck, Levine és Loayza (2000) showed that accumulation of the capital is not the only function of the financial sector. It has a more important and direct effect on the development

of productivity and allocation of resources which contribute to the increase of the total production. Financial intermediation decreases the cost of information as well, because without it all individuals ought to pay this cost in all transactions. If somebody uses information in the market, this information will reflect in the prices. It means that in effective capital markets it is enough to focus on the prices since they contain all information.

Another relevant function of the financial market is monitoring and valuation. It is too expensive for the stakeholders to control the management of the firms. They can delegate this task to financial sector. Banks undertake this control ("delegated monitoring" Diamond 1984) The long-term cooperation between banks and corporations may decrease on the costs derive from informational asymmetry. The third function of financial intermediary sector is risk management. Levine (1997) emphasised that risk management not only helps to accumulate the capital, it also encourages the technological development. Hermes, N.- Lensink, R. (2003) empirically investigated the financial system in 67 countries between 1970-1995 and they proved that development of financial system contributed to the technological spillover and finally to the economic growth of the country.

The developed financial system not only accelerates the economic production, it also reduces the volatility of growth. According to Aghion (2007) the financial sector can improve the liquidity of the firms and facilitate the investment for them, finally the financial intermediation can decrease the volatility of investments and growth of the corporations.

Larrain (2006) found that the volatility of industrial output is lower in countries with more bank credit. They found that bank credit reduces industrial output volatility. The correlations between industries and GDP increase with bank credit and at the firm level, short-term debt is more negatively correlated with firm activity as bank credit increases, suggesting that debt serves to smooth output.

## 2. The impact of FDI[14] on the economy of the host country

FDI is yet another financing source, at the same time it may further increase the financing basis for investments indirectly through activating domestic savings and channelling them to the capital market. As Hungary's example proves, in certain cases FDI substitutes domestic savings, and practically supplements sources of financing for investments. Driffield, N. - Hughes, D. [2003] proved that FDI inflows generally stimulated domestic investments. At the same time Driffield and Hughes found that in certain regions of the country FDI may push domestic investors out of the capital market.

Of sources of financing, which could be portfolio investments and credits as well, FDI is regarded as the best for the economy of the host country for several reasons. On the one hand, it is easier and faster to receive FDI than international credits, on the other hand it is a more stable and longer-term investment than portfolio investments. Economic and financial crises make an impact on creditors' and investors' decisions. A study made by Deutsche Bundesbank [2003] pointed out that bank lending related decisions showed the highest volatility during a crisis. The inflow of portfolio investments showed the second highest volatility, and FDI investments proved the least unpredictable. Consequently, in the long term FDI is a more reliable source of financing than other forms of fundraising. The relative independence of FDI of crises can offset the problems caused by the drying up of other sources of financing. However, Lall – Streeten [1977] emphasized that FDI was more expensive than a credit, as the premium of operating risk had to be guaranteed by the expected return.

FDI inflow makes a positive impact on the capital account of the host country. However, its long-term impact may be different depending on the local investment environment, other investment

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[14] The compilation of balance of payments statistics is regulated by international methodological standards. These standards enable the comparability of the statistics of certain countries. In line with international methodology the acquisition of an ownership stake as high as 10% or above is an FDI.

An increase or decrease in the registered capital and capital reserve of any company established by a foreign investor in Hungary, and the acquisition of an ownership stake of or the sale of a resident company by a foreign investor are accounted for by the Central Bank of Hungary as the turnover of shares or other shares and participations.

Contrary to international methodology, prior to 2003 reinvested revenue was not accounted for in Hungary as an FDI revenue. Only dividend paid appeared in the current account as revenue from an ownership stake, while FDI was made up from turnover data. In 2003 there was a significant change in the definition of FDI indicated in the balance of payments. The Monetary Policy Council of the Central Bank of Hungary voted for the changes required for harmonization with international methodological guidelines. Consequently, as of 2004 reinvested revenues connected to FDIs also have to be included in the balance of payments statistics. Settlement in line with the new methodology was reversed on the time series up to 1995.

Apart from ownership credits and other financing relations also belong to this category of the balance of payments statistics (other capital). Consequently, capital movements connected to debt instruments should also be accounted for as an FDI, and they are not necessarily a long-term source of financing for an enterprise, such as short-term loans granted as part of daily financial settlements within the corporate group.

opportunities and the owners' decision. If profit repatriation starts, it will decrease the balance of the capital account, just like the repayment of credit interests. However, if investment opportunities remain favourable in the host country, reinvested revenue will be accounted for as new FDI.

However, the impact of FDI on revenue can be higher than one would expect based on the capital account. Lehmann, A. [2002] analysed the profitability and utilization of capital investments of American companies in 43 industrialized and developing countries. His research showed a higher profitability rate in case of subsidiaries than official balance of payments statistics shows. The average profitability of companies operating in developing countries was around 15-20%, increased by another 3% due to the licence fees, royalties and other paid services payable to the mother company. During his empirical analysis Lehmann found that the majority, more than half of the revenue generated remained in the host countries in the form of reinvestment. However, dividend payment by subsidiaries and the extent of profit repatriation was different. If the profitability of a subsidiary showed a downward trend, repatriation increased significantly. The intention to repatriate also grew because of the financial crises of the host countries.

As regards the relation between the impact of FDI on economic growth, FDI and the trend of GDP per capita, it is often quite difficult to decide what the cause and what the effect is. Between 1971 and 1995 Choe, J.I. [2003] carried out an empirical research involving 80 countries to find out how FDI affects growth. In his study he also mentioned the direction of causality. His results justified that although there is a positive relation between the trend of FDI and GDP, but the explanatory power of growth regarding FDI inflow exceeded the significance of the impact of FDI on GDP. Consequently, a higher FDI volume does not necessarily result in a higher growth rate, while the trend of GDP is a decisive factor for capital investments (however, Mossa-Cardac's analysis made between 1998 and 2000 and involving 140 countries did not justify the general significance of GDP growth concerning FDI.)

Instead of GDP growth some experts think that the real indicator of growth is rather the change in the level of domestic technology, as well as the ability to adapt to new technologies. These experts are of the opinion that without modern technologies there is no long-term economic expansion. However, mastering a technology greatly depends on the priorities of domestic economic policy and the level of existing human capital (Borenstein et al. [1995]). Few people

agree with this opinion though. For example, Ram, R. - Zhang, K.H. [2002] justified with an extensive database that the fact that during the 1990s FDI grew extensively made a positive impact on economic growth, while they found no satisfactory evidence for a complementary relation between the level of FDI and human capital (examples to it can be found in the empirical analyses regarding Central and Eastern Europe as well).

## 3. Financing choices from corporate view

The precondition of any entrepreneurial activities is having the assets of adequate quantity and quality as well as setting up a combination thereof, which is the most suitable for business. The required resources induced by procurement of the assets, in other terms the costs of the assets form the cumulative capital needs. Financing of the cumulative capital needs is essentially determined by a long-term financial planning and the financing strategies chosen by the company. There are two important rules to consider when the financing strategy and business practices are developed:

- Harmonisation of the term of assets and resources. This (Matches) rule means that long-term investments, (fixed assets) shall be financed by equity or by long-term credits.

- The costs of maintaining liquidity and costs of the lack of liquidity shall result in a minimum total cost.

The key financing strategies can be solid, conservative or aggressive ones. A company with a solid strategy adheres to a strict list of rules, that is, fixed assets are only financed by long-term resources, equity or long-term liabilities. A company with a conservative financial strategy follows a perhaps more cautious approach than necessary in financing issues. In practice this means that long-term resources are used not only for financing fixed, but also for current assets. This policy provides high liquidity for the company and independence from creditors. However, the disadvantage of the conservative strategy is that it makes the financing construction more expensive, since as a general rule, long-term credits are more expensive than short-term ones. The aggressive strategy represents an opinion on the contrary to the conservative one, concerning the connection between liquidity and financial costs. In other words, this company also uses short-term liabilities in the financing of current and fixed assets. This results in a less expensive financing structure, but it increases the risk of the company's bankruptcy. The financing strategy determines the long-term and the short-term financial decisions as well.

The capital structure means the ratio of equity and debts among long-term resources of the company. The financial leverage shows the rate of debt (credit, loan, bond) in the capital of the company. Consequently, if the investments of a company are financed entirely from equity, than its financial leverage would be zero. The more indebted a company is, the higher the financial leverage will be.

Choosing the right type of financing is similar to a marketing problem, when the company intends to sell different securities in the capital market. The capital structure depends on the company's capital structure policy. What interests affect the shareholders and managers of the company in establishing this policy?

The Modigliani and Miller theorem (Modigliani and Miller, 1958) is regarded as the starting point of modern capital structure theories. These were based on the assumption of a perfect capital market and emphasised the irrelevancy of capital structure. The first theorem of Modigliani and Miller states that the company's market value is independent from the capital structure of financing, and the company's expected return on assets, in other terms the opportunity cost of capital is constant (assuming a perfect market without transaction costs and costs of financial distress). The financial manager cannot change the value of a company's securities by simply distributing cash flow among shareholders in different ways. The value of the company is determined by its e real assets and not by the issued securities. Subsequent empirical researches modified this principle, dissolving the assumption of perfect market. The principles considered the most important ones are listed below:

MM theory with taxes taken into account (Modigliani and Miller, 1963), the trade-off theory (Myers, 1984, Kim, 1988), the agent theorem (Jensen-Meckling, 1976, Jensen, 1986, Stulz, 1990,), information asymmetry theorem (Ross, 1977, Leland Pyle, 1977, Myers- Majluf 1984, Myers, 1984), and pecking order theory (Myers 1984)

Which internal and external factors affect toward self-financing?

According to general experiences companies prefer internal resources in financing decisions. International surveys show, that the rate of internal or self-financing forms are around 80% of the total financing requirement. There are several possible explanations, such as:

- Transaction costs related to finance will be significantly lower if it is not required to use

external sources

- If there are no new shareholders, bondholders and creditors, then the original owners need not to worry about sharing control functions over the company (or project benefits) with the new stakeholders.

- If the company gets into debt, it has the burden to repay the credit and its interest, in other words to clear the debt. The interest is accounted for among the financial expenses of the company, thereby reducing the cash flow and shareholder dividend prospects. (Shareholders get dividends only after satisfaction of the creditors' claims.)

In addition to the company's internal motivations a serious limit in the capital structure policy can be an *underdeveloped capital market*. If the capital market is not sufficiently effective, then it will be unable to meet the financing requirements because of the scarcity of volume and choice opportunities of financing supply. If the market is not efficient, then it is not indifferent what financing the company chooses, so there is an opportunity to take positive or negative net present value financing decisions.

As a result of the above mentioned reasons, the company would only use outside capital when the internal resources proved insufficient for the implementation of their investment. Then the management would prefer debts, rather than capital increase. International researches provided several practical and theoretical explanations for the importance of debt in outside capital. Jensen's (1986) theory –this theory related to the asymmetry of information – states that companies prefer to issue new bonds rather than new equity.

The value of a corporation financed by debt can be expressed by the following equation:

Value of a corporation financed by equity

+ Present value of tax savings

- Present value of the costs of financial difficulties

The company financed by debt can increase its profit due to the tax savings. The explanation for this lies in the fact that the interest of credits and bonds is accounted for financial expenses which decreases the company's profit before tax, the tax base of corporate taxes, while the shareholders receive dividends from the profits after tax. This means that the increase in interest rates decreases the company's corporate income tax base, and so the tax liability of the company. The

smaller the amount payable to the state is, the more return would there be to share for investors of the enterprise. Disregarding the effects of personal income tax, then a company which has D amount of debt at rD rate of interest, the corporate tax rate being Tc, the potential tax savings of the company in one year would be D x rD x Tc. ("potential" refers to the fact, that tax savings will only apply if the company has a large enough profit before tax and interest payments. (Brealey, Myers 1996)

The business risk and the probability of financial difficulties (insolvency, bankruptcy) increase proportionally with the indebtedness and financial leverage of the company. The occurrence of financial distress is always associated with a significant increase in the financial expenses of the company and a reducing field of action. If the company gets into debt, it undertakes to pay back the loan, including the interest of it.

Increasing debt - in addition to the negative effects listed above – also shows several positive characteristics, which encourage owners to resort to credit instead of (or beyond) their own equity.

Such an important feature and benefit of the owners is the so-called leverage effect.  This leverage means that if the investment generates higher profits than the interest paid on loans financing the investment, then the difference of these (profits and interest) wander into the owners' pockets. The owners' return thus increases through outside capital. The relation is shown by the following formula, what is based on Modigliani-Miller theorem. (Brealey, Myers 1996)

$$r_{E} = r_A + \frac{D}{E} \ (r_A - r_D)$$

where rA is the total return of the investment (company), rD is the interest rate of credit, rE is the expected return on stocks, D is the value of the debt, and E is the value of equity. Overall, while the tax savings and increasing return can compensate or exceed the increasing risks and costs due to financial difficulties, it is worth getting into debt to finance investments.

The tax savings and financial difficulties, however, don't equally affect different companies. A financial management should consider four aspects when designing an optimal capital structure:

- The company's tax position: Companies with high and stable incomes, so those in taxpayer position, should consider relying on the tax savings from credits. This means that they can afford a higher leverage than less profitable firms.

- The business risk of the activity: companies with higher business risk should constantly be aware of the possibility of increased indebtedness generating financial difficulties. So it is advisable for them to have a lower operating leverage, than their counterparts with smaller business risks. According to Titman (1984), companies producing unique products borrow less, as it is difficult for them to find alternative activities in case of bankruptcy.

- The type of equipment: the companies having more intangible assets, so as to play a key role in the company's income-generating activities, the cost and the risk of financial distress is much higher than it is with other types of businesses. A reason for this is that the intangibles loose value faster and they are more difficult to be sold than other types of assets. In other words, increasing the leverage is not necessarily a good solution in case of these companies. Aivaizan-Berkowitz (1998) examined the interaction between production and financing decisions, focusing on the specificity of the firm's assets and on the flexibility of its production technology. They found when asset specificity is low, operating and financial leverage tend to be complements and the impact of taxes on both investment and financial leverage will be positive and increasing with the size of the capacity adjustment costs.

- Capital reserves: the accumulation of capital reserves is particularly important for companies having number of projects with positive net present value and being in a dynamic phase. Thus, if a company has sufficient capital reserves whenever a good investment opportunity presents itself, they do not have to miss the potential profit just because they cannot find the appropriate outside capital for the implementation of investment plans. Consequently, developing and growing businesses are mostly characterised by a low leverage and self-financing. More profitable firms take up less credit. According to Myers and Majluf (1984) this exactly corresponds to the pecking order theory, namely the companies prefer internal resources over external resources in the financing of their further investments.

In the model of MM's assuming a perfect capital market and tax-free competitive economy financing decisions are irrelevant and can be separated from the investment decisions. In practice, however - due to market imperfections - the corporate capital structure and financing decisions

play a very decisive role in shaping the company's value. Consequently the dual-purpose of financial decisions, namely to maximize the market value of the company and to minimize the cost of capital, i.e. the development of an optimal capital structure, can only be realised by accounting for the tax savings and the costs of financial difficulties.

However, conversion of corporate debt structure is not only a matter of internal decisions. There are several external factors also determining it: so it is affected basically by the development of the capital market or the so-called redlining phenomenon, when the credit market reaches a balance at an interest rate at where demand exceeds supply Next we turn to a presentation of the financial environment in Hungary, to analyse the chances of Hungarian companies in accessing credit.

## 4.   Corporate credit supply in Hungary over the past 20 years

In an international comparison, for 1990, the Hungarian financial intermediary level was comparable to those of middle-income countries (Mérő, 2003). Following the political transition, the first years of the nineties showed an essential degradation of bank crediting, especially corporate crediting suffered the most in this period.

Many explanations can be identified for the early nineties credit shortfall:

1. The shock of the transition

2. Lack of expertise

3. Risky portfolios, bad corporate loans. In 1992, the corporate bad loan ratio doubled (from 5% to 10%), and by 1993 even this has tripled (!) and bad loans in the total corporate loan stock were close to one third.

4. Collapse of Comecon and non-competitive corporate performance

5. Strict bankruptcy law in Hungary. Increase in corporate bankruptcies and liquidations

All of these processes affected the functioning of the banking system, and corporate bankruptcies were followed by bank failures. The worsening situation has necessitated the consolidation of financial markets, and the stages thereof showed some impact on the recovery in corporate credit supply as well.

The first step was loan consolidation, which took place in 1992. The state exchanged the bad loans for consolidation bonds. During the second phase, between 1993-1994, in the course of bank consolidation, the state increased capital in the banks (to 8% capital adequacy ratio level). This was followed by the debt consolidation in 1994 - a key requirement when several major corporations were released from their debts toward banks. Between 1995 and 1998, Hungary practically completed the privatization of banks. The commercial banks with their increased capital have mainly been obtained by foreign owners. The privatization techniques differed among the countries of the region: in Hungary banks were transferred for cash to professional investors. In the Czech Republic, voucher buyout took place, and Poland preferred management buyout (MBO), which resulted in a protracted privatization process. By the end of the nineties, the structure of domestic banks has been formed, with the key actors and owners remaining unchanged in the most important characteristics until the present day.

Along with the consolidation / privatization processes, from 1996 onwards a robust growth in corporate credits started as well. Hungary is typically an open economy, so companies have not only domestic but also foreign channels to increase their indebtedness. However, while in 1996, direct external financing also played a major role in addition to the domestic credit growth, the significance thereof decreased from 1997, so domestic banks became the key actors of financial services.

The Hungarian credit market in the first half of the '90s was characterised by the so-called redlining. This is an "alpha" of crediting, which means that an identifiable group of companies of certain characteristics are excluded from crediting- Certain companies, such as state-owned companies not yet obtained by a foreign owner, or small business could hardly get any credit. (Ábel-Öcsi. (1999) pg 899) However, by the second half of the decade, the market of large companies has been saturated. Banks have started to open toward medium and subsequently to small businesses near the end of the decade. (Török, 2012)

The Hungarian financial intermediary sectors was not keeping up with the strongly deepening trend characterising middle-income countries, so by 2001 lagging far behind, it took a size more typical with lower income countries. The role of domestic bank credits in financing the economy has remained very low in an international comparison. Data on the depth of intermediation reflect a "neither banks, nor market" type of intermediary system. Both the banking and capital market

intermediation is significantly lower than those values of the reference EMU countries or the developed countries. (Mérő 2003)

## 1st Figure: Credit volume /GDP
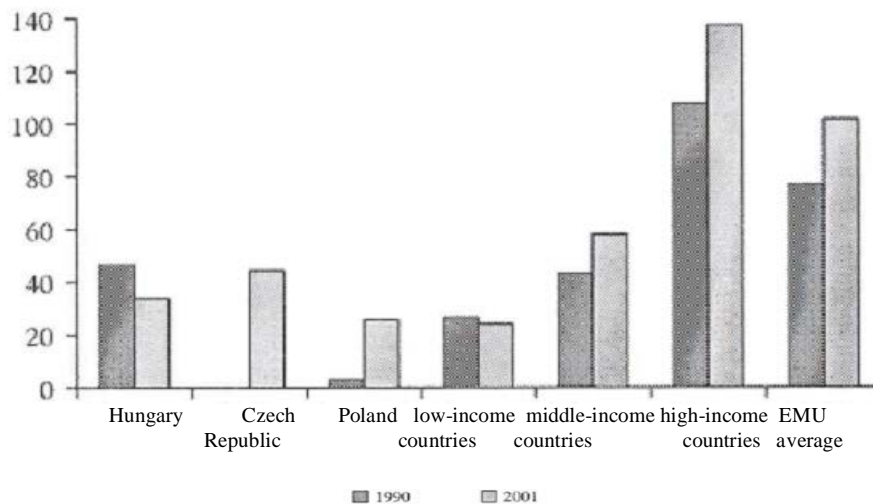


Source: World Bank (2002)

The period between 2000-2007 all over the world meant the years of rapid credit expansion, and this prosperity characterised Hungarian banking system as well. The ratio concerning bank credits in terms of GDP showed in the above figure increased in the middle of the decade.

The real increase rate of long-term (mainly investment type) credits exceeded the growth rate of total credits. Opening towards granting credits to the SME sector mentioned earlier continued (Török, 2012).

The growth of foreign currency crediting can be also dated to this period. The share of foreign currencies in the corporate sector credits started to gradually move from the earlier 10-20% to 40% by the end of 2003, exceeded 50% by 2006 and increased further until the advent of the crisis.

In the last quarter of 2008, the global financial crisis has reached the Hungarian banking system as well. From 2007 the increasing transaction costs of financing showed the impacts of global financial crisis, and these were also visible in the difficulties of obtaining long term credits. From the last quarter of 2008 the quarterly change of the domestic credit portfolio of companies has

constantly been in the negative. The decrease of long term credits is mainly explained by the missing investments of the companies.

## 5. Volume and periods of FDI inflows to Hungary

The development of the structure of FDI plays a pivotal role in the determination of the volume of foreign direct investment. The different motivations of foreign investors in Hungary favoured various types of investments, what can be used for setting up several periods for the typology of FDI flow into Hungary.

1. The period between 1987-1992 was the time of economic transition. Less than 3 billion EUR capital arrived into the country during this time. The importance of the period is marked by the economic, regulatory and political preparation and foundation of subsequent capital movements.

2. The 1993-1997 period was dominated by privatisation. The country realised 4.6 billion EUR revenues (Hungarian National Bank) from foreign investments by 1997. Privatisation, backed by Hungarian investments of foreign capital also meant a boost to the Hungarian market economy.

3. 1998-2004 opened a new period. While previously greenfield investments had been secondary, they became dominant, even exclusive in this interval. The amount of additional greenfield investments reached 1.5 billion. Previous investments became ripe, what resulted in profit repatriation and reinvestment as well as a drawback of greenfield investments.

4. 2004-2008 was the period following the EU accession of Hungary, where the volume of FDI inflow increased compared to the average of previous years. This upward trend lasted until the 2008 global crisis hit. After that, like all over the world, the activity of foreign investors has fallen back considerably.

5. Decrease and a subsequent hectic ramp-up after the financial crisis of 2008

Below the main characteristics of these periods are discussed.

*1987-1992 Economic transition*

The enactment of laws relevant to FDI and the transition characterised the first period. Weak GDP results and the unfavourable turn of the balance of payment in the previous years quickened the structural reforms of the economy.

A two-tier banking system was introduced in 1987. Banking services were gradually liberalised, and the operations of new private banks were licensed. The Parliament accepted the Act on Financial Institutions (PIT) in 1991. The Hungarian Securities Supervisory Authority was established, and in June 1990 the Budapest Stock Exchange (BÉT) was opened.

Structural changes were mainly featuring liberalisation, what included overall reforms of prices, wages, import control and foreign exchange control as well.

Three major new regulations opened the way for large-scale privatisation in 1988-89:

- Act VI of 1988 on Business Associations re-introduced limited liability companies, and allowed for founding private companies regardless to the size and nationality of the owner of the company.
- Act XIII of 1989 on Transformation regulated the shift of state companies into joint ventures.
- Act XXIV of 1988 on Foreign Investments defined the rights of foreign share and capital holders, providing them for an unlimited right to obtain interests in Hungarian companies and to establish new companies. The same act offered wide-scale tax benefits for foreign investors.

The aforementioned reforms of the transition created the basis of a market economy. The most important objective thereof was – in accordance with Article 9 of the Constitution – the establishment of a proprietary democracy, based on the private properties of individuals, collective, institutional and company ownerships are also based thereon, and the differentiated versions of public properties are organically attached thereto.

*Privatisation between 1993-1997*

The volume of foreign investments boosted in Hungary, due to the FDI friendly policies of the 1990s. While in 1992 the share of foreign ownerships in the Hungarian economy was only 11%, this value raced to 41% by 1998. The FDI/GDP ratio was 1.7% in 1990, and by 1998, this has reached 33.2% (Árva et al [2002]).

In this period, right after the transition, Hungary attracted an outstanding amount of FDI – compared to other countries of the region – caused by the possibility of FDI inflow catalysed by the possibility of cash down privatisation. Incomes from privatisation and asset utilisation from 1990 to the end of June 2004 reached 2099.68 billion HUF (appr. 14.44 billion USD)(ÁPV Rt [2004]), 74% of which has been realised by 1998. The largest income was realised nominally in 1995, primarily due to privatisation of the energy sector, what is also visible on the figure below. The volume of incomes from privatisation has drastically fallen back since 1997. The below figure shows Hungarian FDI data cleared from those of the world.

**2nd Figure: Hungarian FDI flow (without reinvestments) / global FDI flow**
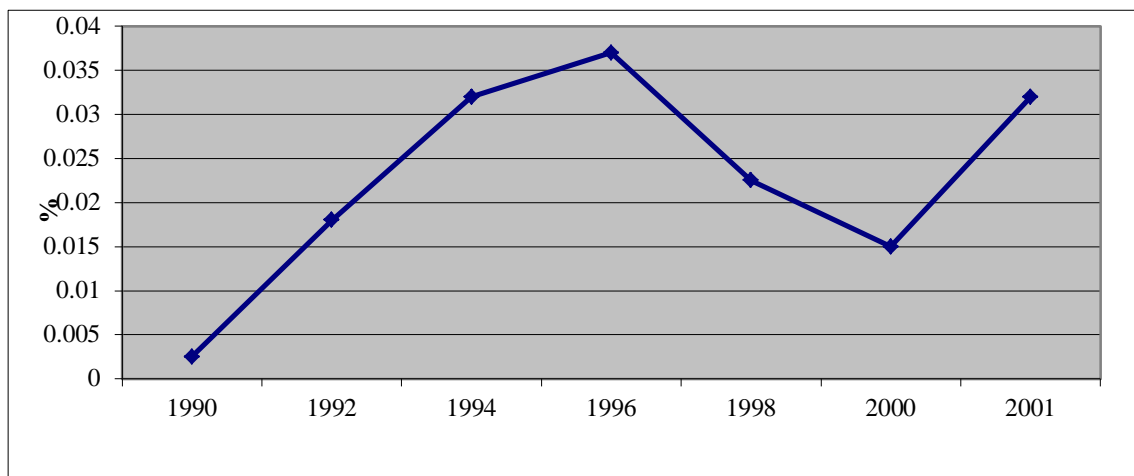


Source: Author's calculation based on UNCTAD data

The upward sloping diagram represents well, that until 1996 – the closing time of great privatisation capital inflows – foreign direct investment to Hungary surpassed the global FDI growth rate. 1997 was the last year when privatisation contributed to the volume of FDI. After this, greenfield investments dominated, and parallel to this, the investment rate shows a downward trend in relation to the global FDI stock changes. (The Hungarian growth in 2000 is misleading, it is the result of a globally decreasing capital flow.)

*1998-2004: Greenfield investments, profit repatriation and reinvestment*

New features became obvious in the nature of foreign direct investment to Hungary since 1998: greenfield investments became constant between 1-2 billion EUR, then started to decrease, the role of proprietary loans changed, profit repatriation became stable, the volume of reinvestments increased, disinvestment appeared.

The balance of equities and other shares – the line marked by triangles – only includes greenfield investments from 1998 onwards. (In previous years, this value represents also the property acquired as part of the privatisation process.) It is clear, that the volume of the inflow became constant, in 2002, it starts to decrease, as a delayed reaction to the international context, and in 2003 it reaches a negative value.

The balance of other capital movements (the line marked by squares) consists of proprietary loans. This value is stagnant until 2000, in 2001 it boosts, and decreases in 2002. This volatile nature of crediting cannot be projected to the future, and cannot be considered a long-term tendency. Probably the political and economic uncertainties of the turn of the millennia are reflected by this fluctuation, and the value of the credit stock has reached equilibrium again.

**3rd Figure: Turnover components of foreign direct investment in Hungary 1995-2003**
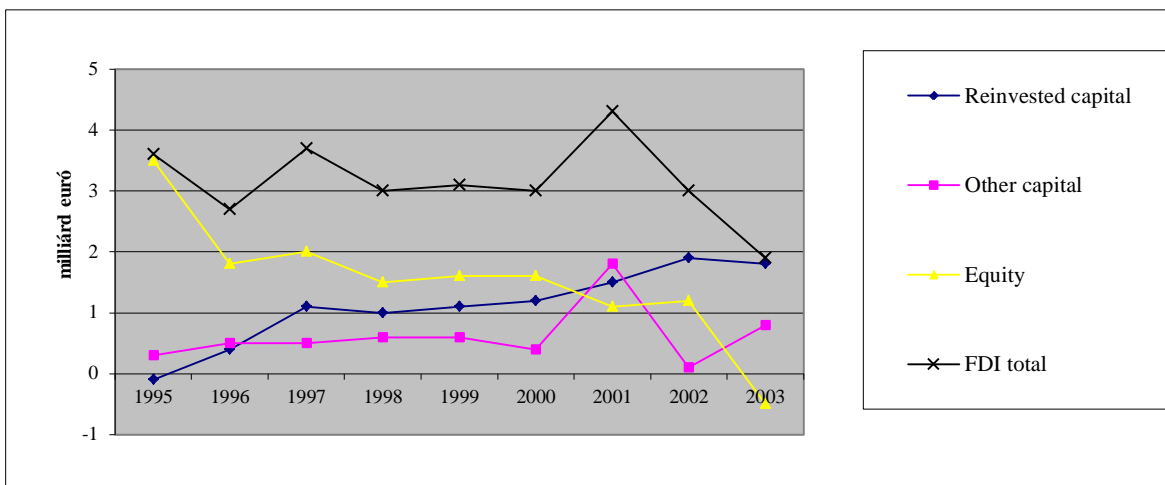


Source: Hungarian National Bank (www.mnb.hu)

The amount of reinvestment – the dotted line – was not significant until 1997. However, between 1997-2000 this revenue reached two thirds of the overall FDI inflow, by its annual average of 1.1 billion EUR. Between 2001-2003, reinvested incomes showed an increasing tendency reaching 2 billion EUR by 2003, besides a decrease in FDI inflow. However, this increase cannot balance the overall decrease, therefore the volume of FDI decreased.

A reason for these changes in the FDI structure can be that foreign companies moving to Hungary turned productive by the end of the 1990s. The realised profit created a new situation, not only in the field of reinvestments, but also by means of the upcoming profit repatriation.

The first large scale profit repatriation appeared in 1998, reaching 843 million EUR, twice as much as in the previous year. The tendency did not turn in 1999 (972.3 million EUR), and after 2000 it became stable above a level of an annual 1 billion EUR. This repatriation rate meets the international average compared to the stock. In 2003, the per capita FDI stock including recirculation in Hungary was the largest in the Eastern Central European region: 3533,3 USD / capita. However, the structure of FDI stock was different in many aspects from other regional countries. The ratio of greenfield investments is still the highest in Hungary, reaching 33% of the complete stock, and the ration of export oriented investments is still outstanding: 15-20%. (Sass [2003]).

Summarising the tendencies of the early 21st century, a very important feature cannot be omitted: this is the increasing role of disinvestment.

**1st Table: Profit sharing of foreign-owned companies in Hungary between 1995-2004**

| Year | Income on equity and reinvested earnings | | | | | |
|------|------------|------------|------------------|------------|------------|------------------|
| | Dividends | | | Reinvested earnings | | |
| | Credit (1) | Debit (2) | Net (3)=(1)-(2) | Credit (4) | Debit(5) | Net (6)=(4)-(5) |
| 1995 | 9,7 | 279,2 | -269,2 | 10,0 | -136,6 | 173,6 |
| 1996 | 17,1 | 300,5 | -283,3 | -2,1 | 397,3 | -399,4 |
| 1997 | 13,9 | 476,1 | -462,2 | 6,0 | 1154,9 | -1148,9 |
| 1998 | 18,1 | 861,1 | -843,0 | -6,3 | 1009,2 | -1015,6 |
| 1999 | 11,3 | 972,3 | -961,0 | -19,9 | 1054,2 | -1074,1 |
| 2000 | 11,8 | 1009,8 | -997,9 | 63,5 | 1135,0 | -1071,5 |
| 2001 | 65,4 | 1076,4 | -1011,0 | -49,2 | 1478,7 | -1527,9 |
| 2002 | 24,8 | 1300,6 | -1275,7 | 28,0 | 1911,4 | -1883,4 |
| 2003 | 34,9 | 1289,5 | -1254,6 | 81,8 | 1796,9 | -1715,1 |
| 2004 | 118,0 | 1804,9 | -1689,9 | -34,6 | 1840,0 | -1874,6 |

Source: Hungarian National Bank (www.mnb.hu)

The amount of disinvestment annually doubled from 1998 to 2001. It considerably decreased in 2002, and in 2003 both investment and disinvestment values were outstanding, taking an overall negative value, what is really disturbing. In subsequent years, the value of shares went back to the 2001 level. The 2003 anomaly could be caused by the uncertainties and incalculableness of the Hungarian political and economic life – fluctuation in exchange rate of the forint, tensions between the Ministry of Finance and the Hungarian National Bank, and expectations towards EU accession.

Deployment of research and development activities of multinational companies in Hungary became a stronger tendency after 1998, that must also be noted among the changes of the FDI structure. This is particularly important, because the R+D centres also mean the centre of the organisation matrix of the company, a stable division existing for long terms, serving and directing other organisational units, and therefore these are indispensable for the survival of the corporation.

**2nd Table: Changes in investment and disinvestment in Hungary between 1995-2004**

| Year | Equity and other capital | | |
|------|----------|----------|---------|
|      | Increase | Decrease | Net |
| 1995 | 3625,50 | 62,8 | 3562,7 |
| 1996 | 1793,30 | 47,3 | 1745,90 |
| 1997 | 2242,80 | 232,6 | 2010,20 |
| 1998 | 1620,60 | 248,9 | 1371,80 |
| 1999 | 1858,70 | 423,8 | 1434,90 |
| 2000 | 2371,10 | 861,5 | 1509,60 |
| 2001 | 2349,90 | 1253,50 | 1096,30 |
| 2002 | 1690,90 | 534,2 | 1156,70 |
| 2003 | 5978,00 | 6642,10 | -664,1 |
| 2004 | 2337,00 | 1228,10 | 1108,20 |

Source(www.mnb.hu)

According to the surveys, almost a half of the large multinational enterprises operating in Hungary are engaged in R+D activities as well. The most important ones by sectors are: lighting industry, (GE-Tungsram), manufacturing medical instruments (GE-Medicor); medicine (Sanofi-Chinoin, Astra Zeneca, Teva-Biogal, Akzo Nobel-Organon); informatics and telecommunication (Ericsson, Compaq, Nokia, Siemens, Motorola); machine production (Audi, Continental Teves, Volkswagen, Temic, Knorr-Bremse, Denso); electronics (Felxtronics, Samsung); tyres (Michelin); household chemicals (Unilever); new material development (Furukawa); agriculture (Novartis-Sandoz Seeds).

*2004-2008 Tendencies after the EU accession*

The European Agreement, signed in 1991, broke down the trade barriers between Hungary and the Communities, and the Hungarian regulatory framework was gradually adapted to that of the Community, therefore actual accession on 1st May 2004 did not mean a major change in the economic or legal environment. Enlargement has not generated further tasks for multinational

companies, because they had been already prepared thereto. EU integration has also not effected the economical operation of their places of business.

The enlargement resulted in Hungary becoming a regional centre for many companies for their access to markets to the East. The country gained a regional central role in the fields of tourism, logistics and the software industry.

Let us see the new tendencies in some figures!

**3rd Table: Direct investment in Hungary, transactions** (Euro million)

| Year | Equity capital | | | Reinvested earnings | Equity capital and reinvested earnings | Other capital | | | Direct investment in Hungary |
|---|---|---|---|---|---|---|---|---|---|
| | Increase | Decrease | Net | | | Liabilities, net | Assets, net | Net liabilities | |
| 2004. | 2 354.1 | 1 272.5 | 1 081.6 | 2 227.4 | 3 309.0 | 355.1 | 225.4 | 129.6 | 3 438.7 |
| 2005. | 4 442.3 | 476.0 | 3 966.2 | 1 917.9 | 5 884.1 | 770.9 | 482.9 | 288.0 | 6 172.1 |
| 2006. | 3 731.2 | 2 255.9 | 1 475.3 | 1 358.6 | 2 834.0 | 3 094.9 | 474.5 | 2 620.4 | 5 454.4 |
| 2007. | 4 583.7 | 3 739.7 | 844.0 | 2 274.5 | 3 118.5 | 3 477.6 | 3 744.0 | -266.4 | 2 852.1 |
| 2008. | 7 539.7 | 4 268.0 | 3 271.7 | 895.1 | 4 166.8 | 2 294.3 | 2 270.4 | 23.9 | 4 190.7 |

Source: Hungarian National Bank statistics 2012

The first change to be mentioned is the growing volume of equity capital, which means that after the EU accession Hungary became the target of the Greenfield investments again. In the meantime, the decrease of equity has also shown high values. The possible explanation of this intensive fluctuation in equity is the structure change in FDI inflow. Investors preferred new sectors and they extracted the capital from the old ones. In 2006, there was a relevant decrease in foreign equity of real estate and business activities, which reflected the recession of this sector. In 2007, this tendency continued and the investors extracted more than 3 billion euros equity capital form this sector. Due to this fact this year the whole FDI inflow in Hungary decreased essentially in comparison with the other years of this period. In 2008 the high volume of inflow equity in service sector resulted in increasing net capital investments.

**4<sup>th</sup> Table: Income on equity and reinvested earnings (Euro million)**

| | Dividends | | | Reinvested earnings | | |
|---|---|---|---|---|---|---|
| | Credit (1) | Debit (2) | Net(3)=(1)-(2) | Credit(4) | Debit(5) | Net(6)=(4)-(5) |
| 2004. | 118.9 | 1 825.8 | -1 706.9 | 397.1 | 2 227.4 | -1 830.3 |
| 2005. | 366.0 | 2 374.3 | -2 008.3 | 95.5 | 1 917.9 | -1 822.4 |
| 2006. | 291.1 | 3 842.3 | -3 551.2 | 690.7 | 1 358.6 | -668.0 |
| 2007. | 376.0 | 4 203.0 | -3 827.0 | 635.6 | 2 274.5 | -1 638.9 |
| 2008. | 1 120.6 | 4 064.4 | -2 943.8 | -705.5 | 895.1 | -1 600.7 |

Source: MNB statistics 2012

The second important phenomenon is the rate of profit repatriation. The volume of dividend doubled and in some years even tripled of this value in previous periods. The amount of reinvested earnings remained at the same level; it was approximately 1.6-1.8 billion euro per year.

It means that the profitable Hungarian subsidiaries allowed owners to realise more and more money from their Hungarian investments. The above mentioned structure change in FDI targets caused the growing proportion of Greenfield investments in FDI inflow, while the rate of investments in the existing firms were stagnant.

FDI stock in Hungary by sectors is as follows: services (56%), manufacturing (36%), electricity, gas and water (5%) another (3%).

According to Ernst and Young's CEE Attractiveness Survey of 2009, investments in services doubled in Hungary between 2004 and 2008 in terms of the number of projects. The share enjoyed by services exceeds that of the manufacturing sector by 20 percentage points. In 2008, Hungary was the target of 21% of all service investments in the CEE although the engine industry was the best performer as far as the number of new jobs is concerned. (ITD 2009)

The stock of FDI increased from 45.134 billion euro to 62.454 billion euro during this period. Despite this positive tendency, Hungary - after the EU accession - lost its leading position in CEE concerning FDI stock per capita. Hungary was the third most attractive economy from the foreign investors' point of view in CEE, but it could overtake some emerging countries from Southern-Europe as well.

**4<sup>th</sup> Figure: FDI stock per capita in the CEE region, 2009**
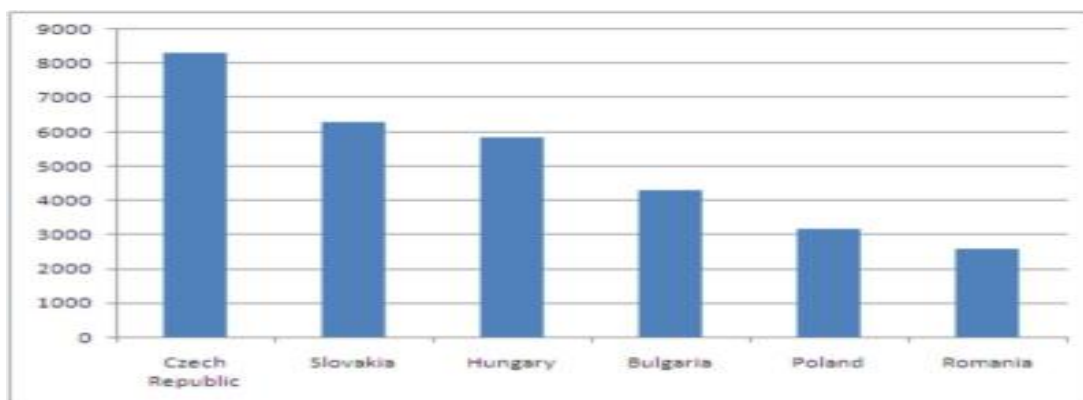
Source: wiiw, FDI statistics, 2009, ICEG, 2010

*Trends after the crisis of 2008*

In line with an analysis made by PricewaterhouseCoopers, FDI inflow to the Central and Eastern European region slumped by half in 2009, and investments in the real estate market plummeted by 71%. However, the financial crisis impacted FDI inflow to the countries in the region differently. Slovenia and Latvia were hardest hit, while in Slovakia FDI increased in the years after the crisis. The statistics made by the Central Bank of Hungary showed that FDI went down significantly in Hungary in 2008, by 30% - it reduced by EUR 3.1 billion. This decline preceded the subsequent influence of the crisis on the other countries of the region; it was 9% worse that the average of the countries which joined the European Union in the recent enlargement round.

**5<sup>th</sup> Table: Direct investment in Hungary, transactions** (Euro million)

| Year | Equity capital | | | Reinvested earnings | Equity capital and reinvested earnings | Other capital | | | Direct investment in Hungary |
|------|----------|---------|------|------|------|------------------|------------|------------------|------|
|      | Increase | Decrease | Net  |      |      | Liabilities, net | Assets, net | Net liabilities |      |
| 2009 | 8,658.3  | 10,276.6 | -1,618.3 | -191.8 | -1,810.1 | 7,360.5 | 4,074.3 | 3,286.2 | 1,476.1 |
| 2010 | 6,322.9  | 3,168.3  | 3,154.6  | -186.1 | 2,968.5  | -1,555.2 | -261.4 | -1,293.8 | 1,674.7 |
| 2011 | 17,699.2 | 14,540.8 | 3,158.4  | 1,241.1 | 4,399.5 | -146.8 | 443.9 | -590.7 | 3,808.8 |
| 2012 | 7,567.5  | 3,652.9  | 3,914.6  | 1,323.2 | 5,237.7 | -1,749.8 | -7,202.0 | 5,452.2 | 10,689.9 |

Source: MNB statistics 2013

However, in 2009 and 2010 Hungary performed somewhat better than her competitors in the region, but the volume of FDI inflow still considerably lagged behind the years preceding the crisis. At absolute value the last two years suggest the regeneration of the capital market, or rather, its soaring; however, the real economic impacts of FDI inflow are not reflected in growing corporate investments or an increasing GDP.

Based on the analysis of the extraordinarily high FDI of 2012 it is clear that while shares and reinvested revenue are in compliance with the average of the previous years, the balance of other capital movements, i.e. loans granted to affiliates increased to the highest ever. Currently one can only try to guess the reasons behind it. The analysis of the last two decades points out that during a crisis (i.e. between 1995 and 1998 as well) instead of equity financing foreign owned companies preferred taking out credits, or receiving a loan from their mother companies. The next chapter will shed light on the reasons.

## 6. Corporate financing strategy in Hungary in the last 20 years

The evaluation of corporate profits and losses cannot be separated from the financing policy of the companies. Corporate profitability depends on capital structure, but at the same time whether a company can take out a credit depends on the creditworthiness, i.e. the profitability and growth prospects of the given company. Below We are presenting the analysis of what kind of impact the financing decisions of Hungarian companies made on corporate productivity and growth in the last 20 years, using financial indicators

The database of Hungarian enterprises was made by ECOSTAT- Hungarian statistical office-, which represents close to 90% of the firms in the country. The average number of firms in this database is close to 2000-3000 for each year but includes entries onto and exits from the market. The period includes the 14 years between 1995 and 2009, 8,5 years before the date of EU integration (1st of May 2004) and 5,5 years after it. The records contain all relevant information from annual reports, e.g. balance sheets, profit and loss figures, etc.

We differentiated the enterprises according to size and ownership. The large enterprises were distinguished from the small and medium enterprises (SMEs) by the number of employees (above and below 300 employees). In 2009 the number of employees missed from the database, consequently concerning this year we couldn't make difference according to size. We considered

a firm as domestic enterprise when foreign capital in total capital was less than 50% and consider a firm as foreign enterprise if foreign capital in total capital was equal or more than 51%.

We made analyses on the database which was filtered according to the above mentioned aspects from three points of view

- Capital structure = financing policy
- Concord between assets and liabilities - liquidity:
- Structure of the profit and loss - productivity

*Financing policy - liquidity*

*Liquidity and financial policy:*

The ratio between **long liabilities and equity** shows the availability of credits for the firms in other words the credit standing of the firm. It also represents the self-financing potential of the enterprises. We can declare that domestic corporations in Hungary preferred internal financing in the major part of the examined period which confirms the validity of peaking order theory in Hungary. Concerning the first part of the investigated period we can find other explanation for low debt- equity ratio. The financial market was underdeveloped, the whole market transformed, the operation and reporting of the enterprises was not transparent, the redlining technique distinguished enterprises, the transaction costs and interest rates were high. These reasons resulted in low supply and low demand of bank credits in '90s.

**5th Figure: Long-term liabilities/Equity between 1996-2009 in Hungary**
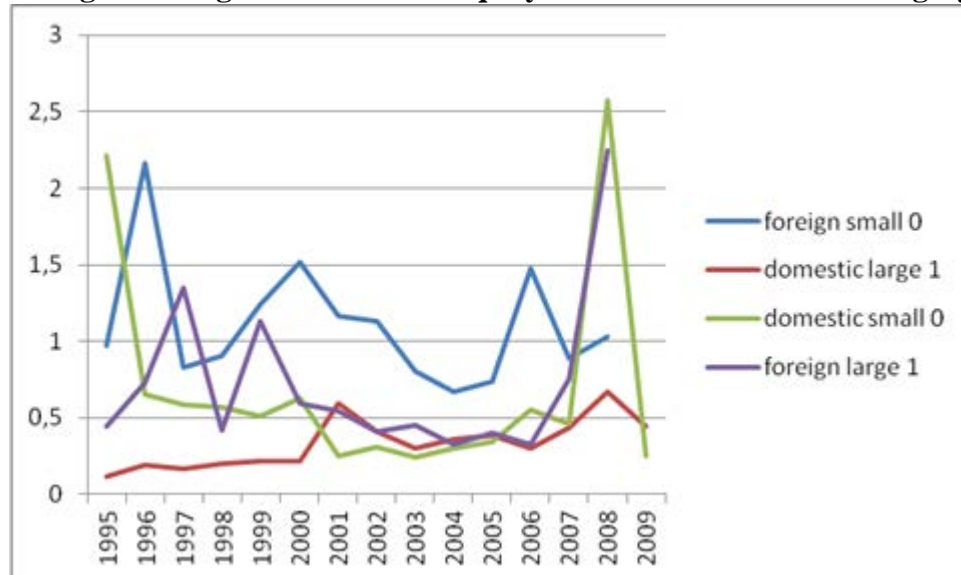
The **debt ratio in foreign enterprises** was higher than in domestic ones in the whole period especially in the case of foreign small enterprises. The priority of credits was extraordinary between 1996-1999 and 2008-2009. This credit demand coincided with the periods of recession in Hungary. According to general principals (foreign) investor reduces proportion of equity in capital structure when the economic risk of the (host) country is increasing. Investors finance investment by local bank credits. This way they can maximise the financial leverage and minimise the owners' risk.

The proportion of **investment credit in total long term liabilities** was not dominant; it was less than 45-40% after 1996 concerning all types of the firms and especially foreign ones. The following items should be presented as long term liabilities: investment and development credit, other long term credit, debts on issue of bonds, liabilities due to founders, other long term liabilities. The database does not make possible to analyse the whole structure, but the ratio of investment credits points the fact that not only local bank credits but founders loans also played an important role in the financial choices of foreign enterprises (bonds were negligible in Hungary) At the same time we have to mention that foreign firms couldn't enjoy the advantages stem from tax savings because most of them didn't pay corporate taxes at all. At the beginning of the '90s, foreign companies were entitled to special tax advantages.

Domestic firms could have exploited tax savings, but the debt ratio was low in their case.

Domestic firms could have exploited tax savings, but the debt ratio was low in their case.

However, the reason for the lower indebtedness of Hungarian companies is the fact that it is difficult to take out a credit rather than an outstanding self-financing potential. The soar in the credits granted to small enterprises in 2008 is attributable to the exchange rate increase of foreign currency credits rather than to taking out new development credits.

The ratio between **long-term and short-term liabilities** reflects 15-85% and 20-80% proportions concerning domestic and foreign enterprises. There is not a relevant difference among firms considering their size. According to ownership we can find deviation in the structure of liabilities. The proportion of long-term liabilities is higher in foreign firms, than in domestic ones. Domestic firms in the whole period replaced the long-term credits with short-term credits. This replacement was advantageous for enterprises for several reasons: the availability of short term

credits is simpler, the debtor examination procedure is shorter, the interest rate is lower, and conditions of the credit are not so rigorous. Domestic owners preferred the so called revolving short-term credit, which are automatically available again for the debtor after redemption. This unending short-term credit construction can be considered a quasi-long-term credit. Balla (2011) drew the same conclusion.

**6<sup>th</sup> Figure: Short term liabilities / total liabilities between 1995-2007 in Hungary**
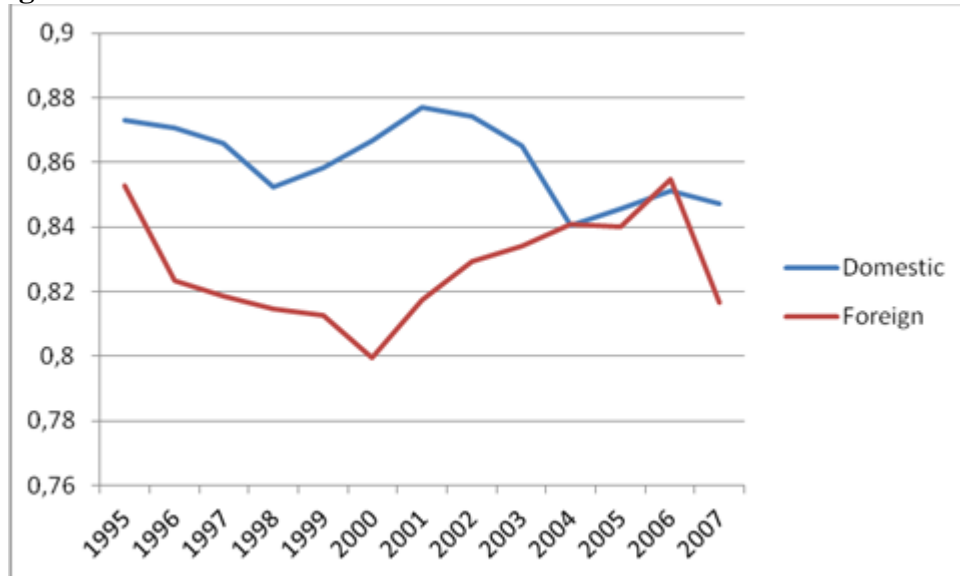


Surprisingly the **compliance between assets and liabilities** concerning all enterprises reflect conservative financial strategy: the corporations financed not only fixed but currents assets as well by long-term sources. The equity was dominant in long-term sources, as we above presented, proportion of long-term liabilities was lower, than 20 % in the whole period. There is not relevant diversity among enterprises on the basis of ownership or size in financial strategy. The indicator of liquidity was higher than 1 concerning all types of the firms in the investigated period.

The main explanation of the conservative financial strategy is the dominancy of internal financing, but mostly it was due to the underdeveloped financial market and doesn't reflect a conscious concept for maximizing the corporate value. At the same time enterprises had to face growing volume of the bad debts and receivables, the spool, which increased the numerator of the fraction

The trendline does not reflect the changes which took place in the credit market after 2000. Although corporate credits increased dynamically, the depth of financial intermediation still

lagged behind the level expected in case of a country as developed as Hungary, and financial intermediation did not become dominant as a corporate financing source either.

**7th Figure: Indicator of the liquidity between 1992 and 2009 in Hungary**
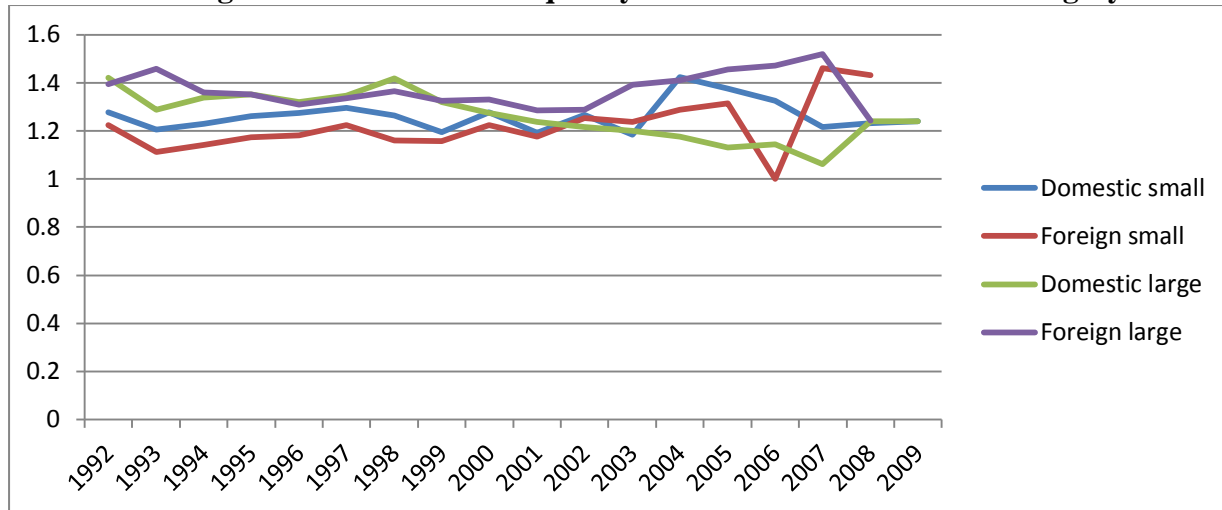


The **proportion of retained earnings and registered capital within equity** reflects how much a company is self-financing, and also reflects its ability for internal growth. The proportion of registered capital shows a linear decline compared to equity in all corporate categories, which is very promising, as it shows that companies grew continuously during the given period. However, the trend of the proportion of retained earnings is not so even. The initially low, often negative profitability level of large industrial enterprises grew to 10-15% of the equity by the middle of the decade. Then profitability level showed a downward trend, which was due to the volume growth of equity (attributable to the accumulated profit reserve). During a considerable part of the period, within equity the retained earnings of companies with a foreign majority ownership exceeded the average of Hungarian owned companies. Throughout the whole period, in the SME sector the proportion of annual profit exceeded the value of the profit of large industrial enterprises compared to equity, which, on the one hand, could partly be connected to lower registered capital; on the other hand, Modigliani-Miller [1996] also pointed out that as a riskier form of investment a small company had to generate a higher profit than more stable large industrial enterprises.

*Structure of the performance and productivity of the firms*

In accordance with the previously mentioned there is a strong correlation between capital structure and performance structure in other words the financing policy has effect on the profitability. The financial income and expenses draws the attention to the differences of financial positions of the firms. Does the company succeed in producing higher profit than paid interest? Couldn't the interest rate as financial expenses eliminate the operating profit?

**8th Figure: Interests paid / total liabilities in Hungary between 1995 and 2009**
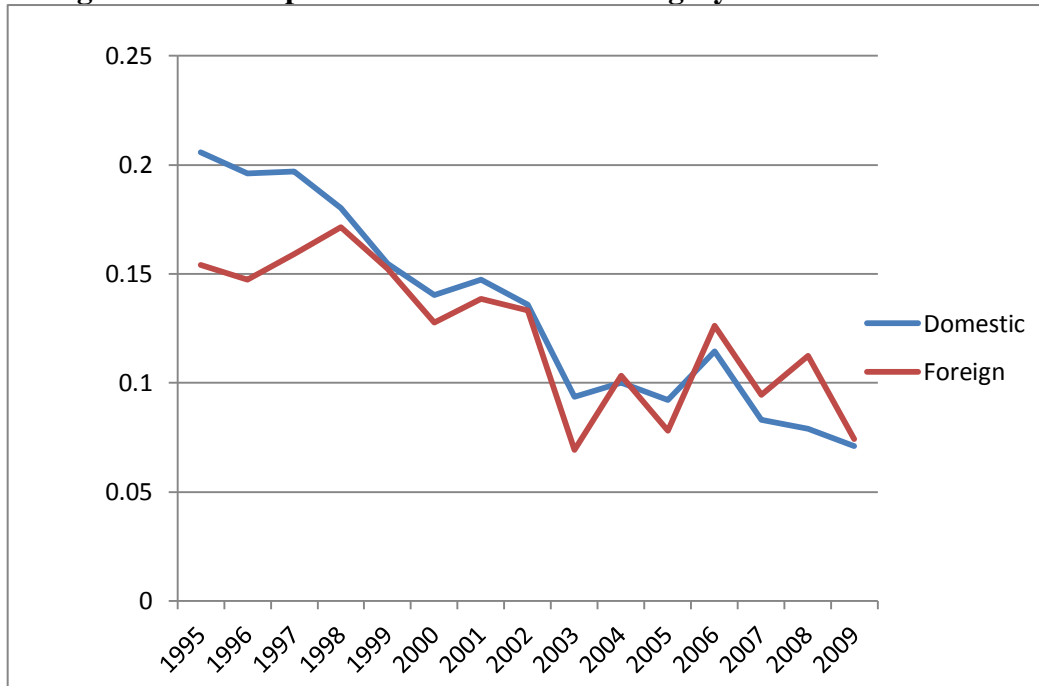


The rate of **paid interest and liabilities** shows the interest conditions and financial position of the enterprises. There were relevant differences concerning this position among corporations in Hungary. The average interest payments for SMEs were higher with 0,5-1 % comparing to the payments of large enterprises with rare exemptions. This fact confirm the so called redlining technique of Hungarian banking system, which credit policy excluded those enterprises form credit supply who were considered too risky. The trend of interest payment followed the dynamism of the availability of long-term credit especially in foreign SMEs sector. When credit supply was low then paid interest was small, when the credit supply increased then interest payment grew.

Foreign ownership did not entail lower interest costs, which means that foreign companies did not receive cheaper credits than Hungarian owned ones. However, the interest of intercompany loans granted by foreign owners is one of the alternatives of profit repatriation, a tax-free form of it. If the assumption that intercompany loans were dominant among liabilities is correct, then relatively high interests can be interpreted accordingly.

The proportion of profit after and before taxes shows the firms' ability to pay tax burdens. This rate also reflects the different availability of tax preferences or allowances. The tax saving increases not only the volume of the dividend but it also contributes to the growing potential of the enterprises. The volume of the retained earning comparing to the earnings after tax produces the base of internal financing sources, and shows the ability of the firms to finance their own investments. This rate is especially important concerning foreign companies because their dividend policy has an effect on the competitiveness of the country in international capital market

The rate of **earnings after and before taxes** – according to the anticipations – was close to 0,9 concerning foreign firms and higher than domestic firms' rate. In the case of domestic large firms this proportion was about 75-85 % until 2004. After it - the date of EU integration - the difference (with special tax advantages) between foreign and domestic firms disappeared.

The volume of dividend which is complement of the volume of **retained earnings comparing to earnings after taxes** was a bit higher in foreign firms than in domestic ones in '90s. It means that foreign owners repatriate 20-25 % of their profit on the average while domestic owners divided less than 10-15% of their profits. After 2000 the dividend policy or in the other word the internal financing policy became similar in all types of the enterprises in Hungary. It means that firms retained approximately 20-30% of their profits to finance later investments of the firm. In 2007 there was an essential decline in this proportion which reflects the effect of economic crises.

The corporate productivity answers the question how effectively the enterprise uses the capital which it gets from different investors, the owners and creditors. According to the analysing target we can investigate the return of the total assets but we can focus on only the productivity of the equity which was provided by the owners..

Return on Assets (ROA) shows the rate of the earnings which the firm produced comparing to its total assets. The numerator of the indicator is equivalent with earnings after taxes (EAT) if the enterprise finances its investments and activity only by equity. In the case of financial leverage –

when the firm also finances its investments by credits – paid interest and consequently smaller tax base may result in tax savings for the enterprise. It means if we reduce the earnings before taxes and interests (EBIT) by tax savings then we can calculate a return which is equivalent with a firm without financial leverage. This calculation makes the indicators comparable independently form the financial policy of the firm. Unfortunately the information which is available in the database doesn't make this correction possible.

Return on equity (ROE) informs us the rate of earnings comparing to the equity of the enterprise. Because of the difference in taxation position of the firms – some of them have better chance to exploit tax preferences and allowance than the others – it is worth calculating the indicator by both EAT and EBIT in the numerator.

The higher the rate of ROE or ROA, the more valuable the firm is in investors' eyes. These indicators don't reflect only the business risk, but financial risk, effect of financial leverage, as well.

**9th Figure: ROA indicator in Hungary between 1995 and 2006**
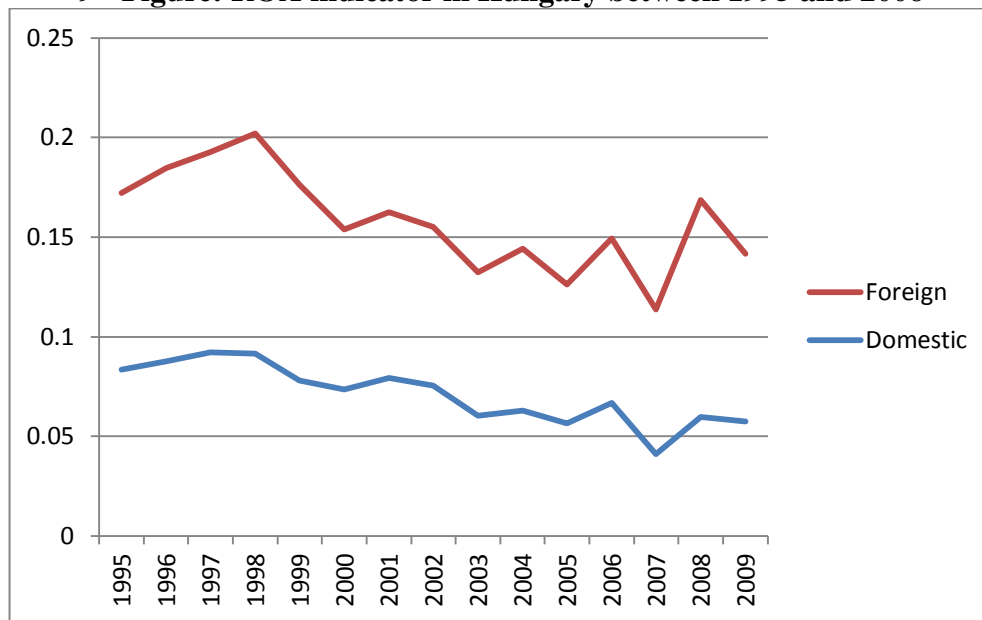


From the analysis of **ROA and ROE indicators** it becomes clear that the earnings before tax / equity indicators of Hungarian and foreign owned large industrial enterprises are practically in the same proportion to each other as the ratio of after-tax profit also taking the impact of various tax reliefs into consideration to equity. Only a difference in percentages can be shown between

the curves of the two indicators - clearly for the benefit of earnings before tax / equity -, but as regards trends, the indicators reflect exactly the same proportions.

The other result to be highlighted is attributable to the impact of ownership composition. Throughout the whole period in question foreign owned companies had 10-15% higher profitability than Hungarian owned ones. The difference in performance between the two enterprise types did not decrease even by the end of the decade.

## 7. Conclusions

In the analysis We tried to outline what kind of financing strategy characterized Hungarian companies in the last quarter of a century, and whether credit supply or FDI inflow considerable compared to the size of the country was the primary source of financing in corporate investments and growth. The result of my inquiry made using financial indicators can be summarized as follows:

- The role of investment credits in the financing of Hungarian companies was insignificant in the 1990s, and did not become dominant even after the credit expansion after 2000.
- Hungarian companies substituted their long-term credit demand with short-term (revolving) credit.
- Throughout the period in question the rate of indebtedness of foreign companies was higher than that of Hungarian companies, but this trend was mainly attributable to loans granted by mother companies.
- During the 1990s Hungarian (small and medium-sized) enterprises paid higher interests than foreign ones, but this situation changed later on.
- All enterprise types followed a conservative financing strategy, which was due to their preference of self-financing. It partly means the manifestation of the hierarchy theory in Hungary, but it is partly attributable to the low level of financial intermediation.
- As of 2000 the extent of reinvestment showed a uniform trend in the financing strategy of Hungarian companies, irrespective of the ownership structure, but it dropped radically after the crisis.
- Throughout the whole period in question foreign owned companies had higher profitability than Hungarian owned ones.

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# PART 2:  INTERNATIONAL MANAGEMENT AND CULTURAL TOPICS

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# NATIONAL CULTURE AND INTERNATIONAL ALLIANCES: A REVIEW OF RECENT LITERATURE

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## Abstract

This literature review explores the main advances in recent research dealing with the role of national culture and cultural differences on international alliances' features. The review focuses on articles published between 2000 and 2012 in top management and international business journals. Through the analysis of the 100 selected articles, the paper identifies main research streams (alliances' formation, structure, goals, management and governance, and performance), as well as main individual and institutional contributors. The review concludes reflecting on avenues for future research related to both thematic and methodological issues.

**Keywords:** International alliances; national culture; cultural distance; literature review.

**JEL:**

## 1. Introduction

Literature on international strategic alliances has traditionally pointed to national culture (NC) issues as a key factor underling the formation, management, and potential success of collaborative linkages between partners coming from different countries. National culture can be defined as the "collective mental programmes" developed by a group of people who share the national environment (Hofstede, 1980, 2001). In particular, cultural differences and cultural distance (CD) among partners have been extensively researched as determinants in the features and evolution of alliances.

This review analyses the advances reflected in recent literature dealing with the role of NC/CD issues on alliances' formation, structure, management and governance, and performance. This review focuses on recent research published between 2000 and 2012 in top or high-impact management and international business journals. Table 1 shows the list of selected journals. Management journals were selected using the list initially identified by Gómez-Mejía and Balkin (1992) and later adapted by Pisani (2011) and Werner (2002), while the selection of international business journals bases on the studies by Acedo and Casillas (2005), Chan *et al*. (2006), DuBois and Reeb (2000), and Lu (2003).

As a first stage, the articles relevant for this review were identified through a keyword search performed in the Institute for Scientific Information's (ISI) Web of Knowledge and Scopus databases.As our main focus is the NC/CD perspective, we looked forarticles including the following words in their title, abstract, or keywords: *acculturation, cross-country, cross-cultural, cross-national, culture* (this term was entered as "culture" for international business journals and as "international culture" for management journals)*, cultural distance, cultural differences, and psychic distance*. In the case of journals no gathered in these databases (*Management International Review* and *Journal of Applied Behavioral Sciences* prior to 2005, and*Industrial &Labor Relations Review* in 2003), we carried out a direct search in their respective archives.

At a second stage, a qualitative analysis was developed in order to select the articles dealing with strategic alliances and cooperative agreements, as well as to thematically classify the selected studies. We finally analysed100 articles dealing with three main research lines: alliances' formation, structure, and focus (32 articles); alliances' management and governance (40 articles); and alliances' performance (28articles).

**Table 1. Breakdown of identified articles by source journal**

|  | Identified articles 2000-2012 |
|---|---|
| *Management Journals** | |
| Academy of Management Journal (AMJ) | 1 |
| Academy of Management Review (AMR) | 0 |
| Administrative Science Quarterly (ASQ) | 1 |
| Decision Sciences (DS) | 1 |
| Human Relations (HR) | 2 |
| Industrial & Labor Relations Review (ILRReview) | 0 |
| Industrial Relations (IRJ) | 0 |
| Journal of Applied Behavioral Sciences (JABS) | 1 |
| Journal of Applied Psychology (JAP) | 1 |
| Journal of Management (JM) | 1 |
| Journal of Management Studies (JMS) | 3 |
| Journal of Occupational and Org. Psychology (JOOP) | 0 |
| Journal of Organizational Behavior (JOB) | 0 |
| Journal of Vocational Behavior (JVB) | 0 |
| Management Science (MS) | 0 |
| Organizational Behavior & Human Decision Process (OBHDP) | 0 |
| Personnel Psychology (PP) | 0 |
| Psychological Bulletin (PB) | 0 |
| Strategic Management Journal (SMJ) | 1 |
| **TOTAL** | **12** |
| *International Business Journals*** | |
| International Business Review (IBR) | 26 |
| International Marketing Review (IMR) | 7 |
| Journal of International Business Studies (JIBS) | 21 |
| Journal of International Management (JIM) | 7 |
| Journal of International Marketing (JIMk) | 6 |
| Journal of World Business (JWB) | 10 |
| Management International Review (MIR) | 11 |
| **TOTAL** | **88** |

* List of journals initially identified by Gómez-Mejía and Balkin (19
92) and later adapted by Pisani (2011) and Werner (2002).
** List of journals derived from Acedo and Casillas (2005), Chan *et al.* (2006), DuBois and Reeb (2000) and Lu (2003).

## 2. Main findings

### 2.1. Journals, authors and type of articles

As shown in Table 1, MJs gather only 12% of selected articles. Among IBJs, two journals —*JIBS* and *IBR*— accumulate almost 60% of the total amount of selected articles.

The 100 articles gathered in our database have been authored by 197 different researchers. In order to assess individual contributions within the field we have examined both the total and adjusted contributions by each author —following the methodology used in previous reviews like Lu (2003) and Morrison and Inpken (1991). Regarding the total amount of contributions, a

complete credit was counted each time a researcher authored or coauthored an article, regardless of the total number of authors in the same article. Moreover, no distinction was made based on the author's order within the article. Regarding adjusted contributions, a complete credit was counted for a singled-authored article, half a credit for articles coauthored by two researchers, one third of a credit in the cases of three coauthors, and so forth. Over 84% of identified authors contributed only once (total contribution), a scarce 10% participated in two different papers and only 5.5 % authored 3 or more studies. It clearly seems that regardless of the wide variety of researchers working on the field, only a few are able to consistently publish in the selected top journals.

Table 2 reports the most prolific contributors to the field: it shows the list of 30 authors who contributed 2 or more articles in the period of study, as well as the list of authors whose adjusted contribution is over 0.5. Three authors clearly lead the rankings of both total and adjusted contributions: Yadong Luo, University of Miami/Sun Yat-Sen University (8 TC, 6.75 AC); David A. Griffith, University of Hawai / Michigan State University / University of Oklahoma (6 TC, 2.65 AC); and Tamer S. Cavusgil, Michigan State University / Georgia State University (6 TC, 1.66 AC). The first of these authors clearly focuses on China as host country (100% of his articles), centering the interest on both management and governance processes and performance of international alliances (mainly joint ventures). He is the only one of these three authors considering MJs as outlets for his research (more than one third of his papers haven been published in MJs, pointing to a clear unusual tendency among researchers). However, it has to be pointed that no recent research has been published by this author (his latest article dates back to 2007). Griffith's research is clearly focused on management and governance of international alliances, while Cavusgil is the only one who contributes studies to the three different research lines identified in the following section.

9% of selected articles are conceptual; that is, these papers propose and develop theoretical frameworks to analyze the influence of NC/CD on internationalization processes, but they fail to empirically test the validity of their proposals (most of them related to management and governance of international alliances). Among articles with an empirical focus, those using quantitative methodologies are the most frequent and only 3 follow a qualitative approach based on case studies. As a result, empirical analyses based on qualitative methodologies different from case studies are practically non-existing in the database.

Almost 80% of the empirical articles deal with the role of cultural differences and CD on international alliances' features; therefore, the impact of the home or host national culture has scarcely received any attention. Although a few themes (most of them related to alliances' management and governance) have been addressed with a NC perspective (e.g. communication processes, negotiation approaches, trust orientation), a particularly wide range of decisions remains almost unexplored. Among these, a particularly relevant one: which are the national cultural dimensions conditioning alliance formation decisions, alliances' structure and focus, and partners' choice.

Regardless of its critics and "hidden assumptions" (Shenkar, 2001), the Kogut and Singh's (1988) index based on Hofstede's (1980) cultural dimensions remains as the CD measurement most frequently used (almost 60% of the empirical papers including an explicit measurement of CD). In spite of its high impact and citation, it seems that few researchers have followed Shenkar's call for new measurements; in particular cognitive measurements. Only 15% of these empirical papers measure CD based on the own managers' or decision makers' perceptions. What is more, a particularly small number of papers supplement the traditional index by considering the fifth or sixth dimensions (Long Term Orientation, Indulgence/Restraint) or take into account the individual role of each particular dimension. Integrating the different dimensions into one index implies an assumption of equivalence (Shenkar, 2001) which does not have theoretical foundation or empirical support.

## 2.2. Mapping the field

Alliances' formation, structure, and focus

A first group of articles deal with the choice of alliances (versus alternative entry modes) as a way to enter foreign markets, the choice among different types of cooperative agreements, and/or alliances' main focus. Table 3 gathers basic information relative to the 32 articles included in this category.

Most papers dealing with the first issue focus on the choice between greenfield wholly owned subsidiaries (foreign direct investments carried out by firms that keep 100% of the venture's equity) and equity alliances or joint ventures that imply sharing the investment project with (at least) a second partner. Blomstermo *et al.* (2006), Morschett *et al.* (2008), and Schwens *et al.* (2011) broaden this choice by including a third option related to non-equity alliances and/or non-

equity entry modes, while Ang and Michailova (2008) focus on the choice between equity (JVs) and non-equity alliances (not considering the WOS option), and Yamin and Golesorkhi (2010) explore the equity structure of JVs.

Although the WOS/JV choice has been extensively researched, results are quite equivocal, so definitive conclusions have not been reached. While some studies point to a preference for JVs in cultural distant contexts in order to involve a local partner who provides access to specific resources such as local knowledge and contacts related to the host market (i.e. Demirbag *et al.*, 2007; Filatotchev *et al.*, 2007), others stress the role of WOSs as entry modes that allow the foreign investor to avoid cooperating with a partner whose decision and behavioural rules are not well-known and/or understood (i.e. Kim and Gray, 2008; Morschett *et al.*, 2008). A third group of papers—among them the two meta-analyses by Morschett *et al.* (2010) and Tihanyi *et al.* (2005) gathering information relative to 127 different studies— find that CD does not significantly influence this choice. Something similar happens when analysing the impact of CD on the choice between different types of JVs in terms of the foreign investor's stake of equity. Therefore, recent literature contributes to the "CD paradox" (Brouthers and Brouthers, 2001; p. 177) or "myopia regarding the CD" (Harzing, 2003, p. 75).

However, some recent studies have contributed empirical evidence that may help to explain this contradiction. As shown in Table 3, most of the studies providing this contradictory empirical evidence measure the CD in a *traditional* way: using the Kogut and Singh Index, based on Hofstede's cultural dimensions. Empirical evidence shows that differences along cultural factors not included in this measurement play a key role in this choice; among these, differences in religion and language (Dow and Larimo, 2009). Moreover, recent literature clearly points to moderators —third variables that moderate/strengthen the role played by CD— as key factors conditioning this choice. Among these, the host country risk (Brouthers and Brouthers, 2001), the foreign investor's accrued experience (Cho and Padmanabhan, 2005) and proprietary know-how (Schwens *et al.*, 2011), the industry (Tihanyi *et al.*, 2005), and the language (López-Duarte and Vidal-Suárez, 2010).

Two additional issues may condition the influence of CD relative to this choice: the number of partners in the cooperative agreement and the location of the venture. On the one hand, a greater number a culturally diverse partners introduces additional communication and coordination costs;

therefore, the impact of CD on the WOS/JV choice clearly differs for dyadic and multi-party JVs (Demirbag *et al.*, 2010). On the other, Lee *et al.* (2008) point to a greater impact of CD on the degree of control investors seek in inward projects than in outward ones; therefore, it seems that the CD between partners plays a contingent role depending on the particular location of the shared project.

The home and host country's cultural dimensions also play a relevant role on this choice; in particular, empirical evidence is quite conclusive relating to the role of the *Power Distance*(PD) dimension: the higher the level of PD in the home country, the higher the preference for high control modes —WOSs or majority owned equity alliances— (Makino and Neupert, 2000; Mayrhofer, 2004; Morschett *et al.*, 2010). As decision makers coming from high PD countries enjoy high levels of power and managerial discretion, they tend to seek control when investing abroad; therefore, they are not willing to share power with potential partners. On the other hand, Somlev and Hoshino (2005) show that high PD scores in the target increase the preference for JVs over WOSs: the greater need for management personnel in subsidiaries located in high PD countries leads foreign investors to share the project with local firms that provide management resources. Additionally, the high respect for rules and authority in these countries facilitates the control of shared projects.

Regardless of the particular kind of alliance chosen, firms' cultural experience seems to condition their tendency to engage in new international alliances (Yeniyurt *et al.,* 2009). The unique set of competencies needed to successfully engage in intercultural alliances is accrued through previous experiences with culturally distant partners. These experiences provide a cumulative learning effect over time, regardless of the country context of a particular alliance. This effect positively impacts not only the firm's propensity to engage in new international alliances, but its propensity to enter into culturally distant cooperative agreements (rather than into culturally close ones).

Finally, recent literature has also explored the impact of CD on the main objectives of alliances: the study by Kaufmann and O'Neil (2007) provides empirical evidence relative to the negative impact of CD between partners on their tendency to engage in innovation (versus marketing) alliances. Marketing alliances are unilateral agreements[i], as each partner can carry out its obligations independently of the other/s partner/s and minimal interaction between partners is needed beyond the initial agreement. Therefore, the level of needed integration/coordination

between partners is relatively low and, from an intercultural-interactions perspective, sequential relationships are non-complex. On the contrary, innovation-oriented alliances are bilateral agreements which require partners to bring in resources and work together on a constant basis. They demand continuous interaction between the parties and a higher level of integration, deriving in complex sequential relationships.

<u>Alliances' management and governance</u>

A total amount of 40 articles dealing with alliances' management and governance have been analysed (Table 4 displays the list of selected articles, as well as their main findings). The lack of a shared cultural framework increases governance difficulties in partnership relations among culturally distant partners. This lack usually results in greater behavioural uncertainty — uncertainty relative to the partners' actions— and higher concern about potential opportunistic behaviours (Luo, 2007a), as well as greater difficulties for attaining a shared alliance's pragmatic meaning (or interpretative significance) which ensures coordination of actions and clearly defines what kinds of cooperative behaviours are permissible within the agreement (Kumar and Andersen, 2000).

Therefore, each time a firm enters an alliance it faces a relational risk; that is, a risk derived from uncertainty about the partner's future behaviour. However, the *perceived* relational risk —the risk perceived by managers or decision makers— is a subjective construct conditioned by these managers' national culture. As shown by Delerue and Simon (2009), managers coming from high PD and UA cultures tend to show higher perceptions of relational risk. Cultural differences between partners also increase relational risk perception (Hsieh *et al.*, 2010).

Some papers analyse the role of relational mechanisms (as opposed to formal and contractual mechanisms) as effective tools for managing international alliances. Relational governance mechanisms are based on trust, mutual understanding, and informal rules; therefore, they depend on partners' relational commitment, information-sharing behaviour, and negotiation approach. As shown in the following section, relational commitment and trust among partners emerge as essential issues underling alliances' performance, since they induce desirable cooperative behaviours (i.e. knowledge sharing, knowledge transfer, no resistance to change).

Most empirical studies point to a negative relationship between CD and relational commitment, trust development, and willingness to pursue negotiation approaches that aim at maximizing and

equally distributing collective gains. As shown in Table 4, the study by Bstieler and Hemmert (2008) pointing to a limited impact of CD on trust formation in the particular case of R&D alliances is an exception to this general rule. Cultural barriers curtail the development of both cognitive-based trust—that is, perceived trustworthiness or expectation about the partner's behaviour— and affect-based trust —that is, trust propensity or the willingness of a party to trust others. Additionally, the home's NC conditions not only managers' management styles —in terms of communication strategies, handling of conflicts, responses to adverse situations, and negotiation approaches—, but also their concept and idea of trust (Muethel and Hoegl, 2012; Zaheer and Zaheer, 2006). However, once these relational mechanisms have been developed and implemented, their benefits seem to be reinforced at higher degrees of CD (Abdi and Aulakh, 2012).

Some recent studies show that the negative impact of CD on the development of relational mechanisms can be moderated by partners' perceptions of interorganizational justice, that is, perceptions of the fairness of each other's actions in interorganizational relationships. The theoretical framework developed by Beugré and Acar(2008) attributes this moderating role to the three basic components of interorganizational justice: distributive —fairness of outcomes distribution—, procedural — fairness of the decisions underlying outcomes distribution—, and interactional —fairness of interpersonal treatment. However, empirical evidence is only provided for the last one (Luo, 2006).

A second potential moderator is the extent to which partners participating in the cooperative agreement have internalized their own national cultural values, meanings, and norms, as well as the extent to which they are permeable to the cultural meanings and behaviours brought by the other partners (Brannen and Salk, 2000). This permeability depends, in turn, on several factors, among them, the balance of power between national cultural groups, the partners' and individuals' degree of internalization, and the extent of their prior knowledge of the other's culture. Finally, communication strategies and processes developed by partners to manage their international relationships also play a key role as moderators of the negative impact of CD on the effectiveness of relational governance mechanisms(Griffith, 2002).

Alliances'performance

28 articles have been gathered within this research stream. Table 5 shows the list of selected articles, their main findings, as well as the different performance measurements used in these studies. National cultural differences have been addressed as a key barrier to international alliances' performance and success. As above mentioned, these differences tend to hamper communication processes, partners' ability to create and maintain trust within the alliance, and the establishment of procedures that encourage cooperative behaviours. These, in turn, hinder information flows and organizational learning processes and decrease alliances' performance.

Nevertheless, empirical evidence is, at least, equivocal. The use of heterogeneous measurements of both cultural differences and alliance performance may explain (at least to a partial extent) such contradictory evidence: the meta-analysis by Reus and Rottig (2009), gathering information on 61 independent studies on international JV performance, shows that, when measured using objective measurements, CD does not play a direct role on the agreement's performance, but it shows a negative influence when measured through subjective appraisals.

Among recent literature, some papers contribute to this contradictory evidence: on the one hand, studies that measure the alliance's performance through the agreement's longevity or survival (Hennart and Zeng, 2002; Meschi and Riccio, 2008), and those using *ex ante* performance measures —stock market reaction to the alliance's announcement—(Hanvanich *et al.*, 2203, 2005),clearly point to large cultural differences between partners as drivers of lower performance. On the other, some studies that use financial indicators or subjective measurements find a positive impact of cultural differences of performance (i.e. Chiao *et al.*, 2009; Yeheskel *et al.*, 2001). There is still a third group of articles pointing to a non-significant impact of CD on alliances' performance (i.e. Li *et al.*, 2002; Nielsen, 2007).

However, recent literature also provides some clarifying ideas that help to understand so conflicting results. A first group of papers —Pothukuchi *et al.* (2002), Sirmon and Lane (2004)— point to differences in organizational, and even professional, cultures as more disruptive for international alliances' performance than differences in national culture. Differences in organizational and professional cultures hamper to a higher degree partners' interaction and their potential for sharing, combining, and leveraging complementary resources related to value-creating activities.

A second group of papers focuses on post-formation processes that may be developed and implemented by partners in order to overcome the negative effect of national cultural barriers; among them, these papers highlight intensive training programs for language skills, foreign training in the partner's country, personnel exchanges, and the use of local managers (Brouthers and Bamossy, 2006), or the development of management teams that show a balanced level of cultural diversity (rather than teams dominated by one partner's culture) (Li *et al.*, 2002).

Once again, moderators seem to play a key role as variables conditioning the final impact of cultural differences on alliances' performance. Among the most relevant, literature points to the parent firms' degree of internationalization, the market focus of the agreement (Chiao *et al.*, 2009), the partners' communication context —that is, their degree of reliance on person-to-person relationships to communicate with partners— (Jean *et al.* 2010a), the partners' shared perceptions of the alliance's procedural justice (Luo, 2005), the existence of a double-layered acculturation context —cultural differences between partners and cultural differences derived from the venture's location— (Hanvanich *et al.*, 2003), or the technological level of partners and industries (Hanvanich *et al.*, 2005).

## 3. Final reflections

Researchers have extensively focused on NC/CD when studying alliances' features and evolution. Previous sections summarize main advances in recent literature dealing with the impact of NC/CD issues on alliances' formation, structure, management and governance, and performance.

The bulk of the analyzed studies focus on CD, while research dealing with the influence of the home/host national cultural dimensions is more scant (except for the research stream related to alliances' management and governance). Therefore, the study of the role of some NC dimensions on both international alliances' formation and performance arises as a particularly interesting field.Our review shows that results are somehow contingent to the NC/CD measurement used in each particular study. In particular, it seems that country-level measurements (aggregate models of national cultural dimensions and cultural distance) and decision maker-level ones (measurements based on the own managers' perceptions and experiences) frequently point to different results. Additionally, the actual impact of NC/CD on different alliances' features depends on the presence/absence of third variables that act as moderators (among others, parent

firms' accrued experience, acculturation processes, communication processes, and partners' perceptions of interorganizational justice).

The following issues arise as the main limitations of this review article: having focused our review process on top Management and International Business journals, contributions in other outlets have not been included in the review. The use of a qualitative subjective criterion (based on researchers' interpretation) for analyzing and classifying the selected articles is a second limitation. Although we think it confers a level of thoroughness to the analysis of selected articles higher than quantitative or bibliographic methodologies, the development of an objective quantitative analysis based on bibliographic measurements would be a way to extend this research.

**Table 2. Individual contributions: Most prolific authors**

| Author | Total contributions | Institution | Author | Adjusted contributions | Institution |
|---|---|---|---|---|---|
| Luo, Yadong | 8 | University of Miami<br>Sun Yat-Sen University | Luo, Yadong | 6.75 | University of Miami<br>Sun Yat-Sen University |
| Cavusgil, S. Tamer | 6 | Michigan State University<br>Georgia State University | Griffith, David A. | 2.65 | University of Hawai<br>Michigan State University<br>University of Oklahoma |
| Griffith, David A. | 6 | University of Hawaii<br>Michigan State University<br>University of Oklahoma | Cavusgil, S. Tamer | 1.66 | Michigan State University<br>Georgia State University |
| Shenkar, Oded | 4 | Ohio State University | Marshall, R. Scott | 1.5 | Portland State University |
| Demirbag, Mehmet | 3 | The University of Sheffield | Nielsen, Bo Bernhard | 1.5 | Copenhagen Business School |
| Glaister, Keith W. | 3 | The University of Sheffield | Shenkar, Oded | 1.33 | Ohio State University |
| Li, Ji | 3 | Hong Kong Baptist University | Lin, Xiaohua | 1.25 | University of Windsor<br>Ryerson University |
| Lin, Xiaohua | 3 | University of Windsor<br>Ryerson University | Alexander, Elizabeth A. | 1 | University of the West of England |
| Richards, Malika | 3 | Penn State University<br>Drexel University | Brouthers, Keith D | 1 | University of London<br>University of East London |
| Sinkovics, Rudolf R. | 3 | University of Manchester | Kumar, Rajesh | 1 | Aarhus School of Business |
| Tatoglu, Ekrem | 3 | Bahcesehir University | Liu, C.-L.E | 1 | National Cheng Kung University |
| Brouthers, Keith D | 2 | University of London<br>University of East London | Mayrhofer, Ulrike | 1 | University of Robert Schuman |
| Hanvanich, Sangphet | 2 | Xavier University<br>Lehigh University | Richards, Malika | 1 | Penn State University<br>Drexel University |
| Jean, Ruey-Jer (Bryan) | 2 | National Chengchi University | Robson, Matthew J. | 1 | University of Leeds |
| Kumar, Rajesh | 2 | Aarhus School of Business | Rodríguez, Carlos M. | 1 | Delaware State University |
| Lam, Kevin | 2 | Chinese University of Hong Kong | Slater, Stephanie | 1 | Cardiff University |
| Marshall, R. Scott | 2 | Portland State University | Tsang, Eric W.K | 1 | Wayne State University |
| Miller, Stewart R. | 2 | University of Texas | Zaheer, Akbar | 1 | University of Minnesota |
| Morschett, Dirk | 2 | University of Fribourg | Demirbag, Mehmet | 0.99 | The University of Sheffield |
| Nielsen, Bo Bernhard | 2 | Copenhagen Business School | Glaister, Keith W. | 0.99 | The University of Sheffield |

| Author | Total contributions | Institution | Author | Adjusted contributions | Institution |
|---|---|---|---|---|---|
| Nyaw, Mee-Kau | 2 | Lingnan University | Tatoglu, Ekrem | 0.99 | Bahcesehir University |
| Pak, Yong Suhk | 2 | Ewha Womans University<br>Yonsei University | Sinkovics, Rudolf R. | 0.91 | University of Manchester |
| Park, Young-Ryeol | 2 | The University of British Columbia<br>Yonsei University | Li, Ji | 0.83 | Hong Kong Baptist University |
| Roath, Anthony S. | 2 | University of Texas<br>Michigan State University | Pak, Yong Suhk | 0.83 | Ewha Womans University<br>Yonsei University |
| Robson, Matthew J. | 2 | University of Leeds | Park, Young-Ryeol | 0.83 | The University of British Columbia<br>Yonsei University |
| Schramm-Klein, Hanna | 2 | University of Siegen<br>Saarland University | Wang, Cheng Lu | 0.75 | Hong Kong Baptist University<br>University of New Haven |
| Slater, Stephanie | 2 | Cardiff University | Jean, Ruey-Jer (Bryan) | 0.66 | National Chengchi University |
| Swoboda, Bernhard | 2 | University of Trier | Lam, Kevin | 0.66 | Chinese University of Hong Kong |
| Wang, Cheng Lu | 2 | Hong Kong Baptist University<br>University of New Haven | Morschett, Dirk | 0.66 | University of Fribourg |
| Zaheer, Akbar | 2 | University of Minnesota | Schramm-Klein, Hanna | 0.66 | University of Siegen<br>Saarland University |
| | | | Swoboda, Bernhard | 0.66 | University of Trier |
| | | | Nyaw, Mee-Kau | 0.58 | Lingnan University |
| | | | Roath, Anthony S. | 0.58 | University of Texas<br>Michigan State University |

**Table 3. List of selected articles dealing with alliances' formation, structure, and focus.**

| Article | Journal | NC/CD measurement* | Home country | Host country | Industry | Sample | Main focus/Empirical evidence |
|---|---|---|---|---|---|---|---|
| Ang & Michailova (2008) | MIR | K&S-Hofstede 4 | Emerging countries (BRIC) | Multi-country | Multi-industry | 628 alliances | Relationship CD- likelihood of equity alliances: U-shaped. |
| Arora & Fosfuri (2000) | JIBS | K&S-Hofstede 4 | Multi-country (developed countries) | Multi-country | Chemical | 1696 licenses 2638 WOSs | CD favours the choice of license agreements over WOSs |
| Blomstermo et al. (2006) | IMR | K&S-Hofstede 4 | Sweden | Multi-country | Service | 147 firms | CD favours the choice of WOSs/equity alliances over non-equity alliances (soft service) |
| Brouthers & Brouthers (2001) | JIBS | Hofstede 5 & Morosini et al. (1988) index | Europe, USA | Europe (Central, East) | Multi-industry | 231 FDIs | Interaction effect between CD and political risk on the WOS/JV choice |
| Cho & Padmanabhan (2005) | IBR | K&S-Hofstede 4 | Japan | Multi-country | Multi-industry | 604 FDIs | Interaction effect between CD and experience on the WOS/JV choice |
| Cuypers & Martin (2010) | JIBS | K&S-Hofstede 4 | Multi-country | China | Multi-industry | 6472 IJVs | Real options theory not applicable to equity stakes in IJVs |
| Demirbag et al. (2007) | JWB | K&S-Hofstede 4 | Multi-country | Turkey | Multi-industry | 6838 FDIs | CD favours the choice of JVs over WOSs |
| Demirbag et al. (2009) | JWB | K&S-Hofstede 4 | Turkey | Multi-country | Multi-industry | 522 FDIs | Non conclusive evidence relative to the role of CD on the WOS/JV choice |
| Demirbag et al. (2010) | MIR | K&S-Hofstede 4 | Multi-country | Turkey | Multi-industry | 5253 FDIs | CD favours dyadic JVs over WOSs and WOSs over multi-party JVS |
| Dow & Larimo (2009) | JIMk | K&S-Hofstede 4 & Dow and Kuranaratna (2006) | 4 Nordic countries | Multi-country | Multi-industry (manufacturing) | 1502 FDIs | CD (religion, language) favours the choice of JVs over WOSs, moderating role of experience |
| Filatotchev et al. (2007) | JIBS | Regional clusters (China) | Taiwan | China | Multi-industry | 285 FDIs | CD favours the choice of (minority) JVs over WOSs |
| Garg & Rasheed (2003) | IBR | Th. Paper | | | | | Adverse selection problems derived from CD are lower in multi-unit franchising agreements than in single-unit ones |
| Kaufmann & O'Neill (2007) | JWB | K&S-Hofstede 5 & Hofstede 5 | Multi-country | Multi-country | Computer, automotive, pharmacy | 89 IJVs | CD increases the tendency to marketing versus innovation alliances |
| Kim & Gray (2008)* | MIR | K&S-Hofstede 5 | Multi-country | Korea | Multi-industry (manufacturing) | 228 firms | CD favours the choice of WOSs over JVs |

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|---|---|---|---|---|---|---|---|
| Lee et al. (2008) | SMJ | K&S-Hofstede 4 | Multi-country | Korea | Multi-industry | 386 potential agreements | Different effect of CD on control degree for inward/outward investments |
| López-Duarte & Vidal-Suárez (2010) | IBR | K&S-Hofstede 4 & Hofstede 4 | Spain | Multi-country | Multi-industry | 334 FDIs | Political risk and language differences moderate the role of CD on the WOS/JV choice |
| Makino & Neupert (2000) | JIBS | PD and UA by Hofstede | USA | Japan | Multi-industry | 131 FDIs | High PD/UA in the home country favours the preference for WOSs over JVs |
| Mayrhofer (2004) | IBR | No explicit measure | Germany/France | Multi-country | Multi-industry | 4632 alliances | PD and IC values in target condition the alliance/acquisition choice |
| Morschett et al. (2008) | MIR | K&S-Hofstede 4 & K&S-Schwartz (1999) | Germany | Multi-country | Multi-industry (manufacturing) | 80 FDIs | CD favours the choice of WOSs over cooperative agreements (service firms) |
| Morschett et al. (2010) | JIM | Meta-analysis | | | | 72 studies | The higher the PD score in the home country, the higher the tendency to choose WOSs over cooperative agreements. Non conclusive relative to CD |
| Pak & Park (2004) | MIR | K&S-Hofstede 4 | Japan | Multi-country | Multi-industry (manufacturing) | 444 firms 3236 subsidiaries | CD favours the choice of JVs over WOSs |
| Quer et al. (2007) | IBR | Regional clusters | Spain | Multi-country | Hotel | 127 entries | Contingent role of CD in the equity/non-equity choice (host region) |
| Richards & Yang (2007) | JIM | PD and UA by Hofstede | Multi-country | China, India, Japan, USA | Multi-industry (R&D) | 543 IJVs | -UA & +PD in the home country increase investors' stake in equity alliances |
| Schwens et al. (2011) | JMS | GLOBE Proyect-practices | Germany | Multi-country | Multi-industry | 227 firms | CD moderates the role of proprietary know-how in the equity/non-equity entry mode choice |
| Slangen & Van Tulder (2009) | IBR | K&S-Hofstede 4 | Holland | Multi-country | Multi-industry | 231 FDIs | Non conclusive evidence relative to the role of CD in WOS/JV choice |
| Somlev & Hoshino (2005) | IBR | Clusters by R&S | Japan | Multi-country (Europe) | Multi-industry (manufacturing) | 751 subsidiaries | High PD score in the host country favours the preference for JVs |
| Tihanyi et al. (2005)^^ | JIBS | Meta-analysis | | | | 55 studies | Non-significant effect of CD on the WOS/JV choice; moderating effects of industry and home and host country's characteristics |
| Tsang (2005) | IBR | K&S-Hofstede 4 | Multi-country | Vietnam | Multi-industry | 2416 FDIs | CD favours the choice of WOSs over JVs and non-equity agreements |
| Wang & Schaan (2008)* | MIR | K&S-Hofstede 4 | Japan | Multi-country | Multi-industry | 4558 FDIs | CD has a non-linear effect on the WOS/JV choice |
| Xu et al. (2004) | MIR | K&S-Hofstede 4 | Japan | Multi-country | Multi-industry | 2339 subsidiaries | CD has no impact on the WOS/JV choice |

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| Yamin & Golesorkhi (2010) | IBR | K&S-Hofstede 4 & clusters R& S | Multi-country | UK | Multi-industry | 442 IJVs | CD decreases the foreign investor's stake in equity alliances |
| Yeniyurt et al. (2009) | JIBS | K&S-Hofstede 4 | USA | Multi-country | Pharmacy | 791 alliances | Experience with CD partners favours the formation of international alliances |

^^ The article also analyzes performance.

**Table 4. List of selected articles dealing with alliances' management and governance.**

| Article | Journal | NC/CD measurement* | Home country | Host country | Industry | Sample | Main focus/Empirical evidence |
|---|---|---|---|---|---|---|---|
| Abdi & Aulakh (2012) | JIBS | K&S-Hofstede 4 | USA | Multi-country | Multi-industry | 137 firms / 184 managers | CD favours higher benefits of relational governance mechanisms |
| Beugré & Acar (2008) | DS | Th. Paper | | | | | Perceptions of justice moderate the negative impact of CD on relational commitment. |
| Brannen & Salk (2000) | HR | No explicit measure | Japan | Germany | Paper | 1 case study | Individuals' internalization of NC norms moderates the impact of NC on the development of a negotiated organizational culture |
| Bstieler & Hemmert (2008) | JWB | Fukuyama (1995) | Kore and Austria | Multi-country | Multi-industry (manufacturing) | 100 firms | Limited impact of CD on trust formation in R&D alliances |
| Delerue & Simon (2009) | IBR | Hofstede 5 | Multi-country (Europe) | | Biotechnology | 344 managers | High PD and UA of decision makers increase perceived relational risk |
| Gong et al. (2001) | JAP | Hofstede 5 | Multi-country | China | Multi-industry | 265 CEOs of IJVs | CD lowers role conflict and role ambiguity of CEOs in IJVs |
| Griffith (2002) | JWB | Th. Paper | | | | | Communication effectiveness moderates the negative effect of CD on relationship |
| Griffith et al. (2000) | JIBS | IC, PD, UA by Hofstede | USA | Multi-country | Distribution | 151 firms | Interaction effect of cultural dimensions in trust and commitment (vertical alliances) |
| Griffith et al. (2006) | JIMk | Hofstede 5 | USA & Japan | USA & Japan | Distribution | 218 agreements | NC influences the commitment–information-sharing link (vertical alliances) |
| Griffith et al. (2009) | JWB | K&S-Hofstede 5 | USA | Multi-country | technology intensive industries | 200 agreements | CD lowers supply concentration in offshore outsourcing relationships |
| Ha et al. (2004) | IMR | 3 regional blocks | Korea | Multi-country | Distribution | 198 firms | CD increases perceived relational risk and decreases trust (vertical alliances) |
| Homburg et al. (2009) | JIMk | UA by Hofstede | USA & Germany | USA & Germany | Multi-industry | 511 relationships | Negative impact of UA on the use of relational governance methods |
| Hsieh et al. (2010) | JIM | Own scale | Europe, Japan, USA | Multi-country | Multi-industry | 71 IJVs | Cultural distance increases risk perception |
| Jean et al. (2010b) | JIBS | K&S-Hofstede 4 | Taiwan | Multi-country | Electronics | 240 firms | CD does not influence the relationship between information technology resources and governance mechanisms |
| Johnston et al. (2012) | JIMk | Own scale | Multi-country | Taiwan | | 150 firms | CD moderates the positive effect of on trust development (vertical alliances) |
| Ketkar et al. (2012) | IBR | IC by Hofsede | Brazil & USA | Multi-country | | 210managers | IC conditions communication processes but not trust (vertical alliances) |

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|---|---|---|---|---|---|---|---|
| Kim & Kim (2000) | IBR | No explicit measure | Multi-country | Korea | Electric & electronics | 1436 license agreements | CD favours longer contract periods in license agreements |
| Kumar & Andersen (2000) | IBR | Th. Paper | | | | | CD increases difficulties for attaining an alliance's pragmatic meaning |
| Kumar & Nti (2004) | JABS | Th. Paper Kluckhohn & Strodtbeck (1961) | | | | | NC conditions partners' sensitivity to discrepancies detection and management |
| Lee et al. (2007) | IMR | Own scale | USA | Multi-country | Multi-industry | 201 managers | CD conditions de degree of benevolence (vertical alliances) |
| Lin & Miller (2003) | IMR | Graham et al. (1994) & IC by Hofstede | USA | China | Multi-industry | 94 IJV managers | NC conditions negotiation approaches in IJVs (problem solving, compromising, forcing, and legalism) |
| Liu (2012) | IBR | Own scale | Taiwan | Multi-country | Information technology | 160 agreements | CD decreases the level of relationship learning (vertical alliances) |
| Luo (2006) | HR | K&S-Hofstede 5 | Mult | China | Multi-industry (manufacturing) | 152 IJVs | Interactional justice moderates the negative influence of CD on partner's interorganizational attachment |
| Luo (2007a) | JIBS | K&S-Hofstede 5 | USA & Europe | China | Multi-industry | 192 IJVs | CD favours the likelihood of opportunistic behaviours by partners in IJVs |
| Luo (2007b) | MIR | K&S-Hofstede 5 | Multi-country | China | Multi-industry (manufacturing) | 190 IJVs | Impact of CD on private versus collective control in IJVs |
| Marshall (2003) | IBR | IC | USA & Peru | Multi-country | Multi-industry | 185 firms | IC influences the development of trust in early stages of relationships (vertical alliances) |
| Marshall & Boush (2001) | JIBS | No explicit measurement | USA & Peru | Multi-country | Multi-industry | 185 firms | Cultural differences in attitudes toward in-group versus out-group members condition the evolution of the relationship(vertical alliances) |
| Muethel & Hoegl (2012) | JWB | No explicit measurement | China & Germany | | Multi-industry | 45 managers | Impact of NC on managers' concept of trust |
| Ness et al. (2007) | IBR | K&S-Hofstede 4 | Norway | Multi-country | Multi-industry | 169 agreements | CD curtails communications and trust development (vertical alliances) |
| Rodríguez (2005) | IMR | Hofstede 4 | USA & Mexico | | Multi-industry | 84 managers | Impact of NC on managers' management style |
| Sharma et al. (2006) | JIMk | Own scale | India | Multi-country | Multi-industry | 160 agreements | NC and CD condition relationship commitment (vertical alliances) |
| Skarmeas et al. (2002) | JIBS | Own scale | Multi-country | Multi-country | Multi-industry | 216 agreements | Cultural sensitivity influences relational commitment |
| Slater & Robson (2012) | IBR | No explicit | Japan | UK | | 5 case studies | NC conditions trust orientation (vertical alliances) |
| Tjemkes et al. (2012) | JIM | Hofstede 4 | Multi-country | Multi-country | | scenario-based experiment | Impact of NC on managers' response strategies to adverse situations |

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|---|---|---|---|---|---|---|---|
| Wang et al. (2005) | MIR | No explicit measurement | Multi-country | China | Multi-industry | 463 managers of IJVs | Impact of NC (collectivism/individualism) on conflict handling in IJVs |
| Wu et al. (2007) | JIBS | K&S-Hofstede 4 | USA | Multi-country | Multi-industry (manufacturing) | 142 firms | CD increases the risk of opportunistic behaviours and decreases trust (vertical alliances) |
| Zaheer &Kamal (2011) | JIBS | Th paper | | | | | NC impacts on trust development (vertical alliances) |
| Zaheer & Zaheer (2006) | JIBS | Th. Paper | | | | | Impact of NC on managers' idea and behaviour related to trust |
| Zeybek et al. (2003) | IBR | Own scale | mult | Kazajistan | Multi-industry | 170 IJVs | Impact of perceived NC congruence on the communication strategies |
| Zhang et al. (2003) | JIBS | K&S-Hofstede 4 | USA | Multi-country | Multi-industry (manufacturing) | 142 firms | CD does not impact on trust and relational commitment (vertical alliances) |

**Table 5. List of selected articles dealing with alliances' performance.**

| Article | Journal | NC/CD * measurement | Performance measur. | Home country | Host country | Industry | Sample | Main focus/Empirical evidence |
|---|---|---|---|---|---|---|---|---|
| Alexander (2012) | MIR | IC and UA by Hofstede and GLOBE Proyect | Innovation degree | Multi-country | Multi-country | Cellular phone | 68 firms | Interactions between UA, IC and contractual/equity form conditions alliances' performance |
| Brouthers & Bamossy (2006) | JMS | Own scale | Own scale | Western countries | Europe (East) | Multi-industry | 8 case studies | Postformation processes overcome the negative effect of CD |
| Chiao et al. (2009) | JWB | No explicit measure | Profit/loss | Taiwan | China | Multi-industry (manufacturing) | 236 IJVs | Contingent role of CD: JVs with local partners perform better than those with same nationality/third-country partners |
| Evangelista & Hau (2009) | JWB | Own scale | Own scale | Multi-country | Vietnam & Malasya | Multi-industry | 219 IJVs | CD impedes the acquisition of marketing know-how |
| Hanvanich et al. (2003) | IBR | No explicit measure | Shareholder value creation (event study) | USA | Multi-country | Multi-industry (manufacturing) | 379 JVs 636 IJVs | Negative impact of double-layered acculturation on performance |
| Hanvanich et al. (2005) | IBR | K&S-Hofstede 4 | Shareholder value creation (event study) | USA | Multi-country | Multi-industry (manufacturing) | 379 JVs 489 IJVs | Negative impact of CD on the relationship between the level of technology of the parent firm and shareholders' value. |
| Hennart & Zeng (2002) | JIBS | No explicit measure | Longevity | USA & Japan | USA | Multi-industry (manufacturing) | 97 JVs | Negative impact of CD on JV's longevity |
| Jean et al. (2010a) | JIMk | Hall's (1976) approach | Own scale | Taiwan | | Electronics | 246 firms | Communication culture moderates the impact of relationship learning on performance |
| Li et al. (2001) | JIBS | No explicit measure | Multiple accounting measures | Multi-country | China | Electronics & clothing | 898 IJVs | CD reduces first mover advantages but does not influence performance |
| Li et al. (2002) | JMS | Own scale | Multiple accounting measures | USA, Japan & UK | China | Multi-industry | 2718 IJVs | Cultural diversity (IC) does not negatively influence performance |
| Li et al. (2012) | IBR | IC by GLOBE | ROA) & sales growth | Multi-country | China | Insurance | 61 firms | IC degree moderates the negative relationship between symbiotic ownership and performance |
| Lin & Wang (2008) | JWB | No explicit measure | Own scale | Multi-country | China | Multi-industry | 219 JVs 281 IJVs | Relationship among ownership, trust, legalism, and performance varies across cultures |
| Luo & Shenkar (2002) | JIM | K&S-Hofstede 4 | Own scale | Multi-country | China | Multi-industry (manufacturing) | 155 IJVs | Negotiation approaches moderate the negative impact of CD on performance |
| Luo (2001) | ASQ | K&S-Hofstede 4 | Own scale & | Multi-country | China | Multi-industry | 282 IJV | CD decreases the personal attachment between IJVs' |

| | | | ROI | | | (manufacturing) | managers | boundary spanners |
|---|---|---|---|---|---|---|---|---|
| Luo (2002) | JM | Own scale | ROI & sales per asset | Multi-country | China | Multi-industry (manufacturing) | 255 alliances | CD does not moderate the trust–performance link |
| Luo (2005) | AMJ | K&S-Hofstede 4 | ROI | Multi-country | China | Multi-industry (manufacturing) | 124 alliances | The higher the CD, the higher the impact of shared justice perceptions on performance |
| Meschi & Riccio (2008) | IBR | K&S-Hofstede 4 & K&S-GLOBE Proyect | Survival | Multi-country | Brazil | Multi-industry | 234 IJVs | CD decreases survival |
| Ng et al. (2007) | JIM | Own scale-perceptions & K&S-Hofstede 5 | Own scale | Multi-country | China | Multi-industry (manufacturing) | 298 IJV managers | Non- consistent results when considering CD measurements at firm-level and country level |
| Nielsen & Gudergan (2012) | IBR | Own scale | Own scale | Denmark | Multi-country | Multi-industry | 120 alliances | CD has not influence on exploration fit, but negative influence on exploitation fit |
| Nielsen (2007) | IBR | Own scale | Own scale | Denmark | Multi-country | Multi-industry | 119 alliances | CD does not influence performance |
| Pak et al. (2009) | IBR | K&S-Hofstede 4 | Own scale | Multi-country | Korea | Multi-industry | 100 IJVs | CD shows a negative impact on performance |
| Park et al. (2012) | IMR | K&S-Hofstede 4 | Own scale & sales growth rate | Korea | Multi-country | Multi-industry | 326 IJVs | CD does not influence tacit knowledge acquisition |
| Pothukuchi et al. (2002) | JIBS | K&S-Hofstede 4 | Own scale | Multi-country | India | Multi-industry | 127 IJVs | Organizational differences are more relevant than CD |
| Reus & Rottig (2009) | MIR | Meta-analysis | Meta-analysis | | | | 62 studies | Role of CD contingent on the measure (objective/subjective) |
| Sirmon & Lane (2004) | JIBS | Th. Paper | Th. paper | | | | | Organizational differences are more relevant than CD |
| Slater & Robson (2012) | IBR | Th. Paper | Th. paper | | | | | Effect of NC on social capital processes |
| Voss et al. (2006) | IMR | Mendenhall and Oddu (1988) | Own scale | USA & Japan | USA & Japan | Electronics | 97 alliances | Information exchange mediates the trust-performance relationship |
| Yeheskel et al. (2001) | JIM | Hofstede 4 | Own scale | Multi-country | Multi-country | Multi-industry | 140 IJVs | CD along IC and UA positively impacts performance |

*K&S-Hofstede 4*: Index by Kogut and Sighn (1988) based on 4 dimensions of CD by Hofstede (1980, 2001). *K&S-Hofstede 5*: Index by Kogut and Sighn (1988) based on 5 dimensions of CD by Hofstede (1980, 1991, 2001). *Hofstede 4:* Individual dimensions of CD by Hofstede (1980, 2001); *.Hofstede 5*: Individual dimensions of CD by Hofstede (1980, 1991, 2001). *GLOBE Proyect-practices*: GLOBE project by House *et al.* (2004). *Clusters by R& S*: Clusters by Ronen and Shenkar (1985). *UA*: Uncertainty Avoidance; *PD*: Power Distance; *IC*: Individualism/Collectivism. *Th. Paper*: Theoretical article.
** *ROA*: Return on assets. *ROI*: Return on investments.

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# DELIVERING THE RESPONSIBLE MANAGEMENT AGENDA – A FRAMEWORK FOR RESPONSIBLE MINDFUL MANAGEMENT. A POTENTIAL CONTRIBUTION TO THE CRISIS RECOVERY

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## Abstract

The global economic crisis has caused Governments and charities to be squeezed in term of resources to meet social and environmental needs. In parallel, social enterprises, volunteering and the "big society" have stepped in to help fill the void. However, this is smoke screen that covers a bigger problem – the lack of social responsibility by large corporations. Too often, mention is made of the economic crisis recovery but the crisis is greater than this, it includes social and environmental crisis which quite simply is not recovering nor is it receiving the attention it deserves. This paper explores this contention and through a literature review proposes a holistic approach to better inform business as to its responsibility and how to meet a more responsible management agenda. We propose this through a model based on responsible management and mindful leadership and provide a brief description of a study case as to how mindfulness is starting being used by an Iberian Multi-national to recast the social responsibility agenda and move towards a more responsible management approach to business. Different coaching techniques combined with Nominal Group Technique were used to identify underlying deep values of participants (CEOs). The resultant values can be used by the multinational to construct our theoretical model of responsible management and mindful leadership. One outcome of this model applied to this multinational is its coming strategy. Considering the high influence of this multinational in its sector, we believe the use of the Responsible Management and Mindful Leadership Model turns into a tool to increase the multinational´s capacity to influence in the crisis recovery understood considering its social and environmental aspects.

**Keywords:** Mindfulness; responsible management; CSR; social crisis.

**JEL:**

## 1. Introduction

There is little doubt that the global economic crisis impacted hard on many economies and business. While some commentators (Deen 2013) claim the recovery is well under way, there are still economies showing little sign of change (Beams 2013). Clearly, there is still work to be done. When reflecting on the commentaries relating to, and the apparent causes of, the crisis it is clear that greed, personal gain, inward looking business and narrow views of "social" responsibility played a key role. Interestingly, commentary often relates to the financial and economic state of recovery, the need for growth and the degree of debt. Little if any mention is made of the impacts of the crisis upon society and the degree or state of societal recovery. Instead, we see businesses concern with society to revolve around meeting regulatory requirements, playing at Corporate Social Responsibility and capitalising on unfortunate economies and societies of the developing world. As such, when we reflect on the nature and causes of the crisis and the emphasis on business and business gain, it is no surprise to us as to what the heart of the problem is – a lack of awareness, care or consideration for how to resolve the social crisis. In this respect, business has lost its way, it has lost its true potential to contribute to society as a whole, not just in employment and financial terms but in identifying and solving societal and environmental problem. The prolific growth in Social Enterprises, charity organisations, Social Innovation and volunteering emphasises our point that business as we know it is "passing the buck" or avoiding its wider responsibilities to society. Thus leaving the "social" recovery to others, a gap filled in the past by Governments and Charities. Both now squeezed in terms of funding and resources more than ever, and as such unable to deliver.

Visser (2012) captures some of our concerns, and the nature of this shift well when he claims that "we should judge the success of CSR by whether our communities and eco-systems are getting better or worse", (p7) he then goes on to claim "almost every indicator of our social, environmental and ethical health is in decline" (p7). From this stance, Visser states that the current understanding of "CSR has failed" and that we are in a new "age of responsibility". This forms the basis and main aim of our paper, where we embrace the concept of "Responsible Management" and "Mindful leadership" and through the development of our framework and a mini case of an Iberian multinational organisation, explore how we can use such a concept to encourage more Iberian companies to contribute more fully to crisis recovery, not just financial or economic crisis recovery but true societal recovery.

The paper is structured in three key parts, firstly we explore the literature in the field to highlight the evolution of the core concepts and determine key gaps with regard to the understanding of responsible management and its implementation, we then propose a conceptual framework to fill the gaps and help us better understand how responsible management could be realised and contribute to the crisis recovery, before providing a brief case of an Iberian multinational adopting the principles of mindful leadership and the resulting benefits.

## 2. Background

Responsible Management represents the basis from which we develop our argument but also reflects the evolution and extension of the principles of CSR (Corporate Social Responsibility). As such, to develop the background, we examine what CSR is and where it has evolved to, ending with the concept of Responsible Management and the context of our paper.

### Corporate Social Responsibility

The subject of CSR has attracted a lot of attention with a mass of associated literature. The strategic issues, outputs and reporting of CSR are generally well explored, resulting in several initiatives and various calls for 'openness' and 'transparency' (Buelens et al., 2006) e.g. Global Reporting Initiative (GRI), and SRI index. The GRI framework has become a guideline for most companies in operating their corporate responsibility reporting. Figure 1 highlights the three core elements of the GRI which can be seen to align to the triple bottom line (Elkington, 1994). In effect this represents a focus on the end point, reporting and measuring. It does not reflect an approach which could contribute to crisis recovery, as it is too organisational specific, output driven and static. In the same vien, the UN is attempting to operationalise its approach to CSR through "Responsible Management". This is a UN initiative under UN Global Compact and represented through PRME (Principles for Responsible Management Education) and partners such as Globally Responsible Leadership Initiative (GRLI). This, we believe, is a step in the right direction but an area under-represented.

**Figure 1 GRI reporting    (Adapted from Rana et al., 2009)**

## GLOBAL REPORTING INITIATIVE



To fully understand our argument of the obsoleteness of CSR, we need to explore it a little more.

### *Evolution of Corporate Social Responsibility – Time for Change*

With the range of developments and the scope of literature, it is not surprising to find no single definition of CSR. As such, we do not dwell on this. We recongise instead the defining features and the core developments.

The basic definition of the concept of CSR advocated by Bowen in the 1950's viewed the concept as a social responsibility with the obligations of business to pursue policies and decisions or action which was desirable in terms of the objectives and values of society (Bowen, 1953; cited by Buelens et al., 2006). This was largely based on the premise that the actions of businesses influence the lives of citizens in many respects, an issue not widely recognised in the current crisis recovery. Since the 1950s, the emphasis of CSR has shifted from a focus on shareholders (through to the end of the 1970s), to philanthropy in the 1980s, corporate governance in the early 1990s, stakeholder engagement in the late 1990s, corporate accountability and the triple bottom line in the early 2000s through to sustainable markets and responsible competition now (see Visser 2012).  In effect the shift has been from a minimalist effort through to more a stewardship role but its measurement still remain focused on end results and outputs, not the holistic process, indicating a potential lack of process, values, ethos and

proactive reflexivity. This is why there is a need to reshape the field and to reflect, refine and reform the understanding of CSR within a context of responsible management, and how such responsible management can help more fully contribute to the crisis recovery.

### Defining Responsible Management and its context with CSR – moving forwards

While CSR itself has become a global concept the implementation of the wider responsible perspective has not kept pace. One key initiative designed to correct this misalignment is the UN PRME initiative, an initiative directed at developing Responsible Leadership through a programme of Management Education with Responsible Management at its heart. However, while CSR has been evolving globally, there is a lack of clarity with regard to definitions and what responsible management actually means or involves within the framework of CSR. Broadly speaking, the concept encompasses an ongoing commitment by an organisation to act ethically and also contribute economically whilst demonstrating respect for people, communities and society at large (Carroll, 1999). Many organisations both profit and non-profit making are now not only viewing responsible management as the right thing to do but also seeking to develop it as a strategic tool that can be employed to gain competitive advantage, increase profitability and also enhance their long term survival.  In this regard, Hopkins (2009) cited Toyota's innovative approach of using CSR as a strategic weapon to move ahead of the competition through the pioneering development of hybrid engines that incorporated environmental concerns into its manufacturing process thus giving it a competitive advantage over rivals like Ford, General Motors. This, combined with the host of corporate scandals (Enron, WorldCom, Lehman Brothers) has led businesses to consider seriously how to protect their reputation, and resulting wealth creation prospects.

However, what is increasingly prevalent is that CSR is deemed the end point of the process. If the economic crisis is to be recovered then this may work but if the crisis recovery does not embraces the wider recovery of society, environment, and social well-being then it is doomed to failure. In this regard, a more holistic responsible management view of business is required. Therefore, while corporate social responsibility (CSR) has been described as those responsibilities and obligations that compel organisations to pursue or respond to socio-economic and environmental needs in a harmonious manner (Buelens et al., 2006) and measurements have been put in place to control the outputs of the organisation through balanced scorecards and the triple bottom line, little if anything has been done to explore the development of the responsible management mind set (in our terms, mindful leadership) or consolidate the inputs to the responsible management process. We propose that if these can be achieved,

business can make a meaningful wider social contribution to resolve the crisis in many economies.

So, what is Responsible Management based on Mindful leadership?

Despite the vast and growing interest in Responsible Management, there is no clarity of definition. Indeed, the UN itself avoids the presentation of a definition in favour of principles and flexibility[15].

In this regard, before defining Responsible Management based on Mindful leadership, we need to explain a few previous concepts implied in such definition: Mindfulness and Presence

### The concept of Mindfulness

According to Langer (1989), a western society view of mindfulness, is a state of mind and perception that makes people avoid the old ways of thinking and behaving. It keeps them alert to new possibilities, and requires sharp attention to the present moment. This creates a state of alertness and active awareness that produces and refines categories, opens the perception to new information and existence of multiple perspectives.

On the other hand the Eastern perspective of mindfulness, means a state of mind and perception with receptive attention to and awareness of present events and experience occurring both internally and externally, or moment-to-moment, non-reactive nonjudgmental awareness. (Brown & Ryan, 2003; Weick & Putnam, 2006). Mindfulness (in its Eastern perspective), when exercised by any person, produces what we call Presence. In biology of knowledge terms, Presence is a creative element and the source of "love" scientifically defined by Maturana and Varela (1987) in their model as recognizing the "other" as a fellow being with the same essential nature as "I" have as a person – i.e. as a "Thou" in the sense defined by Kofman and Senge (1993). In this context, the attitude on establishing relationships within the organization is that "the other" has an existence and experiential domain that is just as valid as that of the "I" itself. So, the language and consequent description of the world produced by the other's experiential domain will be considered equally legitimate. This is reflected in the approach of Bernal & Edgar (2012) of relational biological ethics, which is relevant in attempting the establishment within the firm of relations based not on power and subordination, but on equality, with full recognition of each other as legitimate beings.

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[15] See http://www.unprme.org/about-prme/the-six-principles.php.

### Definition of Responsible Management based on Mindful Leadership

We define responsible management as "a way of managing that takes actions based on deep values which emerge from the awareness of links with society and environment. It implies total accountability for the full consequences of these actions. Such awareness is a dynamic continuous process vividly linked to present moment and Mindfulness, leadership guided by this awareness is a Mindful leadership".

### Mindfulness and the link to Responsible Management

Applying Mindfulness in its eastern interpretation of "Presence" to business and according to relational biologic ethics, it is a way for the organization to gain socioeconomic and environmental system awareness wide enough to consider all the relevant system (social, economic and environmental system) balances when making its decisions to actions, which would lead it to Responsible Management.

According to this approach, such ethical conception within the organization leads to a nurturing that facilitates the emergence of deep values related with authentic individual presence, the experience of our study case supports this hypothesis. Consequently, a Mindful leader is a leader behaving with Presence structures her/his own values naturally according to the described relational biological ethics. Theoretically, an organization behaving from biological relational ethics, would have a participative leadership within a culture of high commitment, were every member would exercise this values and would be able to leader her/himself and also the job to be accomplished in every moment.

### Relationship Between Responsible Management and Business Performance

In striving to achieve its goals and objectives an organisation cannot operate in isolation from its environment. The power and influence of businesses should be balanced with its broad values, social responsibility and the contribution (in a wider sense) to society. There are however differing opinions about how a business should act, such as shareholder focussed or stakeholder centred.

The former idea advocated by Friedman and others suggest that businesses have only one social responsibility and that is to maximise profits for its shareholders (Friedman 1974; cited by Buelens, 2006), the pristine capitalist. Critics of this school of thought have argued that businesses serve multiple stakeholder groups whose interests overlap and conflict Freeman(1984); Friedman & Miles (2002); Henriques & Sadorsky (1999). Understanding such interests and relationships between these stakeholders may compel businesses to act in a more

socially responsible way not withstanding their motivations (Sen, 1993; cited by Buelens et al., 2006). From these viewpoints have originated the assumption of the link between investments in social responsibility and improvements in business performance with various attempts being made to either substantiate or disprove the assertion. For example the work of Ullmann (1985) advances the argument that when businesses are seen as economic institutions then a negative relationship could be established between profitability and social responsibility. Others however disagree with this assertion by establishing a causal relationship between socially responsible management and improved financial performance (Alexander and Bucholz, 1978). However, as Buelens et al (2006) shows, using the supply and demand theory of the firm framework, investment in social responsibility can result in the maximisation of profit while at the same time meeting the needs of stakeholders (employees, customers, community groups etc). In striving to achieve a balance between business goals and responsibility, companies must weigh the costs and benefits of their actions and ensure that they do not become detrimental to their economic and/or competitive performance now and into the future. Those tasked with governance of this process must therefore determine the extent to which the organisation will attempt to meet their social responsibilities and thus implement effective responsible management.

Today's MNCs have become bigger and more powerful than the governments of most countries they trade in and with this shift of resources comes a shift in responsibility to positively and proactively impact the 'world' around them (Gustafson nd, pp. 302). In addition the turn of the 21$^{st}$ century has seen the growing awareness of the concept in society hence demands for corporate social responsibility and environmental accountability is on the increase (Henriques, 2010). This will ensure that CSR and responsible management will remain high on the agenda of organisations worldwide and not fade. The growing importance of the concept is underscored by the extent of coverage included in the business review of the annual report of most major companies as evidence by the recent KPMG survey on Corporate Responsibility Reporting (KPMG, 2011). Thus, such organisations can provide the solution to the crisis if efforts are reoriented and responsible management implemented and widened in scope. This would require a shift in focus for business practice and thinking away from merely CSR to be more "mindful" about responsible management, adopting co-creation, co-responsibility, stewardship (Hernandez 2008) and mindful leadership, not mindless CSR.

Having clarified the nature of the field, the next section explores the gaps in the literature and sets up the various elements of the proposed conceptual framework.

## 3. Research Gaps – The need for a conceptual framework

Exploring the literature highlights a number of gaps and areas requiring re-orientation. These gaps relate to the emphasis of framework and measurement models and to the potential role of "presence" as a driver of the responsible management process, in effect the role of mindfulness.

**Reflecting on our thinking about Social Responsibility - CSR and Responsible Management**

Given our discussions thus far, it would appear that stakeholders are becoming more and more concerned about the corporate social performance of organisations operations, a claim supported by Epstein-Reeves (2010), and Sommerville (2013). This form of performance leads to our first research gap and the need to reflect on what we measure and why. Performance in this regard can be defined as "a construct that emphasizes a company's responsibilities to multiple stakeholders, such as employees and the community at large, in addition to its traditional responsibilities to economic shareholders" (Turban and Greening 1996, p.658). in line with this, it is becoming increasingly clear that investors are using socially responsible investing (SRI) screens to select or avoid investing in firms according to their environmental and social preferences (Chatterji et al. 2009), and a growing number of consumers purchase eco-labelled products that signal a lower environmental and social impact of corporate operations (Loureiro and Lotade 2005). Some corporations are also developing socially responsible purchasing practices to promote more sustainable supply chains (e.g., Drumwright 1994, Bowen et al. 2001, Srivastava 2007, Carter 2008, Seuring and Müller 2008). Research in the need for CSR and indeed its measurement are relatively well developed with general agreement that CSR is needed and does add value (economic and social/societal) through various metrics (Gond and Crane 2009, Rowley and Berman 2000) and eco-efficiency studies (Dyckhoff and Allen 2001, Färe et al. 2006, Kuosmanen and Kortelainen 2007). What is interesting in terms of the studies relating to metrics is the reliance on measuring at an end point, in a linear fashion and around the hard measures of the business e.g. emissions, financial data, customer surveys and the SRI data. However, in reality Responsible Management is highly qualitative in nature and would rely mostly on "soft" measures related to management practices, rather than the "harder" measures mentioned earlier. Several authors have recognised these issues (Carroll 1999, Graves and Waddock 1994) and the complex and multi-dimensional nature of CSR in terms of the process. As such, we need to reflect on the holistic process of responsible management rather than attempt to measure end points of what is an intertwined process. While our paper makes no attempt to measure the CSR activity we highlight this area as a gap purely in terms of the

emphasis placed by studies on the end processes and seek to realign the thinking in the field to be more holistic in nature.

Our next research gap relates to the actors involved in the Responsible Management process and the lack of recognition or understanding of a fundamental element of the process which lies in every person, what we called presence, a result of mindfulness.

From our discussions so far, we believe there is a need to review approaches to considering CSR and Responsible Management, to rebalance around an understanding of the holistic process of being truly "responsible" and to understand the potential and power of "mindfulness". In doing so, we can help organisations navigate the "corporate responsibility" landscape and make a proactive and meaningful contribution to crisis recovery and society as a whole.

## 4. A framework for responsible management mindfulness

Based on the former discussion, we now present a framework for considering the Responsible Management and Leadership of organisation built around mindfulness and a holistic view of the "responsible" organisation. Using this framework, organisations can readdress their position in society and help drive the crisis recovery.

**Figure 2.  A Framework for Responsible Management and Mindful Leadership. Source: Authors**
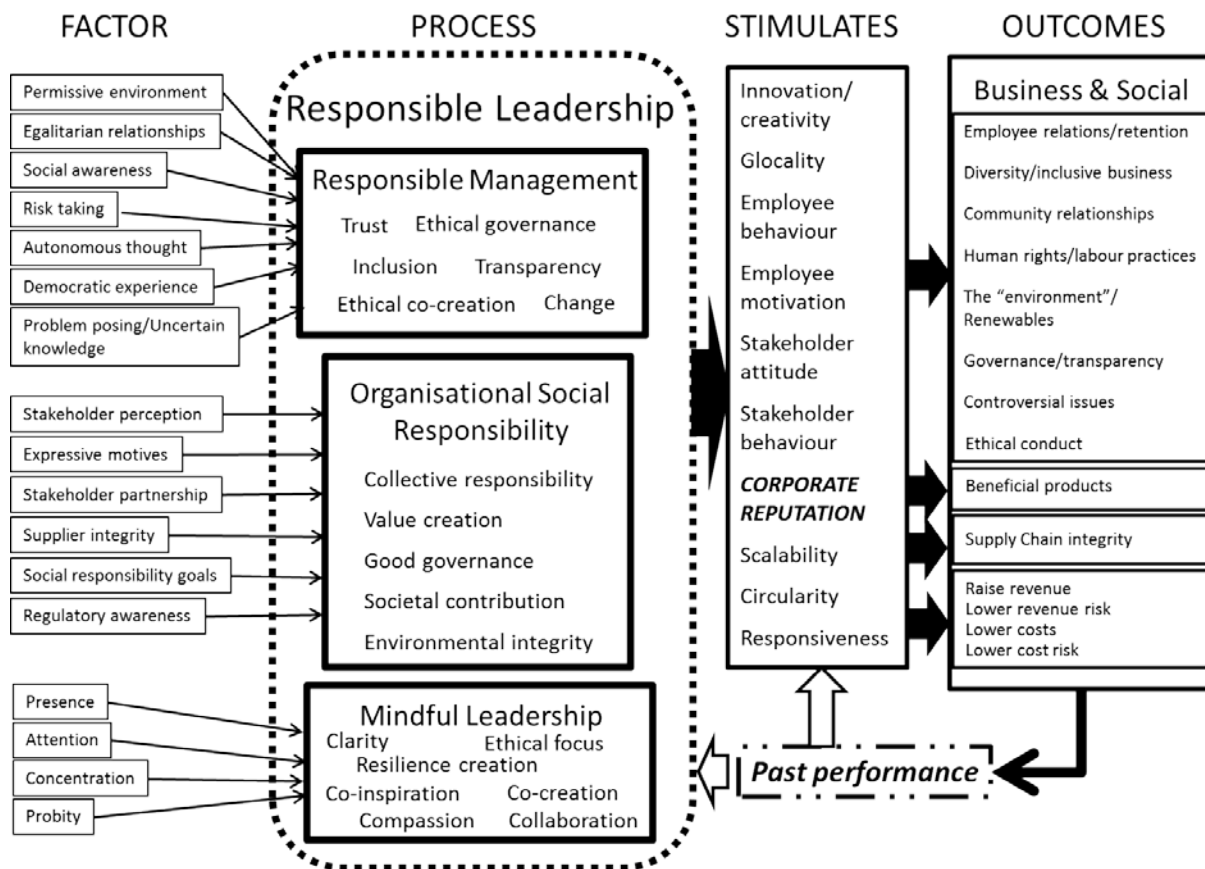


From figure 2 the framework was developed into distinct phases. The phases reflect the *factors* or competences to be developed, the *processes* to be implemented and measured, the resulting *stimulus* and the end results or *outcomes*. Taking each in turn.

### Factors

The factors identified align to the three core processes involved in Responsible Leadership, namely *Responsible Management, Organisational Social Responsibility* and *Mindful Leadership*. The factors represent competences and perspectives that shape and deliver the processes and ultimately reflect the values of the organisation and its ability and willingness to deliver.

Factors linking to Responsible Management have suffered from a degree of academic neglect. Little is written about what components lead to responsible management. Often, the factors are portrayed as a series of principles (UNPRME), generalised behaviours or expected outcomes (Barthel and Ivanaj 2007), and often focusing on actors or stakeholders (Pedersen 2011, Habisch

et al 2011; Christmann, 2004; Eiadat et al 2008, Choi and Park 2014). While these are helpful to emphasise the importance of responsible management and the potential role it can play in the crisis recovery across the broader domain of society, the existing literature is deeply limiting in terms of guiding how to develop responsible managers or indeed what Responsible Management actually is and can deliver. At the conceptual level, our framework draws upon the work of Hesketh (2006) who proposes a set of components for responsible management education. These components allow for us to begin to explore the field.

The factors presented are defined in table 1.

**Table 1 Factors influencing Responsible Management. Source: Authors**

| Factor | Description | Link to Responsible Mngt |
|---|---|---|
| Permissive environment | Staff have control, intent and capability to deliver the objectives. | To allow the proactiveness, reflexivity and responsiveness to identify and meet social, business and ecological challenges |
| Egalitarian relationships | Relationships are equal | This helps deliver the trust, inclusiveness and transparency needed to make responsible management work |
| Social awareness | actively seeking out information about what is happening in the communities around in and around the organisation eg social norms | Decision-makers need to understand and make sense of what is happening around about them in terms of the social setting and potential actions and reactions. |
| Risk taking | Activity that could cause damage or harm but allows for potential rewards | For real change to occur, risk taking is needed. This helps break the conventional norms and provides for novel and alternative solutions |
| Autonomous thought | The ability of decision-makers to think independently | Thinking independently helps facilitate ethical governance by freeing the mind from "mental slavery" and group think. |
| Democratic experience | Collaboration is encouraged and collaborative decision-making welcomed | Responsible management is enhanced by multiple views, sharing of knowledge and learning. These occur through collaborative practices and provide for "buy-in" |
| Problem posing/Uncertain knowledge | Gathering dynamic information from a variety of changing sources. Acknowledgement of the different sources and kinds of uncertainty, many of which are not reducible. | The questioning and continual learning required with uncertain knowledge facilitates a continual process of refreshment in thinking and practice |

These factors represent the foundation of the competences of responsible management.

The factors influencing the Organisational Social Responsibility are widely researched but not often empirically defended. Inoune and Lee (2010) would claim that the multidimensional nature of Social Responsibility makes this a very tricky task. This is supported by Sheldon and Park (2010), WBCSD (2011) and El Dief and Font (2010). The factors we propose are derived from the work of Durden (2007), Broomhill (2007), and Maklan and Knox (2003), and are grouped around stakeholder influences (Hart 1995, Russo and Fonts 1997, Berman et al 1999), expressive motives (Williams 2007), suppliers and supply chain (Seuring and Muller 2008,

Salam 2009, Carter 2008, Srivastava 2007, Bowen et al 2001, and Drumwright 1994), social responsibility goals Maklan and Knox (2003), and regulatory awareness (Eiadat et al 2008). The factors influencing Organisational Social Responsibility are presented in Table 2.

**Table 2 Factors influencing Organisational Social Responsibility. Source: Authors**

| Factor | Description | Link to Org Social Resp |
|---|---|---|
| Stakeholder perception | There is a vast array of potential stakeholders. This factor involves understanding their values, needs, wants and frames of reference. | Understanding the stakeholders allows the firm to be responsive but also predictive of potential stakeholder reactions |
| Expressive motives | Acts that reveal or emphasise the identity of the person e.g. a consumer buys ecological goods to appear "green" and express their identity in this way. | The expressive motives link to value creation in that they can be managed but also the communities can be connected and informed via tools such as social media |
| Stakeholder partnership | Involving and engaging with the various stakeholders and communities | Working with stakeholders through a partnership perspective allows for collective responsibility and raises the changes of potential change and impact |
| Supplier integrity | The degree to which suppliers maintain values, standards and ethics in line with the responsible stance of the host organisation | The organisation is only as good as its weakest link. In this regard, suppliers and distribution channels need to maintain the same or higher degrees of responsible integrity thus strengthening the chain and improving the overall impact of the firm |
| Social responsibility goals | The desired targets which the organisations commits to achieve regarding its social responsibility | With flexibility and responsibility comes a need for clarity of purpose and intent. To allow staff and stakeholders this freedom means a need for clear goals relating to plans, processes and actions linked to society and business influences |
| Regulatory awareness | Awareness, understanding and awareness of implications of local, national and international regulations. | While organisations can exceed the law when acting in the way most responsible, they also need to understand the existing rules, laws and regulations to ensure compliance or make a case for alternative compliance |

The final group of factors relate to the core of mindful leadership. As we explained when defining Responsible Management, Mindful leadership is based on the Presence. Recent literature on psychology and behavioural sciences (i.e. Chiesa et al.(2013); Berkovich-Ohana et al.(2012); Ravnik-Glavač et al.(2012))applied to Mindfulness, supports the idea that applying Mindfulness produces total attention to the present moment, as well as concentration to apply the best needed knowledge in every circumstance. Consequently these factors imply probity in every action which allows for right accountability. In figure 3, we just show that the concentration and attention training are also necessary conditions to develop presence, so there is a bidirectional relation among them and Presence (Kabat-Zinn 2003a, 2003b; Ludwig et al. 2008).

**Figure 3. Presence-Attention/Concetration-Probity relations.**



Source. Authors

The factors influencing Mindful Leadership are presented in Table 3.

**Table 3 Factors influencing Mindful Leadership.**

| Factor | Description | Link to Mindful Leadership |
|---|---|---|
| Presence | A state of mind and perception with receptive attention to and awareness of present events and experience occurring both internally and externally, or moment-to-moment, non-reactive nonjudgmental awareness | It allows for coherence between deep values and acting, which is a source of commitment and energy for organisational members |
| Attention | The focusing of a persons consciousness in a particular element at a particular present moment | It sharpens the collection of relevant information when making decisions |
| Concentration | The will of paying attention | It builds character and habit of paying attention |
| Probity | The harmonising quality of acting with Presence in total attention to present moment, which allows for honest accountability of any action | Probity contributes to generate commitment of collaborators inviting them to also participate in leadership |

Source: Authors

Having explored the factors influencing the processes, we now turn our attention to the three core processes in Responsible Leadership, namely *Responsible Management*, *Organisational Social Responsibility* and *Mindful Leadership*.

### Processes

In making sense of the disparate and limited field surrounding responsible management, we explored a range of literature borrowed from domains of psychology, sociology, health and eco-sciences. The review highlighted six core elements to the understanding and operationalising of Responsible Management. The elements which emerged were trust (Caldwell et al 2010), ethical governance (Manz 2008, Guay et al 2004), inclusion (Maak and Pless 2006), transparency (Gardner et al 2011), Ethical objectivity (Kempster et al 2011, Worden 2003) and willingness to embrace change (Nijhof et al 2000).

Table 4 provides an explanation of each element.

**Table 4 Elements of Responsible Management.**

| Element | Description |
|---|---|
| Trust | To rely on the integrity, strength, truth, professionalism of a person or organisation |
| Ethical governance | Transparency and openness, run on good ethical principles |
| Inclusion | Involving others directly or indirectly |
| Transparency | Easy for stakeholders to see what action are performed |
| Ethical co-creation | Ethical behaviour starts at the moment we listen to everybody's views and generate a respectful flow of information in which we co-create ethical decisions and behaviours |
| Change | The ability and willingness to move from the current form |

Source: Authors

The second process within our framework is that of Organisational Social Responsibility.

As we highlighted in the background section, a considerable degree of work has been undertaken into exploring CSR but that this has in effect detracted from the wider picture of organisational responsibility per se (Houdre 2008, and Sheldon and Park 2010). As such, in this section of the framework we consolidate the core elements of Organisational Social Responsibility as a broader concept and one which we hope will encourage organisations to embrace a wider remit of "social responsibility" that reflects what Visser (2012) would recognise as Stakeholder stewardship.

Table 5 provides an explanation of each element. Much of this is developed from Visser's (2012) work.

**Table 5 Elements of Organisational Social Responsibility. Source: Authors**

| Element | Description |
|---|---|
| Collective responsibility | Responsibility shared across different value sets and context |
| Value creation | Economic development creating social and economic value through inclusive business and beneficial products. Can include economic, political, social, emotional, or cognitive value |
| Good governance | Leadership, transparency and ethical practices. |
| Societal Contribution | A stakeholder orientation that fulfils more than just a narrow contribution |
| Environmental integrity | Sustaining and protecting the eco-system. |

As a consequence of Mindfuness, Mindful leadership process generates several elements as Compassion, Clarity, Creativity, Resilience and Ethical focus (Hollis-Walker et al. (2011); Stanley et al. (2011); Keng et al (2011); Garland et al. (2009); Ly et al.(2009); Carson et al.(2004)).Such ethical focus that we propose related to biology of knowledge models (relational biologic ethics), involves also co-inspiration, co-creation and compassion.

Table 6 provides an explanation of each element.

**Table 6 Elements of Mindful Leadership.**

| Element | Description |
|---|---|
| Clarity | A state of quiet mind produced by using it just when necessary, getting rid of useless elements within mental activity and naturally focusing on what is related to the vital process to be managed at that very present moment |
| Resilience creation | The ability of creating capability in the system to be managed to react and come back to balance after a shock that takes it out of its usual path. This creation happens by having a systemic approach that allows to manage beyond efficiency and efficacy to take into account all the relevant relations within the system that have to be respected and looked after in order to keep them in good state enabling them to react when necessary |
| Ethical focus | The natural result from probity coming from total attention to what is in the first place fundamental, related to essence of human beings and respect to life in all its different manifestations, a respect that generates human relations of equality and generates real dialogue with active listening and genuine expression of feelings and thoughts |
| Compassion | The capability of feeling unity with the rest of human beings and therefore feeling their feelings as if they were own feelings |
| Co-inspiration | The result of real dialogue in which each different part of a human group express their view of the situation while being considered as legitimate by the others. In the real listening during Co-inspiration, each member of a group provides part of the inspiration to generate wider domains of meanings from reality producing richer and different options to make decisions |
| Co-Creation | The acceptance of the view of the reality the group creates based on their co-inspiration, and the commitment to work for it. |
| Colaboration | The genuine energy of every individual working committed to the view generated by the group, in the awareness that it is being built based on the respect to each individual vision. |

Source: Authors

### Stimulates

In this section, we make no claims of cause and effect. We simple seek to highlight what common actions appear to occur from the factors and processes as identified by previous studies highlighted next. From table 7 it can be seen that there are a range of "soft" skills, processes and elements that can stimulate a positive responsible outcome. The most prominent item is that of corporate reputation (Maklan and Knox 2003). There are many studies exploring the impacts of ethical mishaps on the reputation of the organisation and the resulting actions required to "Clean up the mess". Of the same accord a positive responsible experience enhancing the reputation of the organisation and can result in customer trust, loyalty and retention (Fassin and Gosselin 2011, Freeman and Auster 2011, Spiller 2000, Hansen 2009). The other elements of the framework emerge from a range of studies. One most prominent is the work by Visser (2012) identifying creativity, Glocality, Scalability, Circularity and Responsiveness as key item. These items are also supported by the other authors including those exploring innovation, Employee behaviour (Tams and Marshall 2011, O´Higgins and Kelleher 2005), Employee motivation (Harshman and Harshman 1999, Doh et al 2011), Stakeholders (Durden 2007, van Marrewijk 2004, Maak and Pless 2006) and responsiveness.

**Table 7 . Items occurring from the Factors and Processes.**

| Item | Description |
|---|---|
| Innovation/creativity | New ideas and adaption or adoption of existing ideas directed to solving the world's social and environmental problems |
| Glocality | 'glocalization' comes from the Japanese dochakuka, meaning global localization. (Visser 2012) |
| Employee behaviour | How employees act within and outwith the organisation |
| Employee motivation | Influences on a person behaviour in an organisation |
| Stakeholder attitude | The view the stakeholders hold of the organisation |
| Stakeholder behaviour | The action the stakeholder takes |
| *CORPORATE REPUTATION* | The collective assessments of an organisation's past actions and ability to deliver improvements for stakeholders into the future. |
| Scalability | The ability to handle a growth in the scale of the work capably |
| Circularity | The cradle-to-cradle nature of the resources used and products sold by an organisation |
| Responsiveness | Agility, flexibility and willingness to meet a need |

Source: Authors

### Outcomes

The outcomes represent common measures, outcomes, and benefits attributed to Responsible Management, leadership and CSR.

It was around the 1970's that definitions of CSR became more specific and resulted in a shift in paradigm towards Corporate Social Responsiveness. At this point Corporate Social Performance found its way into literature (Buelens et al., 2006) and measures of "social responsiveness" became more prominent (Caroll 1999, 2001). The era of the 1980's and 1990's saw the emergence of new alternatives for CSR like Business Ethics Theory, Corporate Citizenship and Stakeholder Theory with measures of outcomes broadening but still remaining around the "what could be measured" domain e.g. emission, retention, charitable giving. Into the millennium investors and consumer began to take more interest in the responsibility and ethical stance of companies and as such, investment houses in particular, began to attempt to quantify how responsible companies were (using index like SRI). The complexity of this task was soon evident (Gond and Crane 2009, Rowley and Berman 2000) and most measures remained around traditional CSR perspectives. However a clear distinction had now been made between CSR and what Dawkins (2002) termed Corporate Citizenship, giving emphasis to the fact that organisations are members of society. Extending the measures of output along this domain and in the spirit of responsible management leads to quantifiable business measures (Margolis and Walsh 2003, Margolis et al 2007) of revenue, cost, employee retention, gender balance, governance reporting, emissions, recycling, and responsibility reporting, as well as more societal outputs and measures around community engagement, human rights, beneficial products (Visser 2012) and supply chain integrity. Thus a range of outcomes have been included in the framework. These outcomes also align to ISO26000 on Social responsibility in recognition that

many developing economies are taking up such standards in their pursuit of what we hope will be responsible management.

Table 8 summarises these outcomes divided into general categories of traditional business and more intangible, qualitative social oriented measures.

**Table 8. Items occurring from the Factors and Processes.**

| Outcome | Description |
| --- | --- |
| Employee relations/ retention | The degree to which the organisation becomes an employer of choice, holds onto talent and continues to attract the best talent |
| Diversity/inclusive business | The extent to which individuals outside of the dominant employment group are given opportunities within the workplace |
| Community relationships | The degree to which the organisation establishes and maintains mutually beneficial engagements with a variety of stakeholder groups |
| Human rights/labour practices | Meeting and exceed regulatory and advisory HR practices and actions related to Human well-being |
| The environment/ renewables | The measure of waste, recycling, eco-efficiency of the organisation |
| Governance/transparency | How the organisation is operated and openness of reporting and decision-making |
| Controversial issues | The number of controversial issues that arise associated with the operations of the organisation |
| Ethical conduct | How the organisation responds to ethical issues |
| Beneficial products | The development of products with benefits to society in their production, use or re-use. |
| Supply Chain integrity | The degree to which the organisations suppliers align to meet the values and "responsible" standard of the organisation |
| Raise revenue | Increase in revenue, customer retention, customer affinity and customer loyalty |
| Lower revenue risk | Reduced revenue volatility, permission to operate (Govt) and grow. |
| Lowers costs | Lower outgoings due to staff retention and better commitment, reduced waste and energy costs and increased productivity |
| Lower cost risk | Less ecological impact, employee and society impacts and intervention from regulators or Government |

Source: Authors

The model is closed by a learning feedback loop that allows the consideration of "past performance" and a reflective and reflexive approach to resolve or capitalise on the outcomes of the system. Understanding such a system allows organisations to reflect and find their way again. Adjusting their ethical and social compass enhances the wider contribution to recovery from the crisis for Iberian multinationals and acts as a catalyst for others to follow.

## 5. Mindfulness in action – A brief case but a big chance

With the sole purpose of exploring the potential of mindfulness, we used as a starting point, an experience with the implementation of mindfulness in leadership and management of a big multinational. We chose an industrial Iberian multinational employing 10000 workers and carried out the experience of starting to introduce middle managers and CEOs into the experience Mindfulness. The context we used was relating to deciding on the values that would constitute the company's next long term strategy and embedding Responsible Management, Responsible Leadership as well as Organisational Social Responsibility.

We first developed a pilot project in one of its business areas. The objectives were to diagnose what its current culture and values (inertial and emergent) are in relation with sustainability concept and to catch economic, environmental and social criteria that participants find relevant to asses if a particular set of values will facilitate more or less than other the company performance for global sustainability.

The pilot project proved to be effective and coherent with the aim to make the organisational values of sustainability emerge, we included every manager (of any level) of the company within a wider participative process with six different Focus Groups. We had 53 managers belonging to every business areas and countries of the company and including the corporative management team as well as the Human Resources management team, organized in 6 focus groups. The results were validated by the trade union leaders in their international committee.

In introducing the Mindfulness experience, we used Nominal Group Technique combined with different coaching tools. Ontological coaching and constructivist coaching exercises of sophrology, in order to establish connection between the right and left part of the brain and the whole body, giving the participants access to their deep creative level in total attention to present moment to facilitate the conscious emergence of their deep values. One of the evidences we had and many participants manifested was the experience of total attention to present moment, and the chance it gives to have access to the deep genuine creative part of their beings where authentic personal values rest. A part that cannot be accesses easily in everyday inertia, since external dominant values overlap guiding behavior. The chance to share deep values and create a shared vision builds the base for the future strategy of the company in which the outcomes of our proposed model are seen as part of the possible future scenarios to which the company wants to lead the strategy.

In this way, we started the process of Mindful leadership which has leaded the company to the starting of the processes of Organizational Social Responsibility and Responsible Management. This has been applied through the implementation in the coming strategy of the company of the values that emerged within the Mindfulness process implemented to create the future vision of the company, such values have a high degree of coincidence with the defined elements of the three process of our model (Responsible Management, Mindful Leadership and Organisational Social Responsibility).

This multinational is leader in its sector, in the last two decades it has not stopped innovating in technology (having the most advanced processes in its sector) and growing by investing in different countries with acquisitions of other companies with productive plants to add to its vertical integrated global productive system, moreover, this company has negotiating power

enough with its suppliers and clients to establish an objective of demanding them a certain degree of social and environmental performance. The Mindfulness process and Mindful Leadership that supports Responsible Management, has given strength in this company to the vision of keeping a leader position of the company while getting the outcomes (economic, social and environmental) that we propose in our model, being the responsible relations with suppliers and clients they want to reassert a sample of it.

## 6. Conclusions and further research

Our paper has explored the development of CSR and concept of Responsible Management. During this journey we have highlighted and examined how the current thinking in the field of "corporate responsibility" does not allow for a meaningful contribution to the crisis recovery. Our claims have been based on what appears to be a very limited view of "recovery" and indeed "crisis" in terms of how commentators are reporting the situation and economic leaders are acting. It appears as if the wider social crisis is neglected and as such we have sought to redress the balance for Iberian firms by proposing a framework to allow for a more meaningful form of responsible management and to begin to shape an agenda to allow more representative and meaningful measures, monitoring and understanding of the field. At the heart of this paper has been the concept of mindfulness or as we apply it, mindful leadership. We described a case study where our concept of Mindfulness was implemented in an Iberian multinational organisation. Taking into account the economic and technological importance of this multinational in its sector, and its influential capacity in terms of suppliers and clients, as well as their strong current conviction to implement their next growth strategy through adopting and embedding Responsible Management and Mindful leadership, we think this is a good example of how using mindfulness can help lead other Iberian organisations to champion the recovery from the crisis in the holistic way we have defined, while encouraging for future business development.

The framework is useful because it can help companies to put the inner potential of organizational members under a shared mindful leadership, to the service of a shared future vision of global performance (not just economic, but also social and environmental). It is also interesting to remark that this framework is pointing to the deep cause of current socioeconomic crisis, which is a crisis of human values that in business is reflected in unethical behaviours contributing to the breakdown of the basic balances of the socioeconomic and environmental system. We believe that acting in the deep cause level, real solutions to the crisis will be set into action.

As we close our paper, we are heartened that this is in effect the start of a journey not its end in any case. Having developed our framework and identified the core components of it we can now begin to apply and test it in different setting with different stakeholder and across different methodological domains. As such, the further research opportunities are expansive and our contribution is significant for future business thinking.

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# COUNTRY-OF-ORIGIN AS A STEREOTYPE: EFFECTS ON B2B BUYERS EVALUATIONS AND PERCEPTIONS

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## Abstract

The country-of-origin is argued to be able to influence the buyers' perceptions and judgments and consequently the degree of products acceptance. Consumers frequently exhibit strong, positive or negative, countries stereotypes that can be reflected on the image of the brand under evaluation.

B2B brands are recognized as being able to perform a relevant role in establishing a consideration set of potential suppliers in the mind of the buyer. However, the comparison of B2B existing studies with the abundance of B2C research reveals that international B2B branding research is limited.

This study attempts to investigate, in the context of B2B markets, the effects that country-of-origin exerts on the perceptions of the brand created in the mind of the consumers. Moreover, the current research investigates the country-of-origin effects on the perceptions of the buyers of the Portuguese footwear industry.

This study develops a conceptual model to investigate the consequences that country-of-origin exerts on the perceived product and service quality, perceived innovation and branding capabilities and consumer's trust. Moreover the proposed model intends to determine the main implications that are posed to brand awareness, brand loyalty, relationship quality and customer satisfaction.

The structural model hypotheses are empirically tested with a dataset comprised of an international survey data, which collected responses from 24 different countries, from 68 buyers of the Portuguese footwear industry.

Results indicate that the Portuguese footwear industry country-of-origin positively influences the perceived product and service quality, the perceived innovation capability, the perceived branding capability and the buyer's trust. Additionally, the Portuguese footwear industry brand awareness is positively influenced by the perceived product and service quality and perceived innovation capability. The buyers' trust enhance the producer-buyer relationship quality, and the perceived product and service quality and the perceived innovation capability increase customer's satisfaction. The results provide substantive insights to country-of-origin consequences and managerial implications.

**Keywords:** Country-of-origin; perceived quality; innovation and branding capabilities; trust.

# PART 3:   DETERMINANTS OF EXPORT PERFORMANCE

# THE INFLUENCE OF INTERNAL AND EXTERNAL VARIABLES IN THE EXPORT PERFORMANCE

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## Abstract

Focusing on export performance and having as a starting point the resource- based view (RBV) and contingency theories, this paper intends to study the effect of both internal and external factors to a firm in the export venture performance.

As methodology, a qualitative study was developed – case study – using semi- structured interviews to two managers and one director of marketing and communication of one of the largest cork stoppers manufacturing firm in Portugal.

The major findings of this paper are that both internal and external factors have impact in both export marketing strategy adaptation and export venture performance. The more developed the internal resources are, the better is the export venture performance and export marketing adaptation. A better knowledge of external factors has the previously mentioned impact. Also, export marketing strategy adaptation has a positive influence on export venture performance.

This research provides a better comprehension of the phenomenon of export performance in a strict research setting (a firm form a small open economy and, only one product). To have a better export performance, managers should invest in their internal resources (such as market and international business knowledge).

This paper contributes to extant knowledge of the export performance, in the way that it sheds a light on export performance in small open economies, namely the factors which contributes to a better performance of a firm (within the research setting defined).

**Keywords:** Export performance; small open economies; emergent economies; Portugal; cork stoppers.

**JEL:**

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# 1. Introduction

The exporting activity has a great importance in the field of international business (IB) because it represents a strategic option for firm to internationalise at a significantly low cost; as so, it remains the most frequent foreign market entry (Sousa, 2004; Zhao and Zou, 2002). Due to that fact, for over forty years, *export performance* has been a *hot topic* in the field of IB (Zou and Stan, 1998).

Exporting is an important phenomenon, when related to small open economies, which need to engage international trade, in order to maintain their standards of living (Baldauf *et al*., 2000).

Notwithstanding the importance of exports in the global economy and specifically in the small open economies, there is no consensus regarding export performance conceptualisation and, consequently, its operationalization and measurement (Katsikeas *et al.* 2000; Sousa, 2004).

Despite the many attempts made by researchers, both through qualitative and quantitative studies, there is still a gap concerning the existence of a framework of reference (Katsikeas *et al*., 2000). Concerning the qualitative research, there are the literature reviews/meta-analysis produced by Aaby and Slater (1989), Katsikeas *et al*., (2000), Leonidou *et al*. (2002), Sousa (2004). Regarding the quantitative research, there is contribute from Cavusgil and Zou (1994), Shoham (1998), Lages and Lages (2004), Lages *et al*. (2005), Zou *et al*. (1998), and so forth. The extant lack of consensus results in the absence of a reference framework and in fragmented findings (Leonidou *et al*., 2002).

Globalisation of trade and sales activities has intensified the need of companies to expand to new markets (Leonidou, *et* al., 2002, Sousa, 2004, Sousa *et al*., 2008). Despite the advances met in the field of international marketing, namely in high income, industrialised countries, there is still a flaw concerning the emergent economies, therefore research involving these economies should be done (Burgess and Steenkamp, 2006).

To fill the extant gaps, this paper had the objective of ascertaining the factors that contribute to the success of the export performance from Portugal to the Russian, Indian, and Chinese markets. The study sought to answer the main question about whether the model was fit for the research setting or not, mainly the contribution of both internal (RBV-related) and external (contingency theory-related) factors for a better performance. The model was tested through the use of the methodology of case study, involving three semi-structured interviews, as well as secondary data collected in websites (annual reports, sectorial studies).

This contribution of this study is threefold. Firstly, it combines both a RBV and contingency theories, in order to develop the research model (presented in figure 3). Secondly, it extends previous scientific knowledge concerning export performance involving emerging open economies. Finally, it sheds some light on the question of the performance of industries in small open economies.

## 2. Conceptual framework

Export performance is one of the most studied areas of International Marketing and IB. As Katsikeas *et al*. (2000, p. 493) state, "[e]xport performance is one of the most widely researched but least understood and most contentious areas of international marketing". This fact is due to the rising tendency towards economic globalisation, the increasing liberalisation of the markets, the economic and monetary unions, and because a great number of countries rely on their export performance to achieve economic growth (Cavusgil and Zou, 1994). Thus, this field of management is very important not only for researchers, but also for managers and public policy makers (Katsikeas *et al*., 2000; Sousa, 2004).

Despite being a deeply studied area, this issue is actually the subject of lack of consensus and synthesis concerning its conceptualisation, operationalization, methodology and also its determinants and performance measures (Cavusgil and Zou, 1994; Katsikeas *et al*., 2000; Shoham, 1998; Sousa, 2004; Zou, *et al*., 1998).

### 2.1. Attempts of definition of the concept

A pursuit for the comprehension of the phenomenon of export performance has been made for the last forty years (Diamantopoulos, 1998). The studies developed sought for "organizational, managerial, environmental, and strategic determinants of export performance" (Diamantopoulos and Kakkos, 2007).

Diamantopoulos (1998) states that export performance is the reflex of the results of export behaviour when exposed to different firm-specific and environment-specific circumstances. Cavusgil and Zou (1994, p.3) define export performance "as a strategic response by management to the interplay of internal and external forces".

Shoham (1998, p.62) defends that "export performance is conceptualized as a composite outcome of a firm's international sales".

Moreover, export performance is "multifaceted and cannot be captured by any single performance indicator" (Diamantopoulos, 1998, p.3), which reveals the need of following a multidimensional approach when defining the measurement for assessing export performance,

instead of using single-items measures, because they are insufficient for any solid assessment (Shoham, 1998).

All things considered, it can be assumed that export performance is an idiosyncratic concept for each conceptualisation, operationalization and measures' definition are tailored-made to the reality in study, the type of firm considered and its settings (Greve, 1998; Katsikeas *et al.,* 2000, Sousa, 2004).

## 2.2. Resource based-view and industrial organisation theories

Sousa *et al.* (2008), in their literature review, consider that the determinants of export performance can be classified using two different approaches: the **resource- based paradigm**, which is focused in the internal determinants of the firm, and the **contingency paradigm**, which is focused on the external ones.

The resource-based paradigm emphasises the creation of competitive advantage using a set of resources, i.e., all the "assets, capabilities, organizational processes, firm attributes, information, and knowledge, etc. controlled by a firm" (Barney, 1991, p. 101). In other words, what Barney (*Id.*, p. 116) sustains is that "sources of competitive advantage are firm resources that are valuable, rare, imperfectly imitable, and non-substitutable." Dhanaraj and Beamish (2003) sustain that "superior performance results from acquiring and exploiting unique resources of the firm", which, according to Sousa *et al.* (2008) represents the internal determinants of export performance.

The contingency theory approach is built on the proposition that environmental/ external factors to the firm affect its performance (Donaldson, 2001, Sousa *et al.*, 2008). It is supported by the structure-conduct-performance (SCP) of industrial organisation (IO), which posits that the competitive intensity of a firm is determined by the structural characteristics of the market, and that positional advantage can only be achieved and sustained if the competitive strategy plan is efficiently and effectively carried out (Morgan *et al.*, 2004; Sousa *et al.*, 2008).

Ruekert *et al.* (1985, p. 17) suggest that "the kind of performance that results from marketing activities is dependent upon the nature of the task, the way in which the task is organized, and the nature of its environment." Robertson and Chetty (2000, p. 212) defend that "export performance is determined by the extent to which a firm's behaviour matches or fits its internal and/or external context".

## 2.2.1. Internal variables vs. External variables

The **internal variables** are the ones intrinsic to the variables that the firm may control (Sousa *et al.*, 2008). According to Katsikeas *et al.* (2000), Leonidou et al. (2002), and Sousa *et al.* (2008) they can be subdivided into:

☐  Managerial characteristics - concerning the decision-maker and his personality,

level of education, behaviour, attitudes, (international) experience, innovativeness, international experience export commitment, and support, and other traits;

☐  Organisational characteristics - regarding the resources, capabilities,

competencies, operations, and the company's goals;

☐  Targeting - which involves identification, selection and segmentation of international markets;

☐  Firm characteristics – size of the firm, ownership structure, firm capabilities and resources;

☐  Marketing-mix strategy - which are product, pricing, promotion, and distribution;

☐  Market orientation - it has been recently considered.

The **external variables** concern the environmental aspect, i.e., the ones that the firm cannot control and that shape the macro-environment of both the domestic and international markets (Sousa *et al.,* 2008).

According to Sousa *et al.* (2008), these variables may be divided into:

☐  Foreign market characteristics – including legal regulations, cultural (dis)similarity, local business conventions, channel accessibility and market competitiveness;

☐  Foreign environmental characteristics – like cultural (dis)similarity and political and legal aspects;

☐  Domestic market characteristics – like export assistance and environmental

characteristics.

☐  Therefore, one may consider that export performance can be affected by both internal and external factors.

### 2.3. Objective vs. Subjective Measures

Regarding the dichotomy objective vs. subjective, it represents, according to Katsikeas *et al.* (2000) the mode of assessment of export performance, and for Sousa (2004), it is a way

of operationalizing the concept of export performance, which is complemented with economic, non-economic or generic measures.

Objective data is usually extracted from official sources, like the company financial

statements and reports. Whereas objective assessment gives accurate information, especially when measuring short-term performance, objective data is not easily available, accessible, and easy to interpret, and mangers do not separate domestic market information from international market data, nor grant information on single ventures. Objective data assessment is not uniform, depending on the homogeneity of accounting practices. Moreover, this kind of data do not allow generalizations across industries and countries, and they are not always willingly given (Katsikeas *et al.*, 2000; Lages and Lages, 2004; Sousa, 2004).

Subjective data is based on the personal experience of the respondent, and can be important when objective information is not accessible, available, or generalized. It is usually used to assess long-term performance, yet, when employed, it must be used the principle of parsimony. Moreover, not always the key informants - those who have the knowledge about the phenomenon in study, and who are willing to report on it (Campbell, 1995) - have the same reference point (Katsikeas *et al*., 2000; Lages and Lages, 2004, and Sousa, 2004), which may create some bias on the results.

Using both types of data assessment is the ideal approach, because it increases the confidence on the reliability and validity of the measures and they complement one another (Katsikeas *et al*., 2000, and Sousa, 2004). Several studies rely on both, such as Shoham (1998), Styles (1998), Zou *et al.* (1998), and so forth.

## 2.4. Economic, Non-economic, and Generic Measures

In the reviews of export performance made by Katsikeas *et al.* (2000) and Sousa (2004), the authors divide export performance measures into economic, non- economic, and generic ones, in order to operationalize the concept.

Katsikeas *et al.* (2000) defend that, regarding economic measures, they can be divided in sales-related, profit-related and market share-related. Sousa (2004), another author who had a similar approach to the topic, presented analogous lines of thought in a table where he considered the "[c]lassification and [f]requency of [a]ppearance of [e]xport [p]erformance [m]easures" (*Id.* p. 9).

Regarding **economic** measures, according to Katsikeas *et al*. (2000, p. 498), and Sousa (2004, pp. 9-10), they can be sales-related (e.g.: export sales growth, export sales volume); profit-

related (e.g.: export profitability, export profitability growth), and market share-related (e.g.: export market share, market diversification).
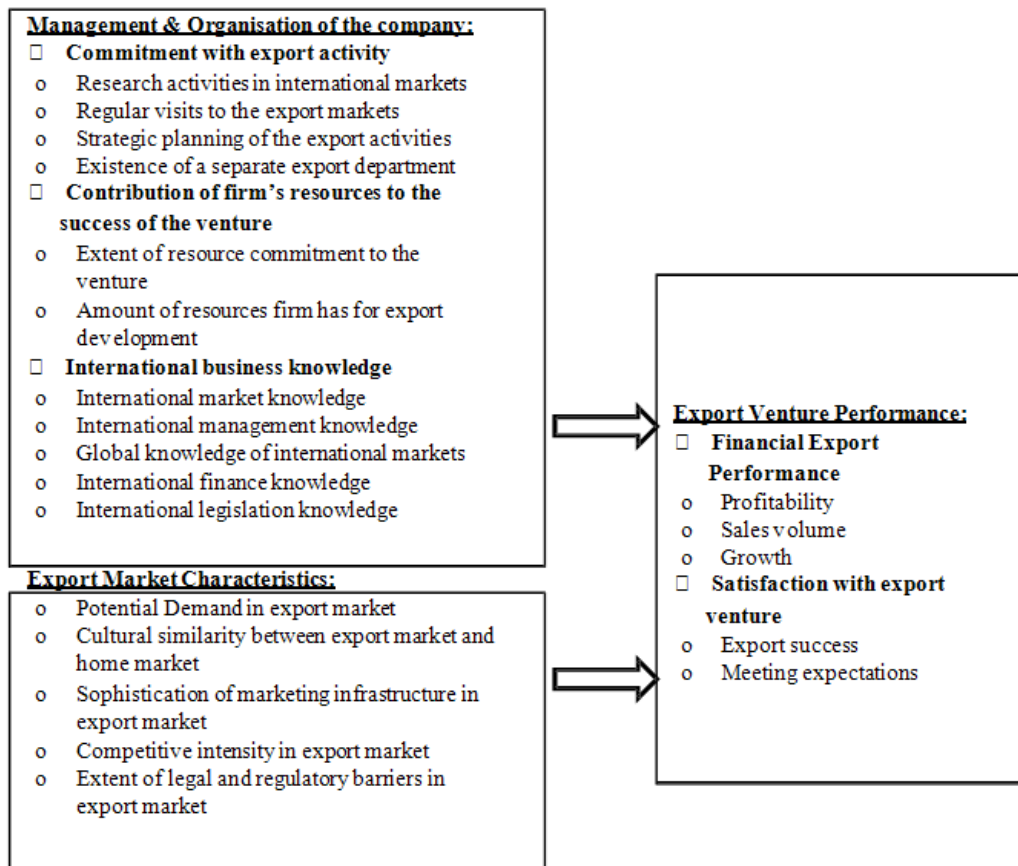
Concerning the **non-economic** measures, they can be split in product–related

(when the focus is on export success reached through and efficient implementation and execution of a marketing strategy, like new products exported), market-related (such as export market penetration), and miscellaneous (like customer satisfaction).

Referring to the **generic** measures (e.g.: perceived export success, achievement

with export objectives), Katsikeas *et al.* (2000, p. 499) consider it as a more collective approach to the measurement of export performance. These types of measures are related with the respondents' perceptions of attainment or failure of a determined goal/objective, in which results the success or failure of the export activity (Lages and Lages, 2004). Nevertheless, these are unrefined measures because they do not give the whole picture of the construct's domain (Katsikeas *et al.*, 2000).

Notwithstanding the existence of a plethora of measures (more than the few listed above), there has been a stream in the literature that defends the use of multiple measures, not only to complement each other, and provide a more accurate analysis, but also to capture different sides of the construct (Shoham, 1998; Sousa, 2004).

## 3. Research model and proposition

**Figure 1: Conceptual model of assessment of export venture performance (developed model)**

**Management & Organisation of the company:**
- **Commitment with export activity**
  o Research activities in international markets
  o Regular visits to the export markets
  o Strategic planning of the export activities
  o Existence of a separate export department
- **Contribution of firm's resources to the success of the venture**
  o Extent of resource commitment to the venture
  o Amount of resources firm has for export development
- **International business knowledge**
  o International market knowledge
  o International management knowledge
  o Global knowledge of international markets
  o International finance knowledge
  o International legislation knowledge

**Export Market Characteristics:**
  o Potential Demand in export market
  o Cultural similarity between export market and home market
  o Sophistication of marketing infrastructure in export market
  o Competitive intensity in export market
  o Extent of legal and regulatory barriers in export market

**Export Venture Performance:**
- **Financial Export Performance**
  o Profitability
  o Sales volume
  o Growth
- **Satisfaction with export venture**
  o Export success
  o Meeting expectations

Source: Author, adapted from Cavusgil and Zou (1994), Katsikeas *et al.* (1996), Stoian *et al.* (2011), and Zou *et al.* (1998).

The framework above presented can be examined dividing it in three levels/layers. This research model inspired in the one developed by Cavusgil and Zou (1994) can be simplified by: internal and external factors to the firm have influence in the export venture performance. To develop the model, it was chosen constructs and items, which had already been tested by Cavusgil and Zou (1994), Katsikeas *et al.* (1996), Stoian *et al.* (2011), and Zou *et al.* (1998), that were joint together with the purpose of reaching a model that could be easily adapted to the case of a small open economy exporting to emergent economies.

The main goal of this work is only to apply this model to the export of cork stoppers to a single foreign market (Russia, India, and China), while conducting a study in the cork industry.

## 4. Methodology

### 4.1. Research Setting

There are three main issues have not yet received a scientific attention: the export performance of small open economies, the cork industry, and the potential of the emergent economies as an export target.

Studies concerning Portuguese exports are common due to the level of openness degree of Portuguese economy (as it can be seen in the following figure), its high levels of export and import intensity, and also because Portugal is a small open economy. As such Portuguese export can be justified, according to Baldauf *et al*. (2000, p. 62), as a way "[t]o maintain the standard of living, these countries face the increasing challenge of establishing cross-border relationships". As a matter of fact,

78% of Portugal GDP's is obtained through the trade activity (World Bank, 2014).

**Figure 2: Openness degree of Portuguese economy and respective values of export and import intensity from 1996 until 2009 (unit: Euro thousand)**
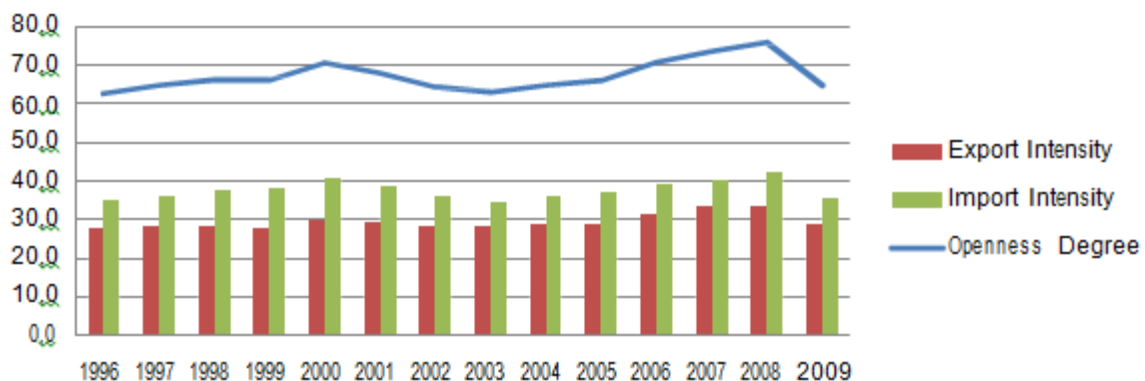


Source: Ministério da Economia, da Inovação e do Desenvolvimento, 2011. GDP - Quarterly National Accounts (base 2006)

Concerning the emergent economies, Burgess and Steenkamp (2013, p. 1) affirm that "[t]heoretically, emerging markets present significant socioeconomic, cultural, and regulative departures from the institutional assumptions of Western countries". As such, the theoretical/scientific background developed in Western countries should not be directly applied in emergent economies (*Ibid.*). A lot of research has yet to be carried out in order to allow academics to be able to do "the Holy Grail of marketing science — empirical generalizations" (*Ibid.*, 2006, p. 353). Yet, emergent markets can be used as kind of laboratory for testing and developing new theories (*Ibid.*).

Furthermore, according to World Bank GDP ranking, PPP based (2014); China, India, and the Russian Federation are on the top 10 places of the ranking.

To sum up, the research setting for this study was the largest Portuguese cork stopper exporter, and its export to emergent economies like Russia, India and, China.

### 4.1.1. The importance of cork industry in Portugal

Portugal is the world leader in cork exports. Having an annual cork production of 100.000 tonnes (APCOR, 2013), Portugal is responsible for 49,6% of the world's total production. In 2012, Portugal achieved a country share of exports of 64,7%, followed by Spain, whose share was of 16% (ITC, 2013). The following graphic (figure 4) shows the evolution of cork exports and its comparison among other countries and the world values in thousands of Euro.

**Figure 3: Evolution of cork exports from 2008 until 2012 - Portugal vs. world vs. other countries (unit: Euro thousand)**
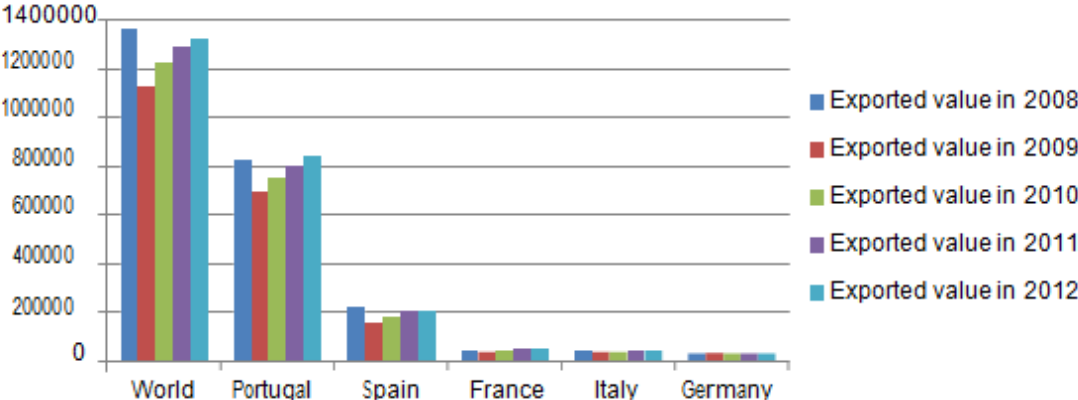


**Source: International Trade Centre (ITC) calculations based on UN COMTRADE statistics, 2013**

Concerning the structure of cork exports in Portugal per product type, it can be concluded that cork stoppers represented approximately 68% of cork exports back in 2012, which reflects its importance in Portuguese economy.

**Figure 4: Structure of cork exports in Portugal per product type**
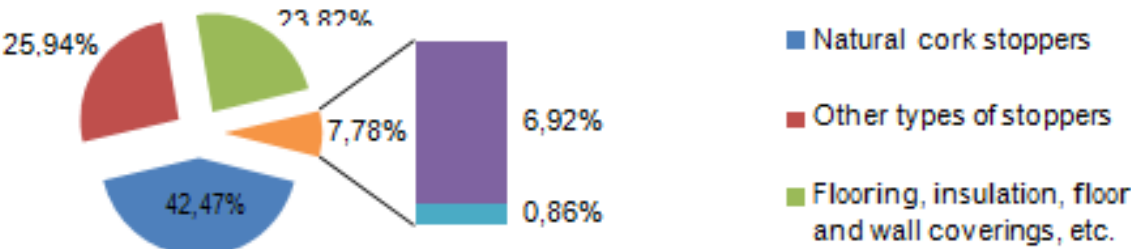
As it can be seen in the following graphic, wood and cork represent 3% of Portuguese total exports. Nevertheless, Portugal has the highest country share of cork exports in the world (ITC, 2013).

### 4.1.2. Exports Destinations

Concerning the main destinations of the cork exports, the main target of Portuguese exports is the European continent, namely countries like France, the USA, Spain, Italy, and Germany.

In recent years an increasing importance of the emergent economies has been noticed. As such, it can be found that Russia and China have a representativeness of 23,0% and 3,0%, respectively, in the cork exports in relation to total Portuguese exports (INE, 2012). It can also be noticed that only the exports to Russia faced a strong boost, while in India and China it can be ascertained a slight decrease (*cf.* Figure 8).

**Figure 5: Cork exports from Portugal to the BRIC from 2010 until 2012**

### 4.2. Research design

The methodology adopted was "the representative or typical2 case (…) [where] the objective is to capture the circumstances and conditions of an everyday or commonplace situation" and "[t]he lessons from these cases are assumed to be informative about the experiences of the (…) institution" (Yin, 2009, p. 48). Bryman names it as exemplifying3 case, because it "will provide a suitable context for certain research questions to be answered" (Bryman, 2012, p. 70).

Case studies are preferred when compared to other research methods because

they have the competence of dealing with a wide range of evidence sources (from documents, to observations, interviews, and so forth, covering both qualitative and

quantitative data), which gives the in-depth knowledge of certain situation/phenomenon (Yin, 2009).

This research involved two types of data: primary and secondary data. The primary data consisted of semi-structured interviews were conducted to the Chief of Marketing and Communication and two Area Sales Manager for Eastern Europe & Asia. The use of this kind of interview reduces the risk of bias on the interviewee's answers, since it does not convey possible alternatives to them. The interviews were developed and applied in Portuguese, and then translated into English. The secondary data used in this research was gathered from official documents provided by the company (some of that not available for the public) and website information.

## 5. Case study

To develop this research we assume two main propositions:

**P1:** "Management & Organisation of the company" will affect the "Export venture performance".

**P2:** "Export Market Characteristics" will affect the "Export venture performance".

### 5.1. Management & Organisation

Management and organisational support are crucial for the success of the export activity. Having a good support and understanding from the higher ranks of the organisation might dictate whether an export venture is fruitful or not. This way, by scrutinising the commitment from the management to the export venture; the international business knowledge the managers in command have; and how much of the firm's resources are destined to the export activity; we can assess how it influences the export venture performance.

This analysis of the management & organisational contributions will rely on the semi-structured interviews conducted to Interviewee A, B, and C.

### 5.1.1. Commitment with Export Activity and Contribution of Firm's Resources to the Success of the Venture

Amorim & Irmãos is a company that exports 95% of its production (AICEP – Portugal Global, 2013). Therefore, its whole strategy is designed for export activity. Also, the management gives full support to export development.

The company has an independent export department responsible for a tight and meticulous planning and control efforts developed for each export venture. Moreover, the venture planning is done well in advance, involving all sorts of data from the company's database, market research, future perspectives for the target market (that are assessed through visits), in order to reach the most advanced level of market knowledge. Furthermore, they have first-hand market knowledge due to their presence in those markets for over 30 years

When interviewing both Interviewee C and B, it was easily concluded that there are great efforts in order to achieve wide market knowledge, even when the market is still very young, which is the case of the Indian market.

In India's case, there is data on alcoholic beverages consumption, but the Indian population does not have yet relevant levels of alcohol consumptions. According to Interviewee B, it is due to its cultural and economic background.

Regarding the commitment with export activity and contribution of firm's resources to the success of the venture, Amorim & Irmãos tend to keep their strategy of allocating enough resources in order to bring return and growth.

Russia, India, and China are considered markets to invest in as a whole, but when analysing country by country, some adjustments are made, in order to reach each target/country needs.

## 5.1.2. International Business Knowledge

One of the most important aspects when considering a company, which relies on exports, is the international business knowledge of the senior managers of the company.

In Amorim & Irmãos, experience on international markets is a well-known practice.

Concerning the Area Sales Managers interviewed, both have 20 years or more of experience in the markets of Eastern Europe, Asia, and USA, which gave them a wide perspective on international market and management. This knowledge is shared with the other company's managers, so that all can have the same base of knowledge and be specialised in the markets where they operate.

Concerning the specifics of legal knowledge, it is a task of the legal department of the company, due to the legal instability of those countries.

## 5.2. Export Market Characteristics

Due to the decrease of wine consumption in the traditional markets, we can see Russia, India, and China as a potential market because these markets are believed to be fundamental to ensure the future growth of the world's economy. According to OIV, China is already the 5th largest wine producer in the world. This leads to some relocation, which is not exempt of geographical and physical barriers, implying alterations on the marketing strategy, on the product itself, and so forth.

Contrarily to China, Brazil and Russian Federation have met a decrease of their growth rate of wine production. Concerning India, it has a residual production, which might will be surpassed when the culture of alcohol consumption rise and when they develop a distribution network.

Regarding the **cultural similarities** between Portugal and Russia, India and

China, they are very different countries. Each one has its own way of doing business, which is much different from the one used in the Western countries, which demand a high degree of adaptation.

Portugal can be compared to Russia, India, and China, using the tools provided by The Hofstede Centre. These tools compare both countries in terms of power distance (PDI), individualism (IDV), masculinity/femininity (MAS), unc ertain avoidance (UAI), and long-term orientation (LTO).

When comparing Portugal to the above-mentioned countries individually, the results are following:

It can be concluded that there are dissimilarities between Portugal and the considered countries, despite in some cases they are not very accentuated (e.g.: Portugal and Russia, concerning UAI, are similar, i.e., in both countries, ambiguity is not well tolerated). This favours a glocal approach from the company, concerning its communication

**Figure 6: Comparison between Portugal and Russia, India and China of Hofstede 5 dimensions**
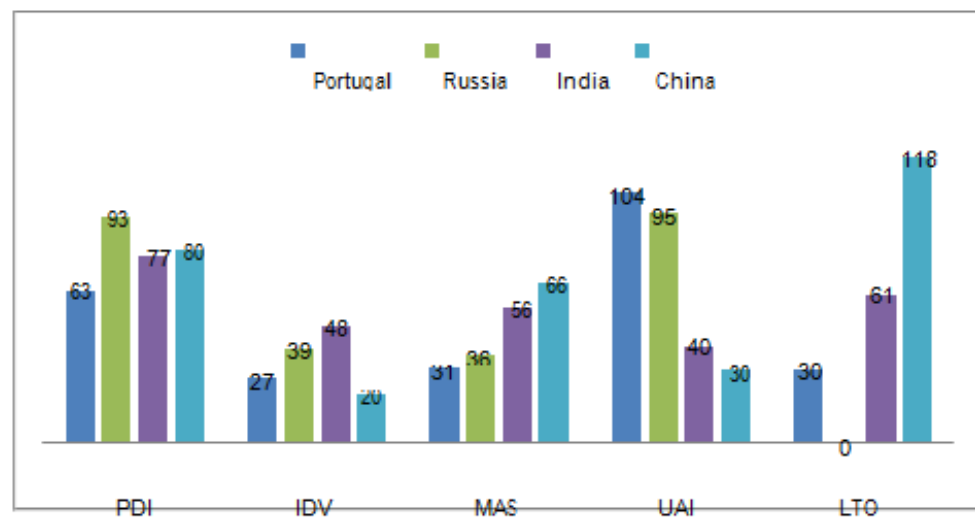


**Source: The Hofstede Centre (2013)**

In relation to the **sophistication of the marketing infrastructures**, they are well developed in China (the company even has a subsidiary) and are well developed in Russia (nine main agents in Russia). India is the less developed market, having only two main agents.

Concerning the **competitive intensity** in those markets, the company faces the same competitors as in other markets, which are aluminium caps and synthetic stoppers, which have global market knowledge.

Regarding the **legal and regulatory barriers**, a great effort must be done in order to reduce the trade barriers, and, as it was said, homogenise the legislation.

Other small adaptations may be done due to the country weather conditions and the country infrastructures.

### 5.3. Analysis of Export Venture Performance

In this part, the financial export performance will be analysed, as well as the management satisfaction with the export venture.

### 5.3.1. Financial Export Performance

Concerning the perceptions on the financial performance of the export venture, both Area Sales Managers interviewed agree that the export venture for those countries is profitable, having obtained good results. Nevertheless, India is seen as a future investment that might bring high levels of return, when the cultural conditions change.

When asked about the sales volume, if considered the study regards emergent economies, and weighting its representativeness of the client portfolio of Amorim & Irmãos, the respondents   considered that the export venture generated  a considerable amount of sales, with exception of India.

Concerning the growth achieved by the venture, the opinions are slightly divided, because while one of the managers believes it has increased since 1989, the other defends that these markets are not mature enough. The venture's growth is one of the main issues, because these markets are believed to be fundamental to ensure the future growth of the world's economy. Despite only recently having been being recognised as a future important player, Corticeira Amorim has already had its presence there for about 30 years, accordingly to its strategy of the vision for the future.

### 5.3.2. Satisfaction with export venture

With regard to the satisfaction with the export venture, it will be examined how the managers perceive both the export success and whether the venture performance met their expectations.

In this case, all the interviewees passed the same general message that if one bares in mind the specifics of the countries, the results are worth, but all of them said that if their superior where asked the same questions, he will always demand better results.

This way, all three considered the export venture averagely satisfactory, having always the opportunity of being better.

When asked about its success, the answers were the same.

When speaking about the expectations, the answers were slightly different, because, despite some expectations where met, there where factors that influenced that result, for instance, one must bear in mind the specifics of these markets and also the fact expectations are always higher than the reality.

## 6. Discussion

As it could be seen the emergent economies are a target of utmost importance for any company who wants to be successful in the exports business. Not only have they concentrated 3 billion of world's populations, as well as they are the biggest emergent markets, having contributed to the majority of world's GDP. Another important  fact  is  that  the consumption  rate  of  these  countries  is  growing exponentially.

It was also concluded that India is still a complicated market, where marketing and business strategies must be carefully planned.

With this case study, we ascertain the influence that the management and organisational aspects of the company have on the export venture performance, verifying P1. If the concept is decomposed, one can conclude that the firm's commitment to the export activity, which in this case is almost 100%, is one of the crucial factors to the success of the exports. In addition, the international business knowledge, which was very high, due to the experience and practices of shared knowledge adopted by the firm also influence the export venture favourable outcome. Furthermore, it is concluded that a large investment of resources in the export activity, which is result of careful planning and high levels of control of the export activity, will lead to the creation of a better marketing strategy and increase the performance of the venture.

When analysing the export market characteristics, one might see that it influences the export venture performance, which corroborates P2. Evaluating item by item, the potential demand of the export market may influence the distribution network and as the same time as influences the outcome of the export venture. The cultural dissimilarity between Portugal and Russia, India and China, as well as that sophistication of the marketing infrastructures are some of the most important factors that highly influence the export venture performance. The competitive intensity influences the venture performance, in the financial achievement. Finally, the extent legal and regulatory barriers also influence the export venture performance.

To sum up, one might conclude that the model presented in figure 1 (p.8) can be an example of a way of assessing the export performance in the cork stoppers industry, when we observe the exports from Portugal to Russia, India and China.

## 7. Findings and implications

### 7.1. Theoretical findings

This study might not be the most innovative research in the field of International Marketing. Nevertheless, it is in a way pioneer one, because it not only analyse the reality of only one industry – the cork industry – as well as it studies the impact of export performance in the emergent economies, which, accordingly to Sousa *et al.* (2008) is a branch of knowledge which is not very much studied.

With this research, it is proposed that the application of the developed model is quite useful for a company whose goal is to internationalise/who are in an early stage of the process of

internationalisation, and for those who are already in the market, but whose performance does not fulfil expectations. Further empirical studies based on this model can provide with conformity that if it is equally useful for not only in LSE, but also for SME.

Furthermore, it was verified that export marketing strategy is linked to export venture performance, as well as a strategic planning and market knowledge.

## 7.2. *Managerial findings and political implications*

This research would like to shed light on the topic of the performance of cork exports, which is an industrial sector that has not been very much explored yet, and on which Portugal can rely to the success of its exports.

Managers, not only from the cork industry, might find this investigation interesting and useful because the constructs defined for the cork stoppers exports might as well be "exported" for other industries, like textile industry, the shoes industry, and so forth.

Other of the implications that should be taken from this research are the political implications, because if the government and associations like AICEP – Portugal Global join efforts in order to promote the image of our country and our products (like APCOR campaign), it would not only be useful for cork industry, but also for all the sectors of activity.

## 7.3. *Limitations*

As some of the main limitations of this study, it can be pointed that it is a very restricted research, having as a main focus the exports of a single business unit – cork stoppers – and consider only one company, which is the largest one in Portugal. These facts may create some bias on the study.

Other limitations that arise are the ones intrinsic to the methodology adopted. Being a case study there is some concern because they provide little basis for generalisation and replication of the study.

Another limitation was lack of set practices and established theories in the subject area, so the conceptual framework was built through the combination of different parts from different theories.

Some might say that the unit of analyse used, single venture, is not the adequate. It could be used a portfolio of exports, all of firm's export, and so forth.

Another limitation that might be pointed out is the type of measures used: objective vs. subjective, and some kind of inclination from the part of the researched towards the use of subjective measures.

Other additional limitations that might be pointed out are the reduced number of interviews done, as well as the limited number of years (only one) assessed.

### 7.4. *Future research*

First of all, a study involving all cork stoppers exporters in Portugal should be conducted, including SMEs, and also to open the object of study to the sector of cork, and do not restrict it to cork stoppers.

Some quantitative analysis and longitudinal studies should be done, in order to verify whether the results gathered through qualitative research on a narrow scope study, match those from a wider scope and quantitative source.

A useful direction for further research is to use more objective data in order to grant a stronger reliability and validity to the research.

The research model could be replicated in other industries and involving more countries, for instance apply the research model to other small open economies, and compare the results from small open economies vs. larger economies.

It also might be useful to explore better the relationship between the export market characteristics and the export performance.

Other interesting variable that might be added to the model developed for this study could be adding the perspectives of the customers.

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# THE EFFECT OF IMPORTS ON EXPORT PERFORMANCE

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## Abstract

We focus on internationalization literature, and more specifically, on import-export links. We distinguish between export propensity, that is the decision of exporting or not, and export intensity to measure the export performance, to analyze the relationship between imports and exports. In addition, we introduce a new variable, the incorporation of imported intermediate inputs into production process, to study its impact on export propensity and export intensity. We provide empirical support for these arguments through a two-stage model estimation using a logit panel model to study the export propensity variable, and a panel data with fixed effect model to analyze the export intensity variable. We use the information from the data base "Survey on Business Strategies" which contains information about Spanish manufacturing firms. In particular, imports and the incorporation of intermediate inputs into production process affect export propensity, but not export intensity.

**Keywords:** import, export propensity, export intensity, import-export links.

**JEL:**

## Introduction

Traditional internationalization models placed to exports as the first step of a gradual process of expansion abroad which is based on experiential learning (Johanson and Vahlne, 1977). So, the bulk of research on this topic has until recently almost exclusively focused on outward internationalization activities such as exporting and foreign direct investment (Karlsen et al., 2003). However, it has highlighted the need to extend the international model to also explain the importer commitment of the firms, since in an exporter-importer relationship the commitment to foreign supplier is important (Johanson and Vahlne, 2006).

In global markets, offshore outsourcing is frequently recognized as an essential strategy of firms to maintain and develop their competitive advantages (Kotabe and Mudambi, 2009). Besides, offshore outsourcing can help firms to improve their ability to export, and so to increase export performance, being the effects stronger in the markets where firms import intermediate goods (Bertrand, 2011).

One the one hand, importing experience can be an important aspect to reduce costs when making decisions related to establishing or expanding international activities (Eriksson et al., 1997) since it may facilitate firms' outward internationalization by providing knowledge about markets and contacts in the foreign market. On the other hand, a firm can extend its frontiers to search more efficient resource-allocation and focus on core activities, and outsourcing may turn out higher production capacities and economic of scale, and therefore higher performance. So, importing firms can be more competitive in international markets due to efficiency gains achieved (Di Gregorio et al., 2009). These efficiency gains can occur when a firm relocates or outsource its relatively less efficient parts of the production process in another country with lower production costs, because its average productivity increases (Amiti and Wei, 2009) or due to the introduction and adoption of new technologies (Aw et al., 2001). So, more productive firms are more likely to export because the level of competition in export markets is more intense, since there are higher costs in foreign markets than domestic markets (Wagner, 2007).

Although the behavior of the most of companies indicates that they use different ways of internationalization simultaneously: exports, imports, alliances…(Fletcher, 2001), the most previous studies have focused on analyzing the exports and imports separately, so that there is a lack of microeconomic studies on offshore outsourcing and export behavior (Salomon and Shaver, 2005). In fact, while some authors study the relationship between imports and

exports (Karlsen et al., 2003), the most of them focus on external operations ignoring the importer behavior (i.e. Ghymn and Jacobs, 1993; Chetty and Eriksson, 2002). However, whether a firm does both exports and imports jointly helps to create and sustain competitive advantages since importing activities may influence their export activities (Chryssochoidis and Theoharakis, 2004).

Therefore, imports have great relevance in the international business strategy, since it is not an independent activity in the firm, being part of the firm's search for low-cost inputs, or for products or technology not available locally, or to provide other needs in the overall supply chain management process, so it is necessary to deepen the analysis of import-export links (Aykol et al., 2012).

Finally, the prior literature about relationships between importers and exporters has been centered on behavioral interactions between international buyers and sellers through constructs as trust, power, dependence, communication and conflict. However, the relationship with export performance, despite its importance, has been studied in only a few articles (Aykol et al., 2012). Some of them have been documented in the past few years, analyzing evidence of firms' importing activities being linked to higher probability of export market entry (Choquette and Meinen, 2012; Meinen, 2012), higher export intensity and scope (Di Gregorio et al., 2009), higher export sales (Bertrand, 2011) and larger export portfolio in terms of variety of exported products (Bas and Strauss-Kahn, 2011). However, we have no evidence about the study of the incorporation of imports into production process and its incidence on the decision of exporting and export performance.

Previous literature does not deep on how imports can facilitate the decision of exporting or not; so, the main aim of this paper is to analyze the relationship between imports and exports, since links of both activities can lead to improvements for firms. In particular, we study if imports can facilitate the decision of exporting or not, and once the firm is an exporter, we examine the impact of imports on export performance. Moreover, we examine if there is a positive impact on the decision of exporting and export performance in the case of imports are incorporated into production process.

So, the contribution of this paper is the study of imports and exports simultaneously since these international activities are studied separately in the literature, whilst both activities importing and exporting are part of the strategy of international trade of the firm. Therefore, this paper claim to contribute analyzing import-export links, as in regard to the decision-

making as the subsequent impact on export performance since previous papers focused on behavioral interactions between importers and exporters, but not on these aspects despite its relevance. Finally, we aim to go one step further by studying the effect of the incorporation of imports into production process. To our knowledge, this issue has not been addressed in previous literature.

## The relationship between imports and exports

Imports are an important activity within the firm, and form part of the strategy of international expansion, since imports are not an independent business activity. Imports are part of the firm's search for low-cost inputs, or for products or technology not available locally, or a mechanism to serve other needs in the overall supply chain management process.

The learning that takes place through importing, whether it occurs before or after the firm enters into exporting, serves to inform decision makers about overseas opportunities of both kinds: supply and market. For firms starting their activity abroad, imports may be an initial step in the internationalization process, and therefore, in the process of taking advantage of opportunities overseas (Eriksson et al., 1997). Besides, whether a firm does both exports and imports jointly helps to create and sustain competitive advantages since importing activities may influence their export activities (Chryssochoidis and Theoharakis, 2004).

Export propensity

From an exporter perspective, the importers facilitate the internationalization process by providing access to foreign markets. In fact, importing can also be a mode of entering international markets and even facilitate exporting due to contacts created and knowledge and experience gained in foreign countries (Karlsen et al., 2003), since imports can be used to gain initial knowledge about a foreign market that subsequently will be pursued for sales of the products of the firm, or for establishing links to key players in the target market in order to further expansion (Eriksson et al., 1997).

Also, costs when making decisions related to establishing or expanding international activities can be reduced by importing experience (Eriksson et al., 1997) since it may facilitate firms' outward internationalization by providing knowledge about markets and contacts in the foreign market. Thus, we formulate the following hypothesis:

*H1a: Imports have a positive impact on export propensity.*

Through the import of intermediate inputs, a firm can get a higher quality or lower costs than domestic markets (Fariñas and Martín-Marcos, 2010), since international purchases allow access to markets with cheaper labor and raw materials (Manuj and Mentzer, 2008), and with technological and organizational advances (Bygballe et al., 2012). So, imported intermediate inputs can benefit firms through improved unit price, quality and innovation (Kotabe and Murray, 1990; Birou and Fawcett, 1993), which may have a positive impact on productivity firm. So, more productive firms are more likely to export because the level of competition in export markets is more intense, since there are higher costs in foreign markets than domestic markets. So, the barriers to entry within export markets assure that a firm must reconfigure its resources and capabilities to get improvements in its production processes (Wagner, 2007).

*H1b: Imports incorporated into production process have a positive impact on export propensity.*

Other variables that could affect in this relationship could be the age and de size of the firm, although they are not the main objective of our analyses. Thus, we present briefly some reasons of their inclusion.

There are much research showing the contribution of firm age to export propensity (Czinkota and Ursic, 1991), but the results have been inconclusive. Some studies indicate that younger firms have more interest in foreign markets than older established firms (Lee and Brasch, 1978; Ursic and Czinkota, 1981). Nevertheless, others papers suggest that older firms are more likely to export than younger firms (Welch and Wiedersheim-Paul, 1978; Javalgi et al., 2000), or even, that there is no relationship between firm age and export propensity (Diamantopoulos and Inglis, 1988). Whether there is no consensus on the impact of firm age on export propensity, we consider the age of firm like a proxy of organizational experience, and therefore, this can facilitate the reduction of costs in the firm.

Firm size is one of the most important variables in exporting, given that a lack of size can be considered a handicap in exporting for small firms. Overall, the results indicate that exporting firms are larger in terms of number of employees than non-exporting firms (Keng and Jiuan, 1989). In fact, there are a number of significant studies which found a positive relationship between a firm's size and its propensity to export (Majocchi et al., 2005; Suarez-Ortega and Alamo-Vera, 2005). Kedia and Chhokar (1986) go so far as to announce that most small and medium-sized firms do not export. Kaynak and Kothari (1984) found

that small and medium-sized businesses participating in international trade have more employees than businesses within the same size categories who do not participate.

Studies measuring firm size as the sales level of firm indicate that firms with higher sales are more likely to engage in exporting activity (Kaynak and Kothari, 1984; Keng and Jiuan, 1989). Erramilli and Rao (1993) explain that larger firms are more capable of absorbing the risks associated with internationalizing, and are therefore more likely to do so.

Export intensity

In global markets, offshore outsourcing is frequently recognized as an essential strategy of firms to maintain and develop their competitive advantages (Kotabe and Mudambi, 2009). Bertrand (2011) shows that the positive effects associated with offshore outsourcing are more direct, and therefore stronger, in the export market where the firm outsources. Importing intermediate inputs from the export market gives firms local market information, which reduces location-specific disadvantages and thus strengthens their presence in the export market.

Also, a firm can enlarge its boundaries to search more efficient resource-allocation and focus on core activities, and outsourcing may results in higher production capacities and economic of scale, and therefore, in higher performance. So, importing firms can experience efficiency gains, enabling them to be more competitive in international markets (Di Gregorio et al., 2009). Thus, we formulate the following hypothesis:

*H2a: Imports have a positive impact on export intensity.*

The increase in productivity firm by the decision to source from foreign countries can be due to structural or compositional changes in the firm (Mitra and Ranjan, 2007), in other words, if a firm relocates or outsource its relatively less efficient parts of the production process in another country with lower production costs, its average productivity increases due to a compositional effect, so that there would be a static efficiency gain. In this case, the remaining workers may become more efficient, if it possible to restructure in a way that pushes out the technology frontier (Amiti and Wei, 2009). Efficiency gains can also arise from the introduction and adoption of new technologies (Aw et al., 2001), which improve the way activities are performed by importing services (Amiti and Wei, 2009). On the other hand, a firm can also seek for an increase in the quality of their inputs and products to enhance its competitiveness (Leonidou, 1998), and therefore, its export performance.

*H2b: Imports incorporated into production process have a positive impact on export intensity.*

Therefore, imports can be used for purposes such as gaining initial knowledge about a foreign market that subsequently will be pursued for sales of the company's products or services, or for establishing links to key players in the target market, again for further expansion there via links established with the target company.

Similar to the case of export propensity, we also consider that firm size and its international experience could affect the export intensity.

On the one hand, larger firms have more organizational resources such as financial capacity or labor, and production capacity; get higher levels of economies of scale; and tend to perceive lower levels of risk in the international market (Katsikeas et al., 1997). In addition, larger firms own many unused resources which allow them to allocate more efforts to export (Badauf et al., 2000). All these determinants would lead to export success (Bonaccorsi, 1992). However, findings on the incidence of firm size on export performance have yielded mixed, since the relationship between firm size and export performance has been positive in some papers (Lado et al., 2004; Majocchi et al., 2005), whereas other studies have established no association or negative relationship (Bonaccorsi, 1992; Katsikeas et al., 1996; Stoian et al., 2011).

On the other hand, export experience has risen as a key determinant of export performance. According to the assumption of the gradualist approach to internationalization, first, firms create a strong domestic base and after begin to export. So, internationalization process becomes a gradually increasing experiential knowledge process (Johanson and Vahlne, 1977). Therefore, the gradualist approach postulates that gradually accumulating foreign market knowledge increases firm's ability to coordinate its international activities (Hadjikhani, 1997). In other words, it is evident that accumulation of experience on international markets and experiential knowledge allows firms develop some skills and capabilities necessary to export (Johanson and Vahlne, 1977; Katsikeas et al., 1996). Again, previous research has been mixed results, as some studies obtained a positive relationship between international experience and export performance (Lado et al., 2004), whereas other papers got a negative relationship (Brouters and Nakos, 2005) or no association (Stoian et al., 2011).

## Data, variables and methods

In order to test the hypotheses, we use the information from the data base "Survey on Business Strategies (Encuesta sobre Estrategias Empresariales – SBS –), which contains accounting and strategic information about manufacturing firms with more of 10 workers. This data base was designed by the Fundación Empresa Pública (FEP), now Fundación SEPI; and is sponsored by the Ministry of Industry and Energy, now the Ministry of Industry, Tourism and Trade. This survey was made for three main reasons. First, the absence of a data base of industrial firms with wide information and it was available to researchers. Second, there is not information of panel data to study the behavior of these firms. Third, the need to perform structural works in the area of industrial economy. The data base is representative of the Spanish firms and it is adequate for microeconomic analysis of industrial reality (Fariñas and Jaumandreu, 1999).

The survey variables have an annual temporal dimension, although some of them are four-year variable; and includes information about business strategies in various areas: activity, products and production processes, customers and suppliers, markets, technological activities, employ, and external trade, besides provides some accounting data.

From this database we obtain a sample of 688 firms for the period 2006-2009. Thus, we have 2498 observations (an unbalanced panel). When we focus only on exporters, there are only 508 firms in the sample (an unbalanced panel of 1736 observations). This database also provides the required information to measure the variables.

With respect to measures of the dependent variables used, *export propensity* is a dummy variable which has value 1 when the firm exports and zero otherwise; and *export intensity* is measured by the logarithm of the ratio of the annual volume of exports in constant prices between annual sales in constant prices (Instituto Nacional de Estadística (INE)'s Industrial Price Index -IPRI).

With respect to the independent variables, imports (m) is measured by the logarithm of the ratio of the annual volume of imports in constant prices lagged one period between annual sales in constant prices (IPRI).

To apply the logarithmic transformation on null values of variables used, we transform variables using the following common procedure in the literature (Busse and Hefeker, 2007; Krifa-Schneider and Matei, 2010):

$$y = \ln(x + \sqrt{(x^2 + 1)})$$

The variable "imports incorporated into production process (m*Inc)" corresponds to the previous variable (m) multiplied by a dummy variable (Inc) which indicates if the intermediate inputs are incorporated (value 1) or not (value 0) into the production process.

The variable "international experience" (export intensity$_{t-1}$) is measured by the logarithm of the ratio of the annual volume of exports in constant prices lagged one period between annual sales in constant prices (IPRI).

The age of firm (Age) is measured by the logarithm of years in business of the firm lagged one period. The firm size is measured by way of 3 dummy variables which indicate whether it is a large (Large), medium (Medium) or small firm (Small), including in the models only two of them. We also control by the economic activity and we measure the 20 manufacturing sectors (Sector$_i$) with 20 dummies variables[16], one for each sector, including in the model only 19 variables. Finally, the years (Time) are measured with 4 dummies, one for year (2006-2009).

As our objectives differentiated between export propensity (in order to study the decision to export or not) and export intensity (to analyze the volume of exports), and these decisions have its own determinants, we use the general model of two-stage selection proposed by Heckman (1979). However, the analysis shows that the Mills' lambda is not significant and thus there is not a problem of selection bias[17].

Thus, we can do the two stages manually by estimating, first, a logit panel model using the full sample to study the export propensity variable, and second, a panel data with fixed effect model using the sample of exporting firms to analyze the export intensity variable.

So, we estimate two different models to examine our hypotheses. In the first estimation model, we aim to analyze the impact between the use of imported intermediate inputs and their incorporation into production process, and export propensity. The sample of firms used is an unbalanced panel of 2498 observations. In the second estimation model, we focus only on exporters, which are 1736 observations from the full sample, studying the impact

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[16] The 20 manufacturing sectors are as follows: meat industry; food products and tobacco; drink industry; textile industry; leather and footwear industry; wood industry; paper industry; graphic art; chemistry industry and pharmaceutical products; rubber and plastic products; non-metalic mineral products; iron and non-iron metals, metalic products; agricultural and industrial machinery; computer, electronic and optical products; electrical equipment industry; motor vehicle industry; other transport material; furniture industry; and other manufacturing industries.

[17] We have the Heckman model results at the disposal of anyone who is interested.

between the use of imported intermediate inputs and their incorporation into production process, and export intensity.

Thus, in order to test the hypotheses 1 (H1a; H1b), we estimate the following model for the manufacturing industry i in year t (Model 1):

$$export\ propensity_{i,t} = \beta_0 + \beta_1 m_{i,t-1} + \beta_2 m * Inc_{i,t-1} + \beta_3 Age_{i,t-1} + \beta_4 Medium_i +$$
$$\beta_5 Large_i + \beta_6 \sum Sector_i + \beta_7 \sum Time_i + \varepsilon_i \qquad (1)$$

Where export propensity$_i$ is the dependent variable. As independent variables are included the following variables: imports ($m_i$), and imports incorporated into production process ($m_i$*inc). We include as control variables the age of firm (Age) the firm size (Medium, Large), the time effect (2007, …, 2009) and the manufacturing sub-sector (19 dummies); and $\varepsilon_i$ is an error term.

Then, in order to test the hypotheses 2 (H2a; H2b), we estimate the following model for the manufacturing industry i in year t (Model 2):

$$export\ intensity_{i,t} = \beta_0 + \beta_1 m_{i,t-1} + \beta_2 m * Inc_{i,t-1} + \beta_3 export\ intensity_{i,t-1} +$$
$$\beta_4 Medium_{i,t} + \beta_5 Large_{i,t} + \beta_6 \sum Sector_{i,t} + \beta_7 \sum Time_{i,t} + \varepsilon_{i,t} \qquad (2)$$

where export intensity$_i$ is the dependent variable. As independent variables and control variables, we use the same than in Model 1, and we include the experience of firm instead of the age of firm. We use a Panel-Corrected Standard Errors to solve heteroskedasticity and autocorrelation problems.

## Results

Table 1 presents the results of Model 1, and Model 2.

We confirm the hypothesis H1a and H1b since imports and imports incorporated into production process has a positive and statistically significant impact on export propensity. With respect to control variables, age of firm, medium and large firms and some sectors as textile, wood, or electrical equipment industry, also have a positive impact on export propensity.

With respect to the export intensity (Model 2), we obtain that the coefficient of the variable studied are no statistically significant, so we do not support the hypotheses H2a and H2b, and we do not obtain empirical evidence about the impact on export intensity of imports and imports incorporated into production process. With respect to control variables,

international experience and medium and large firms have a positive impact on export intensity.

**Table 1: Main Results**

| Variable | Logit – Export propensity Model 1 | | PCSE – Export intensity Model 2 | |
|---|---|---|---|---|
| | Coef. | Std. Error | Coef. | Std. Error |
| constant | -2.384*** | 0.802 | 0.055 | 0.034 |
| m | 1.281*** | 0.604 | -0.018 | 0.034 |
| m* Inc | 2.406*** | 0.626 | 0.057 | 0.037 |
| Age | 0.437*** | 0.172 | | |
| Export intensity$_{t-1}$ | | | 0.838*** | 0.017 |
| Firm size dummies | Included | | Included | |
| Time dummies | Included | | Included | |
| Sector dummies | Included | | Included | |
| Observations | 2,498 | | 1,736 | |
| Wald chi$^2$ | 173*** | | 3,791*** | |

## Conclusions

Most of research on international business has focused on outward internationalization activities such as exporting and foreign direct investment (Karlsen et al., 2003). However, it is important to extend the international model to explain the importer commitment of the firms (Johanson and Vahlne, 2006), because imports have great relevance in the international strategy and it is necessary to deepen the analysis of import-export links (Aykol et al., 2012).

This paper examines the relationship between exports and imports. With respect to exports, we differentiate between export propensity to study the impact of imports on the decision of exporting or not, and export intensity to analyze the incidence of imports on export performance. In addition, we introduce a new variable because we explore if the incorporation of intermediate inputs into production process has impact on both, export propensity and export intensity.

The results in this paper demonstrate significant evidence that both imported intermediate inputs and the incorporation of these inputs into production process, have a positive impact on the decision of exporting, that is, export propensity. However, we do not obtain empirical evidence about the impact on export intensity of these variables. So, we show the relevance of imports in order to take the decision of exporting or not, and therefore, we demonstrate both decisions importing and exporting are closely related. Furthermore, our results show that other variables as the age of firm, international experience, firm size or the sector where the firm operates can be important to export propensity or export intensity.

We contributed to fill a gap in internationalization literature, and more specifically, in research about exporting and importing since previous studies have focused mainly on outward internationalization activities and behavioral interactions between importers and exporters. However, we focus on export-import links with particular emphasis on the relationship between export propensity and imports, and export intensity and imports. Besides, we used a new variable, the incorporation of intermediate inputs into production process, which allows us do analysis more complete of international trade.

We had data limitation because some variables used only have information between 2006 and 2009; therefore it is necessary to extend the available data for dynamic analysis in future research.

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# PART 4:    INTERNATIONAL NETWORKING

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# THE IMPORTANCE OF TOP MANAGEMENT TEAMS IN GLOBAL DYNAMIC NETWORKS

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## Abstract

The rapid technological changes, the shifting patterns of international trade and the different competition modes forced the birth of a new organizational form called "dynamic network" by Miles and Snow (1986). This paper of conceptual nature, aims at analyzing the importance and role of Top Management Teams, according to Hambrick (1984), in creating an organizational culture favorable to the establishment of dynamic networks, in the development of trust and in promoting commitment within the network by reviewing a set of concepts like networks, trust, commitment and organizational culture. Therefore the role of top management teams in building strong form trust will be analyzed by using the existent theory to establish the relation among the concepts of "dynamic networks", top management team, commitment and the concept of trust introduced by Sabel (1993). As networks are not discrete events in time, they involve continuous relationships and this means commitment among all the members of the network. It then presents a discussion of some empirical and theoretical implications of the analysis. The originality is in the combination of the various theories, namely the "dynamic network" of Miles and Snow (1986), the Upper Echelons Theory (Hambrick and Mason, 1984) and the concept of "trust" of Sabel (1993) to prove that top management teams have influence in the development of trust.
While some authors argue that top management actions have direct implications in the company's performance, others argue that the strategic success of a business depends on the ability of the top management team to build strong forms of trust within global networks, and then by being part of a network companies will have access to a wider variety of resources, to more knowledge, capabilities and technology. The challenge abides on showing how an organizational culture, trust and commitment in exchange relationships within a dynamic network can enhance or be a source of competitive advantage for organizations.

**Keywords:** Top Management Teams; Network; Trust; Commitment; Organizational Culture.

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## Introduction

The shifting patterns of international trade, the new forms of competition and the rapid technological changes have forced many firms to rethink their market approaches, and consequently their strategies, structures and management processes have been combined and resulted in a "dynamic network" (Miles & Snow, 1986).

A change can also be observed in the focus of organizational theory away from the internal processes of organizations towards the organization–environment interface (Häkansson & Snehota, 2006).

According to Hambrick and Quigley (2014) executive actions substantially shape the fate of enterprises and as Hambrick (1987) argues the strategic success of a firm depends not only on one person, but on the entire top management team, therefore the relevance of exploring the role and the importance of the top management team within organizations and even more importantly when relating to other firms and members of the same network.

In fact, Kiessling and Harvey (2004) defend the idea that the top management team (TMT) will be central in the development of networks between organizations, in particular the personal interactions that are of great importance for building strong forms of trust.

For all this, it is very important to analyze the available literature regarding top management teams, network and dynamic network, trust, commitment and organizational culture to be able to determine how TMT influence the creation of an organizational culture that promotes trust and commitment among individuals and other organizations.

This topic is particularly interesting as some researchers, like Bower (1970) have highlighted the role of CEOs in shaping organizational architecture through their decisions about structure, executive staffing, incentives and metrics. Others, such as Hambrick and Finkelstein (1990) focused their attention on establishing a relation between TMT tenure and organizational outcomes. Or, Hambrick and Quigley (2014) who have studied for twenty years the influence of the CEO on a firm's performance. There appears to be a substantial lack of research in exploring the role of TMT in creating an organizational culture capable of promoting a strong form trust within dynamic networks.

## Literature Review

Once the aim of this study is to understand the role and importance of top management teams in creating an organizational culture favorable to the establishment of dynamic networks, a

review of the main contributions, approaches and theories related to the "role of top management teams in the organizations", "network", "organizational culture", "trust" and "commitment" will be carried out. The concepts of "trust" and "commitment" will also be reviewed as they are intimately connected to the definition of networks and as top management teams may have a huge influence in creating trustworthy relations within a network and therefore committing to the other members. In fact, Kiessling and Harvey (2004) argue that the top management team is instrumental in the development of trust between organizations, and that the personal interactions have an important contribution for building a strong form of trust. These authors also defend that strong form trust will open the network to more knowledge exchanges and therefore reduce any opportunistic behavior.

## Top Management Team (TMT)

The concept of "Top Management Team" appeared in the academic literature around the eighties, with the Upper Echelons Theory (Hambrick & Mason, 1984) as a reference, and now it is widely used by both academics and practitioners representing an important advance since the management of a firm is commonly a team activity. In fact it usually refers to a small group of the most influential people within an organization. Sometimes this group can be named after "management committee" or "executive committee" (Hambrick, 1995).

Kiessling and Harvey (2004) defend that the Top Management Team (TMT) must be included in strategic decisions as they influence the attitudes within their firm and in their future relationships. Hambrick (1995) argue that the Top Management Team task is rather complex, once they are bombarded with information, some are ambiguous and for this reason it is relevant to focus on the role of the TMTs. As a result the characteristics of the top team will largely influence the way they scan and interpret the environment and the decisions they make. To reinforce this aspect, Hambrick (2007) state that the executives' values and personalities have great influence on the way they interpret the situations they face, and how this can determine their decisions.

In fact, the Upper Echelons Theory (Hambrick, 1984) defends the idea that the organizational outcomes, in terms of strategic choices and firm's performance levels are partially influenced by the top management background characteristics, namely their values and cognitive bases. The central idea of this seminal paper is focused on how executives behave based on their personalized analysis of the strategic situations they face, and that these analysis are a product of the executive's experiences, values and personalities.

Bowman and Kakabadse (1997) argue that the Upper Echelons perspective appeared as opposition to the argument of Hall (as cited in Hambrick & Mason, 1984, p. 194) that "large organizations are swept along by events or somehow run themselves" and also to put into a more coherent framework a set of fragmented literature on the characteristics of top managers.

Later in 1987, Hambrick recognizes that it is possible to reconcile these two opposing views depending on how much managerial discretion exists. One implication of managerial discretion for the Upper Echelons approach is that this theory offers good predictions of organizational outcomes in a direct proportion to how much managerial discretion exists. Managerial discretion refers to the field of action available to top executives and discretion refers to the different levels of constrain that different TMTs face. When managerial discretion is low, the action of the top management is limited, when high top managers are allowed to "shape the organization", and leave their marks on the organization (Hambrick, 1990).

Hambrick and Finkelstein (1987) state that managerial discretion can be determined by three sets of forces. Firstly, the degree to which the environment allows change and variety; secondly, the extent to which an organization allow the top executives to plan and implement the strategy; and lastly, the degree to which the top manager is capable of creating multiple paths.

However the resource availability and the presence of some inertial forces may limit or enhance managerial discretion. Large organizations and inertia tend to inhibit managerial flexibility in some critical domains. And the same happens when the firm offers a reduced number of options to managers (Hambrick & Finkelstein, 1987).

In 1981, Hambrick had already distinguished two main sources of relevant contingencies for organizations: strategy and environment and defended that executives who could cope with both would have relatively great power within their organizations. The author also noticed that there are four parts of the environment that managers can scan, following the classification of the three top management tasks introduced by Miles and Snow (1978): Entrepreneurial task - related to the identification of market/product trends; Engineering Task - focused on external developments that can contribute to the improvement of processes; Administrative environment - concerned with the impact of external developments on the roles and relationships in the organizations; Regulatory environment: related to taxes, government regulations, accreditations and sanctions.

TMT by performing the top management tasks identified by Miles and Snow (1978) and screening the environment will notice the rapid technological change, the shifts in competition modes and international trade and recognize the need for a new organizational design. In this case, the administrative task happens as a consequence of the entrepreneurial and of the engineering tasks.

According to Miles and Snow (1986) there is a new organizational form called "dynamic network", hence the importance of trying to fully understand what they represent, how do they work and what is their impact in an organization.

## Network

The network approach developed by the Industrial and Marketing Purchasing Group (IMP Group) describe the industrial systems in terms of three basic variables; actors, activities and resources (Häkansson, 1987, as cited in Brito & Roseira, 2005). This is called the ARA (Actors, Resources and Activities) model (Häkansson, 1987, as cited in Brito & Roseira, 2005). The actors are those who perform activities and control resources according to their goals and they can be individuals, firms, and groups of individuals, groups of firms or even parts of firms. The activities can be either transformation or transfer (Häkansson & Snehota, 1995). The first ones are directly controlled by one actor and change or improve the resources, the transfer activities link transformation activities and transfer the direct control over a resource from one actor to another. The resources can be subdivided into three main categories: physical, like equipment and buildings, financial and human resources such as labor, knowledge and relationships. Resources can be accessed directly through ownership, or indirectly through relationships (Brito, 2006). And, it is the structure of the relationships established among these three elements that can be referred to as networks. This happens because activities can be linked in a great variety of ways, providing "the backbone of any organization or inter-organizational relationships" (Geoff & Leney, 2009, p. 553). Actor bonds, as they are social in nature and tend to create, nurture and sometimes destroy relationships through interaction with other actors. Resources can also tie in once they are in contact with different resource types both tangible, like equipment and intangible like knowledge and skills (Häkansson & Snehota, 1995).

The ARA model represented a major step forward in terms of conceptualizing B2B relationships and networks. Although each ARA element is different from the other, their

close relationship offers an excellent overview of how both organizations relate within a network (Geoff & Leney, 2009).

However, according to Brito (2006), the dependence between the members and the possible complementary objectives may conduct to a division of tasks within the network which makes the coordination of all activities an important issue in industrial networks.

In fact, Davies, Leung, Luk and Wong (1995) argue that the management of a network constitutes an important element of strategic behavior and the networking paradigm is a way of understanding the totality of relationships. These authors also defend that networks may help a firm to enhance their competitive advantage once a network provides external access to tangible and intangible resources of other network members.

Furthermore, Scott and Laws (2010) present two approaches to the concept of a network: it may be a sensitizing metaphor (a purely descriptive label given to an activity such as a networking meeting); or it can be a conceptual representation of social structure and how it is manifested based on theorizing of social interactions. These two approaches cover a wide range of inter-organizational networks since formal structured alliances, joint-ventures and partnerships to informal information gathering and support networks, being in their opinion, the most relevant elements of the actors and the relationships.

A network can also be defined as an organizational form featured by repetitive exchanges among semi- autonomous organizations that rely on trust and embedded social relationships to protect transactions and reduce their costs (Borgatti & Foster, 2003).

Miles and Snow (1986) go further by introducing the concept of "dynamic network", as a way firms have to react to the new competitive environment. This new organizational form is "a unique combination of strategy, structure and management processes" (Miles and Snow, 1983, p. 62). The dynamic network suggests that its main elements may be easily assembled and reassembled so as to meet the changing competitive requirements. The characteristics of a dynamic network are: Vertical disaggregation (Business functions as product design, marketing and manufacturing.); Brokers (Business groups); Market mechanisms (contracts and payment for results are frequently used); Full- disclosure information systems (broad access to information systems).

The dynamic network can be viewed either from the perspective of each individual element or from the network as a whole. For a firm, the main advantage of being part of a network is the

opportunity to gain access to a particular resource, so each member should be seen as complementing rather than competing with the other members.

If the network is seen as a whole, then when a part is missing or performing poorly it means that the network may be performing below the desirable levels for a while, however as organizational relationships are a result of the relationships established among people working in the organizations, and not among organizations, the more people interact, the more they will be contributing to the success of the dynamic network.

The arrival of this concept forced managers, especially the ones in position to redesign their organizations, to change the way they viewed the future directions of their firms and also the approaches they used to manage the existing structures (Miles & Snow, 1986). So, the ability to develop trust and commitment and a strong organizational culture favorable and open to the outside world is most relevant to the success of networks.

## Trust

The concept of trust has been used in a large number of research domains with various methods and measurement instruments, however it has seldom been explicitly examined (Geyskens, SteenKamp and Kumar, 1998).

Menkoff (1993, p. 44) comments: "To be trusted by others and to maintain one's trustworthiness are frequent explanations for success to business affairs and the continuation of commercial relations".

The trust building between businesses is rather difficult in particular when assumptions about anybody's goodwill are made. However, Kiessling and Harvey (2004) believe that trust within global relationships may result from two main sources: the context and the relationship. In the first case, trust comes naturally as a consequence of having adopted a relevant behavior or knowledge of how effective the interaction and/or communication is with the other members. When trust appears as a result of the relationship it is a product of the actors' interactions.

Trust is "the mutual confidence that no party to an exchange will exploit the other's vulnerabilities" (Sabel, 1993, p. 1133). This author refers to three different types of vulnerabilities: "Adverse Selection Vulnerability" – exists when parties find it difficult to evaluate the quality of resources or assets of the other member; "Moral Hazard Vulnerability" – appears when the elements find it costly to evaluate the quality of the resources; and "Hold-up Vulnerability" – is found when members make large or asymmetric transactions.

Barney and Hansen (1994) found three types of trust in exchange relationships. The first - Weak form trust – happens when there are no vulnerabilities, so chances for opportunistic behavior are limited, and also when the quality of goods and services is not costly to evaluate; the second form - Semi-strong trust – is found when significant exchange vulnerabilities exist and so parties should be protected with some governance devices to limit opportunistic behaviors from other members; the third - Strong form trust - Emerges in the face of significant vulnerabilities, whether there are any governance mechanisms or not.

Geyskens, SteenKamp and Kumar (1998) find that trust contributes to satisfaction and long-term orientation over and beyond the effects of economic outcomes of the relationship.

Sabel (1993) states that trust is the central element of social life and that substantive agreements are the foundations of trust. The creation of trust in business derives from the mutual dependence that exists among business partners, this is among members (actors) of a business network. In fact, trust is considered a priority by the Chinese at the initial stage of any business relationship (Yen, Barnes and Wang, 2011), so first mutual trust has to be established among the business partners, and then any transactions may occur. In China, trust represents the most respected element among business relationships once it helps to "smooth transactions" and prevent risks in a changing environment.

Berry and Parasuraman (1991) sustain the idea that relationships are developed on the basis of existing mutual commitment. Following the idea of Morgan and Hunt (1994) that commitment and trust encourage the existence of relationship investments through the cooperation between exchange partners, limit the attraction of short-term alternatives once higher long-term benefits are expected. So, commitment and trust lead to cooperative behaviors. Therefore, the need to find out what the concept of commitment means and what it implies becomes essential.

## Commitment

The concept of commitment has been defined several times according to the area of research. The most common definition comes from the Human Resources field and is related to the commitment of an employee to the organization, however this is not the definition that matters for this study, this research is more focused on the commitment among organizations.

Wilson (1995) defines commitment as being the desire to maintain a relationship and ensure that it lasts. For Ramasamy and Goh and Yeung (2006, p.134) a relationship commitment

relates "to the desire to continue a business partner relationship and the willingness to put in the effort to ensure long-term relationship".

Lenney and Easton (2009, p. 553) define commitment as "agreements between two or more social actors to carry out future actions" and range from the specific and everyday actions to the general and strategic ones. According to these authors the concept of commitment happens among actors, as one may be fully committed to another and the other actor may not be committed at all. Additionally this term may be used to enrich the ARA (Actors, Resources and Activities) model, by showing why actors, resources and activities are linked and helps to explain interaction and network outcomes. Following these authors' idea, actors are usually driven by goals, which imply actions.

Goals are seldom reached in isolation. They are realized and achieved by continuously creating and maintaining business relationships.

Nevertheless, this study will focus on the commitment among organizations. Morgan and Hunt (1994) are of the opinion that if a committed partner believes that an ongoing relationship is working on and makes all the efforts to sustain and endure it indefinitely, then it is a relationship commitment. The definition of commitment of Morgan and Hunt (1994) was also applied to the organizational commitment scales they developed. These authors recognize that commitment among exchange partners are fundamental to achieving "valuable outcomes" for themselves, and so partners will make all the efforts to develop and maintain their relationships. So, they state that commitment is fundamental when relational exchanges occur between a firm and its partners.

Geoff and Leney (2009) argue that commitments can be considered a resource within the network, but a resource that orients the activities and reflects the goals of members (actors).

Commitment can be caused by tangible elements such as large and irreversible capital investments or intangible elements like wanting to seem consistent with their prior actions and pronouncements (Hambrick, Geletkanycz & Fredrickson, 1993). When it is caused by intangible elements, it requires a further research on what the firm values and beliefs are behind the actions taken or the behaviors adopted, therefore, it would be valuable to develop a research on the organizational culture.

## Organizational Culture

There are many definitions of organizational culture, however organizational culture usually refers to the values and beliefs that provide norms about expected behavioral patterns that

employees might follow (Schein, 1992). Those shared values work most of the times as guidelines to members' behavior. Mumford, Scott, Gaddis and Strange (2002) reinforce this idea by arguing that the senior management of a firm can exercise influence within the organization through values. In fact, by emphasizing certain values and by creating norms for expected behaviors, managers can build an organizational culture with a powerful influence on employee behavior. Values and norms can in turn manifest itself in artifacts (e.g., organizational rituals, language and stories, and physical configurations) and lead to desired or accepted behaviors.

Edgar Schein (1985) presents culture as a set of assumptions one makes about a group they belong to. The assumptions are grouped into three levels: artifacts, espoused beliefs and values, and basic underlying assumptions differentiating the levels at which organizational culture manifests. Organizational norms derive from values and manifest in artifacts, which represent the most visible layer of the organizational culture once they became evident in symbols, rituals, physical workspace evidence and type of language (Schein, 1992).

Although organizational culture is a largely invisible social force, it is very powerful within an organization. For this reason, Hogan and Coote (2013, p. 1609) state that "organizational culture is a powerful means to elicit desired organizational outcomes".

## Theoretical Framework

Once this paper is of conceptual nature, the research started with a literature review to be able to develop some propositions, which can be tested in a following stage.

For now, this research paper intends to address the following propositions taking into account the general theoretical approach/framework applied:

First – Firm characteristics (size, industry, …) impact on Top Management Team actions' and on network of business relationships (stability and success)

Second Proposition - Top Management Teams impact in the organizational culture

Third Proposition – Top Management Teams impact in the developing of trust and commitment

Fourth Proposition – Trust, commitment and organizational culture impact on network of business relationships (stability and success)

Fifth Proposition – Organizational culture influence the developing of trust and commitment

Anderson, Rungtusanatham and Schroeder (1994) defended that top management leadership is important to create and communicate a vision for continual improvement in order to enhance the viability of the organization. Finkelstein and Hambrick (1990) argue that it is important to understand the background, the experiences, and values of top managers to explain the choices they make. And, the Upper Echelons Theory (Hambrick & Mason, 1984) is based on the idea that top management teams highly influence a firm's outcomes, in fact it is expected that strategies and performance reflect the management characteristics. Furthermore, Finkelstein and Hambrick (1990) noticed that a management team tenure in an organization influence their commitment to status quo, their attitude to risk and its informational diversity, which will affect the organizational outcomes. So, firms with long tenure teams will tend to follow persistent and stable strategies due to long-term acculturation of the managers which creates a common organizational vision and also because they are not willing to take unnecessary risks.

The values, behaviors and experiences of the Top Management Team, following Schein (1992) concept of culture will shape the culture of the organization, as organizational strategy, actions and decisions will reflect the visible layer of the organizational culture.

Culture represents a collective social construction over which Top Management Teams have a relevant influence on, in fact Schneider (1987) argues that the kinds of people in a place determine the organizational behavior, in other words, people define the way the places look, feel, and conduct's itself. Therefore, leaders define the culture of the organization.

Once trust within global relationships result mainly from context and/relationship, then according to Kiessling and Harvey (2004), if managers adopt a relevant behavior or have knowledge on how to effectively interact and communicate (context), and/or are aware of the consequences of their interpersonal interactions (relationship), then a favorable atmosphere is created within which trust can be developed in an organization. In fact, these authors defend that the top management team is crucial in the development of trust among organizations, in particular because the personal interactions are highly important for building strong forms of trust.

Trust grows with repeated use over time so it is usually studied and observed in long-term relationships; therefore it is most likely to create commitment in turn. (Kiessling & Harvey, 2004). According to Salancik (1977), commitment molds people's attitudes and maintain their behavior even when possible tangible rewards or positive feedback is absent, so there is

commitment when one is bounded to his acts. Salancik recognizes commitment as being a "powerful and subtle form of coopting the individual to the point of view of the organization" (1977, p. 80).

Morgan and Hunt (1994) argue that when both commitment and trust are present, they produce outcomes that promote efficiency, productivity and effectiveness. In short, commitment and trust lead directly to cooperative behaviors, the kind of behaviors firms should have when they are members of a network.

A firm is nothing more than a complex network of internal and external relationships among people, functions, and departments that constitute the starting point to develop and implement strategies (Ritter and Wilkinson and Johnston, 2004). And, Davies, Leung, Luk and Wong (1995) argue that managing a network is an important aspect of any strategic behavior and networking which implies an understanding of the totality of the relationships.

Hence, two more propositions come up:

Sixth Proposition – Top Management Teams characteristics impact on network of business relationships (stability & success)

Seventh Proposition – Organizational culture impact on Top Management Team actions' and on network of business relationships (stability and success)

Managers who can combine the two sources of critical contingencies: environment and strategy, are likely to have greater influence within their management teams (Hambrick, 1981). The dynamic process of adjusting to environmental change and uncertainty involves a wide range of decisions and behaviors (Miles & Snow, 1978). Usually, managers make their strategic decisions based on their views of the environment and of the resources of their organizations, which implies that if managers perceive the network approach as being a competitive advantage then they will make all the necessary efforts to configure the organizational structure and resources to meet the new environmental challenges (Miles & Snow, 1986).

According to Menkoff (1993) trust very often gives an important contribution to the explanation of the success and to the maintenance of business relationships. In China, for instance, trust is a key element in any business affairs as Yen, Barnes, and Wang (2011) found out.

If, according to Schneider (1987), top managers shape the culture of an organization through their beliefs, actions, values and behaviors and if they understand the network approach as a possible competitive advantage, once the organization gains access to other members' resources (tangible and intangible), then when taking decisions and configuring the organizational structure, top managers will also consider the resources available in the network into their actions and behaviors (Miles & Snow, 1986). Actions and behaviors that help to influence the organizational culture.

If an organizational culture promotes open decision making, information widely available and accessible, fair treatment of employees and offers rewards that emphasize shared success, according to Goh (2002) those practices help to increase the level of trust within the organization. Goh (2002) defends teamwork, collaboration and co-operation as critical elements of any organizational culture to knowledge transfer among partners. Borders, Johnston and Rigdon (2001) reinforce this idea by stressing the fundamental role of cooperation between network members in any business strategy. Batt and Purchase (2004) argue that collaboration is required within networks, as firms need to compromise their aims and agendas if they want to achieve the goals of the network.

Figure 1. Design of the theoretical framework



Figure 1. Design of the theoretical framework
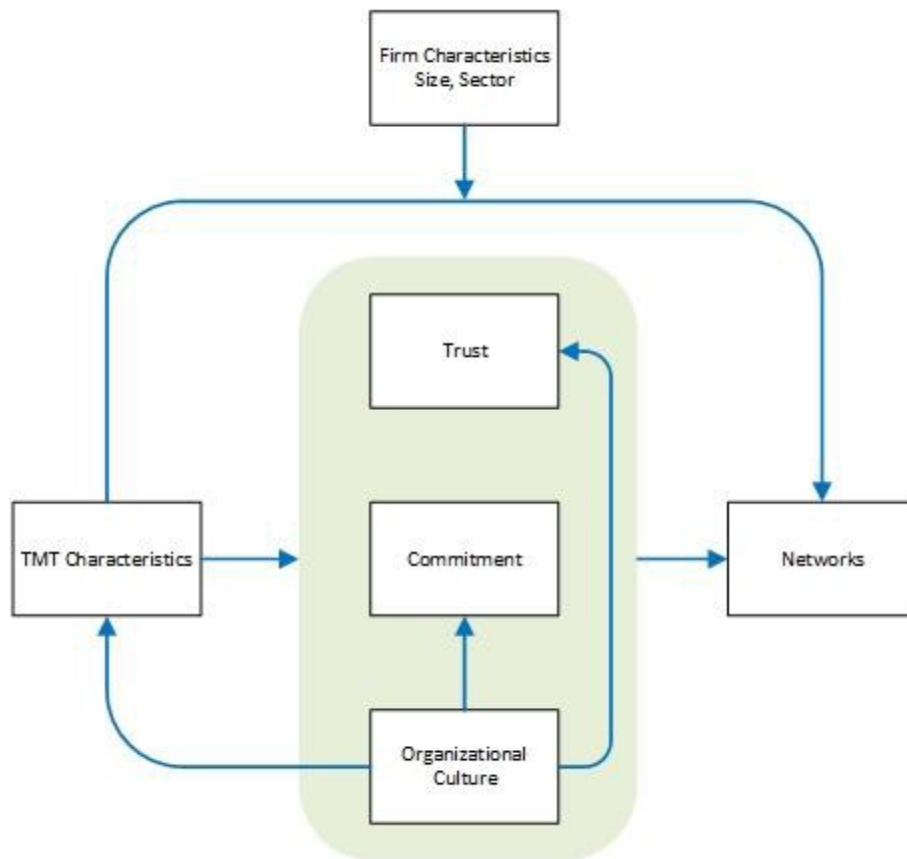
Therefore, if Top Management Teams' values, beliefs, actions and behaviors influence organizational culture, if the culture of an organization reflects the characteristics of their leaders according to Schein (1992), if their Top Managers manage to build trustworthy relationships and create commitment within the organization, then it is most likely that Top Management Team characteristics will have an important role to play in the management of dynamic networks, as shown in figure 1.

Hambrick (1987) argues that there is not an ideal management team, in fact in his opinion, the mix of qualities is dependent on the context in which managers play and how each one fits with each other and how their combined mix of aptitudes, values, skills and knowledge fit with what is required by the competitive environment. If top team qualities are well suited and meet the requirements of the environment then higher the chance of competitive success.

However Finkelstein and Hambrick (1987) found that managers of some organizations have more discretion than others in other organizations due to the degree to which environment allows change, the organization is open to a wide range of possibilities and trusts the top management team to plan and implement those actions, and to the degree to which the

management team is capable of thinking on different hypotheses. The top-managerial discretion may be limited by the firm characteristics namely the organization size which tends to reduce managerial flexibility, and the resource availability tends to enhance the managerial discretion.

Furthermore Finkelstein and Hambrick (1987) found that in high discretion industries, like in the computer industry, top management team plays a role in the organization outcomes while in low discretion contexts, as in the natural gas distribution industry, top managers may have little influence in the firm's results. So, depending on the size of the firm, on the resources the firm offers and on the industry it belongs, the top management team would be and behave differently.

## Conclusions

This conceptual paper uses the available literature to extract some prepositions for further research. This paper is a first attempt at understanding all the complexities in relation to the impacts of Top Management Teams on creating and promoting organizational culture and on the management of business networks. The organizational culture also have an impact on the decisions of the Top Management Teams, and so does some other variables like the size of the firm and the industry it belongs. The existence (or not) of trust and commitment are also influenced by elements of the culture of the firm. So, it is also expected to acquire an understanding of the role of trust, commitment and of the culture of an organization on a firm's network of business relationships.

So far, the literature has been used to extract and confirm the propositions, however this paper lacks some empirical confirmation. In any subsequent papers on this subject area, more research on the importance of culture as a mechanism of behavior control, on the role of commitment in the management of networks, on the process of building strong forms of trust and on the process of creating or shaping organizational culture by top management will have to be carried out. The idea of the subsequent second stage when conducting further research to collect some empirical data through semi-structured interviews, and then confront continuously the theoretical framework with some empirical work, until it reaches a theoretic saturation and the propositions are confirmed.

However, further theoretical framework may be necessary in order to frame the empirical data in the second stage of this research.

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# NARROWER OR WIDER? THE NETWORKING DILEMMA TOWARDS BETTER INNOVATIVE OUTCOMES

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## Abstract

Multinational corporations (MNCs) have a unique position to access diverse sets of knowledge across their intra- and inter-organizational networks in order to generate successful innovations and combinations of existing knowledge. In this context, subsidiaries provide a particularly context for studying innovation because these units operate in a complex dual environment: required to be responsive to their local markets whilst also meeting the demands of their parent organization. However, only a few recent studies have analyzed the simultaneous impact of inter- and intra- organizational networks on the innovation performance of MNCs. Furthermore, due to the emphasis on the local network level, researchers have tended to ignore the general role of international network and the more specific role of international inter-organizational network. This paper is aimed at filling this gap in the literature. Thus, to meet this goal, we analyze whether the diversity of inter- and intra- organizational networks contribute – through the access to heterogeneous knowledge - to the enhancement of subsidiaries' innovation performance.

The analysis is based on panel data of 1100 subsidiaries of MNCs operating in Spain for 2008-2011. Hypotheses are tested via a random-effect model for panel data using the xtreg command available in Stata. The empirical findings allow confirming the importance of network diversity. On the one hand, data reveal that geographical diversity of intra-organizational network has a significant impact on innovation performance. On the other hand, our results lead us to conclude that innovation is largely induced by opportunities for collaboration with partners of inter- organizational network from different backgrounds and knowledge bases, as well as with different geographical locations. We contend that diversity of intra- and inter-organizational networks increases the innovation performance in different ways. First, intra- organizational networks of MNCs have a significant impact on innovation due to their influence on the heterogeneity of knowledge latent within this network. Second, in relation to inter-organizational network, innovation entails the convergence of heterogeneous knowledge from different types of partners. Third, firms with diverse ties have access to a variety of ideas and perspectives that firms with primarily

redundant contacts do not; this characteristic is important in innovation, which strongly depends on the ability to bring together and recombine diverse knowledge. Fourth, the heterogeneous types of knowledge emerging from different locations may be combined advantageously, supporting the argument for knowledge sourcing abroad to obtain technological diversity and increase the knowledge portfolio. Thus, firms that seek to innovate are bound to engage in some exchanges with cognitively distant partners. Our results complement previous literature by showing that not only the international diversification of a MNC itself but also the wider geographical and functional diversity of its organizational network provides access to heterogeneous knowledge. Additionally, this paper makes a theoretical contribution to the debate on heterogeneous knowledge inputs and cognitive distance into the domain of international innovation network.

**Keywords:** innovation performance, inter-organizational network, intra-organizational network, multinational corporation.

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## Introduction

Multinational corporations (MNCs) can be conceptualized as a network of geographically separated but mutually linked nodes (or units), each possessing unique knowledge resources (Ambos, Ambos and Schlegelmilch, 2006; Collinson and Wang, 2012). The international business literature argues that MNCs can derive advantages relative to purely domestic firms from their superior access to heterogeneously distributed knowledge (e.g., Bartlett and Ghoshal, 1989) and their ability to transfer and exploit such knowledge within the MNC (e.g., Kogut and Zander, 1993). Furthermore, MNCs gain access to new knowledge and generate more radical innovations by increasing the geographic scope of firms' activities (Bartlett and Ghoshal, 1989; Barkema and Vermeulen, 1998). Foreign activities reinforce the process of accessing knowledge resources that would be more difficult to find if the firm develops its activity only in a domestic market (Almeida and Kogut, 1999; Bartlett and Ghoshal, 1989; Nachum and Zaheer, 2005). Firms operating within a broader geographic scope are able to access new lines of technological and market diversification that are reflected in local markets (Iwasa and Odagiri, 2004) and can obtain a greater diversity of flow of ideas, products, processes and technologies (Håkanson and Nobel, 2001).

Additionally, MNCs are embedded in the inter-organizational networks of the local suppliers, customers, legislators, and other organizations from the countries where each MNC develops its activity, and these organizations all have an interactive relationship with MNCs (Ghoshal and Bartlett, 1990). The literature argues that networks with external partners are a potentially important aspect of the innovation process (Cohen and Levinthal, 1990; Huggins and Johnston, 2010; Möller et al., 2005; Mohannak, 2007, Rosenkopf and Nerkar, 2001).The positive impact of inter-organizational networks on innovation has been traced back to the potential of inter-organizational collaboration to facilitate knowledge sharing and interactive learning processes among participating firms (Cohen and Levinthal, 1990; Huggins and Johnston, 2010; Inkpen and Tsang, 2005; Powell et al, 1996).

In this sense, it is widely acknowledged that MNCs have a privileged position to access diverse sets of technical inputs across their worldwide operations to generate new innovations and combinations of existing knowledge. In this context, subsidiaries provide a particularly context for studying innovation because these units operate in a complex dual environment, required to be responsive to their local markets whilst also meeting the demands of their parent organization. However, only a few recent studies have analyzed the simultaneous impact of inter- and intra-organizational networks on the innovation performance of MNCs

(Achcaoucaou, Miravitlles and León-Darder, 2014; Birkinshae, Hood and Young, 2005; Collinson and Wang, 2012; García-Pont, Canales and Noboa, 2009; Helble and Chong, 2004; Meyer et al, 2011). Furthermore, due to the emphasis on the local network level, researchers have tended to ignore the general role of international network and the more specific role of international inter-organizational network. This paper is aimed at filling this gap in the literature. Thus, to meet this goal, we analyze how innovation performance of MNCs' subsidiaries is influenced by the diversity of the intra- and inter-organizational networks in which these MNCs are embedded. We seek to better understand how heterogeneous knowledge derived from their networks influences innovation performance.

In this paper, we theorise and empirically test why MNCs and their subsidiaries may pay more attention to broader heterogeneous knowledge. We propose that diversity of intra- and inter- organizational networks will increase the innovation performance in different ways. First, intra- organizational network of MNCs have a significant impact on innovation due to their influence on the heterogeneity of knowledge latent within this network. Second, in relation to inter-organizational network, innovation entails the convergence of different types of knowledge from different types of partners. Third, firms with diverse ties have access to a variety of ideas and perspectives that firms with primarily redundant contacts do not; this characteristic is important in innovation, which strongly depends on the ability to bring together and recombine diverse knowledge. Fourth, the heterogeneous types of knowledge emerging from different locations may be combined advantageously, supporting the argument for knowledge sourcing abroad to obtain "technological diversity" and increase the "knowledge portfolio". Thus firms that seek to innovate are bound to engage in some exchanges with cognitively distant partners. The cognitive distance (Nelson and Winter, 1982; Nootboom, 2009) creates opportunities for the recombination of heterogeneous knowledge inputs.

This study answers that call in the literature to dedicate more attention to examining the scope and quality of network relationships (Giroud and Scott-Kemnel, 2009). Therefore, our findings provide greater clarity to the role of the network in innovation. Specifically, we show that firms with diverse ties have access to knowledge heterogeneity that may improve creative potential and the ability to implement new ideas. We complement previous literature by showing that not only the international diversification of a MNC itself but also the wider geographical and functional diversity of its organizational network provides access to heterogeneous knowledge. Moreover, we make a theoretical contribution to the debate on

heterogeneous knowledge inputs (Nelson and Winter, 1982) and cognitive distance (Nooteboom, 2009) into the domain of international network. Our empirical contribution, from panel data of 1100 subsidiaries of MNCs operating in Spain for 2008-2011, shows the importance of network diversity. Data reveal that intra-organizational network diversity has a significant impact on innovation performance. Additionally, our results lead us to conclude that innovation is largely induced by opportunities for collaboration with partners of inter-organizational network from different backgrounds and knowledge bases, as well as with different geographical locations.

The paper is structured into four additional sections after this introduction. The second section provides the theoretical framework and presents the research hypotheses. The third section describes the methodology, sample and method of analysis. The results are offered in the fourth section. Finally, the fifth section summarises the main conclusions and limitations and outlines some proposals for future research.

## Hypotheses development

### Intra-organizational network and innovation

An important characteristic of MNC is that they invest in multiple countries and operate international affiliates across heterogeneous external environments. Such knowledge is distributed across different units (e.g., Bartlett and Ghoshal, 1989; Birkinshaw, 1996; Gupta and Govindarajan, 2000; Hedlund,

1986). Knowledge heterogeneity arises partly because units build knowledge assets, such as technological competencies, from heterogeneous external environments.

Subsidiaries share access to the MNCs intra-organizational network of resources which they can leverage to develop competitive capability in their local environment (Andersson et al. 2007; Bartlett and Ghoshal, 1989). In this sense, these units may build knowledge assets based on knowledge inputs from other units within the MNC ("internal knowledge"; see Frost, 2001). The potential for learning and knowledge diffusion seems to be higher whenever they belong to a network that spreads over different countries and therefore over diverse knowledge and innovation systems (Frenz and Ietto- Gillies, 2007). In this sense, there is extensive evidence that MNCs are increasingly carrying out R&D and innovative activities in foreign locations (Dunning and Lundan, 2009; Narula and Zanfei, 2005). Authors such as Frenz and Ietto-Gilles (2007) claim that the characteristic of group belonging itself may lead to a higher innovation potential because each part within the organization learns from the

environment in which it operates and transmits such knowledge internally to the remaining units of the MNC. Indeed, the higher the degree of multinationality, the stronger the impact on innovation propensity (Frenz and Ietto-Gillies, 2007). Along a similar vein, Lahiri (2010) notes that the intra- organizational linkages between research units significantly influence firms' ultimate ability to derive benefits from increasing the geographic scope of their research and innovation activities. Penner-Hahn & Shaver (2005) suggests the existence of a virtuous circle whereby this greater knowledge base can further foster benefits from increased international R&D.

The existence of heterogeneous knowledge enriches the possibility of new combinations and thus enhances the likelihood of emergence of novel ideas and, therefore, positively influences innovation performance (Leiponen and Helfat, 2011; Nelson and Winter, 1982). For this reason, we contend that a MNC's subsidiary with a broader geographic diversity of its intra-organizational network has an advantageous access to greater heterogeneous knowledge. Consequently, the increase in the flow of ideas, products, processes and technologies will exert a positive impact on innovation performance. Taking this as basis, we propose the following hypothesis:

Hypothesis 1. A broader geographical diversity of a subsidiary's intra-organizational network is positively associated with the firm's innovative performance.

### Inter-organizational network and innovation

Inter-organizational networks can be considered as a strategic source of knowledge and competitive advantage (Figueiredo, 2011). Knowledge flows between partners of inter-organizational network allow subsidiaries to leverage knowledge spillover from other firms (van Wijk et al., 2008). Bullinger et al. (2004) suggested that universities, research institutes, suppliers, customers and other partners have a valuable impact on the knowledge and innovation creation process. Firms need inter- organizational connections to gain access to complementary knowledge resources. Both vertical (buyers and suppliers) and horizontal (competitors or other partners) collaborations are valuable: customers can help define market needs, suppliers provide long-term access to specialized and complementary assets (Van Echtelt et al., 2008), and competitors offer opportunities to learn new skills and access to needed assets (Ahuja, 2000).

Having inter-organizational links with a diverse set of partners implies access to a complementary number of assets (Faems et al., 2005). This diversity in external resources lowers the risk of information redundancy, so (really) new knowledge and information are acquired, which increases innovative performance (Duysters and Lokshin, 2011). Nieto and Santamaría (2007) concluded that the greatest positive impact on the degree of innovation novelty comes from collaborative networks comprising different types of partners. As noted by Cagliano and Galinta (2002), establishing a relationship with inter-organizational networks allows organizations to learn about technologies, new materials, interesting ideas and technological know-how. We posit that the more diverse a subsidiary's inter-organizational network is in terms of functional diversity, the more innovative the firm is due to the access to different backgrounds and knowledge bases. Knowledge heterogeneity is reflected in the characteristics of the individual members in the inter-organizational network. Such heterogeneity can enhance the breadth of perspective, the cognitive resources, and the overall problem-solving capacity of the group of researchers (Demirkan and Demirkan, 2012; Hambrick et al., 1996), which will improve the ideas created within the network. Therefore, we posit the following hypothesis:

Hypothesis 2. A broader functional diversity of subsidiary's inter-organizational network is positively associated with the firm's innovative performance.

Subsidiary external embeddedness is typically defined in terms of the extent to which a unit has developed close relationships with local external partners as opposed to arm's-length relationships (e.g., Andersson and Forsgren, 1996). This external embeddedness has been found to lead to increased legitimacy (Luo, Shenkar, and Nyaw, 2002), enhanced subsidiary learning (Mu, Gnyawali, and Hatfield, 2007), and a greater likelihood that the subsidiary will serve as a source for its sister units' capability development (e.g., Andersson et al, 2002). Some researchers recognise the relevance of geographical proximity of inter-organizational network's partners to innovation (Asheim, 2012; Caniëls and Romijn, 2006; Rutten and Boekema, 2012). They claim that having more local partner types is associated with higher levels of innovative performance. However, other scholars have argued that maintaining predominantly local networks could lead to a lock-in situation (for example, 'group- think' and knowledge redundancy) in which organizations are less open to innovation opportunities and resources outside of their own region (Boschma, 2005; Giuliani, 2005).

International network collaborations boost the inflow of new knowledge to the product development process (Subramaniam, 2006), resulting in a commercially viable, culturally adaptable, and institutionally legitimised product for the global marketplace. Benneworth and Deesen (2011) notice that an excessive emphasis on the regional level ignores the continuing importance of the national and international scales for influencing what can be achieved and the importance of regional capacity for absorbing knowledge and deploying it effectively in novel innovations (Mahroum et al., 2008). Although large organizations that increasingly act as coordinators and managers of global innovation networks do have regional profiles, the extensiveness of those innovation networks means that regional influences play a very limited role in the innovation network logic. Another stream of literature shows that firms with broader international knowledge sourcing around the world can tap into different national systems of innovation (Cantwell, 2000). In this context, the heterogeneous types of knowledge emerging from different locations may be combined advantageously, supporting the argument for knowledge sourcing abroad to obtain "technological diversity" and increase the "knowledge portfolio" (Cantwell and Janne, 1999). While an international network offers many benefits, there are also significant costs and risks involved with international partners, as they require greater investments in developing communication and coordination routines to support the ongoing interactions necessary for product commercialisation. Kotabe et al. (2007) suggest that many internationally dispersed sources of knowledge may increase complexity beyond acceptable levels for effective communication and coordination. Building on the earlier conceptualisation of network efficiency (e.g., Baum et al., 2000) or balance in the focus on different network participants, Coombs et al. (2009) find that a geographically balanced network aids in the development of new products largely due to the diversity and efficiency of the firm's knowledge search processes. Thus, we posit that the more internationally diverse the subsidiary's network partners are, the more diverse the knowledge sources are and, consequently, the more opportunities for innovation. Therefore, our third hypothesis is as follows:

Hypothesis 3: A broader geographical diversity of subsidiary's inter-organizational network is positively associated with the firm's innovative performance.

## Research methodology

### Sample and data

The database used in our study is extracted from the Technology Innovation Panel (PITEC). This database is built upon the Spanish Innovation Survey carried out by the National Institute for Statistics (INE), which is based on the Community Innovation Survey (CIS) that follows the guidelines set by OECD's Oslo Manual, thus enabling comparison between countries. Because PITEC is designed as a panel survey, it allows us to estimate the changes over time as well as to take into account the heterogeneity in firms' decisions. Although the time period covered by the panel ranges from 2003 to 2011, there have been changes in the questionnaires (e.g., in the content of questions, in the wording of questions, etc.) that prevent the use of the full panel data for our study. Consequently, the results of this study are based on panel data from 2008 to 2011, a period during which all the variables considered in our model are comparable. Finally, it is important to note that the total number of companies participating in this panel is large, which ensures a representative sample of Spanish innovative enterprises.

It is important to note that our unit of analysis is the single firm, i.e., the unit surveyed by the CIS. With respect to the innovation surveys, a firm is defined as: "the smallest unit or combination of units producing goods or services with a certain degree of autonomy". If a firm belongs to a wider company group, the information refers to the activities of the enterprise and not the activities of the company as a whole. This firm may be stand-alone or belong to a wider company group. If the firm is a unit, which is part of a firm comprising several units/firms, then the unit whose characteristics are observed can either be the headquarters of a firm or a subsidiary. To gather a homogeneous sample, we collected only those firms that are subsidiaries. Our final sample consists of a panel data of 1100 subsidiaries of multinational companies operating in Spain (for the period 2008-2011). Based on the national classification of economic activities in Spain (CNAE2009), the sample includes 439 industrial and service companies operating in sectors considered as high-tech – according to INE classification, and 661 companies operating in medium- and low-technology industrial and service activities.

### Measurement of the dependent variable: innovation outputs

To measure the dependent variable- innovation performance-, we use the percentage of total annual sales (by the year) coming from new or substantially improved products introduced

in the last two years. To measure innovation performance, we build an indicator (*innoperf*) as the sum of two values:

a) Percentage of sales due to innovations in new goods and services for the company introduced in the previous two years.

b) Percentage of sales originated by innovations in goods and services introduced over a period of two years and representing a novelty for the market in which the company operates.

This is a similar approach to that used in previous studies (Cassiman, Veugelers 2006; Fosfuri, Tribó 2008; He, Wong 2004; Kampik, Dachs 2011).

## Measurement: independent variables

**Geographical diversity of intra-organizational network (*intcogr*)** was measured by gathering information on the number of different geographical regions where internal partners (headquarter or other subsidiaries of the MNC) actively cooperating with the subsidiary in the development of innovation activities during the last two years are located. The Spanish innovation survey lists four different regions: 1) Europe, when the partner is located in a European country other than the country in which the respondent company is located, 2) USA, 3) China and India, and 4) Other countries. As a result, each firm gets a score of 0 when no international internal partners are used, while the firm gets a value of 4 when the subsidiary is collaborating with internal partners from 4 different regions.

**Functional diversity of intra-organizational network (*hetepart*)** was measured by the number of external partners with whom the subsidiary cooperated during the past two years in some of its innovation activities. These partners include suppliers, clients or customers, competitors, consultants or commercial laboratories/R&D enterprises, universities or other higher education institutes, public research institutions and private research institutes. Thus, the variable "hetepart" takes the value 0 when a firm cooperates with no partners, and its value increases to a maximum of 7 when the firm is collaborating with all potential partners.

**Geographical diversity of a network (*intdivnet*)** was measured by gathering information on the number of different geographical regions where external partners actively cooperating with the subsidiary in the development of innovation activities during the last two years are located. The Spanish innovation survey lists four different regions: 1) Europe, when the partner is located in a European country other than the country in which the respondent company is located, 2) USA, 3) China and India, and 4) Other countries. As a result, each

firm gets a score of 0 when no international partners are used, while the firm gets a value of 4 when the subsidiary is collaborating with partners of 4 different regions.

Consistent with the literature on innovation, our model includes several control variables: firm size (*logsize*), the level of technological intensity of the sector in which a company operates (*ishigh*), and organizational efforts to develop new technologies internally (*intRD*) or to absorb externally generated technologies (*extRD*).

## Method of analysis

After conducting the Breusch-Pagan test (Breusch and Pagan, 1980), hypotheses were tested via a linear regression model for panel data with random effects (Greene, 2003). More specifically, the model tested is:

$$innoperf_{it} = \beta_1 \; ishigh + \beta_2 \; logsize + \beta_3 \; intRD_{it} + \beta_4 \; extRD_{it} + \beta_5 \; intcogr_{it} +$$

$$+ \beta_6 \; hetepart_{it} + \beta_7 \; intdivnet_{it} + (\alpha + \mu_i) + \varepsilon_{it}$$

where *ishigh* is time invariant.

## Results

The following table summarises the main results obtained from the estimation of the proposed model using random-effects. The model estimation was conducted using the "xtreg" command available in Stata, and it is statistically significant at the 5% level. Results reveal that the geographical diversity of subsidiaries' intra-organizational networks has a positive influence on such subsidiaries' innovation performance, which supports hypothesis 1. Moreover, the functional diversity of a firm's inter- organizational network is found to be a positive and significant determinant of innovation performance. This result provides empirical evidence for hypothesis 2 and confirms that the functional diversity of inter-organizational networks has a positive impact on the likelihood that firms will achieve some benefit from their innovative efforts. The coefficient for the geographical diversity of a firm's inter-organizational network is also positive and significant, revealing that more international diversification is related to more innovation performance, as postulated in hypothesis 3. This finding indicates that those firms whose networks include more regions abroad are more likely to achieve better innovation performance.

Concerning the other variables, as expected, the R&D expenditures are positively related to innovation performance. The coefficient for size is negative and significant, revealing that greater firm size is negatively related to innovation performance. This result supports the

arguments of those who argue that, in occasions, size may pose difficulties for innovation since large organizations may be more bureaucratic, less flexible, stronger inertia along established paths, and lower managerial commitment to innovation (Aldrich and Auster, 1986; Wade, 1996). Likewise, the estimated coefficient of whether a firm operates in high-tech sector indicates that this variable is also a good predictor of innovation performance.

| Variable | Coef. | Std. Err. | z | P >|z| | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| ishigh | 5.7391 | 1.5551 | 3.70 | 0.000 | 2.6982 | 8.7800 |
| logsize | -2.406 | 1.1307 | -2.13 | 0.033 | -4.622 | -0.1903 |
| intRD | 0.1242 | 0.0143 | 8.67 | 0.000 | 0.0966 | 0.1523 |
| extRD | 0.0908 | 0.0231 | 3.93 | 0.000 | 0.0454 | 0.1361 |
| intcogr | 3.9731 | 1.6675 | 2.38 | 0.017 | 0.7047 | 7.2414 |
| hetepart | 1.1332 | 0.5081 | 2.23 | 0.026 | 0.1373 | 2.1291 |
| intdivnet | 2.8165 | 1.3551 | 2.08 | 0.038 | 0.1605 | 5.4725 |
| constant | 15.810 | 2.8544 | 5.54 | 0.000 | 10.215 | 21.404 |

Wald Chi2(8) =216.98 (p =0.00000)

Sigma_u = 21.474

Sigma_e = 22.607

Rho = 0.4743 (fraction of variance due to u_i)

Number of observations: 4,367

Number of groups:1,100

## Discussion

MNCs have a unique position to access diverse sets of knowledge across their intra-organizational and inter-organizational networks in order to generate new innovations and combinations of existing knowledge. Nonetheless, the literature has paid little attention to jointly investigate the effect of intra- and inter-organizational networks on the innovation performance of MNCs' subsidiaries. Furthermore, due to the emphasis on the local network level, researchers have tended to ignore the general role of international network and the more specific role of international inter-organizational network. This paper aims to analyze whether the diversity of inter-organizational and intra-organizational network contributes to the enhancement of firms' innovation performance. We seek to better understand how heterogeneous knowledge derived from their networks influences innovation performance.

The analysis, based on data from the Technological Innovation Panel (PITEC), suggests that intra- organizational network of MNCs have a significant impact on innovation performance of MNCs' subsidiaries due to their influence on the heterogeneity of knowledge latent within this network. Additionally, we find that those subsidiaries embedded in an inter-organizational network with high functional diversity may have access to heterogeneous knowledge and improve their innovative potential. Our results show that network diversity fosters innovation performance, supporting theories asserting that cooperating with external partners constitutes a primary source of knowledge and has a valuable impact on the innovation creation process (see e.g., Bullinger et al., 2004; Cagliano and Galinta, 2002; Ellis, 2010; Nieto and Santamaría, 2007).This complementarity arises as different types of external partners provide different types of knowledge and technological opportunities, which collectively enhance their ability to successfully develop and commercialise an innovative product and positively impact their innovation performance. Furthermore, the results suggest that the more internationalised the external partners are, the more positive the influence of the inter-organizational network on innovation performance is. This is due to the fact that a wider diversity of knowledge sources, more opportunities for innovation. The differences between countries' partners—for example, different university systems or industrial clusters—affect perceptions and the stock of their knowledge (Freeman, 1995). In conclusion, when a partner is located in other countries (international diversity) or belongs to another industry (functional diversity), the cognitive distance from the firm is larger. Cognitive distance (Nootbom, 2009) creates opportunities for the recombination of heterogeneous knowledge inputs.

Data show that the geographical diversity of subsidiaries' intra-organizational networks has a positive influence on such subsidiaries' innovation performance. Moreover, the functional diversity of a firm's inter-organizational network is found to have a positive impact on the likelihood that firms will achieve some benefit from their innovative efforts. Finally, our analyses reveal that more international diversification is related to more innovation performance.

Our findings shed light on the role of networks on innovation. Specifically, we show that subsidiaries with diverse ties have access to knowledge heterogeneity that may improve creative potential and the ability to implement new ideas. We complement previous literature by showing that not only the international diversification of a MNC itself but also the wider geographical and functional diversity of its inter-organizational network provides access to heterogeneous knowledge. This finding also enriches prior literature on internationalisation,

which stated that firms' internationalisation may help them enhance core resources and capabilities (Hitt et al., 1994). Additionally, we complement previous literature on heterogeneous knowledge inputs (Nelson and Winter, 1982) and cognitive distance (Nooteboom, 2009) into the domain of innovation network. We use this theoretical framework to provide a consistent analysis of our hypotheses. Our paper also makes empirical contributions.

First, unlike most work in the area, we explore the diversity of the intra- and inter-organizational networks in which these MNCs are embedded and conclude that heterogeneous knowledge derived from their networks influences innovation performance. Second, most empirical work on MNCs subsidiaries´ innovation performance focuses on the local network level, tended to ignore the general role of international network and the more specific role of international inter-organizational network.

We adopt a wider approach to generate greater insights. Third, our analysis includes a three year time lag, which is appropriate, given the non-immediate impact of outsourcing decisions.

Despite the academic and practical implications of our research, we are aware that this paper presents some limitations. First, our study analyzes only geographical diversity of intra-organizational network and functional and geographical diversity of inter-organizational networks due to the restrictions imposed by the nature of the data. Future research along this line could aim at estimating models that consider a wider variety of explanatory network characteristics of MNC's subsidiaries. Second, this paper provides a unidirectional analysis between certain characteristics of intra- and inter- organizational networks. Nevertheless, recent studies have shown that "innovation and cooperation embrace a positive feedback loop, which means that it is not only cooperation that fosters the firm's innovative capability" (Trigo and Vence, 2012: 606). The investigation of this bidirectional relationship between network and innovation performance of MNC's subsidiaries could also constitute a promising line of future research.

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# INTERNATIONAL LOCATION AND FOREIGN OPERATION MODE COMBINATIONS ALONG THE VALUE CHAIN: EFFECTS ON FIRM'S INNOVATION PROPENSITY

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## Abstract

The study examines the implications of the global value chain configuration on firm's innovation propensity. Specifically, the study analyzes how the diversity of locations and the diversity of foreign operation modes along the value chain can affect firm innovation. On one hand, we argue that locating activities in developed countries and developing countries will allow firms to take advantages of the optimal location and the learning derived from diverse knowledge, affecting positively to innovation. On the other hand, we argue that combining different international operation modes can also positively affect the likelihood of innovating for the firm, as it allows firms to be more flexible and access to knowledge from within and beyond the boundaries of the firm. However, we argue that combining high levels of diversity in both decisions can increase costs and complexity, limiting the likelihood of innovating. The hypotheses are tested in a large sample of European SMEs and belonging to different sectors, by examining international operations of the upstream and downstream sides of the value chain. The richness of the data employed allows us to offer generalizable results. Moreover, we adopt a probit model, as the dependent variable is dichotomous and takes value 1 if the firm innovates and 0 in the case it does not introduce any innovation. Results confirm the hypotheses formulated and allow us to draw different conclusions. Firstly, that locating activities in both developed and developing countries can increase the likelihood of innovating. Secondly, that undertaking different types of foreign operations along the value chain can give firms the access to more diverse knowledge, from internal and external sources. Lastly, that apart from the benefits that this diversity can generate, firms have to consider that beyond a threshold, i.e. combining high levels of diversity in locations and foreign operation modes, coordination and management costs derived can hinder the initial positive effects on innovation propensity. Our findings also have implications for managers, who should encourage global strategies but considering potential limitations related to their possibilities for coordinating diverse knowledge. The study also provides limitations and potential future research directions.

**Keywords:** Value chain configuration; Location; Operation modes; Innovation.

## Introduction

In 90's Porter (1991) established that one of the ways of analyzing the firm's strategy is through its value chain configuration. However, its interest has grown recently because of the more attention given to the phenomenon of globalization. Some factors have contributed to this phenomenon. The geographical separation of production and consumption, of stages of value adding activities and of specific tasks through the global factory, has allowed firms consider the whole world for configuring their value chains (Buckley, 2011). Moreover, the removal of trade and investment barriers and technological advances in IT, communications and transports have made it easier for firms to access resources all around the world, but at the same time, it has dispersed competencies to new locations. Many firms, then, have reconfigured their value chain in order to maintain their competitiveness.

Studies analyzing the global value chain, however, have focused on examining how firms organize them, in a dispersed or a concentrated way (Beugelsdijk, Pedersen and Petersen, 2009; Hansen, Pedersen and Petersen, 2009), the factors that affect the value chain configuration (Qian, Agarwal and Hoetker, 2012), or the interdependencies between activities located in different countries (Asmussen, Pedersen and Petersen, 2007; Asmussen, Benito and Petersen, 2009). More research is needed in this field, as less research has focused on the implications. Then, in order to shed some light to this respect, we consider different decisions firms take in the configuration of the global value chain that can determine the levels of knowledge they can access to and how they affect to their innovation outcomes. Firstly, we investigate the effects of the diversity derived from combining locations of value chain in developed and in developing countries (which is also how we operationalize the global value chain configuration). We take into account that firms seek the optimal location for their value chain activities (Buckley and Ghauri, 2004). Then, firm may consider the benefits they can obtain in one or the other type of location for each activity of the value chain. Developed countries are locations in which firms have traditionally found more innovative opportunities and they have attracted more advanced activities (Jensen and Pedersen, 2011). However, emerging markets are also becoming potential locations for different activities including the so-called high value-added activities (Kedia and Mukherjee, 2009). Then, if firms combine developed and developing locations they can exploit unique comparative advantages of dissimilar markets as well as access to more diverse knowledge that may inspire more innovative and creative solutions (Yaprak, Xu and Cavusgil, 2011). Thus, we hypothesize that

using a global value chain configuration allows firms to achieve more innovative results. Secondly, we investigate the effects of diversity derived from combining different operation modes along the value chain, also on innovation outcomes. Operation modes can vary in terms of control, flexibility, costs involved, etc. but also in the level of external and internal knowledge that imply. Literature has broadly identified among transactions, contractual and equity modes (Benito, Petersen and Welch, 2012). As Benito, Petersen and Welch (2011) posit, research in operation modes has been specially focused on the analysis of the factors that affect the election of a particular mode. But, some studies have pointed the necessity of considering how firms combine different modes in a particular activity or among different activities in the value chain (Benito et al., 2012; Hashai et al., 2010; Welch, Benito and Petersen, 2007). Specifically, literature has defined mode configuration as the diverse ways in which multiple modes might be arranged (Benito, Petersen and Welch, 2009). In fact, some authors posit that there is a potential role in mode combinations for firms when they use them in a proactive and strategic way (Benito et al., 2012). Then, although each mode has its own characteristics and its own implications, we argue that there can be complementarities between them, which could increase the levels of knowledge diversity and affect firms' outcomes, specifically their innovation propensity. Lastly, following the idea of Asmussen et al. (2007; 2009) about not considering decisions in an isolated way, we try to explore the effects of coordinating different operation modes and different locations in the value chain. Specifically, there are costs related to the necessity of coordinating and managing diverse knowledge. Too much diversity could imply knowledge leakages that could negatively affect innovation outcomes (Kafouros et al., 2008). This last aspect makes us to consider possible interaction effects among high levels of diversity in both decisions. Then, we also hypothesize that combining develop and developing location together with several foreign operation modes along the value chain, would imply a complex global structure that could exceed the benefits (Cavusgil, Yeniyurt and Townsend, 2004; Contractor et al., 2010). And these aspects, could, in the end, negatively affect to firms' innovation propensity.

In summary, we attempt to contribute to the literature in different ways. First of all, the paper sums to the line of research that focus on the analysis of the value chain and not on specific activities. Secondly, we go beyond the aspects that affect the decision of configuring the value chain, to examine the implications of such configuration. In order to address those issues, we develop an analytical framework that integrates different theoretical perspectives. Specifically, the theories of international economics, with the examination of the

comparative advantage among locations, and the organizational learning, with the analysis of diverse knowledge, help us explain the benefits of the diversity achieved thank to do their operations in locations with different features. Additionally, transaction cost economics, network theory and learning theory help us explain why firms may find advantages derived from employing a diversity of operation modes in the activities they undertake. In order to examine empirically the relations specified, we use a sample of SMEs from different European countries and belonging to different sectors. Empirically, the richness of the data allows us to offer generalizable results.

The paper is organized as follows. The next section addresses theoretical aspects and research hypotheses. Then, we describe the data and empirical models in section 3 and our results in section 4. Lastly, in the final section we interpret and discuss the results and conclude drawing also the implications and the lines for future research.

## Theoretical background and hypotheses

Globalization has changed the way in which firms undertake their activities. Firms cannot assume that they can access to knowledge or talented people in a single location (Linares-Navarro, Pedersen and Pla-Barber, 2014). Then, more and more studies consider how firms can disaggregate and disperse their activities globally in order to capture the highest value from them (Mudambi, 2008). Moreover, the configuration of the global value chain may determine the amount and diversity of knowledge the firm can access to. As Casillas and Moreno-Menéndez (2014) argue, the accumulation of experiential knowledge in the internationalization process comes from both types of decisions: the choice of location and the operation modes employed. Then, in this process of becoming global players, firms have to consider where should they locate their activities but also which activities should they control and which do not (Mahutga, 2011).

The examination of those aspects results crucial for analyzing firms' outcomes but especially to firms' innovation propensity, due to innovation is related to the diversity of knowledge firms can obtain and manage from international markets (Hitt, Hoskisson and Kim, 1997; Wu and Wu, 2014). However, literature has traditionally focused on specific activities for examining this relationship. For example, the relationship between international diversification of activities related to the downstream side of the value chain and innovation performance (Hitt et al., 1997; Zahra, Ireland and Hitt, 2000). Similarly, in the upstream side, literature has also explored how specific international activities can contribute to firm

innovation. For example, how the offshoring of R&D could affect innovation outcomes (Nieto and Rodriguez, 2011; Grimpe and Kaiser, 2010). But international diversification is a multidimensional phenomenon that should be explored by including all foreign aspects of the firm's value chain (Wiersema and Bowen, 2011). That situation makes necessary to include a variety of activities in the analysis. In fact, more and more research consider the necessity of analyzing multiple foreign modes employed and their locations, as firms do not take these decisions independently of each other (Hashai et al., 2010). Specifically, when a company undertakes a global strategy by dispersing activities around the globe, the interdependencies between them cannot be ignored, and it is necessary to analyze the whole corporation instead of individual decisions in isolation (Asmussen et al, 2009; Clark et al., 1997). In this research, we follow that line and try to explore their implications on firms' innovation.

Different theories explain why firms operate in different locations and employ different foreign operation modes. On one hand, the theory of international economics with the analysis of the comparative advantages among countries (Ghoshal, 1987; Kogut 1985) supports the idea of taking advantages, for each activity in a specific location, from specialization and synergies derived from economies of scale, scope and learning. Countries vary in their resource endowments, demand and institutional conditions or their national systems of innovation (Dunning, 1980; Malerba and Orsenigo, 1996; Tong et al., 2008). As Rugman and Verbeke (1993) posit, more than a national environment could act as a source for firms' competitive advantage. Specifically, by building disperse and specialized competencies globally firms can arbitrage national differences and generate superior returns (Luo et al., 2011). The organizational learning theory, with the analysis of the possibilities for exploiting and exploring knowledge (March, 1991) has also been employed. This theory highlights the idea of updating firms' current knowledge base with new and incremental knowledge. In fact, by operating in different locations firms can access to a diversity of knowledge that may allow them achieve different product and production technologies (Eriksson et al., 2000). When firms operate in countries in which they can reproduce their routines or apply existing concepts, they can achieve the advantages of exploitation strategy, due to this strategy includes refinement, efficiency, execution, implementation, etc. (March, 1991). On the contrary, when they operate in countries that differ from their origin, they will achieve the advantages from an exploratory strategy, due to this strategy includes search, variation, risk taking, experimentation, discovery, etc.

(March, 1991). Then, learning is more effective when firms find a balance between both alternatives (Greve, 2007).

On the other hand, with respect to operation mode decisions, transaction cost economics, network theory and learning theory explain why firms employ different governance options in their value chains (Gereffi, Humphrey and Sturgeon, 2005). Specifically, transaction cost economics focus on the frequency, asset specificity or the opportunism in the transactions to explain the dichotomy between keeping an activity in-house or going to the market (Williamson, 1985). Network theory goes a step further and argues that there are a variety of modes between the market and the hierarchy of the firm that could also solve problems such as opportunism (Jarillo, 1980). Moreover, inter-firm divisions of labor could be more complex and create interdepencies within the firm and with external agents. Lastly, from a learning perspective it has been argued that, sometimes, the learning required to engage in certain value chain activities is impossible to achieve for firms by their own. They may depend on external resources that complement their competencies and allow them to focus on the core ones (Prahalad and Hamel, 1990). Moreover, the access to external resources allows them learn new external knowledge (Chiu, 2014).

All in all, these theories can contribute to explain not only firms' value chain configurations but also the effects of them. In the next sections we consider those theoretical approaches and examine the global value chain configuration in both aspects more deeply, hypothesizing about how firms can increase their innovation propensity.

### Location configuration of the value chain and its effect on innovation

Location aspects has gained importance in recent years, especially since Dunning (1998) proclaimed it as a neglected factor in international business research, and Buckley and Ghauri (2004) posited that a focus on economic geography was necessary in the analysis of globalization. As it was mention before, firms can arbitrage factor differences among countries (Asmussen et al., 2007). Then, firms that want to achieve the benefits of globalization should consider the optimal location for their activities considering the comparative advantages that exist among countries (Yaprak et al., 2011). Precisely, the goal of a global strategy is to operate considering the optimum combination of inputs and outputs derived from a variety of opportunities (Buckley and Ghauri, 2004). Moreover, location choices have to be considered as the result of active decisions made by firms to maximize knowledge spillovers and to enhance their competitive position (Alcácer and Chung,

2007). Then, international diversity of locations' portfolio may impact on the innovative capacity and the technological learning of the firm, by enhancing its knowledge stock and its abilities for exploiting new ideas (Kafouros et al., 2008; Zahra et al., 2000). However, the analysis of the effects of globalization and international diversification of firm's outcomes has been extensive but inconclusive. One of the problems is they way diversity is defined. Part of the literature has examined the international diversity by considering the variety of countries in which firms operates. In that case international diversity construct may not take into account the diversity phenomenon as firms can operate in different countries belonging to one or few regions (Qian et al., 2008). Other studies focus on the analysis of diversity by considering regions, but similarly, firms use to concentrate their operations in regions with similar characteristics such as the triad identified by Ohmae (1985) formed by three main developed regions: United States, European Union and Japan. Rugman (2003) also identified that firms' world businesses are mainly concentrated on NAFTA, European Union and Asia. Diversity can also be better explained by considering if firms operate in develop and developing countries (Demirbag and Glaister, 2010; Makino, Chung-Ming and Yeh, 2002; Martinez-Noya, García-Canal and Guillén, 2011; Mudambi, 2008, among others). Precisely, we consider that the analysis of diversity considering this last distinction could allow us to identify the global dimension of the value chain.

Developed and developing countries differ in several aspects. In the upstream side of the value chain, literature has traditionally agreed that technical capabilities can easily be found in developed countries and manufacturing capabilities and cost advantages in developing countries (Hsu and Chen, 2009; Luo and Tung, 2007; Makino et al., 2002). However, as Wright et al. (2005) establish, a more strategic attention is needed on emerging markets. Developing countries also provide a huge human capital base that attracts foreign firms (Kedia and Mukherjee, 2009). Indeed, some authors maintain that developing countries not only attract manufacturing but also a broad range of administrative services and R&D activities (Jensen and Pedersen, 2011). Then, although the most creative and knowledge intensive activities are still located in advanced economies (Mudambi, 2008), developing countries are being more and more important in innovative activities (Demirbag and Glaister, 2010; Martínez-Noya et al., 2011). Additionally, the locus of innovation often lies with users, or it is related in the recognition of solutions to customers needs (Wiklund and Shepherd, 2003). From this downstream side, research has also focused on firms operating in developed countries where customers have high-income levels (Wright et al., 2005). But as

Mudambi (2008) posits consumers in all markets are becoming more design conscious and resistant to standardized offerings. Specifically, developing countries are considered more and more important in these activities because many of them offer possibilities of expansion in the sector versus the maturity phase in developed countries (Mudambi, 2008). This situation makes developed and developing countries as potential locations for different activities that can contribute to firm innovation. Moreover, operating in both types of countries may create a level of knowledge diversity that may allow firms combine exploration and exploitation of knowledge (March, 1991). Too much exploitation, by operating in similar countries, implies the firm can easily absorb the knowledge but it has little to learn; conversely, too much exploration, by operating in distant countries, implies that little knowledge can be absorbed and put to commercial use (Barkema and Drogendijk, 2007). Firms, then, need to make an effort in balancing both the exploration and exploitation of knowledge abroad (De Clercq, Sapienza and Crijns, 2005). As firms combine exploration and exploitation efforts they can increase their levels of absorptive capacity and with it increase their innovative outcomes (Cohen and Levinthal, 1990).

All in all, we argue that applying a global value chain configuration by locating activities in developed and developing countries allows firms to better achieve comparative advantages as well as higher levels of knowledge. Specifically, firms may capitalize the resources and advantages that may exist in those different locations, what makes possible to generate more innovative results. Considering the arguments above, we posit the following hypothesis.

*H1: The likelihood of innovating is higher for firms that apply a global value chain configuration by operating in developed and developing countries.*

## Operation modes configuration in the value chain and its effect on innovation

Additionally, firms have to consider how to coordinate the operation modes undertaken in the activities of their value chains. This aspect is also relevant as firms not only take into account the breadth of engagement on international markets but also the depth of engagement that imply the different foreign modes (Aggarwal et al., 2011). These modes have been classified by literature considering different factors such as control, commitment and risk (Anderson and Gatignon, 1986; Hill et al., 1990). These modes can be grouped in three broad categories: market, cooperative and equity modes. Each one can offer different advantages for firms (Hashai et al., 2010) and play different roles in achieving foreign

market objectives (Petersen and Welch, 2002). For example, market modes enable relatively broad technical learning, but wholly owned modes enable a much deeper learning as a result of doing business in a particular foreign setting, and cooperative agreements enable the access to partners advantages (Hashai et al., 2010).

Literature has tried to explain why firms choose one or other operation mode in their international operations for specific activities such as sales (Brouthers, 2002; Davis, Desai & Francis, 2000; Nakos & Brouthers, 2002; among others). Literature has also analyzed the effects on firm's outcomes by comparing foreign modes in specific activities. Nieto and Rodríguez (2011), for example, compare the effect of captive and outsource offshoring of R&D on innovation. Moreover, literature has also explained the disadvantages that firms could find by focusing in a specific mode. For example, Grimpe and Kaiser (2010) point out the risk of dilution of firm's resource base at high degrees of outsourcing, finding a positive moderation of internal R&D and R&D formal collaborations on the relationship between outsourcing of R&D and innovation. Furthermore, it should be considered not only firms' mode combinations in a particular activity but also along activities in the value chain (Asmussen et al., 2009; Hashai et al., 2010). In fact, examining one specific activity of the value chain may result insufficient as it misses information about the knowledge derived from different modes that a firm can combine along the activities of the value chain. Specifically, that vision may imply forgetting the possible complementarities that can emerge from internal and external sources (Veugelers and Cassiman, 1999).

Firms, then, can combine different operation modes that may allow them to access to advantages derived from the division of labor inside and outside the boundaries of the firm. They may evaluate potential risks related to their innovation outcomes considering opportunity costs, asset specificity or the frequency of the transactions in each activity. This reasoning would go in line with a transaction cost approach, in which firms choose the most efficient operation mode in each of their activities. Moreover, combining modes may allow them achieve more flexibility, adapt more easily to changing circumstances and have greater strategic control over decisions such as "when" and "how" develop foreign operations (Benito et al., 2012). Firms can also combine different operation modes in ways that strength the process of foreign market penetration and dissipate other risks, such as becoming locked-in to a particular mode (Petersen and Welch, 2002). This adaptation derived from the search of the optimal mode for their international activities could help firms to innovate, as

adaptation is also related to the implementation of a more effective strategy (Barnett and Burgleman, 1996). Additionally, from a network perspective, a network structure can be used as a proxy for information and knowledge heterogeneity (Rodan and Galunic, 2004). Then, as firms employs different foreign modes in the value chain they can create a network within and beyond the boundaries of the firm that may give access to several knowledge opportunities. Furthermore, form an organizational learning perspective, the access to diverse knowledge, thanks to the integration of different sources of experience, could increase the absorptive capacity of the firm (Cohen and Levinthal, 1990) that also contributes to increase their learning opportunities (Hashai et al., 2010). Precisely, accessing to knowledge of different sources may generate complementarities that positively affect to innovation outcomes (Roper, Du and Love, 2008).

All in all, we argue that the benefits related to the increased levels of efficiency and learning related to a diverse combination of foreign operation modes in the value chain makes possible to generate more innovative results and we posit the following hypothesis.

*H2: The likelihood of innovating is higher for firms that combine a diversity of international modes in their value chains.*

## Interaction effects between location configuration and operation modes configuration on innovation

Apart from considering the individual effect of each decision, it is also necessary to consider interaction effects between them. Literature has argued that the location decision is closely linked to operation mode decision as firms have to decide about where to locate their activities and who will carry out them (Grünig and Morschett, 2012). In order to undertake both decisions, the firm has to combine its competencies and the ones from external agents, with the comparative advantages of the different locations to create a competitive advantage (Mudambi, 2008). Then, a global corporate strategy implies adopting a global basis in planning and resource allocation, facilitating worldwide manufacturing capabilities, fostering a relatively centralized structure and decision-making with a high degree of coordination (Cavusgil et al., 2004). In fact, as Buckley (2011) posit, managers fine-slice the activities, locate them in its optimal location and control them even when not owning all of them.But successful globalization may not be easy and its implementation imply several requirements (Roth, Scheiger and Morrison, 1991; Zou and Cavusgil, 2002). Some research has pointed that high levels of internationalization could imply knowledge leakages

that could negatively affect innovation outcomes (Kafouros et al., 2008). The key, then, is finding the optimal degree of organizational and geographical dispersion of the international strategy of the firm and avoiding incremental costs derived from search, coordination and the management of a complex global structure that could exceed the benefits (Cavusgil et al., 2004; Contractor et al., 2010). Precisely, as more choices are involved in both decisions, coordination efforts increase (Benito et al., 2009). Then, when firms have to coordinate different operation modes and, at the same time, face to the peculiarities of different locations, the level of resources required for managing and assimilating the information and knowledge generated grows. Specifically, they may require the exchange of tacit knowledge among distant departments, partners, suppliers and clients. This could also generate, as Cuervo-Cazurra, Maloney and Manrakhan, (2007) consider, the existence of a liability of expansion, referred to the situation in which firms add operations located in distant environments without having enough resources. This firm-specific difficulty in its internationalization strategy may also generate costs of transportation and communication as well as higher levels of complexity. Moreover, by combining high levels of diversity in one and other election could imply an imbalance between the exploration and exploitation strategies, giving priority to the exploration side. Precisely, one of the arguments given in the literature for explaining the side effects of preferring an exploration strategy is that it results in excessive costs and insufficient rewards from successful ones (Greve 2007; March, 1991).

All in all, we argue that managing high levels of diversity derived from operating in dissimilar locations could hinder the knowledge creation when the firm undertakes foreign operations employing different modes. In those situations, firms may have to manage diverse relationships and peculiarities of different modes and at the same time diverse knowledge from locations with different features. It could imply certain myopia for the organization, focused on coordinating and managing activities geographically and organizationally dispersed, instead of taking advantages generated thanks to the access to diverse knowledge. Taking all these arguments into account, we posit the following hypothesis.

*H3: The positive effects of combining a diversity of operation modes are mitigated when a global value chain configuration by operating in developed and developing countries is undertaken.*

## Methodology

### Sample and data

The source for our empirical analysis is the survey *Internationalisation of European SMEs* undertook by *European Commission, DG Enterprise and Industry in 2010*. The database is composed by 9.480 SMEs with between 1 and 249 employees that can be split according to size in micro-sized firms (1-9 employees); small-sized firms (10-49 employees); and medium-sized firms (50-249 employees). The database distinguishes also by business sector, including manufacturing and service enterprises. The data correspond to 33 European countries, what makes the results widely generalizable to different countries and contexts. Of the total number of firms, 6.056 SMEs are involved in at least one international operation. Among the upstream activities, firms are asked for giving information about being involved in imports, outsourcing and/or foreign direct investment for producing or buying inputs. Among the downstream activities, firms are asked for giving information about if they have been involved in exports, technological cooperation, being a subcontractor of foreign contracts and/or foreign direct investment for sales or as a representative office. With respect to location information, 5.101 SMEs give information about the location where they perform those operations. As we are examining how firms configure their international activities in the value chain in terms of location and international operation modes, we focus on those enterprises that are internationalized excluding from the analysis those that remain domestic.

### Variables

*Dependent variable*. *Innovation* is a dichotomous variable that takes the value 1 when the firm engages in any product or process innovation. This measure is commonly employed in other studies previously for analyzing the firm's innovation performance (Leiponen and Helfat, 2011; Nieto and Rodríguez, 2011).

*Independent variables.* Our explanatory variables relates to the location and operation mode configuration of the value chain. On one hand, we create the variable *Location configuration* that is a dichotomous variable that takes the value 1 when firm locates their activities in developed and developing countries and takes the value 0 when firm locates activities in developed countries or developing countries. In order to construct this variable we take into account the data provided by the World Bank, considering as developed countries those that are classified as high income countries in 2008. As countries present differences in the level

of development, we follow those studies that make this distinction among developed and developing countries (e.g. Demirbag and Glaister, 2010; Martinez-Noya et al., 2011; Mudambi, 2008). We consider that this variable is a good proxy of a global strategy in the location configuration of the value chain.

Additionally, we create the variable *Operation configuration*, a variable that counts the number of different modes that the firm employs in its international operations. As we consider information of different modes in upstream and downstream sides of the value chain, we identify the existence of transactions if the firm undertakes import or export operations; contracts if the firm undertakes technological cooperation, outsourcing, subcontractor agreements; and equity if the firm undertakes foreign direct investment for production or sales. Then, we count the different kinds of operation modes they employ in their value chains, so the variable can take values from 1 to 3.

*Control variables.* Following the literature, the study includes controls for firm-specific characteristics, sectoral and country dummies. Specifically, related to firm-specific variables we include the variable *Size.* Firm size is a proxy of the firm's resource endowment (Chen, Huang and Lin, 2012), so larger firms may have greater ability to achieve innovations (Leiponen and Helfat, 2011).

This variable is measured by the logarithm of the total number of employees, what is common in the literature (Huse, Neubaum and Grabrielsson, 2005; Nieto and Rodríguez, 2011; Zahra et al., 2000). We also include the variable *Age.* This variable captures the life span of the firm, measured by the logarithm of the number of years the firm has been in existence (Grimpe and Kaiser, 2010). It is a proxy of the level of experience of the firm doing innovations (Huergo and Jaumandreu, 2004). Additionally, the study controls for the legal form and ownership structure of the firm. We create a dichotomous variable, *Legal form,* which takes the value 1 when the firm is a limited enterprise (public or private) and 0 when the ownership is in hands of a sole proprietor or a partnership. The literature indicates that ownership and governance structures can influence strategic choices and technological strategies (Zahra, 1996). The European Commission (2011) explains some of the differences among different legal structures. For example, public limited enterprises and private limited enterprises are private joint-stock companies with limited liability for

shareholders; whereas sole proprietors and partnerships, that include forms like cooperatives, face to unlimited liability.

With respect to the effect of sectoral characteristics, we identify seven sectors: *Manufacture; Construction; Wholesale trade; Retail trade; Transport and communications; Business services;* and *Personal services*. To avoid problems of multicollinearity, *Manufacture* is designated as the reference category in the econometric analyses. The inclusion of sectoral dummies is common in the literature on firm innovation (Grimpe and Kaiser, 2010; Nieto and Rodriguez, 2011). Lastly, as the sample include firms from different countries we include dummy variables for each country of origin in order to capture the effect of potential differences in innovation among firms because home country differences.

To test for multicollinearity, an analysis of the variance inflation factor (VIF) was conducted. Individual VIF values greater than 10 indicate a multicollinearity problem (Neter, Wasserman, and Kutner 1989), along with average VIF values greater than six. Moreover, Table 1 shows the description and correlation of the independent and control variables.

**Table 1. Descriptive analysis and correlations of the independent and control variables**

| | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 Location config | 0.417 | 0.493 | 1 | | | | | | | | | | | |
| 2 Operation config | 1.437 | 0.597 | 0.268** | 1 | | | | | | | | | | |
| 3 Size | 3.075 | 1.369 | 0.147** | 0.182** | 1 | | | | | | | | | |
| 4 Age | 2.970 | 0.873 | 0.0325* | 0.0124 | 0.280** | 1 | | | | | | | | |
| 5 Legal form | 0.757 | 0.429 | -0.00258 | 0.0655** | 0.0652** | 0.113** | 1 | | | | | | | |
| 6 Manufact | 0.325 | 0.468 | 0.0947** | 0.0699** | 0.174** | 0.132** | 0.0304* | 1 | | | | | | |
| 7 Constr | 0.067 | 0.249 | -0.0664** | 0.0180 | 0.00192 | -0.0749** | -0.0227 | -0.185** | 1 | | | | | |
| 8 Whol | 0.097 | 0.296 | 0.0792** | -0.0451** | -0.0342* | 0.0325* | 0.00551 | -0.227** | -0.0875** | 1 | | | | |
| 9 Retail | 0.168 | 0.374 | -0.0339* | -0.129** | -0.0628** | -0.0294* | -0.0542** | -0.312** | -0.120** | -0.147** | 1 | | | |
| 10 Transport | 0.059 | 0.236 | -0.0144 | 0.0243 | -0.0200 | -0.00719 | 0.0125 | -0.174** | -0.0671** | -0.0823** | -0.113** | 1 | | |
| 11 Business serv | 0.190 | 0.392 | -0.0514** | 0.0670** | -0.128** | -0.0865** | 0.0443** | -0.336** | -0.129** | -0.159** | -0.218** | -0.121** | 1 | |
| 12 Personal serv | 0.094 | 0.292 | -0.0513** | -0.0263 | 0.0226 | -0.0204 | -0.0350* | -0.224** | -0.0862** | -0.106** | -0.145** | -0.0810** | -0.156** | 1 |

*\* p<0.05; \*\* p<0.01*
*Note: Country dummies not included*

To test our hypotheses, we adopt a probit model as the dependent variable is dichotomous and takes value 1 if the firm innovates and 0 in the case it does not introduce any innovation. These models result appropriate in those situations. Specifically, the empirical model takes the following econometric specification:

$$\text{Prob (Innovation)}_i = \beta_0 + \beta_1 \text{(Location configuration)}_i$$

$$+ \beta_2 \text{(Operation configuration)}_i$$

$$+ \beta_3 \text{ (Location configuration x Operation configuration)}_i$$

$$+ \beta_4 \text{ (Size)}_i + \beta_5 \text{ (Age)}_i + \beta_6 \text{ (Legal form)}_i + \beta_7 \text{ (} \Sigma \text{Sector}_n \text{)}_i$$

$$+ \beta_8 \text{ (} \Sigma \text{Country}_n \text{)}_i + \varepsilon_i$$

where $\beta_0$ is the constant intercept, $\beta_1$ is the coefficient vector, and $\varepsilon$ is the error term.

As it is reflected in the model, we consider different factors affecting innovation propensity, as independent effects as it is reflected by estimating the coefficients for $\beta_1$ and $\beta_2$. However, as we also hypothesized interrelated effects, considering that location configuration ($\beta_1$) and operation mode configuration ($\beta_2$) could affect each other, we also estimate the coefficient for this interaction effect ($\beta_3$).

## Results

Table 2 displays the results of the different models. Specifically, three models are specified. The first model only includes the control variables. Models two and three test the hypotheses. Model two analyzes the impact of location configuration and the operation mode configuration of the value chain activities on innovativeness, the relations posit in hypotheses 1 and 2. In this respect, we observe, as it was expected, that locating the value chain activities in both developed and developing countries has a positive and significant impact on the likelihood of innovating. This result provides empirical evidence for hypothesis 1. Similarly, results confirm that undertaking a diversity of operation modes for their activities in the value chain has a positive and significant impact on the likelihood of innovating. This result provides empirical support for hypothesis 2. The third model includes the interaction among variables *Location configuration* and *Operation configuration,* in order to test the hypothesis 3. This interaction effect is found to be a negative and significant determinant of the likelihood of innovating, what gives support to hypothesis 3.

Considering the effect of other variables in the likelihood of innovating, results show that *Size* is positive and significant in all the models. Although some studies point that the effect of this variable on innovation has been found to be ambiguous in the literature (Grimpe and Kaiser, 2011), our results go in line with those studies that find a positive relationship between both variables (Nieto and Rodriguez, 2011). On the contrary *Age* is negative and insignificant. Although firm age is related to its experience and the possibilities of accumulate learning, some authors have explained a negative sign saying that younger firms tend to be more

innovative than older firms (Grimpe and Kaiser, 2010). The results showed in the models could be reflecting both aspects, making the effect of firm age insignificant. For its part, *Legal form,* exerts a positive and significant effect on the likelihood of innovating. This result is consistent with studies indicating that corporations are more innovative than firms organized as proprietorships or partnerships (Ayyagari et al., 2007).

Regarding sectoral variables, we find a negative and significant relation with *Innovation* for the following categories (compared to the baseline category of *Manufacture*): *Construction*; *Transport and communications. Business services* and *Personal services* also exert a negative sign but insignificant. Additionally, although we do not show the coefficients for the origin country dummies, we are able to identify those countries in which significant differences exist with *Austria* (the baseline category).   *Iceland* is the only country that presents a positive and significant coefficient. On the opposite side we find countries such as *Croatia, Cyprus, Romania, Slovakia* and *Slovenia* that present a negative and significant sign. Countries such as *Sweden, Finland* and *Luxembourg* also have a negative and significant relationship. We do not find any significant effect for the rest of the countries.

Lastly, the three models include different indicators showing its goodness of fit. Specifically, they reflect how models improve when the independent variables are included, for example with the higher values for the $R^2$. Additionally, we perform Log-likelihood ratio tests that confirm the increased explanatory power that models 2 and 3 compared to model 1 and model 2 respectively.

**Table 2: Results**

| | (1) | (2) | (3) |
|---|---|---|---|
| Location config (dummy developed-developing countries) | | 0.198*** | 0.411*** |
| | | (4.71) | (3.79) |
| Operations config | | 0.452*** | 0.534*** |
| | | (12.10) | (9.91) |
| Location config X Operation config | | | -0.153* |
| | | | (-2.13) |
| Size | 0.121*** | 0.0815*** | 0.0820*** |
| | (8.13) | (5.33) | (5.35) |
| Age | -0.0135 | -0.00753 | -0.00654 |
| | (-0.55) | (-0.30) | (-0.26) |
| Legal form | 0.113* | 0.0960† | 0.0970† |
| | (2.19) | (1.83) | (1.85) |
| Constr | -0.521*** | -0.501*** | -0.499*** |
| | (-6.55) | (-6.18) | (-6.15) |
| Whol | -0.185** | -0.161* | -0.164* |
| | (-2.69) | (-2.31) | (-2.35) |
| Retail | -0.375*** | -0.290*** | -0.290*** |
| | (-6.59) | (-5.01) | (-4.99) |
| Trans | -0.570*** | -0.587*** | -0.590*** |
| | (-6.87) | (-6.96) | (-7.00) |
| Bussserv | -0.0132 | -0.0204 | -0.0194 |
| | (-0.23) | (-0.36) | (-0.34) |
| Persserv | -0.153* | -0.0923 | -0.0935 |
| | (-2.19) | (-1.29) | (-1.31) |
| Country dummies | Included | Included | included |
| Cons | 0.310 | -0.329 | -0.438* |
| | (1.95) | (-1.95) | (-2.48) |
| N | 4940 | 4940 | 4940 |
| χ2 | 459.7 | 678.1 | 682.7 |
| df_m | 41 | 43 | 44 |
| Log likelihood | -3032.9 | -2923.6 | -2921.4 |
| Nagelkerke R$^2$ | 0.121 | 0.175 | 0.176 |
| Log-likelihood ratio test | | 218.42*** | 4.56* |

$t$ statistics in parentheses
† $p < 0.1$; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

## Robustness checks

In order to explore the robustness of our findings we take into account another measure for the diversity of locations in which the firm operates. Specifically, this alternative variable considers the global orientation of the firm by counting the number of regions in which the firm operates and considering the following ones: Africa, Asia, Europe, North America, Oceania and South America (Aggarwal et al, 2011). As it was mentioned before, this measure

was not employed in our original model as it takes into account the geographic diversity of the firm but it does not consider the effect of diversity in terms of the location characteristics. In fact, a firm could combine operations in countries located in different regions but with similar levels of development (e.g. Japan in Asia, UK in Europe and USA in North America). Precisely, operating this way would correspond to what Rugman and Verbeke (2004) describe as the regionalization or semi-globalization phenomenon. Then, although we consider that our measure about location configuration can better reflect the diversity aspect, we think that it is useful to show alternative models that confirm the effect of diversity on innovation from another point of view. Results are shown in Table 3. As it can be observed, the analysis of the location configuration via this new variable does not affect our main results in hypothesis 1. With respect to the interaction effect, the coefficient is negative and significant although the level of significance decreases to the 10%. In general terms, we can see that these results are consistent with those reported in table 2.

**Table 3. Alternative models**

| | (1) | (2) | (3) |
|---|---|---|---|
| Location config (regions) | | 0.183*** | 0.301*** |
| | | (6.05) | (3.99) |
| Operations config | | 0.450*** | 0.572*** |
| | | (12.12) | (7.09) |
| Location config X operation config | | | -0.0794† |
| | | | (-1.72) |
| Size | 0.121*** | 0.0827*** | 0.0828*** |
| | (8.13) | (5.41) | (5.41) |
| Age | -0.0135 | -0.0106 | -0.0109 |
| | (-0.55) | (-0.43) | (-0.44) |
| Legal form | 0.113* | 0.0908† | 0.0904† |
| | (2.19) | (1.72) | (1.72) |
| Constr | -0.521*** | -0.506*** | -0.506*** |
| | (-6.55) | (-6.25) | (-6.25) |
| Whol | -0.185** | -0.162* | -0.164* |
| | (-2.69) | (-2.31) | (-2.34) |
| Retail | -0.375*** | -0.292*** | -0.291*** |
| | (-6.59) | (-5.04) | (-5.02) |
| Trans | -0.570*** | -0.572*** | -0.573*** |
| | (-6.87) | (-6.78) | (-6.79) |
| Bussserv | -0.0132 | -0.0438 | -0.0412 |
| | (-0.23) | (-0.76) | (-0.72) |
| Persserv | -0.153* | -0.106 | -0.105 |
| | (-2.19) | (-1.48) | (-1.47) |
| Country dummies | Included | Included | Included |
| _cons | 0.310 | -0.478** | -0.652** |
| | (1.95) | (-2.81) | (-3.28) |
| N | 4940 | 4940 | 4940 |
| $\chi 2$ | 459.7 | 693.2 | 696.1 |
| df_m | 41 | 43 | 44 |
| Log likelihood | -3032.9 | -2916.1 | -2914.7 |
| Nagelkerke R$^2$ | 0.121 | 0.179 | 0.179 |
| Loglikelihood ratio test | | 233.5*** | 2.89† |

*t* statistics in parentheses
†$p < 0.1$, *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

## Discussion and conclusions

The study allows us to draw conclusions on the location and operation mode configuration of firms' value chain. Specifically we extend the analysis of the implications of the value chain

configuration on innovation propensity. On one hand, our results confirm that combining developed and developing locations along the value chain activities is positively related to innovation propensity. This result indicates that firms that try to access to comparative advantages among locations with an exploration-exploitation combined strategy in the value chain can allow firms achieve higher levels of innovativeness. Put another way, configuring the value chains with developed and developing locations offers the firm the possibility of accessing to knowledge diversity that contributes to improve their absorptive capacity and fosters the generation of innovation outcomes. This result also adds to the line of research that shows the positive effects of considering developing countries for activities beyond cost factors (Demirbag and Glaister, 2010; Jensen and Pedersen, 2011). Developing countries are offering more and more opportunities that go beyond the cost motives that these destinations have been traditionally associated with. However, the increasing importance of developing countries does not imply a substitutive effect with respect to developed ones. On the contrary, both types of locations act as complements for generating innovations, what supports the idea of the benefits that globalization has for firms in achieving a competitive advantage.

On the other hand, the study also confirms that combining different foreign operation modes in the configuration of the value chain activities positively affects to the likelihood of innovating. This result is in line with other studies that posit that different types of complementary learning may be generated by having a diverse foreign operation mode portfolio (Hashai et al., 2010). By undertaking a diversity of operation modes, firms can access to different types of knowledge from different sources and at the same time it shows how firms try to make the optimal choice for each specific situation. All in all, these results also support the idea of the benefits derived from combining an exploration and exploitation-knowledge strategy. An exploitation strategy would imply focus on a specific operation mode. By combining different foreign operation modes could be reflecting a more proactive strategy in the search for new knowledge both inside and outside their boundaries.

Moreover, we also show how greater levels of diversity generated by combining a global configuration in the value chain in terms of locations and operations can diminish the positive effect of the more knowledge generated. Then, our results warn about the side effects of the management of high levels of diversity. This goes in the line with those studies that highlight the bigger needs of coordination that exist when the levels of diversity are too high (Contractor et al., 2010; Kafouros et al., 2008). Our findings show how the benefits

derived from the diversity of knowledge have to be considered together with the cost that implies managing this diversity, as beyond a threshold too much diversity could hinder innovation outcomes. Our results could indicate that the knowledge obtained by operating in different locations or with different operation modes may be easy and generate positive results on innovation outcomes. But if both decisions imply high levels of diversity at the same time, the needs for coordinating foreign operations and locations along the whole value chain increases, what generate more costs. Precisely, these challenging needs of coordination could hinder the likelihood of generating innovations.

From an academic point of view, this study contributes to the literature focused on the analysis of the global value chain. Specifically, the paper advances the understanding about the implications of its configuration. A global value chain configuration implies the access to a diversity of knowledge from different locations. Moreover, the study recognizes the necessity of considering how firms can use different operation modes when they take their operations in foreign markets. This diversity of operation modes employed also allows firms to access to different sources of knowledge. These considerations add to the organizational learning literature, but without forgetting the arguments that other theoretical approaches give for explaining higher likelihood of innovativeness. For example international economics also allow us consider that firms that try to look for the comparative advantage that different locations can offer. Similarly, transaction cost economics and network theory allow us to add reasons to explain why operating with different operation modes could help firms to increase their innovation propensity, as firms can find different advantages from combining an internalization strategy with the use of the market or agreements with partners. From an empirical point of view the study also makes some advances. Literature has traditionally focused on the examination of specific activities and its impact on innovation outcomes. However our data allow us to consider the whole value chain as it gives information about different international operations related to upstream and downstream activities of it. Additionally, contrary to those studies that have examined the value chain configuration via case studies (Benito et al., 2009; 2011), we employ a big sample to test our hypotheses. Although case studies give move detailed information about different processes, we consider that this study can offer more generalizable results in this literature area.

This study also has implications for management. Our results show how managers can find in the diversity of knowledge acquired in developing and develop countries a way of increasing the firm's innovation outcomes. Specifically, managers should take into account

that both types of countries can complement their knowledge bases. Similarly, managers should consider the benefits of undertaking different modes in their foreign operations, going beyond the inertia forces that could emerge during the internationalization process. Specifically, managers can find different advantages for each operation mode, what also contributes to increase the diversity of the knowledge generated to offer more innovative potential. However, this study also warns managers about the negative effects that too much diversity can imply. Managers have to take care of considering the level of diversity they can manage and coordinate along the global value chain. Specifically, that combining countries with different levels of development and different foreign operation modes could create costs and certain myopic effects that diminish the positive effect of the more level of knowledge acquired. Results, then, encourage managers to choose a global strategy in the internationalization of the value chain but at the same time warn them about the negative side effects that this strategy could offer when is combined with high levels of diversity in their operation modes.

Nevertheless, this work also has some limitations that may offer promising lines for future research. Because of the data limitations, we cannot differentiate among activities in the value chain beyond two big categories: upstream and downstream sides of the value chain. Then, we do not know neither if they are related to ones with more or less valued added nor the countries in which each one are undertaken. Other studies could include information about specific activities and observe a more complete description of the benefits and drawbacks of managing knowledge diversity. Another interesting line of research could be focused on analyzing firm competencies that could alleviate the coordination costs required for managing multiple location and operation modes jointly. In empirical terms, future works could use longitudinal data and extend the analysis identifying the evolution of combinations in both location and operation modes aspects. In that way, an evolutionary perspective could go further and explain other issues, such as how firms change their operation mode combinations and how these changes affect innovation. It would be also important to employ other measures that could give a deeper understanding of innovation performance. Additionally, more research is needed about the implications of value chain configuration over other firms' outcomes.

In conclusion, we have shown how the value chain configuration can affect innovation propensity. We consider that our results are important as they shed light to understand the effects of managing different levels of international diversity in two main decisions of the

configuration of the global value chain: the location combination of firms' activities and the operation mode combination used with them. All in all, we consider that our empirical findings illustrate the individual benefits of diversity in locations and operation modes, on innovation. But they also show that these decisions are interrelated. This situation implies that firms have to be aware of the side effects of managing high levels of diversity derived from combining a variety of locations and operations modes at the same time.

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# PART 5: SMEs AND EXPORTING

# THE W-CURVE AND THE PERFORMANCE OF SPANISH FAMILY SMES

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## Abstract

Previous studies have provided mixed evidence on the relationship between internationalisation and firm performance. We advance theoretically on this stream of research by investigating the impact of the family dimension of a business on this relationship. Using a panel data analysis for the 2006–2011 period, we find empirically that Spanish family SMEs follow a W-curve. Our findings highlight the importance of differentiating family from non-family firms, and provide a potential explanation for prior mixed evidence.

**Keywords:** Family firm, internationalisation, firm performance, W-curve.

## Introduction

Family businesses (hereafter FBs) are the predominant form of business organisation today (Koopman and Sebel, 2009). According to the Spanish Family Business Institute, FBs account for 85 percent of the Spanish business sector, 70 percent of national GDP and 70 percent of employment in the private sector.

Internationalisation is one of the main challenges that FBs must address to secure their survival in an increasingly global and complex environment. However, FBs face a twofold challenge. As for any firm, expansion into new foreign markets involves costs to adjust to the foreign environment and leads to new structural changes within the firm (Sui and Baum, 2014). Family members also retain significant control over the firm and they wish to preserve what they call its socio-emotional wealth, which is the stock of all the affection-related non-financial value a family derives from its ownership position in the firm (Gómez-Mejía et al.*,* 2010; Arregle et al., 2012). Since internationalisation can pose threats to this wealth, FBs seem more reluctant to expand internationally than non-family businesses (NFBs) (Merino et al., 2014; Sciascia et al., 2012). Consequently, FBs confront two opposing forces. On the one hand, the globalisation of the world economy drives them to grow and expand beyond their traditional markets. On the other, their family dimension leads to conservatism and the development of low-risk projects within the domestic market.

The significant role played by FBs in international markets has recently come to be recognised (Fernández and Nieto, 2006; Arregle, Naldi, Nordqvist and Hitt, 2012; Sciascia, Mazzola, Astrachan and Pieper, 2012). What, specifically, has been learned about FB internationalisation efforts? First, only a very limited number of studies, to our knowledge, have focused on FB internationalisation (Banalieva and Eddeleston, 2011). Most of these studies have focused on FB reluctance to internationalise compared to NFBs (e.g. Fernández and Nieto, 2005; Claver, Rienda and Quer, 2009; Kontinen and Ojala, 2010). Relatively few studies have analyzed the question of if and to what extent the family character of a firm has an effect on the internationalisation–-performance relationship and, therefore, whether the performance of the FB internationalisation process differs significantly from that of NFBs is still debatable (Cerrato and Piva, 2012; Pukall and Calabro, 2013).

The objective of this research is to fill that gap by investigating how the relationship between internationalisation and firm performance is moderated by the family dimension. In doing so, this paper firstly contributes by offering new evidence on the relationship between

internationalisation and performance, which has been inconclusive so far (Chen and Tan, 2012; Hsu et al., 2013). We propose that the lack of consensus on the nature of the internationalisation–performance relationship and, hence, our knowledge of the impacts of internationalisation, results from a failure to fully grasp three effects.

First, most empirical studies are descriptive and cross-sectional, especially regarding the analysis of the internationalisation behaviour of Spanish family small and medium-sized enterprises (SMEs) (an exception is Sacristan et al., 2011). Nevertheless, longitudinal studies are more appropriate for capturing the dynamic nature of the phenomenon of company internationalisation (Chiao et al., 2006). We contribute to previous literature by studying the performance of the internationalisation process of a panel of Spanish industrial family firms from 2006 to 2011. We focus on SME family firms since SMEs represent around 99.88% percent of all enterprises in Spain, according to the Spanish Central Directory of Companies, produced by the Spanish Institute of Statistics (this register excludes agriculture and fishing). In addition, more than 80 percent of Spanish SMEs are considered FBs (Merino et al., 2014). Likewise, we focus on export activities, because most FB international expansion efforts are likely to take the form of exports (Okoroafo, 1999; Fernández and Nieto, 2005).

Second, the conflicting results in the relationship between internationalisation and firm performance may be due to the fact that company characteristics differ. A review of the literature shows that a broad spectrum of firms has been studied so far, including large companies (Kotabe et al., 2002; Li, 2007), new international ventures (Almodóvar and Rugman, 2014) and SMEs (Lu and Beamish, 2001; Chiao et al., 2006). Since FBs have different attributes to NFBs (e.g. familiness, long-term orientation, lack of resources and, conservative attitude), we can expect this to have an influence on the relationship between internationalisation and performance. This paper contributes to the debate by offering new evidence on the influence of the family dimension in explaining this internationalisation–performance relationship.

Finally, another reason for the inconsistent empirical findings on the internationalisation–performance relationship that several scholars have highlighted is an inadequate conceptualisation and measurement of the construct of internationalisation (Ruigrok and Wagner, 2003; Wagner and Ruigrok, 2004; Li and Qian, 2005; Li, 2007). For instance, the most widely-used measure of internationalisation in international business empirical research is the share of exports in total sales for a particular firm (Pla-Barber and Alegre, 2007), but other measures of internationalisation have included the number of export countries (Delios

and Beamish, 1999), the number of dissimilar geographic regions (Kim et al., 1989; Hitt et al., 1997), and a combination of them encompassing both dimensions of geographic scale and scope (Pangarkar, 2008; Fernández-Olmos., 2011).

This paper is structured as follows. In the next section we present the theoretical framework forming the basis for the empirical hypothesis we propose to test. The third section describes the data set and the statistical approach used. The fourth section sets out the results of the empirical analysis. The final section provides a discussion of the results, and offers some conclusions and areas for future research.

## Theoretical framework

## Internationalisation and firm performance

Whether there is a systematic relationship between the internationalisation of firms and their performance has long been a topic of interest to international business researchers (e.g. Hsu et al., 2013; Powell, 2014). Despite many years of research, there is no clear consensus on the effects of internationalisation on firm performance (Powell, 2014).

International diversification is one of the most important pathways for firm growth (Lu and Beamish, 2001). It is a particularly important growth strategy for FBs confined within a narrow geographic scope (Graves and Thomas, 2008). When firms expand into new international markets, there are greater opportunities to achieve economies of scope and scale, and grow. Furthermore, there are differences in market conditions across different geographic areas. By leveraging resources in different markets, firms are in a position to exploit market imperfections (Caves, 1971) and achieve higher returns on their resources. According to the resource-based view, firms with unique, valuable, and inimitable resources (e.g. technological, marketing and human resources) developed on domestic markets can transfer those resources to foreign markets to create competitive advantages (Barney, 1991; Delios and Beamish, 1999; Lu and Beamish, 2004). Another theoretical explanation of international diversification is the aspect of organisational learning. Internationalisation gives the opportunity to acquire additional knowledge and experience, which enables firms with internationalisation to create competitive advantages compared to competitors that have restricted their business activities to the domestic market in their home countries. Consequently, this wider access to relevant knowledge afforded by international expansion is expected to lead to superior firm performance (Johanson and Vahlne, 1977; Kogut and Zander, 1993).

While entering international markets creates new opportunities for long-term value creation, the implementation of such a strategy creates many unique challenges in addition to the common ones associated with the domestic growth of SMEs (Lu and Beamish, 2001). Many of the challenges are typical of the difficulties associated with the liabilities of foreignness (Hymer, 1976) and newness (Stinchcombe, 1965) when operating a business in a foreign domain. The liability of foreignness refers to the fact that new entrants typically display unfamiliarity with local culture, lack local information, and are treated in a discriminatory fashion by host governments, customers and suppliers (Zahher, 1995; Li, 2007). When a firm expands into new geographic markets, it faces the increased costs of liability of newness arising from being exposed to new rules and new methods of doing business (Stinchcombe, 1965; Lu and Beamish, 2004). Furthermore, firms entering foreign markets typically face an increased organisational and environmental complexity which leads to incremental costs for governance, coordination, and transaction (Zaheer and Mosakowski, 1997).

Thus, since there are arguments both in favour of and against internationalisation, there is no clear consensus on the relationship between internationalisation and performance. Several studies have shown that higher levels of internationalisation lead to superior performance (e.g. Grant, 1987; Daniels and Bracker, 1989; Kim et al., 1993; Qian, 1996; Zahra et al., 2000), while others have failed to find any relationship (Buckley, Dunning and Pearce, 1978), or have even found a negative internationalisation–performance relationship (Siddarthan and Lall, 1982; Kumar, 1984; Michel and Shaked, 1986). Alternatively, some studies have frequently found non-linear relationships, such as a U- shaped relationship (Lu and Beamish, 2001; Ruigrok and Wagner, 2003), an inverted U-shaped relationship (Daniels and Bracker, 1989; Geringer, Beamish, and daCosta, 1989; Hitt et al., 1997), and an S-shaped relationship (Contractor, Kundu and Hsu, 2003; Lu and Beamish, 2004; Thomas and Eden, 2004; Li, 2005). Recently, building upon these arguments, some authors have even found M-shaped (Almodóvar and Rugman, 2014) and W-shaped relationships (Almodóvar, 2012).

Consequently, despite the wealth of empirical research to date, this diversity of findings concerning the internationalisation–performance relationship still remains one of the major unresolved research questions in the international business field (Powell, 2014).

Some explanations have been given to this unanswered question. Many scholars find problems with the conceptualisation of internationalisation in empirical analysis (Powell, 2014). Although international activities occur in the geographic scale and scope of foreign operations, a vast body of the research literature has only employed the export intensity (Pla-

Barber and Alegre, 2007). However, since this measure is only a rough proxy for the degree of internationalisation of a firm (since it ignores the dispersion of foreign sales across markets), it lacks validity (Pangarkar, 2008).

The discussion of the effects of internationalisation on performance has mainly covered large organisations (Hitt et al., 1997; Tallman and Li, 1996), although recently it has also focused on SMEs (Hsu et al., 2013). Its applicability to FBs needs to be validated, as there are numerous and significant differences between family and non-family firms in terms of ownership, resources, governance and management (Chrisman et al., 2005). FBs are expected to pursue a traditional pathway to internationalisation, where they grow incrementally by progressively exporting into international markets with greater psychic distance (Graves and Thomas, 2008).

## Internationalisation and FB´s performance

Empirical research on how a firm's family dimension influences its internationalisation process is relatively scarce (Gallo and Sveen, 1991; Gallo and Garcia Pont, 1996; Okoroafo, 1999; Zahra, 2003; Graves and Thomas, 2008; Sciascia et al., 2013). However, the FB literature suggests that family firms have different attributes to non-family firms, and these could provide them with unique strengths and weaknesses that affect their ability to implement an internationalisation process (Koopman and Sebel, 2009; Arregle et al., 2012).

The family dimension of the firm comprises three dominant characteristics, which could result in a lower inclination to internationalise: (1) desire to keep control, (2) conservative attitude and (3) limited resources (Gómez-Mejía et al., 2007; Arregle et al., 2012). According to some authors (Gómez-Mejía et al., 2007), the most critical point that guides FB decision-making is preserving the stock of their socio-emotional investment in the firm. Based on this logic, FBs show less willingness to internationalise compared with other firms because international expansion is seen as a threat to the family's control of the firm (Arregle et al, 2012; Lin, 2012). Furthermore, the agency theory holds that family firms tend to have a conservative attitude and be risk averse. This results in a slow process of internationalisation, especially as family principals have most of their welfare tied to one firm and cannot easily diversify their portfolio (George et al., 2005; Gómez-Mejía et al., 2007).

Compared to non-FBs, FBs are usually at a disadvantage when accessing additional resources and capabilities for internationalisation (Fernández and Nieto, 2005; Arregle et al., 2012). It is well known that financial resources are necessary to support successful international

expansion. They are required to invest in manufacturing facilities to meet overseas demand, implement country-specific R&D and marketing activities, and employ the requisite human resources to manage international trade (Graves and Shan, 2014). FBs have a limited capacity to obtain the financial resources required to expand internationally because they have problems accessing traditional equity or debt markets (Sirmon and Hitt, 2003; Graves and Thomas, 2008). Instead, they prefer family and internal equity financing which does not erode the firm's independence. However, avoiding external financial intervention can restrain the FBs' capitalisation because family members' contributions to capital are likely to be smaller than those of other potential shareholders, and thus prevent their successful internationalisation (Moen, 1999).

Not only do FBs have limited financial resources, they also have managers with little or no international experience in their management team, limited knowledge of the international environment and limited international network relationships (Gallo and García-Pont, 1996; Graves and Shan, 2014). Managerial capabilities, in other words the human resources available for managerial tasks, are required to manage an internationalisation process (Ibeh, 2003). Since international expansion increases the environmental complexity FBs face, these skills are fundamental for selecting, entering and servicing foreign markets, as well as creating routines that facilitate the undertaking of international operations (Westhead et al., 2001). Likewise, an internationalisation process requires changes in the organisational structure and professional management systems that encourage the decentralisation of the decision-making process (Gallo and Sveen, 1991; Abetti and Phan, 2004; Fernández and Nieto, 2005; Graves and Thomas, 2006).

FBs grow internationally with significantly fewer managerial capabilities than NFBs for several reasons. First, the founding families are usually reluctant to make changes in their organisational structures and professional management systems because they fear losing control (Gallo and Sveen, 1991; Gomez-Mejia et al., 2010). They are also less likely to employ qualified salaried professionals, undertake managerial training, or develop export plans (Fernández and Nieto, 2005; Graves and Shan, 2014). Finally, FBs rely heavily on informal controls and decision-making (Moores and Mula, 2000) because of their intuitive knowledge of the business. This personal knowledge may no longer be sufficient when the FB grows internationally, because foreign environments are often more complex than domestic ones and the information processing demands placed on them increase. Hence the usual control forms used in family firms are generally thought to be poorly adapted to changes to

compete successfully in international markets (Aaby and Slater, 1988). All this suggests that FBs may have greater difficulty in expanding their activities to new countries.

Social capital is perceived as the value of a person's social relationships (Burt, 1992). As far as internationalisation is concerned, how relationships between the founder and firms abroad can be leveraged for information, knowledge and learning is relevant. According to Eisenhardt and Schoonhoven (1996), this type of relationship network may help increase the supply of foreign market knowledge by generating access to information. Consequently, such a network of external relationships is an important resource to implement FB internationalisation successfully. However, FBs have been shown to be significantly less likely to engage in external networking compared with NFBs (Graves and Thomas, 2004), possibly because the family is a source and builder of internal social capital (Bubolz, 2001). However, external social capital ties prevent family firms from having an attitude that is too conservative and too risk-adverse (Miller et al., 2008).

Based on the above arguments, FBs may have greater difficulty in successfully implementing an internationalisation strategy due to limited financial and managerial resources and company networks. While a lack of relevant resources is one of the causes limiting the internationalisation of FBs, researchers have found FB attributes that can have a beneficial influence on their internationalisation, such as familiness, speed in decision making, long-term orientation and social capital (Stein, 1989; James, 1999; Miller and Le Breton-Miller, 2005; Pearson et al., 2008).

A main resource that differentiates family from non-family firms is the familiness construct (Pearson et al., 2008), which is defined as "the unique bundle of resources a particular firm has because of the systems interaction between the family, its individual members and the business" (Habbershon and Williams, 1999, p. 11). This unique family resource is crucial to appreciate fully how the family is likely to have a considerable impact on a firm's international operations. Consistent with this, several authors have recognised that familiness has a significant influence on the internationalisation of FBs (Zahra, 2003).

Other elements characterising the family firm that deeply affect the firm's international activities are the long-term orientation of the family shareholders and speed in decision-making (Allouche et al., 2008; Kontinen and Ojala, 2010). Proprietors are anxious to keep ownership and control of the firm within the family and pass it on to future generations. This orientation may mean that long-term survival underlies decisions in all aspects of the firm

(Donckels and Frohlich, 1991), and, in particular, supports the implementation of an optimal investment policy in the long run (James, 1999; Stein, 1989) and emphasises long-term performance goals as opposed to short-term profit targets (Daily and Dollinger, 1993; Harris et al., 1994).

According to Sirmon and Hitt (2003), social capital is one resource that differentiates FBs from NFBs. Although FBs are argued to have a disadvantage in engaging in networking with other firms (since they have fewer company networks compared with NFBs), they may be able to extract better value out of each network relationship. The results of the study by Miller et al. (2008) predict that family firms develop more enduring networks with their customers.

## The four phases of the W-curve for FBs

As a result of their particular FB characteristics (e.g. risk-averse nature and limited financial capital), FBs are expected to take a traditional pathway to internationalisation, growing incrementally by progressively entering foreign markets with greater psychic distance. During the initial internationalisation stage, FBs first seek expansion of their business only in familiar and proximate markets with low levels of sales, coherent with their conservative attitude and risk aversion. In our case, FBs are expected to start their internationalisation in the European Union. Indeed, most Spanish FB exports included in our panel database went to the EU. In this stage, FBs lack information about foreign markets and the international process, and find that the liabilities of newness and foreignness result in significant entry costs. Given that FBs generally lack the managerial capabilities required to manage a growth process and have insufficient economies of scale in the early stages of the process, the costs of this first stage outweigh the benefits of internationalisation.

In the second stage, FBs increase their levels of sales to their familiar and proximate markets to achieve a minimum efficient scale in these markets and, as there are no significant extra costs for selling more products to these countries, these economies are expected to enhance their performance. Moreover, with increasing international experience, FBs acquire experiential learning about how to do business in unknown markets which reduces the costs associated with being new and foreign. Hence, we posit a positive relationship for the internationalisation–performance link in this stage.

After learning from the most familiar and proximate markets, in a third phase, FBs venture into more distant markets. As these regions are substantially different from their home country, FBs face significant costs associated with adjusting to new cultural and institutional

environments, which are expected to be greater than those related to countries with a lower psychic distance (Zaheer, 1995; Shenkar, 2001). Therefore, this expansion generates more costs than incremental benefits at the beginning.

Besides costs related to cultural and institutional complexity, FBs also face a range of costs associated with governance and coordination, which rise as they expand internationally into more and more countries. This is especially true when firms are subject to the liability of smallness, as most of the FBs investigated in this study are.

As a consequence of their long-term orientation and familiness, FBs can devote significant investments and time to learn from the host environment. Thus, with an increasing level of geographic diversification, FBs are expected to be in a better position to adapt their offering to international markets. At the same time, they are expected to know how to build the social capital required to develop long-term network relationships characterised by commitment and trust (Graves and Shan, 2014). These network relationships may enable them to successfully implement an internationalisation strategy in the long term, which is the fourth phase. Putting the above arguments together, we hypothesise a W-curve between internationalisation and performance:

*Hypothesis 1. The relationship between internationalisation and performance for FBs is a W-curve with four phases:*

*In an initial phase, the DOI of FBs has a negative impact on performance*

*In a second phase, the DOI of FBs has a positive impact on performance*

*In a third phase, the DOI of FBs has a negative impact on performance*

*In a fourth phase, the DOI of FBs has a positive impact on performance*

## Methodology

## Sample

Spanish family company data were obtained from the Survey on Business Strategies (SBS), a panel survey conducted by the SEPI Foundation, a government institution, with the support of the Ministry of Industry of Spain. This survey offers information on Spanish firms' strategies for the 1990–2011 period, although the family variable is only available from 2006 onwards. Nevertheless, a longitudinal panel from 2006 to 2011 is a better test of the relationship between internationalisation and performance over time than an analysis with cross-sectional data (Almodóvar, 2012).

We chose the SBS for several reasons. First, this anonymous survey covers a wide range of relevant company characteristics analyzed mainly with non-perceptual measurements. Another relevant characteristic of this survey is its representativeness. The SBS produces a good insight into the Spanish manufacturing industry by including a representative sample of the population of Spanish manufacturing firms with 10 or more employees. The selection combined exhaustiveness for the first category, which includes those firms with over 200 employees, and whose participation was required, and random sampling criteria for the second category, which includes firms employing between 10 and 200 workers. Consequently, this survey has multiple respondents. In particular, in our first year of study, 2006, 4357 firms with the above-mentioned criteria were interviewed (5039 firms in 2011). The SEPI Foundation applies different criteria to maintain its representativeness[18] of the reference population. Finally, many other researchers have used the SBS to study the exporting activity of Spanish firms (e.g. Merino and Salas, 2002; Fernández and Nieto, 2005).

Initially, to select the sample, we identified Spanish manufacturing firms that are SMEs, family firms[19] and which export. Although the upper limit for an SME is 250 employees according to the European Commission, we set the limit at 200 employees because the Survey on Business Strategies uses this threshold when sampling the Spanish manufacturing sector (Almodóvar and Rugman, 2014). Other papers that have defined SMEs as those with fewer than 200 employees are Chandra et al. (2009) and Muñoz-Bullón and Sánchez-Bueno (2011).

## Dependent variable

Performance is most often measured in internationalisation studies by profit to sales (ROE) or profit to asset ratios (ROA) (e.g. Grant, 1987; Geringer et al., 1989; Contractor et al., 2003; Lu and Beamish, 2004). In this study, we present our findings based on return on sales[20] (ROS) because this measure avoids the effects of differential asset valuations resulting from new investment and depreciation (Geringer et al., 1989). Other studies that have also used this measure have been Tallman and Li (1996), Almodóvar (2012) and Almodóvar and Rugman (2014).

## Independent variables

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[18] See Fariñas and Jaumandreu (1999) and www.funep.es for further details.

[19] To be a family firm, we required it to have had a family dimension continuously every year in our panel.

[20] Hoskisson et al. (1993) demonstrated the correlation of various accounting measures of performance (ROA, ROE, ROS).

Degree of internationalisation (DOI). As we mentioned earlier, the most used measure for capturing the degree of internationalisation has been the export intensity ratio (Chiao et al., 2006). However, previous literature has concluded that it is important to use an operational measure combining both dimensions of a firm's internationalisation, the international scale and international scope of its export activities, to reflect the true nature of its internationalisation process (Qian and Li, 1998). Firms may serve foreign markets either through exports or foreign direct investment (FDI). We focus on exports because it is the dominant vehicle of internationalisation for our family SMEs.

Similar to Grant et al. (1988), Pangarkar (2008) and Fernández-Olmos (2011), we propose the following ratio combining the traditional proportion of foreign sales variable and the dispersion of foreign sales across geographic regions[21]:

$$DOI = \frac{proportion\ of\ foreign\ sales}{\sum_{i=1}^{n}\left(proportion\ of\ sales\ in\ region\ _i^2\right)} \text{x}100\ \text{n} = number\ of\ regions$$

To study the relationship between the degree of internationalisation and a firm's performance, we include the squared, cubed and raised to the fourth DOI term ($DOI^2$, $DOI^3$ and $DOI^4$, respectively).

## Control variables

To isolate the relationship between the degree of internationalisation and firm performance, it was important to control for other variables that are likely to affect firm performance. Therefore, in addition to the strategy variable (i.e. degree of internationalisation), we introduced another five firm variables: R&D intensity (R&D), advertising intensity (ADV), firm size (SIZE), proportion of foreign capital (PCAEXT), and firm age (AGE). Likewise, we also controlled for industry effects. The inclusion of the first three firm variables in the model is based on the resource-based view of the firm. Previous studies have identified these as the variables that affect performance in internationalisation (e.g. Delgado et al., 2004; Chiao et al., 2006; Chen and Hsu, 2009). R&D intensity was measured by taking R&D expenses divided by sales (Lu and Beamish, 2004; Chiao et al., 2006). In keeping with previous studies (e.g. Qian, 2002), advertising intensity was measured as the ratio of advertising expenses to sales. Following previous studies (e.g. Chen and Hsu, 2009), we use once-lagged for the R&D intensity and advertising intensity variables. We measure size as the logarithm of a firm's

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[21] We used the criterion the SBS applied, namely to group the world environment into five different regions: EU, Iberia, other countries in the OECD, Latin America and the rest of the world.

total number employees because it captures relative changes in the firm's size (Arregle et al., 2012; Almodóvar and Rugman, 2014).

Basile (2001) found that being part of a foreign company might facilitate the process of becoming an exporter; foreign ownership is, therefore, expected to have an important contributory influence on a firm's export performance. We include the percentage of the firm's foreign ownership (Halkos and Tzeremes, 2007).

We also control for the firm's age in the analysis. The effect of a firm's age on the performance of internationalisation is ambiguous. On the one hand, older firms are usually more stable in their resource endowment than younger firms, which may cause them to have a higher absorptive capacity (Zahra and George, 2002). Younger firms, on the other hand, are less rigid and narrow in their perceptions, and possess the learning advantages of newness (Autio et al., 2000; Sapienza et al., 2006). This is measured as the logarithm of the number of years (plus one[22]) since the year of establishment (Anderson and Reeb, 2003).

Finally, several studies in the field of industrial economics have shown that a firm's performance can be influenced by the sector (Bain, 1968). The industry effect on a firm's performance is controlled by adopting the taxonomy proposed by Pavitt (1984), which classified firms into four different categories: traditional, scale-intensive, specialised suppliers and high technology. We introduced three Pavitt dummy variables in the model, but to keep the results simple, we have not shown them because all of them are not significant.

A summary of the variables, measures and expected direction of signs of influence on firm performance is shown in Table 1.

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[22] We add one year to avoid ages of zero (Fukugawa, 2006).

**Table 1. Variables, measures and expected signs of influence on performance**

| Variables | Measures | Expected signs |
|---|---|---|
| Dependent variable | | |
| ROS | Return on sales | |
| Independent variables | | |
| DOI | Degree of internationalisation | Negative |
| DOI2 | Degree of internationalisation$^2$ | Positive |
| DOI3 | Degree of internationalisation$^3$ | Negative |
| DOI4 | Degree of internationalisation$^4$ | Positive |
| Control variables | | |
| R&D | R&D expenditures/total sales | Positive |
| ADV | Advertising expenditures/total sales | Positive |
| SIZE | Log (number of total employees) | Positive |
| PCAEXT | Proportion of foreign capital | Positive |
| AGE | Log (number of years +1) | Ambiguous |

A firm's degree of internationalisation is a dynamic variable in this study. In our data set, there is annual location information. Table 2 illustrates the values of some variables related to internationalisation undertaken in this research from 2006 to 2011. As can be seen, there are clear differences when comparing non-family and family firms. While 825 of the non-family firms in 2007 had become involved in exporting activities, only 424 of the family firms were exporting firms. In the same vein, non-family firms tend to have a higher degree of export intensity since, in 2006, their average export intensity was 25.3 percent, whilst in the same period family firm export intensity was 18.3 percent. The longitudinal analysis shows the evolution of these data, confirming that the trend is changing, in other words an increasing number of family firms tend to be engaged in exporting activities, while the number of exporting non-family firms is decreasing.

**Table 2. Evolution of the number of exporting firms and export intensity in non-family and family firms**

|  | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|
| Number of family firms, of which: | 708 | 775 | 827 | 844 | 854 | 806 |
|   - Number of exporting firms | 424 | 470 | 514 | 545 | 569 | 560 |
|   - Average export intensity | 18.3% | 18.6% | 19.4% | 20.4% | 21.2% | 23.0% |
| Number of non-family firms, of which: | 1315 | 1238 | 1182 | 1171 | 1152 | 1010 |
|   - Number of exporting firms | 825 | 785 | 769 | 755 | 749 | 668 |
|   - Average export intensity | 25.3% | 25.7% | 26.2% | 27.1% | 27.3% | 30.1% |
| Mean value DOI for family-firms | 0.46 | 0.45 | 0.46 | 0.45 | 0.48 | 0.51 |
| Mean value DOI for non-family firms | 0.52 | 0.51 | 0.53 | 0.56 | 0.57 | 0.61 |

*Methodology*

A preliminary analysis was conducted to determine the relationships between each of the explanatory variables used in the regression. Table 3 provides means and standard deviations of the variables as well as Spearman's correlations[23] for each pair. It demonstrates that degree of internationalisation, advertising intensity, R&D intensity, firm age and firm size tend to be positively correlated. To assess potential problems of multicollinearity, variance inflation factors (VIFs) were calculated. The maximum VIF obtained was 1.16, which is substantially less than the conservative cut-off of 10 for multiple regression models (Hair et al., 1998). These results lead us to conclude that the regression estimates presented in Table 3 are not biased by the presence of severe multicollinearity.

**Table 3. Spearman's correlations**

| Variables | DOI | ADV | R&D | PCAEXT | AGE | SIZE |
|---|---|---|---|---|---|---|
| DOI | 1 |  |  |  |  |  |
| ADV | 0.144** | 1 |  |  |  |  |
| R&D | 0.243** | 0.201** | 1 |  |  |  |
| PCAEXT | 0.072** | -0.002 | 0.025 | 1 |  |  |
| AGE | 0.128** | 0.073** | 0.129** | 0.005 | 1 |  |
| SIZE | 0.276** | 0.185** | 0.325** | 0.141** | 0.251** | 1 |
| Mean | 0.400 | 1.245 | 0.008 | 1.243 | 3.203 | 3.547 |
| Std Dev. | 0.505 | 1.893 | 0.026 | 10.280 | 0.623 | 0.847 |

   \*\* $p < 0.01$ \* $p < 0.05$

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[23] The Kolmogorov-Smirnov test determined that variables are not normally distributed, so we cannot use Pearson's correlations.

We ran a longitudinal analysis with non-linear terms similar to the one Almodóvar (2012) conducted. Since longitudinal surveys reduce the error arising from using a single source, common method variance is not a serious problem for the validity of our results and conclusions (Chang et al., 2010).

We conducted several tests to identify the best statistical model. We ran a Breusch-Pagan LM test to choose between a pooled OLS versus a panel data model. As the null hypothesis is rejected, the panel data are not poolable, and hence, the pooled OLS is inappropriate. Next we performed the Hausman specification test to choose between a fixed-effects versus a random-effects model. The Hausman test rejects the fixed-effects model.

We report the results in Table 4. Model 1 is the baseline model that includes only the control variables. We tested hypothesis 1 using models 2, 3, 4 and 5, in which we built the test of the W-shaped relationship by adding the linear term of degree of internationalisation in model 2, its squared term in model 3, its cubed term in model 4 and its to the fourth-power term in model 5. From models 2, 3 and 4 we find that the linear, squared and cubed terms are not significant, suggesting that linear, U-shaped and S-shaped relationships do not exist for this data set. All the linear, squared, cubed and to the fourth-power terms are significant in model 5, indicating that a W-relationship exists between degree of internationalisation and firm performance for this data set. All the models provided the same results for the control variables. As predicted, both advertising intensity and size have a positive impact on firm performance. The R&D intensity coefficient is positive and the coefficient of PCAEXT is positive, while both are not significant. Furthermore, firm age has a negative impact on firm performance, as in other previous studies (Zou and Stan, 1998; Almodóvar, 2012).

**Table 4. Random Effects Panel Data Regression**

| Variables | M1 Coeff. (Std Err.) | M2 Coeff. (Std Err.) | M3 Coeff. (Std Err.) | M4 Coeff. (Std Err.) | M5 Coeff. (Std Err.) |
|---|---|---|---|---|---|
| $ADV_{t-1}$ | 0.641* (0.263) | 0.829** (0.291) | 0.833** (0.293) | 0.846** (0.294) | 0.865** (0.296) |
| $R\&D_{t-1}$ | -29.982 (19.050) | -32.238 (19.475) | -32.210 (19.500) | -33.022 (19.467) | -33.032 (19.735) |
| $PCAEXT_t$ | 0.028 (0.050) | 0.015 (0.057) | 0.015 (0.057) | 0.019 (0.057) | 0.020 (0.057) |
| $AGE_t$ | -2.294** (0.616) | -2.258** (0.679) | -2.260** (0.680) | -2.228** (0.674) | -2.230** (0.674) |
| $SIZE_t$ | 1.940** (0.710) | 2.095** (0.814) | 2.105** (0.820) | 2.112** (0.816) | 2.076** (0.818) |
| $DOI_t$ | | 0.199 (0.812) | -0.076 (1.988) | -4.995 (4.165) | -15.226** (7.606) |
| $DOI_t^2$ | | | 0.148 (0.845) | 6.415 (4.407) | 28.549** (13.339) |
| $DOI_t^3$ | | | | -1.779 (1.146) | -16.147** (7.607) |
| $DOI_t^4$ | | | | | 2.765** (1.351) |
| Constant | 7.337** (2.621) | 6.045* (2.935) | 6.056* (2.939) | 6.378** (2.935) | 7.129* (3.006) |
| $Prob>X^2=$ | 0.0004 | 0.0012 | 0.0026 | 0.0031 | 0.0035 |

** $p< 0.01$ * $p < 0.05$

## Conclusions

This study investigates the relationship between the degree of internationalisation and firm performance for family SMEs. Prior research mainly focused on this relationship for samples of firms without differentiating between family firms and non-family firms, and documented inconclusive evidence (e.g. linear, U-shaped and sigmoidal relationships). This study re-examines this topic by exploring if prior conflicting evidence could be an outcome resulting from the failure of the potential impacts of family ownership on the performance of exporting firms. Based on the particular characteristics of FBs associated with exporting, we provide arguments that the relationship between the degree of internationalisation and firm performance is expected to follow a W-shaped curve. Our empirical results provide strong support for this hypothesis.

Our results also suggest other implications. Surprisingly, neither the R&D intensity nor the proportion of foreign capital has any influence on performance for Spanish family SMEs, despite previous empirical literature highlighting them as significant factors affecting a firm's

performance. Recently, Schmidt et al. (2014) have suggested that R&D intensity is expected to be higher in firms that are actively managed by the family. Based on this argument, future research could study if R&D behaviour varies between family firms in which the founder is actively involved and older family firms, as this could generate different results for the effect of R&D intensity. Likewise, Randoy and Goel (2003) conclude that founding family leadership moderates the relationship between ownership structure and firm performance. Future studies could explore this perspective, which might result in different conclusions on the impact of foreign capital on firm performance.

## Limitations, implications and future research

The paper also highlights some limitations which bring forth some interesting possible avenues for future research. The first limitation concerns the sample used. Our study was based on family exporting firms from the Spanish manufacturing industry. Despite the representativeness guaranteed by the Survey on Business Strategies, and despite the fact that most empirical studies in the field of export performance use single-country samples (Ruzo et al., 2011; Almodóvar, 2012), future studies based on samples with other international business contexts, such as other countries or other industries (e.g. agriculture or services), would be able to generalise the findings of this research.

Some scholars suggest return of sales (ROS) as a measure to capture the overall firm performance and this is the reason why our model estimation is based on this financial measure (Almodóvar, 2012; Almodóvar and Rugman, 2014). Hence, an attractive opportunity for research would be to test this model by using different performance measures, such as export survival.

Although our study has focused on the performance implications of deciding to export because it is their main way of expanding business internationally, we are sensitive to the fact that there is a wide array of internationalisation mechanisms, such as the use of alliances and foreign direct investments (Cerrato and Piva, 2012). All of them share some common features, but they exhibit many distinct strengths and weaknesses that may differentially affect performance. Future research might also incorporate these other mechanisms of internationalisation to extend the generalisability of our findings.

Another limitation of this study consists of the fact that our empirical data were gathered in a survey that does not contain information about family firm leadership. However, previous literature based on agency and stewardship theories hypothesised that family firm

performance depends on their family leadership type (Kellermanns and Eddleston, 2007; Banalieva and Eddeleston, 2011). Future studies based on qualitative in-depth interviews should study this phenomenon.

Due to data availability, we measured the degree of internationalisation by grouping countries into five global regions. This approach may not be appropriate, however, since the countries' history, culture, political development, economic development and religion are not the same. Therefore, further research should include detailed country-specific data on this topic and employ the techniques used in this study.

The process of knowledge transfer through generations might also play an important role in the performance of family SMEs, especially when the family firm operates internationally (Fernández and Nieto, 2005; Basly, 2007). When multiple generations are involved in the process of international development, the family firm should be able to gain knowledge of the international environment, and, as a result, this should act as a source of competitive advantage for internationalisation. Future research should take into account the arrival of new generations when analysing the internationalisation of family firms.

This research has not been able to specify types of FBs according to their international experience. A measure of international experience would also allow further differentiation among the large group of FBs. The inclusion of international experience into theoretical explanations of family firm internationalisation is likely to produce new research questions related to the rate, speed and sequence of international expansion.

Family firms that became NBFs during the analysis period have not been taken into account and there may be a 'survival bias' in the sample (Vermeulen and Barkema, 2002). One way to counteract this bias would be to analyze whether the structure of the capital could be considered an endogenous variable (Demsetz and Lehn, 1985). In the case of exporting FBs, the evolution of past export performance may explain the permanence of control. If the export performance is poor, family shareholders may disengage and sell their shares, leading to the loss of their family status.

Identifying the effects of the DOI of family firms on firm performance has also several theoretical and managerial implications. It is crucial that family firms' managers understand that the effects of DOI will cause two downturns in their firms' performance. The first is caused by learning costs and the second by the costs associated with adjusting to new cultural

and institutional environments. Managers have to invest their available financial resources appropriately to develop the required international capabilities.

The results of this study may also be relevant to policymakers who design and implement export promotion programs to assist family SMEs. Policymakers should help family SMEs follow a long-term strategy of internationalisation, preparing them for a low performance in the first and third phase of internationalisation. In particular, policies should help family SME managers acquire international capabilities to achieve an optimal level of internationalisation. Possibly, they should promote the formation of network relationships between Spanish family SMEs and overseas firms with the international capabilities to implement an internationalisation strategy. Finally, the identification of the shape between the degree of internationalisation and the family SME's performance could also be used as a managerial tool for exploring the position of a family firm in relation to its competitors.

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# INDIVIDUAL AND JOINT EFFECTS OF EXPORT AND TECHNOLOGICAL COLLABORATION ON SME GROWTH

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## Abstract

### Objectives
This paper investigates the relationships between export-based internationalization, inter-firm collaboration and SME growth. More specifically, the study examines the growth outcomes of two specific firm strategies: export to international markets and technological collaboration with other organisations. Hence, the purpose of the study is to examine the individual and joint effects of exports and technological collaboration upon SME growth.

### Prior work
Prior work suggests that internationalization and inter-firm collaboration are specific business strategies underlying SME growth. While a number of studies have documented the positive impact of SME internationalization and collaboration on growth (e.g. Robson and Bennett, 2000; Lu and Beamish, 2001; Becchetti and Trovato, 2002), they have examined these strategies in isolation. Therefore, little research has been done explicitly on the growth implications of both internationalization and collaborating strategies. Hence, not much is known about their joint impact on SME growth.

### Approach
The paper draws upon the resource-based view, together with internationalization and inter-firm cooperation frameworks, to investigate the role that export, technological collaboration and their interaction have on SME growth. Empirically, we make use of a firm-level panel of data which covers a representative sample of Spanish manufacturing firms with 10 to 200 employees for the period 1998-2006. Information is available for an unbalanced panel data with 1,923 firms and 9,723 observations. A fixed-effects model is employed, which allows controlling for time- invariant unobserved firm heterogeneity.

### Results
The results indicate that firms involved only in export activities are more likely to have stronger sales growth outcomes but not necessarily in terms of employment growth. We also find that engaging only in technological collaboration with other organizations is not correlated to sales and employment growth. However, the results show that SMEs that are involved in both export and technological collaboration are more likely to experience growth.

Thus, SME growth is enhanced when firms pursue both strategies, rather than following only one or neither of them.

## Implications

Our results are important for researchers because they add to the literature in this area. Moreover, findings may be helpful for those interested in promoting SME growth and development. For instance, practitioners should be aware that growth would be more easily realised by combining internationalization and cooperation activities rather than focusing on them separately. Similarly, these positive synergies may be taken into account in designing public policies.

## Value

The paper provides a better knowledge of the joint effects of cooperation and internationalization strategies on SME growth. While prior research has tended to investigate the effect of internationalization and collaboration separately, we examine the interaction between the two activities in shaping growth. Hence, the findings may be useful to gain a better understanding of strategic behaviours that are likely to have a positive impact on SME growth.

**Keywords:** firm growth, SME, export, technological collaboration.

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## Introduction

The growth of small and medium-sized enterprises (SMEs) has been linked to job creation and regional development (e.g. Acs and Audretsch, 1990; Storey, 1994; Acs and Armington, 2006). SME growth has also been related to firm survival (Audretsch and Mahmood, 1995) and has been considered an indicator of the firm's overall success (Fisher and Reuber, 2003). However, SMEs are frequently exposed to constraints that could inhibit their growth prospects because of their small size. This liability of smallness mainly emerges from their lack of resources in comparison to their larger counterparts (Stinchcombe, 1965; Aldrich and Auster, 1986). Previous research has analysed the degree in which SMEs face constraints, especially due to their limited access to financial and human capital resources, as well as their direct growth implications (Beck, Demirguc-Kunt, and Maksimovic, 2005; Hutchinson and Xavier, 2006; Malo and Norus, 2009).

However, relatively little is known about the appropriate strategies followed by SMEs to cope with resource constraints and achieve growth (Hessels and Parker, 2013). While strategic decisions have been shown to be relevant to understand why growth is occurring (Davidsson et al, 2006), a number of literature reviews have pointed to the need for the field to give more extensive consideration to specific strategic decisions related to "how" and "where" small firms grow (Gilbert et al, 2006; McKelvie and Wiklund, 2010). On the one hand, the "how" decision is about the mode of growth. The usual distinction, initially made by Penrose (1959), is that between organic and acquisitive growth. However, an intermediate mode of growth falling somewhere in between these two modes can also be identified. This is usually regarded as inter-firm collaboration and is frequently used by small firms to avoid their lack of resources (McKelvie and Wiklund, 2010). It has been argued that SMEs could enter into coalitions with external organizations in order to obtain resources (Haahti, Madupu, Yavas and Babakus, 2005; Street and Cameron, 2007). On the other hand, the "where" decision has to do with a domestic or international market focus of the firm. Due to the globalization of markets, the domain in which SMEs operate is becoming truly international (McDougall and Oviatt, 1997) and internationalization activities may be essential for their ultimate survival and growth (Gilbert et al, 2006; Sapienza et al., 2006).

In this study we explore how collaboration and internationalization strategies may enable SMEs to achieve growth. Both strategic decisions should be taken into account in order to

advance our knowledge on SME growth. In fact, prior work suggests that internationalization and inter- firm collaboration are specific business strategies underlying SME growth (Love and Roper, 2013). Nevertheless, while a number of studies have documented the positive impact of SME internationalization and collaboration on growth (e.g. Robson and Bennett, 2000; Lu and Beamish, 2001; Becchetti and Trovato, 2002), they have examined these strategies in isolation. Hence, little research has been done explicitly on the growth implications of both internationalization and collaborating strategies performed together. Thus, not much is known about the joint impact of such strategies on SME growth.

In the light of this shortcoming, the present paper is focused on the relationships between inter- firm collaboration, internationalization and SME growth. More specifically, the study investigates the growth outcomes of two specific firm strategies: technological collaboration with other organizations and export to international markets. Hence, the purpose of the study is to examine the effects of technological collaboration and exports upon SME growth. We investigate not only the individual impact of these strategies but also, and more importantly, their joint effects on growth. In particular, we consider four different situations: firms that neither export nor collaborate, firms that only export, firms that only collaborate, and firms that both export and collaborate. This allows us to compare the growth of SMEs that are engaged in both strategies with those that follow only one or none of them.

From a conceptual standpoint, this paper draws on the resource-based theory (RBT), together with insights from international business and inter-firm cooperation literatures, to develop a number of hypotheses about the relationships between these strategies and subsequent SME growth. The RBT helps to explain how some firms can achieve a sustainable competitive advantage by adopting strategies based on their strategic resources (Barney, 1991; Peteraf, 1993). We argue that those SMEs engaged in exporting and technological collaboration strategies will be more likely to grow more than the rest of firms because they will have access to key resources through leveraging their external relationships and/or internationalisation expansion.

Empirically, we make use of a firm-level panel of data which covers a representative sample of Spanish manufacturing firms for the period 1998-2006. We believe Spain is a particularly interesting setting in which to explore these issues for several reasons. First, Spanish exports

increased constantly during the studied period[24], therefore it is clearly of interest to analyze growth and internationalization issues for Spanish SMEs. Second, during the previous years to the outburst of the global crisis in 2008 (i.e. the period we are analyzing), Spain had one third of total job creation in the European Union[25]. However, such a spectacular increase of employment had unstable foundations and Spain continued to struggle with an inflexible labour market. Third, the turn of the century was a time of considerable change in Europe. The EU was emerging from the recession of 2000, while at the same time being poised to incorporate the former communist countries of Eastern Europe in its latest round of enlargement. The entry of new member states promised both challenges and opportunities for European SMEs in terms of broader internationalization, greater aggregate demand and enhanced access to labour.

We test our hypotheses using a large dataset containing information on 1,923 small and medium-sized enterprises. Previous research used smaller samples (Lu and Beamish, 2001; Majocchi and Zucchella, 2003; Westhead, Wright and Ucbasaran, 2004). A large sample improves the reliability of statistical inference and enhances the value of empirical analyses (Greene, 2003). Furthermore, our dataset is well suited for exploring the growth implications of internationalization and collaboration strategies because it includes information about different measures of growth. While growth can occur in different aspects of a firm's operations (e.g. sales, employment, profits, cash flow, market share), we consider both sales and employment because they have been suggested by researchers to be the most salient for SME in evaluating their growth (e.g. Weinzimmer et al, 1998; Gilbert et al, 2006).

The rest of the paper is organized as follows. In the next section we present the theoretical background to the study and derive testable hypotheses. The third section describes the data, variables, and methods. Results are given in section four. In the final section we summarize and discuss our findings.

## Theoretical background and hypotheses

### The determinants of SME growth

There is no unique theory with which to explain the growth of SMEs. Prior work has shown that both firm and environmental factors figure in the prediction of SME growth (e.g.

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[24] http://www.tradingeconomics.com/spain/exports.
[25] http://www.upf.edu/gredtiss/_pdf/2013-LLRNConf_Suarez.pdf

Davidsson et al, 2006; Gilbert et al, 2006). Organizational characteristics, such as firm age, may explain growth. Firms may suffer from being "young" due to lack of reputation or experience, or they can suffer from being "old" due to the inability to adapt to changing environment conditions (Barron et al, 1994).

Researchers have also investigated the firm size and growth relationship extensively. Gibrat (1931) argued that growth is proportional to size and that the factor of proportionality is random. In other words, proportional growth rates are independent of size (Sutton, 1997). Numerous studies have tested this Gibrat's Law (e.g. Evans, 1987 a, b; Geroski, 2005) and the results have been mixed. However, the majority of empirical studies have shown that small and young firms tend to grow more than large, established firms. Given these differences, explaining SME growth takes on particular significance.

From an industrial organization perspective, firm growth is clearly dependent on the industry structure (Scherer, 1980). Hence, a firm's growth mainly depends on industry characteristics and how the firm positions itself *vis-à-vis* the industry structure. As competition intensifies, firms find it increasingly difficult to achieve high growth rates (Bahadir et al, 2009). However, empirical evidence suggests that fast growing firms can found in all industries (Henrekson and Johansson, 2010).

While firm age and size, as well as industry structure, are relevant factors to explain growth, in this study we focus on strategic decisions of firms that may also enhance their growth. Therefore, in addition to structural characteristics to the firm and the industry, SME growth is a function of strategic decisions about how and where the firm should grow (Gilbert et al, 2006). As stated before, we are interested in the individual and joint effects of technological collaboration and export strategies on SME growth. To the best of our knowledge, the potentially synergistic effect of these two combined strategies has not been the focus of much previous research.

In order to explain these relationships, we draw upon the Resource-Based Theory (RBT), in conjunction with insights from the collaboration and internationalisation literatures. Under the RBT, firms are defined as "a collection of productive resources" (Penrose 1959: 24). The basic premise of the RBT is that heterogeneous resources that are difficult to transfer or copy could be a source of sustainable competitive advantage (Wernerfelt, 1984;

Barney, 1991; Peteraf, 1993). The general logic from this view is that those firms with particular resources will be more able to realise and expand their venture.

However, SMEs tend to fail more quickly than large organizations because they have limited or no access to critical resources, such as financial and human capital (Stinchcombe, 1965). Therefore, while SMEs may need a wide range of resources to develop their new ventures and maximise their growth potential (Venkataraman, 1997), they often do not possess all the resources in that optimal set and need to acquire them from other firms and organisations (Zott and Huy, 2007).

Our suggestion here is that both inter-firm collaboration and export-based internationalisation are specific business strategies that may yield a more solid resource base for SMEs. For this reason, one would expect a positive relationship between the decision to export and collaborate and subsequent firm growth, once other potential determinants commonly associated with growth (Gilbert et al, 2006) are controlled for. In the next sections we develop a number of hypotheses on the individual and combined effects of technological collaboration, export and SME growth.

## Technological collaboration and SME growth

According to the RBT, firms adopt strategies based on their strategic resources and capabilities in order to gain a sustainable competitive advantage and contribute to superior firm performance (Barney, 1991). Technological resources and innovation can serve as a source of sustainable competitive advantage both domestically and abroad (Pla-Barber and Alegre 2007; Filipescu, Rialp, and Rialp 2009; Filipescu et al., 2013). Therefore, the development of innovative capacity may indeed facilitate firm growth. The literature recognizes three different alternatives to reach innovative capacity: to develop it internally, to buy it in the market or to establish technological collaborations with other/s firm/s or entities (Santamaria and Rialp, 2007).

Interfirm collaboration usually refers to deliberate agreements between independent firms to perform certain business activities. As mentioned above, the decision to cooperate or collaborate is a variant of the make-or-buy decision, which has extensively been examined from the view of transaction cost economics (Hennart, 1988; Williamson, 1989). From this view, firms will tend to internalize activities where transaction costs are higher in the market than inside the hierarchy (firm). However, there exist intermediate options between the firm and market, which can be efficient instruments to coordinate the innovation activity of the

firm (Tripsas et al., 1995; Ulset, 1996). Thus, firms collaborate in order to acquire resources and skills they cannot produce internally when the risks of collaboration are not too great (Nieto and Santamaria, 2007). Interfirm cooperation or alliances are common in various industries (Hagedoorn, 1993) and have been considered an important strategic tool (Hoang and Rothaermel, 2005; Rothaermel et al, 2006).

Technological collaboration includes collaborative R&D agreements with other organizations such as customers and suppliers, and also university and/or research institute agreements. SMEs tend to rely more on technological collaboration strategies than large firms (Rogers, 2004). This is mainly due to the fact that technological collaboration may allow SMEs to bridge the innovation gap with larger firms (Nieto and Santamaria, 2010). In effect, in the case of technological activities, networks and alliances are main sources of innovation (Von Hippel, 1988). This is because joint R&D within well-organized networks enhances the innovation activities of partners, and thus increases the probability of realizing new products or processes (Vonortas, 1997).

For many growing firms, the goal of engaging into a cooperative arrangement is to access new technologies. Technological or research-based alliances bring together the specific and often tacit skills to collaborate on developing new technologies. This saves other firms from investing time and resources into risky technology development (McKelvie and Wiklund, 2010). Indeed, cooperation agreements tend to be less risky and less costly methods of growing compared to organic or acquisition growth (Pearce and Hatfield, 2002). Hence, this strategy can help SMEs to reduce the costs of the innovation process (Freel 2005; Bougrain and Haudeville 2002).

Additionally, technological cooperation offers learning opportunities for SMEs (Zou et al, 2010). This is because such collaboration may enable SMEs to access new knowledge, sources of technical assistance or market opportunities (Lee et al, 2001; Nieto and Santamaria, 2010). This may be very beneficial to enable new and small ventures to overcome their lack of experience. Moreover, the relationship with partners is an important means to obtain critical resources such as good reputation, especially for high-tech firms (Larson, 1991; Zhao and Aram, 1995).

Overall, we suggest that those SMEs that are engaged in this type of collaborative strategies may be able to grow faster than the rest of SMEs. Thus, we offer the following hypothesis:

*Hypothesis 1: SMEs that are engaged in technological collaboration will grow more than those that are not.*

## Export-based internationalisation and SME growth

Likewise, RBV has become an influential perspective in international business (IB) research (Peng, 2001) and has, for example, been applied to investigate how a firm's powerful resource base enables SMEs to export more successfully (Bloodgood, Sapienza, and Almeida, 1996; Westhead, Wright and Ucbasaran, 2001; Zahra, Matherne and Carleton, 2003; Knight and Cavusgil, 2004; Zucchella et al., 2007). Many of these studies assert that exporters can derive competitive advantage in foreign markets if they transfer value generated by an existing resource base to a new geographic market/s (Rialp and Rialp, 2007; Stoian, Rialp and Rialp, 2011, 2012).

An important element of the internationalization process of SMEs is the foreign market entry mode. According to Rialp and Rialp (2001), a firm could serve foreign markets by means of exporting from its domestic context. It could also try to exploit specific advantages by investing directly in foreign markets. Moreover, an international firm could co-invest with other firms (i.e. international joint ventures). Finally, the possibility also exists of transferring this advantage to another firm through a contractual arrangement, in exchange for some type of compensation (e.g. international licenses or franchises). Therefore, internationalizing firms may select among a number of different modes available to penetrate foreign markets. The selection of a particular entry mode strategy depends on the corresponding level of risk, return characteristics, and/or degree of control and resource commitment each mode provides the entrant firm (Anderson and Gatignon, 1986; Root, 1994; Rialp and Rialp, 2001).

While there is a wide range of options to penetrate in foreign markets, here we focus on exporting activities of SMEs. Export tends to be the initial preferred way of internationalization for SMEs because it does not usually involve a substantial resource commitment to a foreign market and does not necessarily imply establishing a foreign subsidiary (Lu and Beamish, 2001, 2006). Therefore, compared with other entry modes such as foreign direct investments, exporting is a relatively easy and fast way to enter international markets, because it involves lower levels of risk (Golovko and Valentini, 2011; Filipescu et al., 2013).

Export is likely to exert a positive impact on SME growth. First, exporting strategies expand access to markets over a wider geographical area by taking advantage of actual or anticipated demand for products and services overseas (Filatotchev and Piesse, 2009). Moreover, export may enable firms to leverage their existing capabilities across countries and create scale economies that would be unavailable domestically (Andersen, 1993; Dominguez and Sequeira, 1993). Exporting activities may also help firms to develop new capabilities, which in turn may enhance the organizations' ability to pursue new growth opportunities (Sapienza et al, 2006; Weerawardena et al., 2007).

Additionally, being exposed to international markets may help SMEs to respond more effectively to foreign competitors in their domestic market (Carpenter and Fredrickson, 2001). Since growing businesses are continually searching for new markets, products or technologies, they are more likely to take advantage of new information gained by exporting that may be also valuable when competing in their local market (Filatotchev and Piesse, 2009). Overall, therefore, we suggest the following hypothesis:

*Hypothesis 2: SMEs that are engaged in exporting will grow more than those that are not.*

### Technological collaboration, export-based internationalisation and SME growth

As we have seen, RBT emphasizes the importance of resources, but it also acknowledges that firms do not have to own these resources by themselves (Dhanaraj and Beamish, 2003). Firms can alternatively access resources by establishing external relationships with other organizations. So, RBT still provides a useful perspective for exploring how small businesses can develop competitive advantage and enhance organizational performance through leveraging external relationships (Street and Cameron, 2007).

In the context of export behaviour research, empirical studies widely support the idea that innovation induces firms to increase exports, with technological resources having a positive and significant effect on firms' export activities (Basile 2001; Cho and Pucik 2005; Filipescu et al., 2013). The early consensus in the literature indicates that innovation acts as an important driver of exports (Harris and Li 2009). In this sense, international markets may represent an area in which firms can exploit their innovations and thereby enhance their performance (Filipescu, Rialp, and Rialp 2009; Love and Mansury 2009; Hortinha, Lages, and Lages 2011). Accordingly, innovative firms will have a greater tendency to enter foreign markets to increase sales volume and spread the fixed costs of innovation over a

larger number of markets (Autio et al., 2000; Zahra, Ireland, and Hitt 2000; Pla-Barber and Alegre 2007). Thus, innovative firms have strong incentives to subsequently expand their activities into markets beyond their domestic one to earn higher returns from their technological investments (Bianchi 2009).

Furthermore, some authors identify R&D intensity as an important determinant of firms' exports (Barrios, Görg, and Strobl 2003) because firms with a technological, R&D-based advantage can expand into new overseas markets at little or no marginal cost over the cost of developing this advantage in the domestic market (Davis and Harveston 2000). In addition, as exporting expands the potential customer base, investments performed in activities whose costs are largely fixed (e.g., R&D) may be recovered through greater sales volume (Love and Mansury 2009).

In general, the literature reports a positive relationship between firm technological innovation and internationalisation (Rodríguez and Rodríguez, 2005; Bianchi, 2009; Filipescu, Rialp, and Rialp, 2009; Filipescu et al., 2013). A commitment to participate in technological cooperative agreements, that strengthen relationships with other firms, may be required for small firms in the internationalization process (Johanson and Vahlne, 2006, 2009), as this usually involves risks and uncertainties. This collaboration with other firms can be very influential in helping SMEs to overcome resource constraints and in enabling internationalization at an early stage of start-up (Oviatt and McDougall, 1994; Coviello and Munro, 1995, 1997).

Our suggestion is that engaging in both collaboration activities and exporting may help SMEs to obtain external resources (Tang, 2011), which may be reflected in the subsequent growth of the firm. Firms' learning abilities may increase through the combination of export and technological collaboration. In effect, an export-based internationalisation strategy might serve as a means for SMEs to access to novel information and technological knowledge not available in the local market, which can then be used in the collaboration process (Salomon and Shaver, 2005). Additionally, exporting SMEs that also collaborate technologically with other organizations can increase their growth selling better products in international markets and, at the same time, they can also generate spillovers for the products sold in domestic markets, which will be of improved quality (Golovko and Valentini, 2011). As a consequence, they will be likely to grow faster than other firms.

Overall, we expect that adopting both technological collaboration and exporting strategies will result in an increase in the growth of SMEs. In addition to the individual effects of exports and collaboration upon SME growth, the expectation here is that there will be a positive interdependence between them, which in turn would impact the growth of the firm positively. Hence, we formulate our final hypothesis:

*Hypothesis 3: SMEs that are engaged in both exporting and technological collaboration will grow more than those that are not.*

To summarise our approach, the conceptual model of the study is shown in **Figure 1**. First, it indicates that SME growth will separately be influenced by technological collaboration (hypothesis 1) and export (hypothesis 2) strategies. Secondly, we suggest that the combination of these two strategies will have a positive impact of growth (hypothesis 3). Our analyses will include a number of control variables that may have an influence on SME growth, such as their age, size and industry sector.

**Figure 1: Conceptual Model**
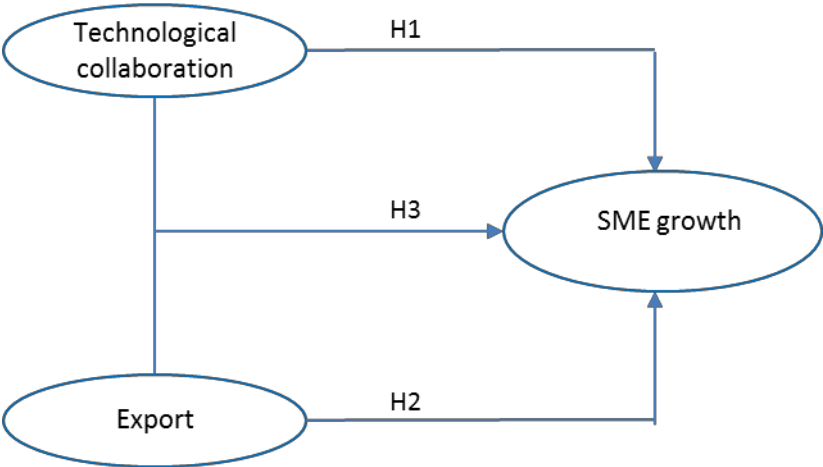


## Methods

### Data

A large number of previous studies on small firm growth have been cross-sectional. This means that growth was assessed from an earlier point in time up to the time of the investigation, and also was subject to selection and hindsight biases (Davidsson et al, 2006). In order to examine the relationships between internationalization, inter-firm collaboration

and firm growth, we draw on data obtained from the *Encuesta sobre Estrategias Empresariales* (ESEE). It is a firm-level panel of data compiled by the SEPI Foundation with the support of the Spanish Ministry of Science and Technology. Hence, we take advantage of the panel structure of our data to investigate the growth effects of exports and technological collaboration strategies.

The ESEE covers a wide sample of Spanish manufacturing firms operating in different industry sectors. The sample is representative of the population of Spanish manufacturing firms with 10 to 200 employees. In this study, the figure of 200 employees is taken as the upper limit for definition as an SME. While the ESEE started to gather data in 1990, our dataset covers the period 1998-2006 since inter-firm collaboration variables were not recorded in the early samples. Information is available for an unbalanced panel data with 1923 firms and 9,723 observations because of some missing values.

Previous research has used the same dataset, as it is representative of the Spanish manufacturing industry (e.g. Fernández and Nieto, 2006; Nieto and Santamaria, 2010; Golovko and Valentini, 2011; Filipescu et al., 2013). Additionally, it should be noted that the ESEE provides an appropriate setting for our purposes because a considerable proportion of firms in the sample are involved in export activities (50.6 per cent of firms). The proportion of SMEs with technological agreements with other firms is lower but still substantial (18.3 per cent). Thus, our sample includes data on firms which are internationally inactive or have not developed technological agreements, as well as those that have internationalized and developed this type of collaborations. This avoids the problem of sample selection bias, or 'sampling on the dependent variable', which can affect studies focusing exclusively on the select band of firms which have made the decision to internationalize or establish technological agreements.

### Variables and measures

Our dependent variable is firm growth. This is measured both in terms of sales and employment. We therefore focus on the two measures of SME growth that are the most widely used in the literature (e.g. Storey, 1994; Weinzimmer et al, 1998). While these two measures are likely to be highly correlated, there are some considerations that delineate them. On the one hand, sales growth indicates the extent to which customers are accepting the products offered by the firm (Gilbert et al, 2006). When sales growth occurs, a venture is supplied with revenues that can be reinvested into resource expansion. On the other hand,

employment growth is a strong indicator of the growth of the assets of firms and it is also a conservative measure for investigating the stability of growth (Stam and Wennberg, 2009).

In order to create the two dependent growth variables, we follow prior research in this area (e.g. Evans, 1987a; Brixy and Kohaut, 1999):

$$Sales\ growth = \log St - \log St\text{-}1$$
$$Employment\ growth = \log Et - \log Et\text{-}1$$

where $St$ and $Et$ are the values for sales and employment at time t and $St\text{-}1$ and $Et\text{-}1$ are the these values at time t-1. Thus, these variables measure a firm's sales or employment growth rate at time t with respect to time t-1, assuming an exponential growth trend.

In terms of independent variables, we include four exclusive dummy variables indicating the firm strategy with respect to its export and collaboration activities. Thus, in order to investigate the individual and joint effects of export and technological collaboration on SME growth, we distinguish the following four cases: (1) firms that neither export nor collaborate, (2) firms that only export, (3) firms that only collaborate, and (4) firms that both export and collaborate.

**Table 1** shows the proportion of firms in each category throughout the period (1998-2006). The majority of them do not engage in exporting and/or collaboration activities (about 45 per cent), whereas about 14 per cent are SMEs that both export and collaborate. The group of SMEs that is involved only in technological cooperation agreements constitutes the lowest proportion among the four categories (between four and five per cent).

**Table 1: Export and collaboration status (per cent)**

|  | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|---|---|---|---|---|---|---|---|---|---|
| No-export & no-collaborate | 44,2 | 45,4 | 44,6 | 44,2 | 45,0 | 46,4 | 46,0 | 45,8 | 45,4 |
| Only export | 36,9 | 35,4 | 35,8 | 38,0 | 36,9 | 37,1 | 36,9 | 35,2 | 35,9 |
| Only collaborate | 4,5 | 4,5 | 4,7 | 4,3 | 4,3 | 3,7 | 3,8 | 4,1 | 3,7 |
| Export & collaborate | 14,3 | 14,8 | 14,9 | 13,6 | 13,8 | 12,8 | 13,2 | 14,9 | 15,1 |

We also include a number of control variables that may have an influence on the growth of firms. The size of the firm is included to account for the link between size and growth (Evans, 1987a). Size is measured as the logarithm of employment for the previous year when the dependent variable is sales growth, whereas it is measured as the logarithm of sales for the previous year when the dependent variable is employment growth. The age of the firm, measured as the number of years since the foundation of the business, is also included. This variable accounts for firm experience and is widely used in empirical studies of SME growth (Storey, 1994; Davidsson et al, 2006). We also control for industry sector by adding a variable for high- and medium-high technology (HMT) industries and low- and medium-low-technology (LMT) industries, since this distinction usually provides a useful reference for studying industry differences (OECD, 2005; Santamaria et al, 2009; Czarnitzki & Thorwarth, 2012) [26]. Finally, we include year dummies to control for macroeconomic effects common to all firms [27].

## Empirical approach

We test the individual and joint effects of export and collaboration on growth by estimating a model that links our two growth measures (i.e. sales and employment) with the four dummies for exporting / technological collaboration activities. The models to be estimated are expressed as:

$$Sales\ growth_{it} = f\ (No\ export\ \&\ no\ collaborate_{it-1},\ Only\ export_{it-1},\ Only\ collaborate_{it-1},\ Export\ \&\ collaborate_{it-1},\ X_{it-1},\ \varepsilon)$$

$$Employment\ growth_{it} = f\ (No\ export\ \&\ no\ collaborate_{it-1},\ Only\ export_{it-1},\ Only\ collaborate_{it-1},\ Export\ \&\ collaborate_{it-1},\ X_{it-1},\ \varepsilon)$$

where *sales (employment) growth*$_{it}$ represents a firm i's sales (employment) growth rate at time t with respect to time t-1; *no export & no collaborate, export, collaborate, export & collaborate* are the four exclusive dummies described above, *X* the vector of control variables (also explained above), and $\varepsilon$ an error term.

To estimate the two equations, we take advantage of the panel structure of our data and use a fixed-effects model, which allows controlling for time-invariant unobserved firm

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[26] HMT includes high-technology industries (e.g. pharmaceuticals, machines and equipment, computer, electronic and optical products) and medium-high technology industries (e.g. electrical machinery, chemicals, motor vehicles, transport equipment). LMT includes low-technology industries (e.g. textiles, food, tobacco, wood, paper) and medium-low technology industries (e.g. rubber and plastics, basic metals, other non-metallic mineral products).

[27] Another relevant control variable would be export intensity. The models were run the models including this variable and the results were similar to those reported in the next section. We decided to exclude it to avoid multicollinearity problems, since export intensity is highly correlated with firm size.

heterogeneity. We choose the fixed effects over random-effects specification to handle the unobserved factors, because the fixed-effects model allows the unobserved firm characteristics to be correlated with the strategy choice and growth variables. Moreover, Hausman (1978) tests were performed and the random effects model was strongly rejected in favour of the fixed effects model.

Additionally, we perform a number of robustness tests. First, we estimate the models separately for the two groups of industries mentioned above (HMT and LMT industries). Second, we run our models according to the age of the firm. We differentiate between young and mature firms by using the median age of firms in our sample, which is 16 years. Third, the models are estimated by including the type of partner involved in the collaboration. We distinguish between cooperation with private firms (customers, suppliers or competitors) and collaboration with publicly funded organisations (universities or research centres) (Nieto and Santamaria, 2010). This allows us to estimate a final model that includes: (1) firms that neither export nor collaborate, (2) firms that only export, (3) firms that only collaborate with private firms, (4) firms that only collaborate with public institutions, (5) firms that export and only collaborate with private firms, (6) firms that export and only collaborate with public institutions, and (7) firms that both export and collaborate with private and public organisations.

## Results

Descriptive statistics and bivariate correlations of our quantitative variables are presented in **Table 2**. Not surprisingly, sales and employment growth are positively and statistically correlated, whereas both firm age and size are negatively related to the indicators of growth.

Table 2: Descriptive statistics and bivariate correlations of quantitative variables

|   |   | Mean | Std. Dev. | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|
| 1 | Sales growth (log) | .040 | .271 | 1 | | | | |
| 2 | Employment growth (log) | -.001 | .211 | -.307* | 1 | | | |
| 3 | Firm age | 20.494 | 17.677 | -.061* | -.059* | 1 | | |
| 4 | Firm size (log employment) | 3.471 | .893 | -.005 | -.075* | .248* | 1 | |
| 5 | Firm size (log sales) | 1.005 | 1.356 | -.052* | .019 | .278* | .830* | 1 |

* Correlation is significant at the 0.05 level.

Next, we present the results of the estimation of the models which account for the individual and joint influence of export and collaboration upon growth. The results of the regression models for sales growth (model 1) and employment growth (model 2) are summarized in **Table 3**. According to the results of the F-test, both sales and employment models are significant. The table shows the results of the estimation which includes all possible four cases in terms of the comparison of single growth-oriented strategies with a combined export and technological collaboration strategy. The omitted category is composed of firms that neither export nor collaborate.

### Table 3: SME growth regression results

| | Model 1: Sales growth | | | Model 2: Employment growth | | |
|---|---|---|---|---|---|---|
| Only export | .032 | (.014) | ** | .013 | (.011) | |
| Only collaborate | -.023 | (.023) | | .009 | (.017) | |
| Export & collaborate | .071 | (.019) | *** | .028 | (.014) | ** |
| HMT sectors | -.055 | (.035) | | -.042 | (.025) | |
| Firm age | .000 | (.001) | | .001 | (.000) | |
| Firm size | -.142 | (.014) | *** | -.073 | (.008) | *** |
| Year fixed effects | Yes | | | Yes | | |
| | | | | | | |
| Hausman test (Chi-squared) | 153.37 | | *** | 120.19 | | *** |
| F-statistic | 19.88 | | *** | 15.76 | | *** |
| Within R-squared | .03 | | | .03 | | |
| Number of observations | 9723 | | | 9723 | | |

Standard errors are in parentheses.
$*p < 0.10$, $**p < 0.05$, $***p < 0.01$

According to hypothesis 1, those SMEs that are engaged in technological collaboration with other firms will achieve higher growth rates. Results from both models 1 and 2 show that there is no significant relationship between collaboration and sales/employment growth, as the coefficients for the "only collaborate" variable is not significant. Thus, we find no support for hypothesis 1.

Hypothesis 2 suggests that there will be a positive relationship between engaging in exporting activities and SME growth. Results of the sales growth model (model 1) support this hypothesis, as the variable measuring "only export" is significantly related to this

measure of growth (p<0.05). However, no significant effects of the only exporting case are found for growth in employment (model 2). Overall, there is mixed support for hypothesis 2.

Hypothesis 3 suggests that SMEs that are engaged in both exporting and technological collaboration will be more likely to grow faster than the rest of SMEs. The results from the two models shows this holds true for both sales and employment growth. The coefficient of the variable measuring export and collaborate is positive and significant at the 1% level for sales growth and at the 5% level for employment growth.

Overall, therefore, there is only partial support to hypothesis 2 and no support for hypothesis 1. Thus, SMEs that are engaged only in exporting activities or collaboration agreements are not likely to grow more than are not. In contrast, hypothesis 3 is highly supported. Therefore, coupling collaboration and export-based internationalization activities has a significant and positive effect on SME growth.

With respect to control variables, results indicate that firm size has a negative and highly significant impact (p<0.01) on both sales and employment growth. Firm age appears to have no significant impact on growth in our sample. While a number of year dummies are significant, no major industry effects are found.

In order to examine if these results are consistent for different groups of firms, a number of robustness tests are considered. Estimates obtained for HMT industries and LMT industries are presented in **Table 4**. Results indicate that SMEs that only export are more likely to grow faster in LMT industries, whereas those that only collaborate do not grow faster than the rest of firms neither in HMT nor LMT industries. However, the variable indicating that the firm is engaged in both export and collaboration activities is found to be positively and significantly related to sales growth in both HMT industries and LMT industries. This variable is also significant (albeit at the

10% level) in the model for employment growth in the group of LMT industries.

Similar results are found when the models are run in two sub-samples in terms of firm age. **Table 5** shows that young firms that only export or only collaborate tend to grow faster in terms of sales. We also find that both young and mature SMEs that export and collaborate at the same time are more likely to achieve higher sales growth than the rest of SMEs. In the model for employment growth, this result is found in the sub-sample of young firms.

Finally, **Table 6** presents estimates for the models that include the type of partner involved in the technological collaborative activity. Again, the results indicate that exporting is positively related to sales growth but not to employment growth and that collaborating does not favour growth. Even we find that collaborating only with private firms has a negative effect on sales growth. However, results show that SMEs that are engaged in both export activities and cooperation with private firms tend to grow faster with regard to sales. Those that export and collaborate with publicly funded institutions are likely to see an increase in both sales and employment (but at the 10% level in the latter case). The strongest statistically significant association in the two models (sales and employment) is found for the variable that accounts for both export and collaboration with private firms and publicly funded institutions. Overall, the results of the robustness tests are consistent with those reported for the core model.

Table 4: SME growth regression results according to the industry sector

| | Model 1: Sales growth | | | | | | | Model 2: Employment growth | | | | | | |
| | LMT sectors | | | HMT sectors | | | | LMT sectors | | | HMT sectors | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Only export | .028 | (.014) | ** | .044 | (.039) | | | .021 | (.012) | * | -.003 | (.021) | |
| Only collaborate | .031 | (.024) | | -.137 | (.056) | ** | | .008 | (.020) | | .009 | (.030) | |
| Export & collaborate | .042 | (.020) | ** | .120 | (.046) | *** | | .034 | (.018) | * | .019 | (.024) | |
| Firm age | -.000 | (.001) | | .001 | (.002) | | | -.000 | (.001) | | .001 | (.001) | |
| Firm size | -.135 | (.014) | *** | -.177 | (.039) | *** | | -.078 | (.010) | *** | -.063 | (.014) | *** |
| Year fixed effects | Yes | | | Yes | | | | Yes | | | Yes | | |
| | | | | | | | | | | | | | |
| Hausman test (Chi-squared) | 131.62 | | *** | 38.38 | | *** | | 98.30 | | *** | 13.95 | | * |
| F-statistic | 20.77 | | *** | 4.99 | | *** | | 12.29 | | *** | 4.99 | | *** |
| Within R-squared | 0.04 | | | 0.04 | | | | 0.03 | | | 0.03 | | |
| Number of observations | 7342 | | | 2381 | | | | 7342 | | | 2381 | | |

Standard errors are in parentheses.
*p < 0.10, **p < 0.05, ***p < 0.01

Table 5: SME growth regression results according to firm age

| | Model 1: Sales growth | | | | | | Model 2: Employment growth | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| | Young firms | | | Mature firms | | | Young firms | | | Mature firms | | |
| Only export | .044 | (.019) | ** | .035 | (.023) | | .026 | (.018) | | -.002 | (.014) | |
| Only collaborate | .050 | (.029) | * | -.110 | (.037) | *** | .039 | (.026) | | -.033 | (.022) | |
| Export & collaborate | .067 | (.028) | ** | .077 | (.029) | *** | .048 | (.025) | * | .004 | (.017) | |
| HMT sectors | -.049 | (.046) | | -.101 | (.057) | | -.049 | (.042) | | -.067 | (.034) | * |
| Firm age | .001 | (.005) | | -.001 | (.001) | | .005 | (.004) | | -.001 | (.001) | |
| Firm size | -.167 | (.018) | *** | -.105 | (.025) | *** | -.122 | (.014) | *** | -.030 | (.011) | *** |
| Year fixed effects | Yes | | | Yes | | | Yes | | | Yes | | |
| | | | | | | | | | | | | |
| Hausman test (Chi-squared) | 115.13 | | *** | 39.23 | | *** | 117.93 | | *** | 21.24 | | * |
| F-statistic | 16.44 | | *** | 6.36 | | *** | 10.50 | | *** | 4.95 | | *** |
| Within R-squared | 0.06 | | | 0.02 | | | 0.04 | | | 0.02 | | |
| Number of observations | 4567 | | | 5156 | | | 4567 | | | 5156 | | |

Standard errors are in parentheses.
*p < 0.10, **p < 0.05, ***p < 0.01

## Table 6: SME growth regression results according to the type of partner

| | Model 1: Sales growth | | | Model 2: Employment growth | | |
| --- | --- | --- | --- | --- | --- | --- |
| Only export | .031 | (.014) | ** | .014 | (.011) | |
| Only collaborate with private firms | -.090 | (.032) | *** | .024 | (.024) | |
| Only collaborate with public institutions | .029 | (.035) | | -.006 | (.026) | |
| Export & only collaborate with private firms | .077 | (.022) | *** | .018 | (.017) | |
| Export & only collaborate with publicly funded institutions | .055 | (.025) | ** | .034 | (.019) | * |
| Export & collaborate with private firms and publicly funded institutions | .082 | (.028) | *** | .049 | (.021) | ** |
| HMT sectors | -.055 | (.035) | | -.042 | (.026) | |
| Firm age | -.000 | (.001) | | .000 | (.001) | |
| Firm size | -.143 | (.014) | *** | -.073 | (.008) | *** |
| Year fixed effects | Yes | | | Yes | | |
| | | | | | | |
| Hausman test (Chi-squared) | 158.48 | | *** | 123.55 | | *** |
| F-statistic | 16.76 | | *** | 12.95 | | *** |
| Within R-squared | 0.04 | | | 0.03 | | |
| Number of observations | 9723 | | | 9723 | | |

Standard errors are in parentheses.
*p < 0.10, **p < 0.05, ***p < 0.01

## Discussion and implications

### Discussion

The objective of this study has been to examine the growth effects of technological collaboration and export-based internationalization in the context of small and medium-sized enterprises. We have used a firm-level panel of data which covers a representative sample of Spanish manufacturing firms with 10 to 200 employees for the period 1998-2006.

The results of our multivariate analysis suggest that firms involved only in export activities will be more likely to have stronger sales growth outcomes but not necessarily in terms of employment growth. This result may be explained by the fact that, in international markets, the growth that occurs may depend on the mode of entry selected for international operations (Brouthers and Nakos, 2004). A firm that internationalizes through exporting modes of entry is more likely to see an increase in sales growth but little to no increase in employment growth (Gilbert et al, 2006), whereas a firm using a FDI mode of entry may see changes in employment before increases in sales occur.

The results also indicate that engaging only in technological collaboration with other organizations is not correlated to sales and employment growth. While technological cooperation may favour the innovation activities of SMEs (Nieto and Santamaria, 2010), we have found that using only this strategy does not necessarily promote firm growth.

In this context, the main contribution of the research has been to explore not only the individual effects of such strategies considered in isolation but also their joint effects on SME growth. Importantly, our findings indicate that SMEs that are involved in both technological collaboration and export are more likely to experience growth. Thus, we find that SME growth is enhanced when firms pursue both strategies, rather than following only one or neither of them. Consistent results for the two growth measures (i.e. sales and employment) and for different groups of firms (i.e. business age, type of industry and type of partner) support the robustness of our findings.

From a resource-based perspective, these findings suggest that the strategic choice involving both inter-firm collaboration and export-based internationalisation may provide access to resources that strengthen SME current resource base, which in turn will positively influences subsequent firm growth. In other words, the joint use of these two strategies may enhance access to resources for SMEs and so promote growth. Hence, they can be

considered complementary activities that may become a means of overcoming resource deficiencies of SMEs and support their development.

Overall, our analysis provides a better knowledge of the joint effects of cooperation and internationalization strategies on SME growth. While prior research has tended to investigate the effect of internationalization and technological collaboration on firm growth separately (Robson and Bennett, 2000; Lu and Beamish, 2001), we have examined the interaction between the two activities in shaping SMEs' growth. Thus, our study is in line with recent research on the strategic determinants of firm growth, particularly on the combined effects between key strategic activities (Filatotchev and Piesse, 2009; Golovko and Valentini, 2011; Filipescu, Prashantham, Rialp and Rialp, 2013). Hence, the findings may be useful to gain a better understanding of strategic behaviours that are likely to have a positive impact on SME growth.

## Practical implications and further research

Our findings may also be helpful for those interested in promoting SME growth and development. For instance, practitioners should be aware that firm growth would be more easily realized by combining internationalization and cooperation activities rather than focusing on them separately. Similarly, these positive synergies may be taken into account in designing public policies. Hence, public support programs could be aimed at promoting both internationalization and cooperation activities.

However, there is a need for future research in this area that examines additional aspects related to these strategies. Since we have focused on export and technological collaboration, it would be necessary to examine the growth effects of other types of foreign entry modes and inter-firm collaborative agreements. Moreover, the key variables of the study (i.e. internationalization and collaboration) have been measured as binary outcomes. Therefore, it would be interesting to examine the growth impact of specific export markets (e.g. EU, USA, Latin America, etc.) and different contractual arrangements (e.g. partnerships, long-term contracts, joint ventures, etc.). Additionally, future research in this area should examine the implications of collaboration and export strategies in terms of firm survival. Finally, we cannot omit the risk of obtaining results which are overly specific to one particular country. Comparative studies drawing on multiple-country samples are more than welcome in internationalization research (Dhanaraj & Beamish, 2003).

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# WHICH SME'S CHARACTERISTICS ARE IMPORTANT IN GEOGRAPHIC DIVERSIFICATION OF EXPORTS?

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## Abstract

The geographic diversification of exports can be seen as a sign of competitiveness and success of the firm in exporting. However, most SMEs export to only a single foreign market, and a small fraction of firms exports to a large number of markets. Our aim is determine which firm characteristics are important in geographic diversification of exports. Specifically we analyse international characteristics (international experience, diversity of exported products and foreign shareholders) and firm´s local-based characteristics (human capital, technological resources and productivity). We use a sample of 97 Spanish SMEs who have exported from 2000 to 2012. Model estimations based on panel data (Panel Corrected Standard Errors) show that all the international characteristics along with a greater availability of technological resources are characteristics which appear to achieve greater geographical diversification of exports.

**Keywords:** Geographic diversification; export; firm characteristics; panel methodology.

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## Introduction

The growing integration of the global economy and the declination of trade-barriers among markets are raising the importance of international diversification for both small and large firms. Small and medium-sized enterprises (SMEs) represent the vast majority of the population of firms. In the European Union (EU-27) this sector represents approximately 99.8 percent of all firms (Eurostat, 2008), and exporting is the most common foreign market entry mode (Majocchi, Bacchiocchi and Mayrhofer, 2005) because it is a faster and easier way to access international markets, in comparison to foreign direct investment.

Entering new markets is what we know as geographic diversification, defined as "*expansion across the borders of global regions and countries into different geographic locations or markets*" (Hitt, Hoskisson and Kim, 1997). Exporting to diverse markets enables the firm to seize new opportunities and diversify the risks associated with export activity (Contractor, 2007). However, there are costs associated with continued geographic diversification, for example limits to the capacity of managers to cope successfully with greater complexity, loss of control and increased inflexibility, difficulties of transferring the firm´s competitive advantages across markets, or inefficiencies arising from lack of adaptability to environmental differences (Williamson, 1975). In this regard, the geographic diversification of exports can be seen as a sign of competitiveness and success of the firm in exporting, so it is an important element in the firm´s overall success.

To be successful in export diversification, firms need to be globally competitive to take advantage of leveraging world markets. Resource-Based View (RBV) (Barney, 1991) locates competitive advantage with the internal capabilities of a firm, so firms adopt strategies that their resources can support (Ekeledo and Sivakumar, 2004).

Previous research has focused on the diversification of international activities of large multinational enterprises (Hitt et al., 1997). However, as Lu and Beamish (2006) say, empirical findings for large firms do not necessarily apply to SMEs.

In the specific case of SMEs, it had been accepted that they exported to few and nearby markets, because their size limited access to the needed resources to reach more and farther markets. Nowadays, however, the profound changes in international markets have enabled size, in itself, not to be an obstacle to diversify exports. However, most firms export to only a single foreign market, and a small fraction of firms exports to a large number of markets

(Lawless, 2009). Thus the underlying question is which firm characteristics are important or necessary in geographic diversification of their exports?

While most previous studies on geographic diversification of exports have focused on the effects of the geographic diversification on firm performance (i.e., Hitt et al., 1997; Capar and Kotabe, 2003; Dastidar, 2009), a critical component of international diversification concerns its antecedents (Hitt, Tihanyi, Miller and Connelly, 2006). Prior research has shown that such variables as size (Autio, Sapienza and Almeida, 2000), product diversification (Chang and Wang, 2007), international experience (Autio, Sapienza and Almeida, 2000; Erramilli, 1991) or human capital characteristics (Tihanyi et al., 2000; Mishina et al., 2004) are positively associated with international diversification of exports, but there are many additional characteristics to explore as potential antecedents of international diversification, especially with longitudinal designs (Hitt et al., 2006).

The aim of this paper is to derive a greater understanding of the determinants of the export diversification of SMEs. Following RBV, we are based on the assumption that the differences in the international diversification result from differing characteristics of firms. In other words, those firms having certain characteristics adopt easier an international diversification strategy. We introduce firm characteristics as determinants of the export diversification, a novelty in this particular SME export literature. Firm characteristics are classified into two categories: international characteristics (international experience, diversity of exported products and foreign shareholders) and firm´s local-based characteristics (human capital, technological resources and productivity). To the best of our knowledge, these characteristics have not to date been considered globally. This objective has been analysed in the geographical context of Spain because the number and importance of SMEs in Spain is generally representative of the average in the European Union. Moreover, this data was most readily available, and allow us to include information from two databases and from 13 years. The period analysed is is from 2000 to 2012. This interval is especially significative because since 2007 the domestic Spanish market suffers great contraction which obliges the firms to international expansion; geographic diversification becomes a condition to survive.

This paper aims to contribute to literature by two ways. First, we use firm level panel data for Spanish SMEs exports distributed on geographic areas instead of countries. Most prior studies focused on the geographic diversification have assumed that unit of analysis to measure the diversification is the country. This paper relaxes that assumption and seeks to further refine the role and impact of the firm characteristics on the exports to different areas or regions,

more than to countries. In essence the underlying premise of this study is that exporting to different areas or regions where social, economic, and legal structures are different from those normally faced may really be what exposes the firm to competitive pressures and greater learning opportunities (Ruane and Sutherland, 2005). Geographic spread exposes the firm not only to a rich array of environmental conditions (e.g., different customers and competitors), but also to a broad range of experiences, ideas, and concepts (Barkema and Vermeulen, 1998; Li and Ng, 2002).

Moreover, our approach is distinguished from other studies by using panel data of continuous exporters. Continuous exporter is considered as a firm who exports every year of certain period. We suggest that there is advantage in this focus. Sporadic exporters are usually focused on the receipt of unsolicited orders from customers overseas, it is a factor in stimulating current export decisions, but it does not implies a further export engagement. Firms do not export regularly will likely contribute less to export growth than continuing firms (Lawless, 2009). And according to Katsikeas (1996) continuous exporters may have developed more internal capability not only to look for attractive foreign market opportunities, but also to respond effectively to a wider range of signals that can stimulate export activity, as contrasted with firms involved in sporadic exporting.

The remainder of the paper is organised as follows. Section two provides the theoretical background and hypotheses for our study. Section three describes the methodology and section four presents the results and discussion. Finally, we conclude with our main conclusions.

## Literature review and hypotheses

To be successful in export diversification, firms need to be globally competitive to take advantage of leveraging world markets. Resource-Based View (RBV) (Barney, 1991) locates competitive advantage with the internal capabilities of a firm, so firms adopt strategies that their resources can support (Ekeledo and Sivakumar, 2004). Resources are generally defined as "all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm" (Barney, 1991: 101). The RBV helps to explain the conditions under which a firm's resources will provide it with a competitive advantage (Barney, 1991). Resources must be valuable, rare, imperfectly imitable and non substitutable. However, one critique to the RBV is the assertion that it is not the value of an individual resource that matters but rather the synergistic combination or bundle of resources created by the firm

(Kraaijenbrink, Spender, and Groen, 2010). In this paper, the term firm characteristics includes all resources, capabilities, attributes or knowledge controlled by a firm and which can constrain or strengthen the geographic diversification of its exports. Through analysing firm characteristics, we can gain a more comprenhensive picture of which ones may play an important role in determining success in export diversification.

In order to provide an integrative view of the most important firm characteristics and to facilitate its presentation, we have agrouped them into two categories: international characteristics (international experience, foreign ownership and diversity of exported products) and firm´s local-based characteristics (human capital, firm productivity and technological resources).

## International Characteristics

International characteristics refer to those characteristics of the firm related to international activity. These include the international experience of the firm, foreign ownership and diversity of exported products.

## Firm Experience

The influence of international experience on the international expansion of firms has been extensively investigated in the literature since the Uppsala Model appeared (Johanson and Wiedersheim-Paul, 1975). However the empirical evidence on this relationship has been focused on large firms (Camisón and Villar-López, 2010).

International experience comes from a learning process based on the gradual accumulation of foreign market knowledge (Johanson and Vahlne, 1990). With increasing international experience, firms acquire greater confidence in their ability to estimate costs and returns, to establish relationships, to overcome national differences in institutional environments and to handle international activities in general, diminishing the uncertainty and favouring commitment to foreign markets (Barkema et al., 1996; Kundu and Katz, 2003; Castellani and Zanfei, 2007). In sum, firms acquire greater confidence in their ability to identify and assess business opportunities offered by countries of greater cultural distances, and consequently, they will not only reach more markets but also more distant and different markets (Chetty, Eriksson, and Lindbergh, 2006; Erramilli, 1991; Durán, 2006).

While international experience is important for all firms, it is more important when firm is small. SMEs must face greater risks than large firms (Camisón and Villar-López, 2010) because the international experiential learning process involves both time and effort.

Experience enables the firm to minimise the cost of errors in a given foreign operation (Kundu and Katz, 2003). Minimizing mistakes is particularly important for SMEs which are characterized by scarcity of resource, the impact of an error is much bigger than for a large firm and could compromise its future diversification strategy.

Hence we postulate the following:

**Hypothesis 1** The geographical diversification of exports will be greater when the international experience of the firm is greater.

### Foreign shareholders.

The influence of foreign ownership on export activity has been investigated in recent papers (Calabrò et al., 2013; Filatotchev et al., 2008; Wignaraja, 2008a; Rasiah, 2003; Du and Girma, 2007). However research on the link between foreign ownership and geographical diversity of exports has generally been missing from these studies.

Given the high uncertainty surrounding international markets compared to the domestic market, risk perception is key factor to explain geographical diversity of exports. Acquisition of sufficient information on foreign markets and operations reduces risk perception, and it is crucial for a firm´s export decision (Leonidou and Katsikeas, 1996). Compared to large-sized firms, SMEs have fewer resources to finance searching for new markets opportunities. Although information on foreign markets can be acquired through various sources, many exporters strongly prefer personal and direct sources of information when they have to decide where to export (Requena and Castillo, 2007). The foreign shareholders are an excellent source of information. First-hand knowledge about opportunities in foreign markets, the trend of demand, and major problems about exporting, reduces risk perception. Foreign shareholders facilitate information gathering and processing, since they are perceived as a reliable and inexpensive information source (Requena and Castillo, 2007). Therefore, information from foreign shareholders could be one of the best ways to learn about profitable opportunities abroad.

Firms with foreign ownership are more likely to access to overseas business networks, it implies make easier the access to finance, to qualified human capital and specialist in export business (Yoshino, 2008). Moreover, foreign shareholders could bring skills, technologies and know-how from their source countries which in turn could improve the efficiency of firm (Esteve, Sanchis and Sanchis, 2004; Yoshino, 2008). Their valuable experience accumulated

in exporting, could be useful not only to the market of origin of the foreign shareholders, but to export to more distant and diverse markets.

In sum, firms with foreign ownership have a superior access to tangible and intangible assets than local firms (Rasiah, 2003). So they show a higher degree of flexibility and a higher ability to seek new markets (Sjöholm, 2000). Thus, we can expect the existence of foreign shareholders makes the geographic diversification of exports easier.

This leads to the formulation of the following hypotheses:

**Hypothesis 2.** The geographical diversification of exports will be greater when the firm has foreign shareholders.

## Product diversification

Product diversification refers to the expansion into new market segments (Li, Quian and Quian 2012). It entails two dimensions: related and unrelated diversification. Related product diversifiers become involved in multiple industries with businesses that are able to tap a common pool of corporate resources (Nayyar, 1992). On the other hand, unrelated diversification involves expansion into product markets that are not related to a firm´s core resource (Rumelt, 1974). We focus on unrelated diversification because according to RBV, compared with related diversification, its main benefits include a more efficient allocation of resources through internal capital markets, and a more consistent performance due the possession of a portfolio of imperfectly correlated businesses (Ng, 2007).

However, it can lead to excessive transaction costs that restrict geographic diversification, resulting in a trade-off between product and geographic diversification (Tallman and Li, 1996). Since SMEs generally suffer from shortages of resources, economies of scale and market power, traditionally it is believed that their businesses are confined to relatively narrow product segments within certain national boundaries (Li, Quian, and Quian, 2012). It is probably for this reason that very few papers have addressed how unrelated product diversification affects the international diversification of SMEs (Li, Quian, and Quian, 2012). But one distinctive characteristic of a SME is its flexibility in adapting to a rapidly changing environment (Camisón et al., 2010). Adaptive capability comes in many forms, such as putting new ideas into action, amending existing products rapidly to explore new markets, and introducing a diversity of products to meet the different cultural and technological standards of the markets they enter (Lu et al., 2010). So, actually, product diversification in combination

with international diversification has become an increasingly important strategy among SMEs (Gnyawali and Park, 2009).

The RBV suggests that product diversification impacts the international diversification of firms through various channels (Chang and Wang, 2007; Hitt et al., 1997). First, experience with product diversification can build managerial capabilities that allow more effective management of international diversification. For example, product diversifiers often use mechanisms to promote cooperation or produce competition among divisions (Hill et al., 1992), and they can apply these structural mechanisms in dealing with diversified activities to facilitate transactions across geographic markets and reduce costs and time in the decision-making process (Kogut and Zander, 1992).

Second, there are greater opportunities to achieve synergies as product-diversified firms expand into multiple markets (Chang and Wang, 2007). For instance, foreign markets provide product diversifiers with better opportunities to gain from the economies of scope and scale than domestic markets (Buhner, 1987). In addition, enhanced efficiency in resources allocation through multinational networks gives product-diversified firms opportunities to exploit the imperfection in factor markets (Porter, 1985).

Moreover, as unrelated diversifications broaden an organization's knowledge base, a diverse knowledge base can increase an organization's 'absorptive capacity' to assimilate a broader range of market opportunities (Ng, 2007). Exploiting this diverse knowledge base provides expansion options in increasingly distant product markets. Hence unrelated diversification may facilitate entrance into new and distant markets.

Thus, from the RBV of the firm, the structures and capabilities developed to implement product diversification strategies can also help implement international diversification (Hitt et al., 1997). Therefore, we made the following hypothesis:

**Hypothesis 3.** The geographical diversification of exports will be greater when the product diversification of the firm is greater.

### Firm´s local-based characteristics

In the previous literature there is no consensus in the classifications of the firm characteristics which influence export diversification. Following and adapting Grant (1991), we group human capital, firm productivity and technological resources, under the denomination of local-based characteristics. Authors agree these resources are crucial for developing and maintaining an export program (Cavusgil and Naor 1987).

## Human capital

International expansion represents a formidable challenge to human capital of the firm (Tihanyi, Ellstrand, Daily, and Dalton, 2000). This challenge is more evident in SMEs characterised by a more active role given to the decision-makers of the firm (Hutchinson, Quinn, and Alexander 2006).

Geographic diversification increases the complexity of the organisation and this complexity, in many cases, makes it difficult to coordinate personnel (Penrose, 1959). This means that managers have to provide better assess firm capabilities suitable for international diversification (Tihanyi et al., 2000). They have to be able to establish effective coordination mechanisms that keep the geographic diversification of the firm under control (Mishina et al., 2004).

Furthermore, continued expansion into more international markets can result in information overload owing to increased transaction costs and cultural diversity. The diversity of information gained, therefore, may require managers to sift through large amounts of data to identify patterns or cues (Zahra, Ireland, and Hitt, 2000).

More highly qualified managers are more capable of identifying and exploiting business opportunities and of avoiding potential threats in the international environment. In addition, geographic diversification may be a consequence of opportunistic behaviour of the more qualified managers. They tend to lead the firm towards geographic diversification, as it may be associated with greater visibility and prestige, along with other managerial benefits (Mishina et al., 2004). Thus, they accept the risk associated with global expansion in exchange for the potential reward of career advancement (Tihanyi et al., 2000).

While entry into similar markets often involves the repetition of already established routines, entry into different and more distant markets means the firm has to creatively recombine existing routines. The entire organisation has to be engaged in this process. Therefore, having qualified staff would have a positive impact on geographical diversification (Mishina et al., 2004). Higher levels of human capital (in terms of the technical skills of the workforce and the education and experience of staff) are associated with faster technological learning and the development of strategies that increase the specific competitive advantages of the firm (Wignaraja, 2008b), which therefore encourage the geographic diversification of its exports. More qualified personnel is more likely to have skills such as the ability to communicate in

foreign languages, to read signals, to solve problems and to understand customers in other cultures.

Personnel with a broad world-view and with a special "cultural sensitivity" may facilitate the appreciation of other cultures, reducing some of the uncertainty associated with the entry of the firm in physically and psychologically distant markets (Tihanyi et al., 2000; Shapiro, Ozanne, and Saatcioglu 2008).

Furthermore, a more skilled labour force contributes to vertically differentiating firm products. So this would be expected to have a positive impact on the geographical diversification of exports because products with different levels of quality can be offered to different markets (Máñez, Rochina and Sanchis, 2008).

Therefore we postulate the following:

**Hypothesis 4** The geographical diversification of exports will be greater when the qualification of human capital is greater.

## Firm Productivity.

The literature also links the involvement of the firms in international trade with their productivity level. Although the available evidence strongly indicates that there are substantial and persistent productivity differences between small and large firms, SMEs have proved that they could be quite successful in competing against large firms in a rapidly changing uncertain environment (Taymaz, 2005).

An extensive body of empirical analysis (such as Delgado, Fariñas and Ruano, 2002; Greenaway and Kneller, 2004; Wagner, 2007a; Greenaway and Kneller, 2007) confirms higher levels of productivity for exporting firms versus non-exporting firms. However information on the link between productivity and geographical diversity of exports has generally been missing from these studies. But this situation is changing and recent works of Andersson, Lööf and Johansson (2008), or Lawless (2009) analyze this issue and suggest that there is a positive relationship between the geographical scope of exports and firm productivity.

There are various arguments to explain a positive relationship between the geographical scope of exports and productivity. On the one hand, only the more productive firms can successfully compete in international markets (Melitz, 2003; Girma, Kneller and Pisu, 2005; Cassiman and

Golovko, 2011), since only they can cover the additional costs of entering new export markets (Roberts and Tybout, 1997; Bernard and Jensen, 1999; and Bernard and Wagner, 2001).

On the other hand, firms with higher productivity are able to improve both products and processes to achieve technical efficiency, scale economies, and a higher technological level, and thus remain competitive (Taymaz, 2005). The stronger competition in foreign markets implies that firms that export to a larger number of foreign markets may have higher productivity than firms that serve a smaller number of foreign markets (Wagner, 2007b; Lawless, 2009; Andersson, Lööf and Johansson, 2008).

Hence, we propose the following:

**Hypothesis 5** The geographical diversification of exports will be greater when the productivity of the firm is greater.

## Information and Communication Technology

In the analysis of the firm characteristics which influence the geographical diversification we cannot forget the role played by the information and communication technologies (ICT). We focused on Internet-based technology (such as email, websites and electronic commerce) because it is *"an enabling technology – a powerful set of tools that can be used, wisely or unwisely, in almost any industry and as part of almost any strategy"* (Porter, 2001, p. 64).

Even when, according to the RBV, the Internet *per se* will rarely be a competitive advantage because this technology is widely used and accessible to all firms, it can be a powerful instrument for competitive strategy and establish itself as a key factor for business success, as long as it complements and enhances strategic resources (Clemons and Row, 1991).

There is a plethora of studies that considers that the Internet could be a useful tool for SMEs, characterized by their limited access to certain resources and markets (Nieto and Fernández, 2005; Loane, 2006; Moodley, 2003; Piscitello and Sgobbi, 2004; Mostafa, Wheeler, and Jones, 2006). However, more discussion about the role that the Internet plays on the expansion of the scope of exports may be required for a better understanding of its impact on international expansion.

One of the major barriers to foreign market expansion perceived by SMEs managers has been the uncertainty about foreign markets. The Internet is a global network, its searching properties are immense. However, the degree of usefulness of the knowledge and information available via the Internet depends on the firm´s absorptive capacity, that is, the *"ability to*

*recognize the value of new information, assimilate it, and apply it to commercial ends*"
(Cohen and Levinthal, 1990, p. 128). Firms have to be able to garner knowledge and
information with regard to their own specific internationalization needs (Loane, 2006). As
such, the Internet holds the potential of reducing the uncertainty associated with doing
business in foreign markets (Petersen, Welch and Liesch, 2002). The Internet has altered the
perception of physical/psychological distance as a barrier to international trade (Freund and
Weinhold, 2004). In the hands of SMEs the Internet may be an instrument that tends to
expand the geographic scope of exports.

In addition, the Internet has the potential to reduce trade costs, including both sunk entry costs
and variable trade costs, and also information asymmetry for some transactions (Afuah, 2003).
For example, Internet access reduces firm´s search cost not only of identifying potential
overseas customers or distributors, but also of evaluating them, so the adverse selection
problem of the Internet can be mitigated. It also reduces cost for collecting other types of
information regarding their overseas market opportunities, hence reducing market entry costs.
At the same time, the Internet could improve efficiency of the international transactions (for
instance, related to shipment), thus reducing variable costs (Freund and Weinhold, 2004;
Petersen, Welch, and Liesch 2002).

Furthermore, when a firm exports to multiple geographic markets, it faces lower degrees of
similarity between the environmental elements dealt with (Aldrich, 1979), it coordinates more
activities and resources and handles more complex information flows than single-market firm.
Internet-based technology may cope with this informational complexity (Sandulli et al., 2010).

Moreover, the Internet-based technology is likely to facilitate rapid and simultaneous entry
into a large number of foreign markets. The Internet is configured as a new distribution
channel that firms can use to sell their products/services directly to consumers (Clarke, 2008).
So firms can penetrate foreign markets via the Internet without involving themselves in
substantial and irrevocable foreign investments (Petersen, Welch, and Liesch 2002).

This leads to the formulation of the following hypotheses:

**Hypothesis 6** The geographical diversification of exports will be greater when the availability
of Information and Communication Technologies in the firm is greater.

## Methodology: sample, variables and their measurement

## Sample and Data Sources

The target group of analysis was small and medium-sized (SMEs) continuous exporters. We follow the definition of SMEs used in the European Commission Recommendation 2003/361/EC[28]. Moreover, in accordance with Greenaway et al. (2007) "continuous exporters" are those firms that exported every year during the period under study. We focus on them because continuous exporters are more dependent on export market operations for their business than firms involved in sporadic exporting (Katsikeas, 1996).

We collected data primarily from two sources. First, the Spanish Chambers of Commerce, which, in collaboration with the Spanish Tax Agency, prepare the Directory of Spanish Import and Export Firms. It provides annual information on each exporting firm from 2000 to 2012 with regard to its export markets; exported products and the firm's website. And, the second source is the Iberian Balance Sheet Analysis System (SABI), a database elaborated by Bureau van Dijk, which provides annual financial information on Spanish firms. In both cases firms are identified by their tax ID, so that databases can be merged.

The data on each exporter was compiled annually (2000-2012) and we obtained a final sample of 97 SME exporters from Aragón (Spain) for whom all the necessary information was available). Aragón is a region located in the northeast of Spain, besides being the region from where the authors come from, it shares similar characteristics with the rest of Spain, regarding the main export destinations and characteristics of the companies. The other reason for choosing Aragón for this research is its strategic geographic location, connecting the most important Spanish cities and the rest of Europe.

As our objective was to identify which SMEs' characteristics favour the geographic diversification, a delay period was included to avoid the problem of endogeneity and we constructed a panel of data consisting of 1164 observations (97 firms x 12 years). The number of foreign markets is 178 countries, the number of foreign markets provided by these firms ranged from one to 90, with the average being 12.16. This range in foreign markets indicates our sample captured firms with varying levels of geographic diversification, as we required to test our hypotheses.

## Variables

Dependent variable: Geographic diversification reflects the breadth or multiplicity of foreign markets served by the firm. Previous studies, such as Tallman and Li (1996), have used the number of countries as a measure, but it does not inform us about the cultural, economic,

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[28] According to the European Commission Recommendation 2003/361/EC, enterprises employing less than 250 persons and having an annual turnover of less than 50 million euros, and/or an annual balance sheet total less than 43 million euros are regarded as SMEs.

political and social diversity. So to capture those differences, researchers have been grouping countries into global regions for the past few decades (for instance, Hitt et al., 1997; Delgado, Ramírez and Espitia, 2004). Following the criteria of the Secretaría de Estado de Comercio Española (El sector exterior 2008, 2009), we group markets into eight relatively homogeneous geographic areas: the eleven Euro area countries (EU-12, Spain excluded); the rest of the European Union (EU-27); the rest of Europe; Latin America; North American countries not included in the above areas; Asia; Africa; and Oceania[29]. This categorization is based on the political, social and economic conditions existing in each country during the study period, in order to maintain homogeneity within each group. So the geographic diversification is measured by the number of geographic areas the firm exports.

Explanatory Variables: We used six independent variables, one for each hypothesis.

To measure firms' **international experience**, we took the natural logarithm of the number of their export markets, reflecting the assumption that firms learn from their previous international experiences at a decreasing rate (Barkema et al., 1996).

A dummy variable was used to reflect the presence of **foreign shareholders** in the firm. It took the value one for firms with foreign shareholders and zero otherwise (Greenaway et al., 2007).

**Product diversity** was measured on the basis of the Combined Nomenclature[30] (Requena and Castillo, 2006). We measured the unrelated diversification by the natural logarithm of the number of two-digit level exported products.

We measured the level of qualification of **human capital** by means of the natural logarithm of the annual salary per employee in thousands of euros, following Bernard and Jensen (2004).

**Productivity** was measured by the natural logarithm of the average sales per employee (Ruane and Sutherland, 2005; Wagner, 2007a) in thousands of euros. More appropriate measures of productivity like value added per hour worked cannot be computed because of a lack of information on hours worked.

To capture the implementation of **Internet–based technologies** we used a dummy variable, which takes the value one for firms with a website in different languages (at least in English

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[29] We also included one area for non specified destinations.
[30] The Combined Nomenclature (CN) is the products nomenclature used by the EU, which is based on the internationally widely used Harmonized System (HS) Nomenclature. HS product chapter consists of two-digit codes, HS heading and subheading consist of four-digit codes and these are further refined by CN subheadings defined up to the 8-digit level. Unfortunately, the only export information available at firm level is at the two-digit level.

and Spanish), and zero otherwise. Although we are aware that there are better measures, unfortunately they are not available for us.

Control variables: Finally, we also included as control variables the firm size and the industry. The size of the firm represents the physical and financial resources of a firm and is frequently used as a proxy for competitive positioning within an industry (Li et al., 2012). We measure firm size using the natural log of the number of workers (Hansson and Lundin, 2004; Goerzen and Beamish, 2003). We controlled for the industry-specific effect in the analysis. Recent studies have argued that the geographic diversification for manufacturing firms is different from that for service firms (Capar and Kotabe, 2003). The industry variable was a dummy that takes the value one for manufacturing firms and zero otherwise (Chang and Wang, 2007).

All independent and control variables were included with a one-year lag to reduce the potential problem of endogeneity. The descriptive statistics of the variables are presented in Table 1. There are 1,164 observations over the period 2000-2012, and the average of foreign areas provided by these firms is more than four. The correlation matrix and the variance inflation factors (VIF) of the variables are shown in Table 2. The VIF values range from a low of 1.16 to a high of 1.48, with the highest value well below of the limit of 10 recommended by Hair, Anderson, Tatham and Black (1999). Therefore, it can be assumed that there are no multicollinearity problems.

## Table 1. Descriptive Statistics

|  | Mean | SD |
|---|---|---|
| **Geographical diversity** $_t$ | 4.137 | 2.232 |
| **Firm experience (in log)** $_{t-1}$ | 2.006 | 1.028 |
| *Firm experience (nº)* $_{t-1}$ | 12.165 | 13.061 |
| **Foreign shareholders** $_{t-1}$ | 0.0722 | 0.259 |
| **Product diversity (log)** $_{t-1}$ | 1.008 | 0.768 |
| *Product diversity (nº)* $_{t-1}$ | 3.768 | 3.835 |
| **Human capital qualification (in log)** $_{t-1}$ | 3.359 | 0.364 |
| *Human capital qualification (€1,000)* $_{t-1}$ | 30.653 | 11.023 |
| **Productivity (in log)** $_{t-1}$ | 5.210 | 0.818 |
| *Productivity (€1,000)* $_{t-1}$ | 306.959 | 695.041 |
| **ICT** $_{t-1}$ | 0.753 | 0.432 |
| **Manufacturing sector** $_{t-1}$ | 0.680 | 0.467 |
| **Firm size (in log)** $_{t-1}$ | 3.317 | 0.982 |
| **Firm size(nº)** $_{t-1}$ | 42.771 | 41.732 |

SD: Standard Deviation.

Absolute values are presented to facilitate comparison with other studies.

**Table 2. Correlation Matrix and VIF\***

| Variables | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | VIF |
|---|---|---|---|---|---|---|---|---|---|
| 1-Firm Experience | 1.000 | | | | | | | | 1.36 |
| 2-Foreign Shareholders | 0.042 | 1.000 | | | | | | | 1.18 |
| 3-Product Diversity | 0.304 | 0.104 | 1.000 | | | | | | 1.27 |
| 4-Human capital qualification | 0.138 | 0.102 | 0.100 | 1.000 | | | | | 1.30 |
| 5-Productivity | 0.016 | 0.224 | 0.222 | 0.409 | 1.000 | | | | 1.48 |
| 6-ICT | 0.122 | -0.209 | 0.147 | 0.126 | -0.0795 | 1.000 | | | 1.16 |
| 7-Manufacturing Sector | 0.140 | -0.065 | -0.113 | 0.049 | -0.292 | 0.171 | 1.000 | | 1.23 |
| 8-Firm Size | 0.376 | 0.167 | 0.061 | -0.038 | -0.157 | 0.128 | 0.293 | 1.000 | 1.35 |

*\*VIF: Variance Inflation Factors.*

## Model selection

Because the data set in this study has both a time series dimension (13 years) and a cross-sectional dimension (97 firms), we use the panel data technique. This methodology has advantages over cross-sectional models employed in most previous international field studies: it reduces collinearity among the explanatory variables, thus improving the efficiency of econometric estimates; and it also allows take into account a greater degree of the heterogeneity that characterizes firms.

As our objective is to identify the factors influencing the geographic diversification strategy for exports, we lag the independent and control variables by one year. According to Dau (2013) this is important to ensure that it is a change in the independent variables that leads to different levels of the dependent variable, and not that the relationships are spurious or due to reverse causation. In addition, this reduces the potential problem of endogeneity of explanatory variables (Cassiman and Golovko, 2011). The model is specified as follows:

$$GD_{i,t} = \alpha + \beta_1 \, EXP_{i,t-1} + \beta_2 \, FOR_{i,t-1} + \beta_3 \, DIVP_{i,t-1} + \beta_4 \, QUALIF_{i,t-1} + \beta_5 \, P_{i,t-1} + \beta_6 \, ICT_{i,t-1} + \sum_j \gamma_j \, CV_{i,t-1\,j} + \varepsilon_{i,t}$$

Where *GD* is the *g*eographic diversification variable (the number of areas the firm exports to); the subscripts *i* and *t* refer to firm and time, respectively; *j* stands for control variable *j* in the equation (i.e., firm size, manufacturing sector dummy and year dummies); $\alpha$ is the constant; $\beta$

stands for the coefficients of independent variables; $\gamma$ stands for the coefficients of control variables; *EXP* is a proxy for firm international experience; *FOR* is a dummy to control for the foreign shareholders; *DIVP* is a proxy for firm product diversification; *QUALIF* represents the human capital qualification; *P* is a proxy for firm productivity; *ICT* is a proxy for firm ICT; *CV* represents the control variables; and $\varepsilon$ stands for the error term.

To test the model we apply panel methodology with sector and time effects, using the STATA 13.0 statistical program. First we compare the pooled data model versus the random effects, via the test formulated by Breusch and Pagan (Lagrange multiplier test for random effects). The results of this test indicate the existence of effects. The next step is to perform the F significance test for fixed effects; the results indicate that it is preferable to use the fixed effects rather than the grouped model. The Hausman test result shows that the difference between the random and fixed effects coefficients is systematic, and therefore the fixed effects method should be used (Hausman, 1978). Moreover, we perform the necessary tests to detect possible model specification problems. First we apply the modified Wald chi-squared test for heteroscedasticity, and it is confirmed. Wooldridge`s (2002) test for autocorrelation in panel data also indicates that there is a problem of autocorrelation. Since our dataset has more panels than time periods (97 panels and 12 time periods), Feasible Generalised Least Squares (FGLS) is ruled out (Beck and Katz 1995, 637), so we estimate the model using Panel Corrected Standard Errors (PCSE), as this statistical method enables us to solve both heteroscedaticity and autocorrelation problems.

## Results and discussion

We show the results for the final fixed effects model in Table 3. Our results for the international characteristics show a good alignment with the RBV reasoning that underlies much of the recent research on the relationships between geographic diversification and international characteristics

## Table 3. PCSE Model Estimation Results*

| Variable | Coefficient | Standard Error |
|---|---|---|
| Firm experience $_{t-1}$ | 1.606*** | 0.445 |
| Foreign shareholders $_{t-1}$ | 0.464** | 0.156 |
| Product diversification $_{t-1}$ | 0.135* | 0.055 |
| Human Capital qualification $_{t-1}$ | -0.320 | 0.124 |
| Productivity $_{t-1}$ | -0.032 | 0.058 |
| ICT $_{t-1}$ | 0.598*** | 0.099 |
| Manufacturing sector $_{t-1}$ | 0.456*** | 0.105 |
| Firm size $_{t-1}$ | 0.051 | 0.049 |
| Constant | 1.062 | 0.456 |
| Year Dummies Included | | |
| Wald Chi-square | 2257.72*** | |
| R-squared | 0.630 | |
| Number of observations | 1164 | |
| Number of firms | 97 | |
| Time periods | 12 | |

*Prais-Winsten regression, heteroscedastic panels corrected standard errors (PCSE).
Significance of the coefficients according to the Wald Statistic: *** if $p < 0.001$; ** if $p < 0.005$; * if $p < 0.01$.
Ommited sector is service sector. This is to avoid the problem of collinearity.

Hypothesis 1 predicts that geographic diversification will be greater when **International experience** is greater**.** The results fully support this hypothesis as the coefficient of the variable is positive and statistically significant (EXP = 1.606, p<0.001). This result is in

keeping with the majority position in the literature, according to which, international experience provides knowledge that facilitates the identification and assessment of opportunities offered by markets of a greater cultural distance (Durán, 2006) and increases the probability to enter into multiple markets (Kundu and Katz, 2003; Erramilli, 1991).

Also hypothesis 2 that predicts that foreign shareholders have a positive impact on geographic diversification is supported (FOR = 0.464, p<0.005). The results show that the existence of foreign shareholders increases significantly the geographic diversification. The knowledge and experience of foreign shareholders in the firm is usually regarded as a highly useful business resource due to the exchange of knowledge involved.

Hypothesis 3 predicts that geographic diversification will be great when the unrelated diversification is greater. The results support this hypothesis as the coefficient of the variable is positive and statistically significant (DIVP = 0.135, p<0.01). Product diversification increases opportunities for access to different geographical areas, not only providing resources, but also possibly these resources could be more stable (Ramírez-Alesón and Espitia-Escuer, 2001). This result is in keeping with that obtained previously by Bernard et al (2007), they found a positive and statistically significant correlation between the number of products that firms export and the number of countries they export to.

On the other hand, the qualification of human capital does not seem to have a statistically significant influence on the geographic diversification of exports, thus Hypothesis 4 is rejected.

Hypothesis 5 predicts that the **productivity** of the firm has a positive impact on geographic diversification. However, the results indicate that productivity does not seem to have a significant influence on geographic diversification; so this result does not support the Hypothesis 5. This seems to indicate that a hierarchy of markets may exist. Firms begin to export to more popular markets. As productivity increases firms will tend to enter in less popular markets. This implies that firms will tend to progressively sell less in each additional market as they move down the hierarchy. In addition, as productivity increases firms will tend to increase their sales more in markets that are higher up the hierarchy; so export growth at the firm level would come more from adding to sales in existing markets than from sales in new markets.

Hypothesis 6 predicts that the implementation of Internet-based technologies is positively associated with geographic diversification. The results fully support this hypothesis as the

coefficients of the variable is positive and statistically significant (ICT = 0.5982, p<0.001). ICTs are consolidated as an influential factor in the decision to geographically diversify firm exports because, in accordance with Petersen et al. (2002), the Internet is a tool that can reduce one of the main obstacles to international diversification, such as the uncertainty in foreign markets.

Finally, with respect to the control variables, we obtain only industry effects on growth in international diversification, while firm size is not statiscally significant.

## Conclusions

In the current business environment, expansion into international markets is no longer a competitive advantage for most firms, it is an economic necessity. Firm must be able to take advantage of international opportunities to successfully survive in a complex, global environment. The finding of this paper suggests that certain firm characteristics may play an important role in the international diversification of corporate operations.

In constrast to earlier empirical research on internationalization of firms, this study focuses on the effect of firm characteristics on the geographical diversification of exports, providing a significant explanation of the firm´s geographical diversification. Our results confirm that certain characteristics encourage further geographical diversification. Specifically, our estimates show that international characteristics as firm experience, foreign shareholders and a great number of products exported, along with local-based characteristics like a greater availability of technological resources, are characteristics which appear to achieve greater geographical diversification of exports.

This study also shows that the qualification of human capital and productivity of the firm do not seem to significantly influence geographical diversification. Probably because the firms involved in the international arena already have a high level of qualification of human capital and a high level of productivity, which dilutes the potential impact it may have on the diversification of exports.

However we have to be very careful with the interpretation of these results. Our estimations have one year lag, and probably the effects of certain characteristics are not in the short time, but it is necessary a longer period to evaluate their effects. By example, the ausence of effect of the productivity on geographical diversification could be reflecting that those changes in this resource, no have been assimilated totally by the firm. Therefore, firm needs more time, to see the effect of these characteristics on geographic diversification.

Our findings also have implications for managers because managers are risk averse, venturing across borders evolves slowly and cautiously (Sapienza, Autio, George and Zahra, 2006). The results suggest that, to get a high geographical diversification, a firm must develop processes to promote certain characteristics. This study can be a useful guide for entrepreneur managers.

Thus, the results are of interest, but require further investigation to try and overcome some of the limitations they present. We measured firm´s characteristics based on secondary data. So, although they have been used as approximations for typical business characteristics usually measured in the literature, some of those presented need improving. However, it should be noted that the availability of data for Spanish SMEs is still quite restricted.

Despite these limitations, this work is an attempt to advance the study of geographic diversification as an objective for firms who want to succeed in the international arena. This is particularly so for the Spanish SME, which in recent decades has acquired significant international importance and today are driving the crisis recovery.

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# PART 6: NEW VENTURES AND ENTREPRENEURSHIP

# A PROCESS VIEW OF NEW VENTURES INTERNATIONALIZATION: CAPABILITIES, ALERTNESS AND THE MODERATING ROLE OF TECHNOLOGICAL TURBULENCE

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## Abstract

This research is based on the perception that the explanation of International New Ventures' (INVs) performance demands a process view, going deeper than the standard approach, in empirical papers, of testing a direct relationship between company-level antecedents and performance. In line with Aspelund, Madsen & Moen (2007) and Keupp & Gassmann (2009) arguments, a three-tier model was developed to investigate the process leading to INVs international performance. Based on the dynamic capabilities framework, entrepreneurial alertness was envisaged as the mediating element between several firms' capabilities (such as entrepreneurial orientation, foreign market knowledge and absorptive capacity) and their international performance. On the other hand, two environmental factors (competitive intensity and technological turbulence) were identified as possible moderators of the relationship between entrepreneurial alertness and international performance.
In order to test empirically the structural model, primary data was collected through an online structured questionnaire, using the key-informant technique. The initial population consisted of a multi-industry set of Portuguese new ventures founded between 2000 and 2009, which remained active in 2009, employed more than 5 people, and exported at least 10% of turnover in 2009. A total of 1993 firms were found to be eligible and a total of 416 usable responses were received (20.9% response rate).
Empirical research confirmed the hypothesized model. Firms' capabilities significantly influence the level of entrepreneurial alertness, which impacts on company international performance. On the other hand, from the two moderation effects hypothesized, only the one related to technological turbulence was confirmed. The paper makes three contributions to International Entrepreneurship literature. First, it highlights the key role played by entrepreneurial alertness in explaining INVs' international performance. This is convergent with the dynamic capabilities view on firms' ability to sense and seize specific international business opportunities. Second, it shows that alertness is based on a set of first order capabilities, namely entrepreneurial orientation, foreign market knowledge, and absorptive capacity that simultaneously leverage and constrain alertness as a key element to foster INVs' higher performance. Third, it underlines the role of technological turbulence as a moderator of the relationship between entrepreneurial alertness and INVs' international performance.

**Keywords:** international entrepreneurship; international new ventures; international performance; dynamic capabilities; entrepreneurial alertness; technological turbulence.

# OPPORTUNITY ENTREPRENEURSHIP AND INTERNATIONALIZATION IN EMERGING COUNTRIES: EVIDENCE FROM OWNER-MANAGERS' PERCEPTION OF INSTITUTIONS IN BRAZIL

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## Abstract

Institutional studies based on cross-country comparisons and founded on a determinist perspective analyse the influence of institutions on individuals' behaviour in emerging economies. The current research in contrast looks to new institutional economics and the literature on entrepreneurship to pose two research questions based on individuals' discretion: How does the SME owner-manager's perception of the institutions influence their decision to embark on international operations? And: What role does opportunity motivation play in the impact of those perceptions on the decision to internationalise? The authors analyse a sample of 296 owner-managers who founded their businesses in the Federal State of Sergipe (Brazil), and the results confirm that the individual's perception of the normative and regulative institutions, the interaction between the two, and the interaction between the normative and cognitive institutions, explain the decision to embark on international operations. Opportunity motivation mediates the impact of the normative institutions on that decision.

**Keywords:** Institutions, Internationalization, Emerging countries, SMEs, Opportunity entrepreneurship, Brazil.

The international business literature has focused on large firms founded in advanced economies and with direct investment in countries in a similar economic context (e.g., Chan and Makino, 2007) or in emerging economies (e.g., Meyer and Nguyen, 2005; Meyer et al., 2009). The knowledge accumulated to date in this area is insufficient to understand the international behaviour of firms from emerging economies (Luo and Tung, 2007; Goldstein and Pusterla, 2010). For example, the previous literature has identified as key variables in international expansion processes ownership advantages, geographical resources and the development of the institutional environment, and the economic openness of the country – e.g., inward foreign direct investment, or inward FDI (Luo and Tung, 2007). For Yiu, Lau and Bruton (2007), however, the scarcity of resources available to emerging economies makes it is advisable to reconsider the role of ownership advantages in these contexts. In turn, the positive influence of inward FDI on firms' internationalisation is not always direct due to the existence of obstacles such as the limited absorption capacity of the local firms common in emerging economies (Cantwell, Dunning and Lundan, 2010). Thus researchers are showing increasing interest in understanding the factors that can explain internationalisation in large firms from emerging countries (e.g., Luo and Tung, 2007). The study of internationalisation in SMEs is still pending, Cheng and Yu (2008) being an exception.

SMEs are particularly important in emerging economies because their growth and internationalisation boost economic development in the country (Acs and Amorós, 2008). With regards the antecedents of internationalisation and given that traditional factors cannot fully explain it, other variables of an institutional nature should be considered (Peng, Wang and Jiang, 2008). The previous research, guided by the more traditional versions of institutionalism, considers the institutional structures to be stable external conditions (Peng et al., 2008) and analyses, in isolation, the effects of the regulative – e.g., laws – normative – e.g., cultural values – and cognitive – e.g., socially acceptable business practices – dimensions (e.g., Meyer et al., 2009). Moreover, this research takes a macro (cross-national) perspective and uses a deterministic focus to identify the influence of these dimensions on MNEs' international operations (e.g., Meyer et al., 2009; Chan and Makino, 2007).

The more recent versions of institutionalism, however, establish a bridge between the macro and micro levels of analysis by accepting the fundamental role of the individual actors in the adoption of business decisions (North, 1990, 2005). The new focus aspires to connect the

patterns of economic growth with the motives and actions of the individual actors (North, 1990), accepting the importance of the individual's perception of their environment and their agency capacity (Jackson and Deeg, 2008; Meyer et al., 2009). In this respect, Dunning and Lundan (2008: 580) argue that the firm's international activity "[…] rests on the information processing of the individual entrepreneur". In SMEs, the decision to internationalise may be related to the owner-manager's opportunity motivation and knowledge (Madsen and Servais, 1997; Zahra, Korri and Yu, 2005), particularly in emerging economies (Luo and Tung, 2007). The entrepreneurship literature too stresses the importance of entrepreneurial motivation (e.g., Busenitz, Gomez and Spencer, 2000; Dunkelberg et al., 2013; Zahra et al., 2005). This motivation, in addition, may be conditioned by the institutional framework of the organisational field (Trevino, Thomas and Cullen, 2008; Stenholm, Acs and Wuebker, 2013).

On the basis of the above, the current study aims to explain from an institutional perspective the decision to internationalise in SMEs founded in emerging economies while accepting the important role of the individual. Specifically, the authors aim to respond to the following two research questions: (1) How does the SME owner-manager's perception of the institutions influence their decision to embark on international operations? And: (2) What role does opportunity motivation play in the impact of those perceptions on the decision to internationalise? For this purpose, the authors have carried out an empirical study in Brazil, an emerging economy that has seen increasing internationalisation in its MNEs (Abreu Campanario, Stal and Muniz da Silva, 2012) and SMEs (Cyrino, Barcellos and Tanure, 2010). Likewise, bearing in mind Jackson and Deeg's (2008) warning that the different institutional frameworks can have distinct strengths and weaknesses for different sectors, it is advisable to choose a specific sector in order to consider the contingent nature of the institutions. Thus the current work looks at the tourism sector, since it is a strategic sector in the socio-economic development of emerging economies (Liu and Wall, 2006). The tourism sector can increase firm internationalisation in a country via the activity of its MNEs – e.g., hotel chains, tour operators – and SMEs – e.g., firms that organise recreational activities such as golf and scuba diving, tourism consultants in specialised architecture for hotels, etc.

## Country background: institutional change and FDI in Brazil

Emerging economies are countries "whose national economies have grown rapidly, where industries have undergone and are continuing to undergo dramatic structural changes, and whose markets hold promise despite volatile and weak legal systems" (Luo and Tung, 2007: 483). Brazil is therefore an emerging economy, although its high income also makes it a

BRIC country – Brazil, Russia, India and China. The country is 79th out of 174 countries in its human development index, and its Gini index (0.518) lies almost exactly halfway between 0 – income and consumption distributed equitably – and 1 – a hypothetical situation in which one person possesses all the wealth in the country (United Nations Development Programme Report 2010).

Brazilian firms have internationalised increasingly since the 1990s in the wake of institutional changes such as liberalisation and economic stability (Cyrino et al., 2010). Its outward FDI has grown continually since that time except in 2009, when the global economic crisis led Brazilian MNEs with foreign subsidiaries to repatriate capital (Abreu Campanario et al., 2012). SMEs from the country have also been internationalising, entering global niches either encouraged by international customers or on their own initiative. In view of Brazil's institutional weaknesses, the internationalisation of its SMEs has been based on low-cost products and services, and the target countries are usually other emerging economies (Tracey and Phillips, 2011). Many SMEs with strong local characteristics – e.g., restaurants, specialist trade – have chosen their target countries on the basis of cultural and institutional factors (Cyrino et al., 2010). Nevertheless, the growth in Brazil's outward FDI and international trade has been weaker than that of the other BRIC countries because its institutional framework has not evolved sufficiently to support expansion abroad – e.g., absence of port reforms, inadequate tax regulation (Abreu Campanario et al., 2012). In Brazil, each unit of inward FDI is associated with a greater increase in economic development than in some advanced economies (UNCTAD, 2012), so clearly the international expansion of Brazilian firms is not only related to the development of ownership advantages deriving from foreign investment (Goldstein and Pusterla, 2010) but also to institutional factors, as authors have noted for emerging economies (Peng et al., 2008). This underlines the interest in studying the factors that may influence the decision to expand firms internationally, which may be particularly critical in the less developed parts of the country. Brazil is made up of 27 federal states; Sergipe is one of the least developed and it has one of the lowest levels of internationalisation among its firms (Figure 1).

**Figure 1. Maps of Brazil and state of Sergipe**
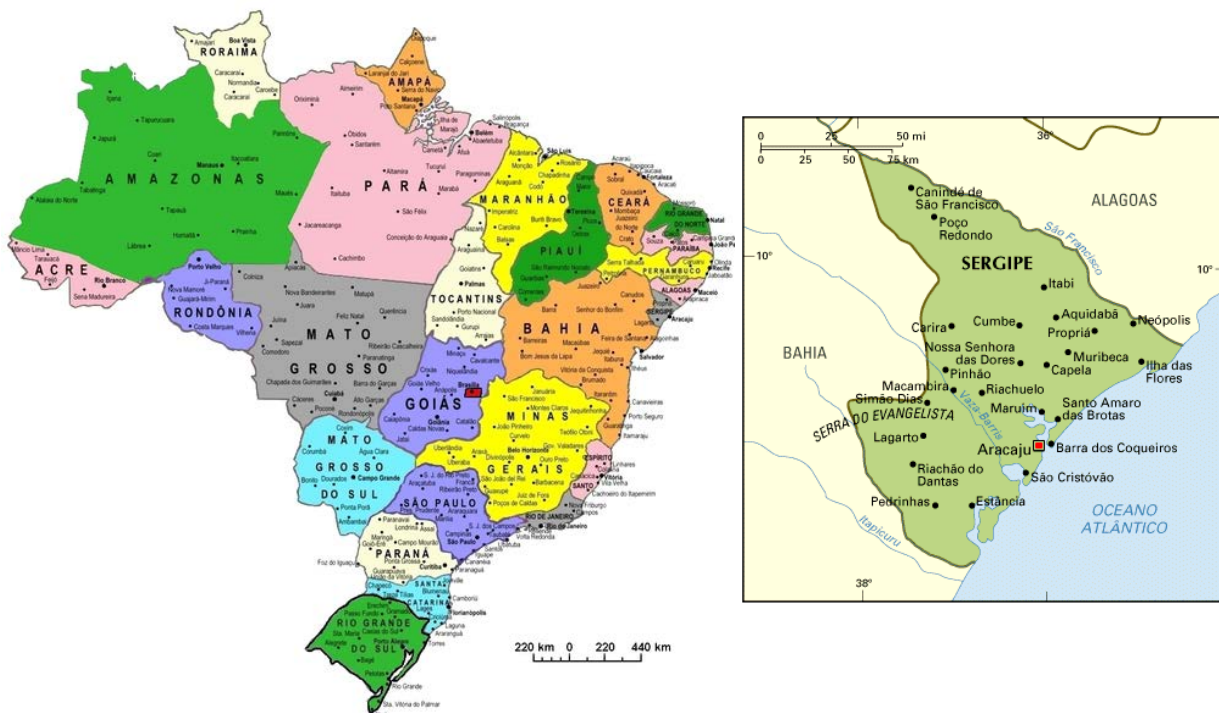


From the socio-cultural perspective, Sergipe is home to 1.06% of the Brazilian population, while its surface area represents 0.26% of the national territory, making its population density high (Table 1). The state has a higher proportion of its population living in rural areas than the country as a whole. In economic terms, Sergipe obtains 1.47% of total federal transfers, although its investment spending represents only 0.08% of the national total. The state's per capita GDP lies at under 60% of the national figure. Moreover, despite housing 1.06% of the Brazilian population, it is home to only 0.53% of its registered firms. The employment structure reflects this lower level of entrepreneurship because its total working population represents 0.79% of the national level, with this figure rising to 0.83% when considering only workers in employment. With regard to economic diversification, Sergipe's economy is based on the extractive and productive industries and the tertiary sector, with tourism being of particular importance because of the state's attractive coastline. The state's contribution to the national value added lies at under 0.69% in all the above-mentioned activities. Sergipe's firms export less than average too. Despite possessing 0.53% of the country's firms, its exports amount to only 0.04% of national exports (the state is only the 25th biggest exporter out of 27). Nor do imports point to an economy open to the outside world: they reach only 0.12% of the country's imports as a whole. Finally, during the period 2000-2009 Sergipe captured only

0.05% of the foreign capital invested in Brazil. Clearly this low figure casts some doubt on the impact of foreign capital investment on firm internationalisation in this state.

**Table 1. Socio-economic variables in Sergipe, Brazil (2009)**

| Socio-cultural variables | Sergipe | As % of Brazil total | Economic variables | Sergipe | As % of Brazil total |
|---|---|---|---|---|---|
| Surface area (km$^2$) | 21915.116 | .26 | Per capita GDP (000 reales) | 9787 | 57.63 |
| Total population | 2019679 | 1.06 | Gross value added agriculture current prices (000 reales) | 1045374 | .68 |
| Female population (%)_2010 | 51.40 | 43.63 (mean Brazil) | Gross value added industry current prices (000 reales) | 4963047 | .69 |
| Rural population (%)_2010 | 26.48 | 15.63 (mean Brazil) | Gross value added services current prices (000 reales) | 11771659 | .69 |
| Poverty index (%) 2003 | 47.80 | ---- | Working population, employed and self-employed | 369155 | .79 |
| GINI index 2003 | .50 | .555 (mean Brazil) | Working population, employed | 335192 | .83 |
| ---- | ---- | ---- | Number of firms | 26515 | .53 |
| **Variables relating to public income and spending** | **Sergipe** | **As % of Brazil total** | **Variables relating to foreign sector** | **Sergipe** | **As % of Brazil total** |
| Income federal transfers (000 reales) | 1222989 | 1.47 | Exports US$ FOB | 60729971 | .04 |
| Income capital transfers (000 reales) | 42791 | .64 | Imports US$ FOB | 153309997 | .12 |
| Investment spending (000 reales) | 198080 | .08 | Foreign capital in Brazil: Foreign direct investment stock_2000 (inflows) | 48269 | .05 |

Source: Brazilian Institute of Geography and Statistics (IBGE), Brazilian Central Bank, Brazilian Ministry of Foreign Trade.

## Literature review and hypotheses

### Institutions and individual's institutional perceptions

Traditional institutional theory argues that individuals' behaviour responds to the ideas and beliefs emerging in a specific institutional context, and that individuals must adapt to this context if they wish to succeed (North, 1990; Scott, 1995). Specifically, the institutions

represent the rules of the game of the organisational field and determine the viability of participating in an economic activity and its associated transaction costs (North, 1990, 2005). Entrepreneurs take on the role of players (North, 1990). The strategy they adopt will be determined by the opportunities created by the institutional framework (Meyer and Nguyen, 2005). North (1990) distinguishes between two types of institution: formal – e.g., laws – and informal – e.g., cultural values. Scott (1995) classifies these institutions in three dimensions: regulative, normative and cognitive. The regulative dimension includes the laws and policies formulated by the government to encourage certain types of behaviour and discourage others (Scott, 1995), for example openness to international trade, incentives to firm expansion. The normative dimension includes the social values about acceptable human behaviour. These institutions not only define socially acceptable objectives – e.g., earn profits – but also the right ways of achieving them – e.g., acceptance of black economy, corruption, etc. (Huang and Sternquist, 2007). Scott (1995) argues that the entrepreneur's behaviour is guided not only by their own interest but also by their social consciousness. The cognitive dimension reflects the business and economic knowledge the organisations of the country or region share and includes the decisions taken and structures designed successfully by other organisations (Lu, 2002). These elements help the decision-maker to choose between acceptable options in the face of a certain level of uncertainty (Manolova, Eunny and Gyoshev, 2008).

For the most recent institutionalism, in turn, the individual takes on a more active role. In fact, the individual may accept the current institutions, but also may adapt to them, ignore them, or even mobilise their own resources to modify them if they are obstacles to achieving their goals (Cantwell et al., 2010). The rational choice model helps explain the individual's new role. Because people suffer from cognitive limitations that affect their decision-making, individuals will choose and apply those institutions allowing them to economise in their need to obtain, process and use information in their organisational field (Dunning and Lundan, 2008). Their choice will be conditioned by the desire to carry out efficient transactions that make it possible to achieve the firm's goals while minimising costs and risks (Meyer et al., 2009). This new approach sees the institutions as social structures that limit and permit but do not determine the actors' final choice (Hoffman and Ventresca, 2002). In this way, the most recent institutionalism connects the institutions at the macro level with the agency capacity of the individuals at the micro level (Jackson and Deeg, 2008; Meyer et al., 2009). The institutions in this respect represent a reality that is objective and external to the individual, who possesses their own subjective perception about that reality. That perception will be

conditioned by the individual's cognitive limitations, and in the light of these limitations and considering their motivations they will interpret and respond to the possibilities offered by the institutions (Szyliowicz and Galvin, 2010).

## Institutional pillars and internationalization of SMEs from emerging countries

In the international business literature authors have often studied on an individual basis some (e.g., Chan and Makino, 2007) or all (e.g., Meyer et al., 2009) of the institutional structures, reaching conclusions about the direct effect each institutional dimension may have on the international strategy adopted by the firm. The most recent versions of institutionalism, however, suggest that the firm's international activity rests on the information processing carried out by the individual entrepreneur (Dunning and Lundan, 2008), in other words, on the different perceptions about the institutions and the responses that they consider possible (North, 1990, 2005). Consequently, in the same institutional context some owner-managers will embark on international expansion and others will not. In the following paragraphs the authors discuss how the individual's perception can/may affect their decision to internationalise their firm.

Emerging economies characteristically have a limited regulative framework that leads to a legal vacuum and unpredictable or inconsistent government policies (Puffer, McCarthy and Boisot, 2010). Limited information exists about the competition in the market (Acs, Desai and Hessels, 2008) and insufficient knowledge exists about how to exploit business opportunities. Moreover, incentives to embark on business activity are usually lacking (Meyer et al., 2009). Thus when the regulative institutions generate a favourable framework for the firms and the managers can perceive the availability of information about issues critical for the SME's international expansion (Hessels and Terjesen, 2010) – e.g., legal formalities, and characteristics of target markets (Trevino et al., 2008), public aid and incentives to internationalisation (Meyer and Nguyen, 2005; Luo and Tung, 2007) – and the availability of training allowing the firm to adapt its workforce to the needs of its sector (Domadenik, Prasnikar and Svejnar, 2008), they will be willing to embark on international expansion.

For their part, the normative institutions are usually well developed in emerging economies to make up for the lack of a wide-ranging and stable legislative framework (Puffer et al., 2010). When these institutions are, as some authors observe in emerging economies, permissive of corruption (Puffer et al., 2010; Trevino et al., 2008) and irregularity in business operations (Busenitz et al., 2000), or hostile to people making money from investment (Busenitz et al.,

2000), they generate uncertainty (Tracey and Phillips, 2011) and damage international business operations. In this respect, when the SME owner-manager perceives that successful entrepreneurs enjoy respect and a high status and that society values legal, successful and expansive business practices, they will feel that they have more incentive to embark on international expansion operations.

In emerging economies the business framework is made up of small firms than often act in the informal sector and are not internationalised. Thus less business knowledge of quality has been accumulated on the basis of the experience of its firms – e.g., knowledge of target markets, knowledge of consumer behaviour in those markets, etc. Such knowledge can give firms guidelines when they are internationalising (Lu, 2002), so its lack can generate serious problems (Luo and Tung, 2007). In addition, business education, whether obtained professionally or at university, is also lacking, so firms know little about the business practices recommendable in international expansion processes. Trevino et al. (2008) warn that in an emerging economy business education can be a good proxy for the quality of the workforce and the degree of openness of an economy to international business. Thus when the SME owner-manager perceives the existence of accumulated business knowledge that is relevant for embarking on international expansion operations, and that they can access such knowledge directly or capture it by hiring available, qualified staff, they will be more likely to get involved in international expansion operations.

H1. The greater the SME owner-manager's perception of the existence of regulative (H1a), normative (H1b) or cognitive (H1c) institutions favourable to expansive entrepreneurial activity, the greater this manager's involvement in international expansion operations.

Nevertheless, since these institutional dimensions are interconnected and highly interdependent (Szyliowicz and Galvin, 2010), Jackson and Deeg (2008) warn that studying them in isolation ignores the possible effect of the interaction between the institutions on firm internationalisation. The institutions are liable to fail to achieve the desired effect if they are not congruent with each other (Cantwell et al., 2010), while their joint effect will increase if in spite of their different content they point in the same direction.

H2. The greater the SME owner-manager's perception of the existence of regulative, normative and cognitive institutions that mutually reinforce each other and favour expansive entrepreneurial activity, the greater this manager's involvement in international expansion operations.

## Institutional pillars and opportunity entrepreneurship in emerging countries

In the entrepreneurship literature authors commonly distinguish between opportunity and necessity motivation, with the first applying to those cases where the entrepreneur embarks on business projects to exploit business opportunities (Reynolds et al., 2002). Various authors argue that the regulative, normative and cognitive institutions can condition entrepreneurs' motivations (e.g., Szyliowicz and Galvin, 2010; Trevino et al., 2008). These authors associate opportunity motivation with economic contexts with developed institutional frameworks that are favourable to business activity, and necessity motivation with countries with weak institutions such as the emerging economies (Acs and Amorós, 2008). The institutions affect the level of uncertainty individuals who wish to embark on business projects face, and because uncertainty makes business activity risky and complex it also affects the perception of business opportunities (Manolova et al., 2008). For example, a legal structure that provides stimuli and business opportunities will motivate the intention to embark on business projects to exploit such opportunities. Similarly, social values extolling the idea of one's own firm as a desirable professional option or according high status to successful business-people will motivate individuals to seek out opportunities to expand and be successful (Tominc and Rebernik, 2007; Stenholm et al., 2013). Finally, the existence of both business models of growth and success and specialised knowledge in the country/region will generate the entrepreneurial motivation to seek out opportunities (Acs et al., 2008).

H3. The greater the SME owner-manager's perception of the existence of regulative (H3a), normative (H3b) or cognitive (H3c) institutions favourable to expansive entrepreneurial activity, the greater this manager's opportunity motivation.

Because the institutional dimensions are interconnected (Szyliowicz and Galvin, 2010), if their contents are coherent and favourable to the carrying out of expansive entrepreneurial activity, their joint effect will conceivably be reinforced to favour opportunity motivation in the owner-manager.

H4. The greater the SME owner-manager's perception of the existence of regulative, normative and cognitive institutions that mutually reinforce each other and favour expansive entrepreneurial activity, the greater this manager's opportunity entrepreneurship motivation.

## Opportunity entrepreneurship and internationalization of SMEs in emerging countries

A mediation model may possibly represent the relations described above better, because the institutions could have both a direct effect on the owner-manager's decision to embark on

international operations and an indirect effect via their impact on the development of opportunity motivation. Specifically, the institutions could increase the owner-manager's desire to get involved in international operations (H1), as well as their opportunity motivation (H3). The authors have already justified H1 and H3, so to propose a mediation hypothesis they need to justify the effect of opportunity motivation on the decision to expand internationally.

Entrepreneurship research has shown that business founders have different motivations, but is less conclusive about the importance of such motivations in how the manager runs their business (Dunkelberg et al., 2013). Nevertheless, and because the owner-managers usually centralize the decision-making in SMEs because of the low level of organisational structure in such firms (Cheng and Yu, 2008), their motivations will conceivably affect the decision to internationalise (Madsen and Servais, 1997). In this respect, the literature points out that opportunity motivation embraces a set of objectives – e.g., obtaining a high income, reaching a high social status – that pulls the entrepreneur (Hessels, van Gelderen and Thurik, 2008) towards the carrying out of business projects with high growth potential (Acs et al., 2008). As a result, SME owner-managers with opportunity motivation will conceivably be more committed to international operations (Hessels et al., 2008) because they are the ideal way of achieving such growth.

H5. The SME owner-manager's opportunity motivation is a mediator in the effect of the regulative (H5a), normative (H5b) and cognitive (H5c) institutions on this manager's decision to embark on international expansion operations.

## Methodology

### Population, data collection and sample

The population under analysis consists of entrepreneurs located in the six tourist municipalities of the state of Sergipe (Brazil) – i.e., Aracaju, Pirambu, São Cristóvão, Laranjeiras, Canindé de São Francisco, and Estância – who fulfilled the following preconditions: they are founders, owners and managers of an SME operating in a sector related to tourism, for example hotel and catering, recreational activities, or tour operators. Being a founder, owner and manager of the firm is an important requisite for analysing the influence of opportunity motivation on the decision to expand internationally, and it was guaranteed in the fieldwork carried out by SEBRAE (Serviço Brasileiro de Apolo as Micro e Pequenas Empresas) in March 2009.

No register existed of the SME owner-managers in the above municipalities, so the authors accessed the register of firms, which included both firms run by their founders and firms run by someone else: the census of the Junta Comercial do Estado de Sergipe. According to this register, in the year 2008, 1,520 firms were operating in the tourism sector in the six municipalities analysed. Nevertheless, the register was not up to date, did not include informal entrepreneurship, and did not hold information about firm size or subsector. The authors could not reliably determine the size of the population or define the sample size following proportionality criteria, so instead they used a fixed quota system so each municipality had a balanced representation in the sample. The sample consists of 296 individuals, distributed as follows: São Cristovão, 17%; Aracaju, 23%; Pirambú, 14%; Laranjeiras, 14%; Estancia, 15%; and Canindé, 19%. The sample firms have an average age of 9.89 years, an average workforce of 3.3 full-time employees, and operate in the following tourism subsectors: accommodation – e.g., hotels, rural guest houses – (19.26%); restaurant and catering (29.39%); transport – e.g., sea vessels, hire cars – (14.53%); recreational activities – e.g., tourist attractions, tourism activities in nature or at sea, organisers of tourism events – (12.16%); intermediary agents – e.g., travel agencies, tour operators – (3.04%); trade – e.g., craftwork distribution, souvenirs – (20.27%); and others – e.g., consultancy and tourism advice, hotel-specific design – (1.35%).

## Measurements

*Dependent variable*. Following Zahra, Neubaum and Huse (2000) and Yiu et al. (2007), intensity in expansion in foreign markets was measured using a 7-point Likert scale, where 7 indicates that the firm is actively committed to international operations according to its owner-manager. Methodologists have recommended using multiple-item measures, though not all authors agree (Loo, 2002). In fact, in the international business literature it is not uncommon to see a dependent variable consisting of a single item – e.g., the firm exports or does not export (Hessels and Terjesen, 2010); length of time exporting (Ogbuehi and Longfellow, 1994).

*Mediating variable*. Opportunity motivation was measured using 5 items borrowed from Williams (2009) and Birley and Westhead (1994): exploiting business opportunities, important business for municipality, make money, exploiting skills as entrepreneur, chance to make use of own educational level. These items were measured on 7-point Likert scales, where 7 indicates that the individual fully possesses that entrepreneurial motivation. A principal-components factor analysis confirmed the existence of a single factor (alpha=0.858), with satisfactory levels of fit (KMO=0.829; $\chi^2$=663.454***; variance explained=64.31%).

*Independent variables*. The institutional dimensions were measured using 22 items on 7-point Likert scales (7 indicating full development of the institution in the owner-manager's environment). The authors used Tominc and Rebernik's (2007) scale to measure the normative institutions, but designed their own regulative and cognitive scales in coherence with the new institutionalism perspective and guided by Busenitz et al. (2000). A principal-components factor analysis with promax rotation confirmed the existence of the three institutional dimensions (KMO=0.762; $\chi^2$=1315.525***; variance explained=61.536%; alpha=0.797). The regulative dimension (alpha=0.808; variance explained=15.822%) consists of variables to do with government measures aimed at generating an environment favourable to business activity and international expansion e.g., public help from Brazilian state and regional funds, information offices advising about issues to do with running and expanding a business, training opportunities for professions required by the firm and for current employees to improve their knowledge and skills in their current jobs). The normative dimension (alpha=0.600; variance explained=11.455%) consists of the cultural variables that Tominc and Rebernik (2007) propose – e.g., people who successfully start their own business are highly respected, stories are frequently seen in the local media and conversations about successful new businesses. Finally, the cognitive dimension (alpha=0.826; variance explained=34.259%) consists of variables measuring the business knowledge existing in the environment and obtained either from professional experience or academic study – e.g., this municipality has people with management experience, with experience in my firm's sector, with IT skills. Promax rotation was used because this methodology allows for the existence of correlations between the factors. This methodological choice is coherent with the theoretical foundations of this work, which suggest that relations exist between the three dimensions: regulative, normative and cognitive institutions (Szyliowicz and Galvin, 2010). If these relations exist they will be fed into the multivariate estimations carried out subsequently.

Control variables. With regards the individual, the authors controlled for the owner-manager's educational level (1: none; 2: primary school; 3: secondary school; 4: university), age and participation in business associations. The higher the owner-manager's educational level the better – conceivably – the firm's management and so the better the chances of expansion abroad (Acs et al., 2008). The owner-manager's age is a proxy for their experience (Mitchell et al., 2000), and conceivably has a positive effect on the decision to embark on international operations. Moreover, the literature stresses that unlike in advanced economies, where ownership advantages condition internationalisation, in emerging economies participating in

business networks becomes more important (Yiu et al., 2007). The authors used the GDP of each municipality at 2008 prices (Instituto Brasileiro de Geografia e Estatística), 2008 being the year previous to the fieldwork, thereby avoiding possible problems of data endogeneity. This variable has been commonly used in the international business literature as a proxy for market size (e.g., Trevino et al., 2008; Meyer et al., 2009).

## Data analysis

Correlation analysis was applied first to present the interrelationship among the research variables and examine the possibility of multicollinearity. Multiple lineal regression analyses were used to test the hypotheses. To assess the potential for regression coefficient instability, collinearity diagnostics were conducted. In particular, the authors calculated variance inflation factor (VIF) scores and condition number. Finally, the current research is cross-sectional in nature, and uses a single data source, which could result in a common method variance. To minimize this risk, respondents were guaranteed full anonymity, and the questionnaire was pre-tested to provide evidence about respondents' understanding of the questions. After the database was constructed, the authors ran Harman's one-factor test to exclude the possibility of common method variance, as previous authors have done (Li, Bingham and Umphress, 2007). Tests show that there are 4 factors with eigenvalues greater than 1, regardless of whether the unrotated principal-component factor analysis (total variance explained=63.47%), or principal-component analysis with varimax rotation (total variance explained=63.47%), or principal axis analysis with varimax rotation (total variance explained=53.19%) is used. The first factor explains 26.99%, 19.93% and 17.42% of the total variance, respectively. The Harman test failed to indicate the existence of a principal factor.

## Empirical findings

Table 2 shows the correlations between the variables. With regards multi-collinearity in the data, the highest correlation between the independent variables is 0.418, which is lower than the recommended limit of 0.75. The VIF and the condition number in the regressions estimated (Table 3) are comfortably under 10 and 20, respectively, the cut-off points recommended in the literature. These results suggest that multi-collinearity is not a problem in these data.

Table 3 shows the regressions estimated to analyse the direct, moderating and mediating effects proposed in the hypotheses. With regards the direct effects, the results from Model 2 (Step 2) indicate that two of the three institutional dimensions – the regulative and normative

– exert a significant, positive effect on international expansion in the SME. These results provide support for H1a and H1b. In contrast, H1c, which tests whether the cognitive institutions affect the firm's international expansion, is rejected. For its part, Model 1 (Step 2) only confirms that the normative institutions have a significant, positive effect on the development of opportunity motivation (H3b is accepted). Consequently, H3a and H3c are rejected.

**Table 2. Correlations, means, standard deviations, min and max**

| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.International expansion | | | 1 | | | | | | | | |
| 2.Opportunity motivation | | | .473*** | 1 | | | | | | | |
| 3.Participation in associations | | | .189** | .235*** | 1 | | | | | | |
| 4.Education | | | .070 | -.073 | .027 | 1 | | | | | |
| 5.Age | | | -.053 | .026 | .100 | -.286*** | 1 | | | | |
| 6.Per capita GDP 2008 | | | .006 | .095 | .056 | -.043 | -.017 | 1 | | | |
| 7.Cognitive institutions | | | .122* | .096 | .127* | .285*** | -.057 | -.134* | 1 | | |
| 8.Regulative institutions | | | .337*** | .132* | .043 | .185** | -.077 | -.111† | .418*** | 1 | |
| 9.Normative institutions | | | .315*** | .421*** | .126* | -.103† | .040 | .027 | .126* | .204*** | 1 |
| **Mean** | 3.38 | .00 | 1.10 | | 2.72 | 39.89 | 941221.02 | .00 | .00 | .00 | |
| **Std. deviation** | 2.69 | 1.00 | .30 | | .73 | 13.20 | 1.94 | 1.00 | 1.00 | 1.00 | |
| **Min** | 1.00 | -1.98 | 1.00 | | 1.00 | 20.00 | 5579.71 | -2.24 | -1.78 | -3.51 | |
| **Max** | 7.00 | 1.09 | 2.00 | | 4.00 | 80.00 | 5001981.00 | 1.30 | 1.84 | 1.60 | |

$†p < .1$, $*p < .05$, $**p < .01$, $***p < .001$.

Step 3 (models 1 and 2) tests the effects of the institutional interactions on international expansion in SMEs and on the owner-manager's opportunity motivation. The results of the estimation carried out in Model 2 indicate that only the interaction between the regulative and normative institutions has a significant, positive effect on the dependent variable. The interaction between the normative and cognitive institutions does significantly influence the dependent variable, but negatively, which is the opposite of what the hypothesis expected. These results provide only partial support for H2. Finally, H4, concerning the interactions

between the institutional structures and their effect on the development of opportunity motivation (Step 3, Model 1), is rejected, because the model only confirms this effect for one interaction (regulative-cognitive) and with the opposite sign to that expected.

Considering the results of the previous steps, Step 4 in Model 2 involved the final estimation to test the mediating role of opportunity motivation on the effect of the institutional structures on the decision to expand internationally in the SME (H5). The only institutional dimension with an effect both on the dependent variable (H1b) and on the mediating variable (H3b) is the normative dimension, so the possible mediating effect of opportunity entrepreneurial motivation can only occur for this particular institutional dimension. The estimation carried out in Model 2 (Step 4) indicates that in the presence of the mediating variable, the normative dimension loses its significant, positive effect on the final dependent variable. These results provide support for H5b.

**Table 3. Results of models estimated and hypothesis tests**

| | Opportunity motivation<br><br>Model 1 | International expansion<br><br>Model 2 |
|---|---|---|
| **Step 1: Control** | | |
| Participation in associations | .245*** | .207** |
| Education | -.084 | .011 |
| Age | -.007 | -.072 |
| Per capita GDP | .073 | -.029 |
| $\Delta R^2$ | 7.4% | 4.6% |
| $\Delta F$ | 5.193*** | 3.121* |
| **Step 2: Control + Main effects** | | |
| Participation in associations | .185** | .173* |
| Education | -.048 | .019 |
| Age | .009 | -.050 |
| Per capita GDP | .063 | -.014 |
| Cognitive | .043 | -.091 |

| | | |
|---|---|---|
| Regulative | -.002 | .281*** |
| Normative | .395*** | .223*** |
| $\Delta R^2$ | 15.6% | 13.7% |
| $\Delta F$ | 17.471*** | 14.271*** |

**Step 3: Controls + Main effects + Interacting effects**

| | | |
|---|---|---|
| Participation in associations | .198*** | .183* |
| Education | -.036 | .025 |
| Age | -.013 | -.076 |
| Per capita GDP | .064 | -.005 |
| Cognitive | .014 | -.087 |
| Regulative | -.017 | .256*** |
| Normative | .433*** | .255*** |
| Cognitive * Regulative | -.126* | .000 |
| Cognitive * Normative | .033 | -.144† |
| Regulative * Normative | .113 | .237** |
| $\Delta R^2$ | 2.5% | 3.4% |
| $\Delta F$ | 2.910* | 3.639* |

**Step 4: Step 3: Controls + Main effects + Interacting effects + Mediating effect**

| | | |
|---|---|---|
| Participation in associations | | .105† |
| Education | | .036 |
| Age | | -.064 |
| Per capita GDP | | -.031 |
| Cognitive | | -.094 |
| Regulative | | .269*** |
| Normative | | .078 |
| Cognitive * Regulative | | .048 |
| Cognitive * Normative | | -.155* |
| Regulative * Normative | | .183** |
| Opportunity motivation | | .390*** |

| | | | |
|---|---|---|---|
| $\Delta R^2$ | | | 11.1% |
| $\Delta F$ | | | 41.595*** |
| Final adjusted $R^2$ | | 22.6% | 29.8% |
| F | | 8.756*** | 11.156*** |
| Durbin-Watson | | 1.546 | 1.843 |
| Collinearity Statistics | VIF (min/max) | (1.011/1.825) | (1.010/1.827) |
| | Condition number | 16.620 | 16.653 |

$†p < 0.1$, $*p < 0.05$, $**p < 0.01$, $***p < 0.001$.

## Discussion

### Institutional direct influences

The results indicate that opportunity motivation develops when the owner-managers perceive the existence of normative structures consisting of social values that encourage and legitimate high-growth entrepreneurship. The owner-manager's perceptions about the regulative and cognitive structures play no role in the development of this motivation. The individual's entrepreneurial aspirations seem to have a social basis associated with institutions that – being normative – are more deeply rooted and developed in an emerging economy than the regulative and cognitive institutions. If this is the case, promoting opportunity motivation in an area may require an investment in time to modify the structure of the social values and will also be a challenge for public administrations used to trying to incentivise individual behaviour through regulations.

The decision to embark on international expansion in the SME, on the other hand, is founded on a combination of instrumental reasons, provided by the regulative institutions, and social reasons, based on the normative institutions. Consequently, in emerging economies although the laws fail to generate a particular type of motivation in the manager, they do generate opportunities perceptible to the decision-makers that condition their strategic behaviour. Nevertheless, although the laws are important, they may be insufficient on their own to stimulate such entrepreneurial behaviour. As Cheng and Yu (2008) warn, examining organisational actions only through the lens of economics may obscure the real reasons behind the actions, and this is true for SMEs' international expansion in the particular context of the emerging economies.

The cognitive institutions on their own cannot explain either opportunity motivation or the decision to expand internationally. This may be due to the fact that in the municipalities analysed in Sergipe – which is a relatively poorly developed state in Brazil – the knowledge accumulated through managerial practice or acquired in the classroom is insufficient or of low quality. In fact, this knowledge may be based on the experience provided by firms operating in the informal economy that is combined with higher-quality knowledge provided by business projects that are regulated and enjoy a more orthodox, model management. This combination of knowledge could have a negative effect on the SME owner-manager's capacity to perceive and evaluate such knowledge as valid when seeking business opportunities abroad.

Finally, an adequate understanding of the direct effects identified in this study must be based on the specific content of each institutional dimension. Specifically, the current work has considered regulative, normative and cognitive institutions related to firm expansion and measured by variables potentially perceptible to the individual and relevant in their decision-making process in the area of international expansion. In this respect, this work diverges from Stenholm et al. (2013) when they warn that the normative institutions can also limit business actions in search of high growth – e.g., cultural values encouraging the search for easy profits or the use of fraudulent practices – and they may be common in some areas. These authors also argue that the regulative environment plays no role in the development of business strategies based on the search for high growth. The current authors believe, however, that that finding has something to do with the macro-level proxies used in their study – i.e., time and cost associated with opening and closing a business, laws protecting property rights.

### Institutional interactions

In the decision to internationalise, the models estimated indicate that the interaction between the cognitive and normative institutions is significant and negative, which is the opposite sign to what was expected (Figure 2). This result indicates that in the decision to expand internationally adopted by the owner-manager, the importance the decision-maker accords to the knowledge existing in their environment differs depending on whether the normative institutions oriented to high firm growth are strong or weak. Specifically, when the owner-manager perceives a culture that only weakly incentivises internationalisation, the cognitive structures take on a greater role in the decision to internationalise. Thus the cognitive institutions based on business knowledge and experience compensate for the lack of normative structures favourable to high-growth entrepreneurship and have a stronger effect on

the owner-manager's final decision. In contrast, in the presence of normative structures favourable to entrepreneurship, the higher levels of entrepreneurial knowledge reinforce the value of the cultural norm and incentivise to a greater extent the owner-manager's international operations. But the importance accorded to the normative institutions when these are strong will take the owner-manager's attention away from the knowledge available to carry out the internationalisation. In other words, the flatter slope of the curve indicates that in the presence of a high-growth entrepreneurial culture, the higher levels of knowledge available, although they interact and reinforce the normative dimension, have less capacity to incentivise the individual's final decision to expand internationally. These results again confirm the high importance owner-managers accord to the normative institutions when taking business decisions in an emerging economy. Scott (1995) warns that such normative institutions, because of their moral basis, tend to be internalised by the individual to a greater extent than the other institutional dimensions. If this is the case, the entrepreneur's behaviour is fundamentally encouraged by the behavioural norms they have internalised (Scott, 1995).

**Figure 2. Effect of interaction between cognitive and normative institutions on SME's**
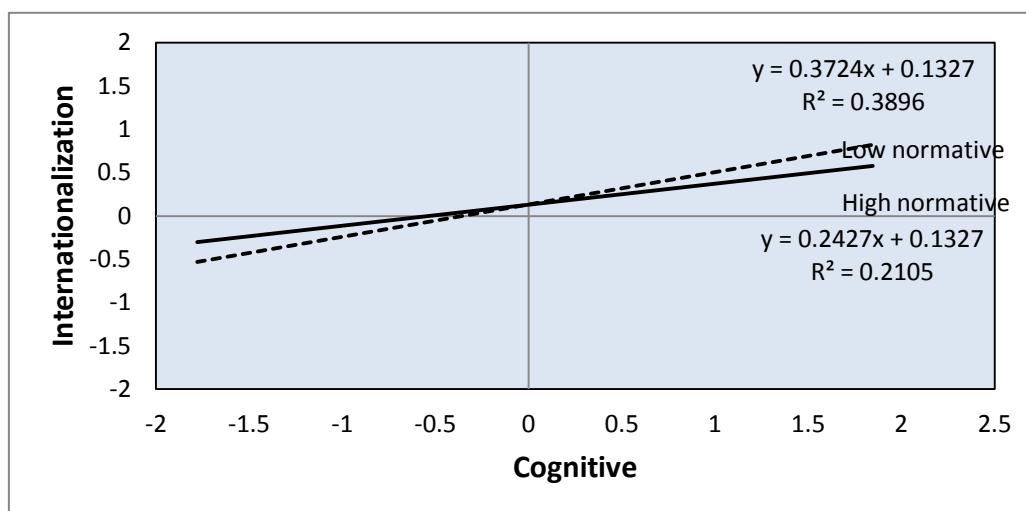


internationalisation in emerging countries

On the other hand, and for the case of the interaction between the regulative and normative institutions, the analysis resulted in a significant, positive interaction. This indicates that the owner-manager's decision to expand internationally and the importance that they accord to legislation supporting firm expansion differ depending on whether normative institutions favourable to expansion exist or not (Figure 3). Specifically, when the owner-manager perceives strong normative and regulative institutions favourable to international expansion, the combined effect of both institutions will increase the likelihood that they will decide to

embark on international operations. However, the effect of such regulative institutions will be weaker when these institutions are not congruent with the normative institutions, as is shown by the slope of the curve for the case of weak normative institutions. The current work shows that when the individual perceives the existence of coherence between the regulative and normative institutions, government measures lead to the desired effect. In this respect, this work confirms the predictions of some authors such as Cantwell et al. (2010), who suggest that institutions are liable to fail to have the desired effect if the normative institutions are no longer congruent with the regulative institutions they support.

**Figure 3. Effect of interaction between regulative and normative institutions on SME's internationalisation in emerging countries**
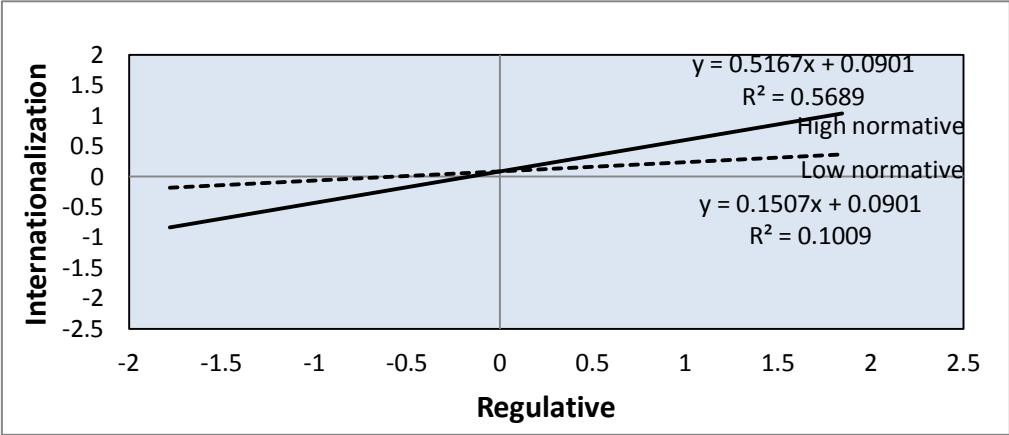


Finally, this work also looked at the institutional interaction and its possible effect on the development of an opportunity motivation in the SME owner-manager. Only the cognitive-regulative interaction was found to be significant. The authors recall that neither of these two institutional dimensions were found to be significant in the test of their direct effect on entrepreneurial motivation. Specifically, the interaction term found has a negative sign, which indicates that the relation between opportunity motivation and the attention the owner-manager pays to the regulative institutions incentivising expansion differs depending on whether the decision-maker perceives sufficient knowledge on management and firm expansion to be available or not (Figure 4). If the owner-manager considers that such knowledge is not available in their environment, the regulative institutions will increase even more the probability that the individual develops an opportunity motivation. In contrast, if the owner-manager perceives the widespread availability of knowledge useful for embarking on the expansion of the firm, the regulative institutions are less likely to generate this opportunity

motivation, in other words, the owner-manager will accord less importance to its existence as a factor motivating them to seek business opportunities.

**Figure 4. Effect of interaction between regulative and cognitive institutions on opportuntiy entrepreneurship**
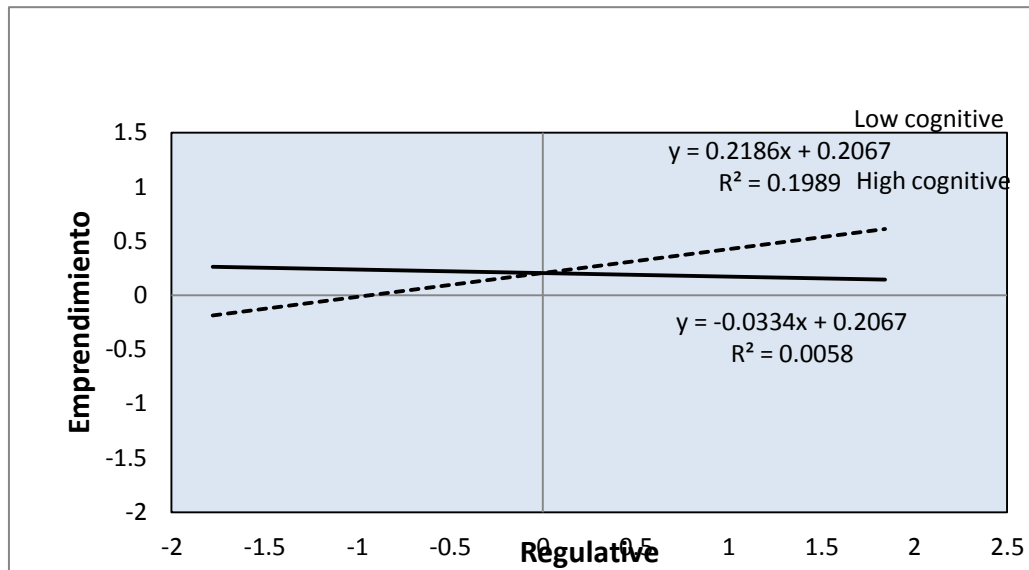


## Opportunity entrepreneurship and internationalization of SMEs in emerging countries

The current research on entrepreneurship has clearly shown that SME owner-managers have different objectives, but it has been less conclusive about the importance these objectives may have on these individuals' behaviour as managers of their businesses (Dunkelberg et al., 2013). The current work contributes to this debate and supports the conclusions of previous research finding that opportunity motivation affects the decisions made by the founder of the firm at the start of its life, in that it finds that this effect is also evident later in time. In other words, when the owner-manager identifies new opportunities related to the internationalisation of their firm later in its life.

Moreover, the current work has also analysed the mediating role of opportunity motivation in the effect of the institutional environment on entrepreneurs' decisions. The results confirm that the individual's perception of the normative institutions affects the development of their opportunity motivation, which, in turn, affects their decision in the area of international expansion. In this way, and because this work takes the individual as its level of analysis, its findings confirm the existence of a causal link from the cognitive to the behavioural level. Specifically, this work provides the basis for a better understanding of the events and relations previous researchers observe when analysing territorial data.

## Conclusions

The current research has aimed to identify the factors explaining the decision to internationalise adopted by the owner-manager of an SME located in an emerging economy. The most recent contributions to institutional theory and the entrepreneurship literature have provided the theoretical foundations for this study. Its findings indicate that the owner-manager's perception about the existence of institutions favourable to international expansion will affect their decision to embark on international expansion. Consequently, and in contrast to traditional institutionalism, which analyses how the environment determines individual behaviour, the current results support the thesis that room exists for individual discretion. This explains why with the same institutions some entrepreneurs commit to firm internationalisation and others do not. Among the three institutional dimensions the current work confirms the importance of the normative institutions in emerging economies. These institutions have the strongest impact on the development of motivations and the adoption of decisions by the SME owner-manager. Specifically, the perception of a business culture based on high growth stimulates the entrepreneur's opportunity motivation, pushing them to seek options to achieve the growth rates they aspire to for their business in the international context. However, in the particular decision to embark on such internationalisation, the normative institutions must be accompanied by regulative institutions designed to offer a environment favourable to international expansion. These latter institutions offer those owner-managers motivated by the search for business opportunities the chance to identify specific opportunities to expand their firm.

The results concerning the moderating effects, in turn, show that the effect of each institutional dimension on international expansion in SMEs is contingent on the development and content of the other institutional dimensions with which it interacts. The current work suggests that the institutions interact in a twofold way that goes beyond the one argued theoretically in the previous literature. This work identifies not only an interaction effect based on the congruence between the institutional dimensions to reinforce each other mutually, but also a second compensatory effect, according to which the absence of some institutions generates greater attention in the owner-manager towards those others that can legitimate a particular motivation and support them in their decisions. This result again supports the idea that the owner-manager has discretion or agency, because they look in their environment in search of those institutions that allow them to reduce costs and risks while carrying out their strategic choice.

The conclusions of this research suggest new lines for future research. Thus and because this research confirms that individual discretion in an institutional framework explains differing commitment to firm internationalisation, in future work researchers should explore more deeply the individual characteristics that affect the perception and interpretation of the institutional environment. For this purpose, a combination of institutional theory and others focused on the individual and their cognitions could prove very useful. These studies could also address other decisions in the area of firm internationalisation such as the choice of location or entry mode, which many researchers have studied in the literature on the basis of deterministic institutional pressures. Likewise, because opportunity motivation is conditioned by the dominant culture in the country/region and can boost international operations in SMEs, an important task for future research would be to determine how to modify such normative institutions in emerging economies, where they have an important impact on individual decisions.

Important practical implications can be drawn from the current work. First, because the owner-manager's perception of the institutions affects the decision adopted in the area of international expansion, the authorities should pay attention to how the legislative measures adopted are applied in the country or region. The implementation of these laws may be as important as or more important than the fact that they exist. Second, although the regulative institutions can contribute to encouraging the SME's international expansion, this effect is conditioned by the existence of normative institutions that generate an opportunity motivation. Because of this, changes in the regulative institutions on their own may not lead to the expected results, and it may be necessary to complement them with others promoting fundamentally normative institutions. Bringing information about successful experiences into the public domain, or offering recognition to such entrepreneurs that shows society they are valued can gradually introduce cultural values that encourage expansive entrepreneurial activity. Third, the current results suggest that in order for business ventures to be able to generate wealth and employment in their countries/regions, rather than concentrate on the number of firms created it is essential to promote a particular type of motivation in the managers: e.g., search for high-growth opportunities (Stenholm et al., 2013).

Finally, any generalisation of the conclusions of this study is subject to a number of limitations. The first concerns the sample, since all the firms are located in the state of Sergipe (Brazil) and operate in the tourism sector. Although the country, state and sector variables are controls allowing for an analysis of the effect of each individual's perception of the

institutions, the doubt remains as to whether the conclusions reached here are relevant only for the particular context analysed. Second, this research has used a public census of the SMEs that was not up to date at the time of the study, meaning that it ignores firms of recent foundation or informal companies, which are common in emerging economies. Finally, the lack of secondary information about the international operations of SMEs in Sergipe made it impossible to include secondary variables to triangulate the data.

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# THE NEW FDI IN INNOVATION LOCATION MAP: SPAIN AND THE APPEARANCE OF EMERGING COUNTRIES

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## Abstract

The appearance of emerging countries as international locations for foreign direct investment in innovation is a sign that multinationals are relocating technological activities to new territories. This could mean a weakening of the supremacy of those developed countries until now considered leaders in innovation, and a loss of the competitive advantages enjoyed by those countries considered intermediate innovators. This paper examines the situation of Spain as a typical intermediate economy, comparing it to its main competitors among the emerging countries, i.e. BRIC and Eastern Europe. Following case studies involving subsidiaries with R&D centres in Spain, we conclude that the policies adopted by some emerging economies to develop their national innovation systems are producing positive results, placing these countries on a level comparable to Spain. However, they still lag behind in the security of their institutional framework, leaving intermediate countries occupying an advantageous position. Finally we give some policy recommendations aimed at improving intermediate countries' competitiveness and increasing their ability to attract international R&D.

**Keywords:** BRIC; intermediate countries; international R&D; foreign direct investment; international location factors; innovation.

## Introduction

In the context of the current economic crisis, countries with emerging economies are making an ever stronger appearance on the international scene. Proof of this is the growing weight of these countries as recipients of direct foreign investment (FDI). In 2010, countries with emerging economies for the first time overtook developed countries as the main destination for investment by multinationals corporations (MNCs). In 2012, over half the flow of world FDI (58.50%) was received by countries with economies that were developing or in transition (UNCTAD).

The main reasons that have traditionally led multinationals to locate activities in emerging countries are access to resources at competitive costs and entry to new markets with high growth potential (Dunning, 1980). Hence most of the FDI received by these countries is for relatively unsophisticated activities, usually involving the manufacture of components and products and their commercialization in different geographical markets. However, it has recently been observed that the public administrations in these countries have been making definite efforts to attract foreign activity with greater added value. One of their main actions is to proactively promote and strengthen their national innovation systems (NISs) with a view to winning FDI with greater added value. Under this new scenario, multinationals are relocating some of their innovation activity from developed countries to countries with emerging economies and greater competitive advantages. As a result we are today witnessing the gradual closing of the gap that separates the most technologically advanced countries and the developing economies of countries such as BRIC (Brazil, Russia, India and China) and those in Eastern Europe. Virtually unthinkable just a few years ago, this phenomenon seems to be intensifying, giving rise to a clear change of trend which is posing new challenges for intermediate countries such as Greece, Italy, Ireland, Portugal and Spain. These economies, particularly Spain, are not perceived as technological leaders in their field and neither can they compete on the basis of low costs alone (Miravitlles, et al., 2013).

Faced with this new scenario, it would be useful to find out exactly where the intermediate countries stand in the international competition to attract and retain the innovation activity of big multinational corporations. It is no longer simply a question of competing with countries traditionally more advanced in terms of innovation, but of competing with emerging countries that are rising ever more steadily up the table. Therefore, taking Spain as

an example of an intermediate economy, the main aim of this paper is to analyse the importance of the different factors that play a role in multinationals' decision-making as regards the location of innovation activities, and also to assess the competitive advantages of intermediate countries compared to those of newly competing countries such as the emerging economies (BRIC and Eastern Europe).

The major contribution is that the policies adopted by some emerging economies to develop their national innovation systems are producing positive results, placing these countries on a level comparable to intermediate countries such as Spain as regards the availability of scientific talent at a competitive cost and the quality of their universities and research centres. However, they still lag behind in the security of their institutional framework, leaving intermediate countries occupying an advantageous position.

This paper is structured as follow. First, we perform a literature review on R&D location factors from three different theoretical frameworks - internalization theory, the resource-based view and the institutional-cultural perspective. In section 3 w describe the qualitative methodology used. Section 4 presents the strengths and weaknesses of the Spanish case in the face of competition from emerging economies to attract foreign R&D. Finally, section 5 includes our conclusions and some recommendations for economic policy.

## Literature on factors affecting the international location of innovation

The most recent literature documents the increasing location of R&D in emerging economies, sometimes at the cost of relocating it from developed countries (see, for example, Huggins et al., 2007; Sachwald, 2008; Thursby and Thursby, 2006). In order to explore the reasons why foreign MNCs change their choice of destination for FDI in R&D, our conceptual framework examines the environmental factors that determine a country's ability to attract investment using three different theoretical approaches - internalization theory, the resource-based view and the institutional-cultural perspective - which provide a rich account of the complexity of foreign R&D location choice (see Figure 1).

**Figure 1. Environmental factors in the location of foreign R&D activity**
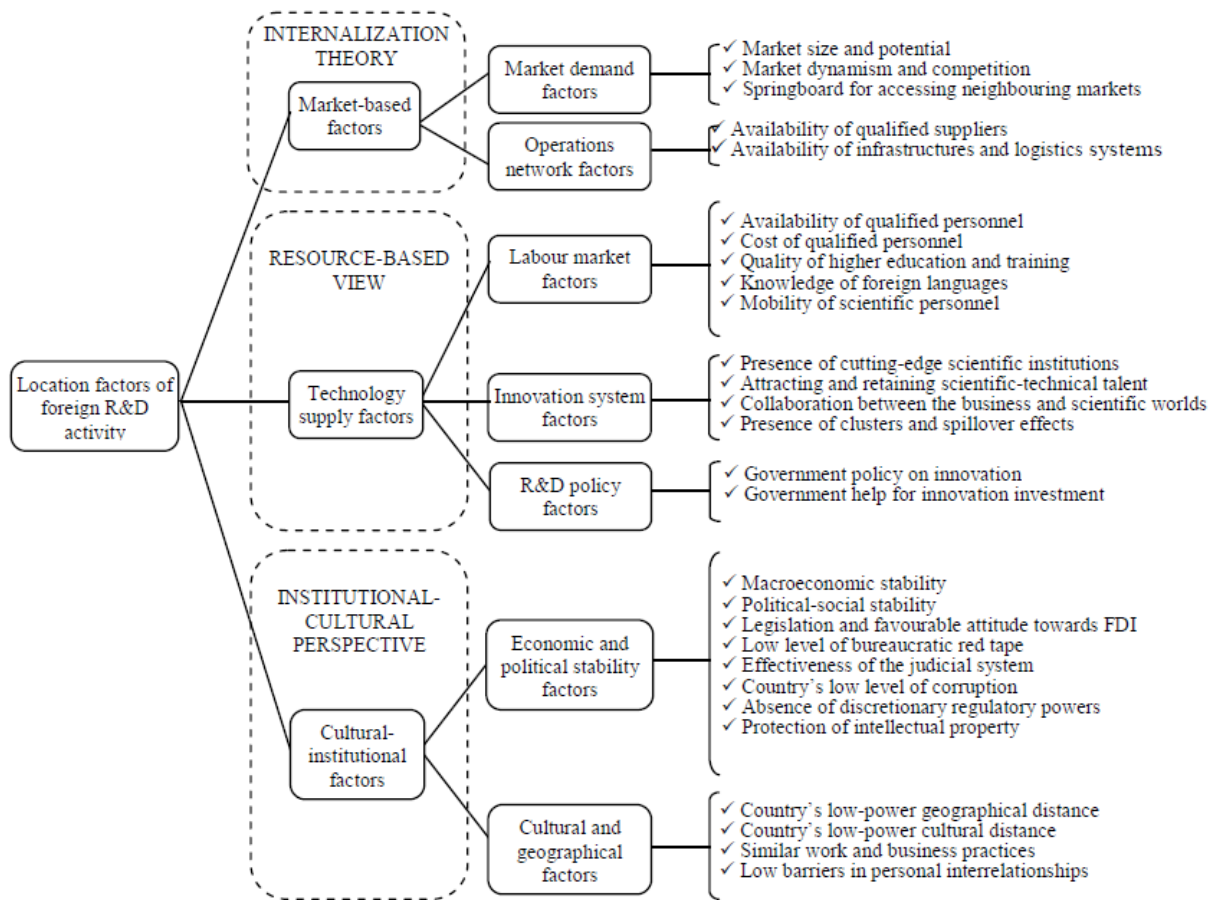
According to internalization theory (Buckley and Casson, 1976; Hennart, 1989; Teece, 1986), the reasons that lead a MNC to locate innovation activity according to demand criteria are so as to make it easier to transfer technology from the parent company to the subsidiary and exploit its competitive advantage in another country. This means internationalizing innovation to reduce transaction costs and give technical support to production units located abroad, and introducing differences into the multinational's standardized products, adapting them to local requirements and tastes. The tendency to internationalize innovation with the aim of exploiting competitive advantage increases depending on how attractive the destination country's market is, compared to that in the multinational's country of origin (Cantwell and Mudambi, 2005; Kuemmerle, 1999). Hence aspects such as market size and potential as measured by GDP (DeWoskin, 2008; Kumar, 2001; Zejan, 1990), the market's dynamism and competition (Beise, 2004; Doz et al., 2001; Gerybadze and Reger, 1999) and the use of countries as springboards to access neighbouring markets (Pla-Barber et al., 2009) are fundamental factors for attracting R&D, especially in cases where the aim

is to adapt products or production processes to the local context (Mansfield, et al., 1979). This aim of adapting to the local market drives multinationals to locate innovation activities near production subsidiaries, and therefore the availability of logistics infrastructures and qualified suppliers, which are fundamental for attracting FDI in production, will also play an indirect but complementary role in the case of R&D (Demirbag and Glaister, 2010; Rao, 2001; Sachwald, 2008). For Sachwald (2008), the increasingly frequent location of development - and to a lesser extent research - activities in emerging economies is due to the geographical distribution of the centres of production, which in these countries has intensified due to the increasing attraction of their markets because of their economic boom.

According to the resource-based view (Cantwell, 1991; Prahalad and Hamel, 1990), multinationals that are attracted by criteria involving technological provisions consider internationalization as a way of creating value in order to achieve new competitive advantages. They therefore try to increase their capacity for technological innovation by using the knowledge that other countries may provide. The tendency to internationalize innovation following criteria involving supply becomes greater when the foreign country increases the resources it commits to R&D (whether public or private), when the quality of human resources for research improves and when the scientific level in general becomes higher (Kuemmerle, 1999). This results in the location of R&D centres abroad in order to source technological input factors such as access to top-level qualified personnel (Demirbag and Glaister, 2010; Florida, 1997; Guimón, 2009; Ke and Lai, 2011; Kumar, 2001; Sachwald, 2008), a consequence of the level of quality of the educational infrastructures (Cantwell and Piscitello, 2002; Demirbag and Glaister, 2010; Sachwald, 2008). MNCs also take into account a workforce trained in the use of foreign languages (Dachs et al., 2012). Labour costs (Demirbag and Glaister, 2010; Doh et al, 2009; Rao, 2001) and staff mobility (Siedschlag et al., 2009) are other factors considered, although in the case of R&D, multinationals tend to give preference to the availability of scientific talent over its cost (Guimón, 2009; Sachwald, 2008; Thursby and Thursby, 2006). In this respect the literature confirms that some emerging economies are beginning to satisfy both these desirable conditions, i.e. providing scientific talent at a competitive cost (Kumar, 2001; Rao, 2001; Sachwald, 2008).

In the same way, MNCs are attributing more and more importance to the dynamism of the local innovation system as evidenced by the presence of cutting-edge scientific centres and institutions, access to clusters and spillover effects, and the proximity between the

business and scientific worlds (see, for example, Bas and Sierra, 2002; Cantwell and Piscitello, 2002; Demirbag and Glaister, 2010; Feinberg and Gupta, 2004; Guimón, 2009; Sachwald, 2008) as a means of exploiting and/or increasing their technological competencies through collaboration and knowledge transfer. Hence the potential for establishing deeply embedded links with other institutions (e.g. universities, research centres and other firms) contributes to a country's attractiveness (Achcaoucaou et al., 2014). In this respect, Demirbag and Glaister (2010) indicate that the supply of such knowledge infrastructures is not limited to developed countries; on the contrary, some of the emerging market economies appear to be highly competitive in providing them. To this must be added the actions of public institutions in the area of innovation. With their overriding priorities in questions of R&D policy and funding for investment in R&D (Guimón, 2009), these institutions act as providers of the perfect environment for the location of FDI in R&D (Doh et al., 2005) and also, therefore, as promoters of a country's technology base.

Aware of this, for over a decade the governments of emerging countries have been introducing measures affecting science and technology aimed at developing their own national innovation systems (NISs) to attract foreign R&D (see the European Commission's ERAWATCH Annual Country Reports, 2012).

Finally there is a third group of factors that explain the location of R&D from an institutional-cultural perspective (Flores and Aguilera, 2007; Globerman and Shapiro, 2003; Guillén, 2000; Henisz and Delios, 2001). In particular, they emphasize the differences in cultural and institutional factors, i.e. the extent to which MNCs seeking to be legitimate agents in the local environment will have to adjust their actions, their rules, beliefs, values, practices and so on, to those of the host country. In this respect those factors involving political and economic risk are an important dimension of the institutional environment because multinational companies have to deal with a completely new political system and set of regulations in their new location (Demirbag and Glaister, 2010). Hence the weakness of government institutions in terms of discretionary regulatory powers, corruption, high levels of bureaucracy and a judicial system with ineffective protection of intellectual property, along with legislation and attitudes insufficiently open to FDI, would not only harm a country's image abroad (see The Global Competitiveness Report by the World Economic Forum, 2013), but would act as a barrier to FDI depending on how different they were from the practices and rules governing action in the multinational's country of origin (Castellani et al., 2013). As a result, MNCs not only prefer more stable macroeconomic

and political-social environments, they prefer environments with systems that are closer or more similar to those in their countries of origin because this considerably reduces any perceived uncertainty and increases their chances of success (Flores and Aguilera, 2007).

Still in connection with the institutional-cultural perspective, the location of innovation also depends on aspects involving the cultural and geographical distance between the country in which the subsidiary is located and the multinational's country of origin (Ambos and Ambos, 2009; Castellani et al., 2013). Hence similar work and business practices, low barriers in personal interrelationships and spatial proximity make for easier communication and mutual understanding between the parties involved. However, MNCs are just as likely to set up R&D laboratories nearby as they are to set them up in more remote areas if there is institutional proximity (Castellani et al., 2013), and therefore emerging economies are in a worse position to compete to attract foreign R&D not only because of geographical distance, but also and to a greater degree because of institutional-cultural distance.

## Methodology

In order to reach our objective, we carried out a qualitative analysis using the case study method because of the greater possibilities if offers when it comes to investigating situations within their real context, situations over which one has no control and where the aim is to find out the "how" and the "why" (Yin, 1990). We decided to examine the phenomenon of international innovation activity location in the Spanish case using in-depth interviews with the managers of subsidiaries of foreign MNCs in Spain. The aim was to discover, through first-person descriptions from members of these organizations, the way they perceive the different factors influencing the international location of innovation. To identify the cases we used the Fundación I+E Innovación España [31], which groups together eight high-profile subsidiaries in the area of innovation (see Table 1). The achievements of these subsidiaries are evident in their consolidated R&D centres in Spain, which generate applications for their respective corporations at a worldwide level. The primary information was gathered in June 2012 from semi-structured interviews lasting approximately two hours. Joint meetings were held with directors and senior management of the foreign subsidiary involved in innovation, which generally meant the managing directors, the heads of R&D and other people responsible for this function in the subsidiary. This procedure was used in order to fulfil the basic requirement that complete knowledge

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[31] For more information about the Fundación I+E, go to: http://www.fundacionimase.com/home.html

was needed of strategies, operations and international relations in the area of innovation at both subsidiary and multinational corporation level.

**Table 1. Case study characteristics**

| Organization | Description | 2012 Turnover (€ million) | 2012 No. Staff | 2012 R&D (€ million) | R&D Distribution | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | %BR | %AR | %Product | %Process |
| Alstom | French multinational in rail transport infrastructure, power generation and transmission. | 785.50 | 4,000 | 25 | -- | 20% | 50% | 30% |
| ArcelorMittal | Steel group with head office in Luxembourg. | 2,400.37 | 6,030 | 7.33 | 10% | 50% | -- | 40% |
| Ericsson | Swedish supplier of telecommunications equipment and service and multimedia solutions. | 778.02 | 2,161 | 70 | 10% | 80% | 10% | -- |
| Hero | Swiss food group. | 216.85 | 566 | 5 | 10% | 30% | 50% | 10% |
| Hewlett Packard | US company providing IT solutions. | 1,215.89 | 2,770 | 60 | 10% | 20% | 60% | 10% |
| Sony | Japanese multinational producing consumer electronics. | 208.69* | 37* | 4 | -- | 70% | 15% | 15% |
| ThyssenKrupp Elevator | German corporation in the lift sector. | 121.29 | 542 | 5.7 | 30% | 40% | 15% | 15% |
| Vodafone | UK telecommunications company providing phone, data and internet services. | 4,810.73 | 4,216 | 3 | -- | 10% | 80% | 10% |

*Notes: All data refer to the subsidiary located in Spain*
*\* Data for Sony Computer Entertainment España*
*%BR=Percentage of R&D allocated to basic research*
*%AR=Percentage of R&D allocated to applied research*
*%Product=Percentage of R&D allocated to experimental product development*
*%Process=Percentage of R&D allocated to experimental process development*

*Source:* The companies themselves and the SABI database (Sistema de Análisis de Balances Ibéricos)

## Factors for the international location of innovation

Although multinationals look in detail at all the aspects affecting decisions involving the international location of innovation included in the theoretical framework explained earlier, they naturally give priority to certain factors over others. In this section we explain these factors in the order of their importance in decision making in the subsidiaries analysed and assess the competitive position of an intermediate innovating country, in this case Spain, in comparison to that of emerging countries.

## Factors related to policy on innovation

Factors connected to government policy on innovation in conjunction with the level of technology offered by the various countries are the aspects that multinationals value most when it comes to making R&D location decisions because they involve access to

financial resources. Specifically, public money for innovation (direct subsidies and tax incentives and deductions) is what they take most into account, although for Alstom "*this type of help is seen as a factor for retaining the activity rather than attracting new or bigger activities to a country*".

As far as the multinationals we interviewed are concerned, the Spanish system of tax breaks should be redefined to make it more effective compared to emerging economies, now that the BRIC countries offer very tempting tax incentives to attract innovation activities. Brazil, for example, allows tax deductions of between 40% and 60% on spending on R&D activities. Russia does not tax intellectual property transactions and frees companies from paying tax in special economic zones (SEZs). In India the law allows 100% of R&D spending to be deducted from taxable income in R&D business units.

Meanwhile the way innovation is treated for tax purposes in Spain has two main limitations. Firstly, there is a time limit for applying and submitting outstanding tax deductions and therefore they cannot be accumulated, which means that many deductions are unable to be applied in the short or the medium term. And secondly, bearing in mind that the organizational structures of multinationals are usually complex and often do not coincide with their legal structures, because R&D centres come under the legal status of the Spanish subsidiary, obtaining tax deductions is paradoxically conditional upon the commercial success and profits of the subsidiary in the Spanish market and not upon the results or success of the actual research activity carried out in the R&D unit.

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**PUBLIC FUNDING FOR R&D IN FOREIGN MULTINATIONALS IN SPAIN**

Companies such as Hewlett-Packard, ThyssenKrupp, ArcelorMittal, Sony and Alstom have often used direct funding for innovation provided by the Spanish government. However, the way this type of incentive has been cut over the last few years is eroding the competitive advantage of Spanish subsidiaries especially when compared to subsidiaries in countries with emerging economies, which are maintaining or even increasing funding.

Given the limitations for applying tax deductions, the reductions in Social Security rates payable for staff working exclusively in R&D were warmly welcomed. For multinationals these became a much more tangible incentive that would have a direct effect on payroll costs for each R&D centre, making them more competitive compared to subsidiaries in other countries. With the crisis, however, these allowances were abolished with immediate effect under the 20/2012 Act, greatly harming those companies that had already planned on applying them.

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## Factors related to economic and political stability

As far as the institutional environment is concerned, political and economic stability and the country's risk indices are the most relevant aspects. For Sony, "*the unfavourable economic situation, with a very high risk premium, does not help to attract R&D. In times of change, high volatility and international uncertainty, multinationals do not opt for inflexible countries with high barriers from the start.*" In addition, for Ericsson "*macroeconomic instability makes it more difficult and complex to carry out a long-term strategy of industry creation and local commitment*".

Despite the fact that the financial crisis is international in character, some countries like Spain find themselves more affected than others. For ThyssenKrupp, "*macroeconomic instability in Spain could lead to less capacity for public funding and a worsening of the country's image abroad. If it continues over time, it could even lead to the relocation of the multinational's R&D centres in Spain to other countries such as Germany, for company policy reasons, or China, for market reasons.*"

However, in other aspects less dependent on the economic situation but which also give a country stability, such as the level of bureaucracy in government, the effectiveness of the judicial system, the protection of intellectual property and an attitude and legislation favourable towards FDI, Spain has a clear competitive advantage over countries with

emerging economies. For Hewlett Packard, "*struggling with red tape in China is complicated, but in India it's especially infuriating*". And according to Hero, "*Brazil is extremely protectionist as far as legal security is concerned because it has a huge, insecure legal system, which complicates things enormously; neither is there very much security in Russia or China when it comes to business activities*". As regards the protection of intellectual property, intermediate countries like Spain have a competitive advantage compared to emerging countries, with China being ranked worst. This is due firstly to the high risk of opportunistic behaviour in its market (risk of imitation and copying), and secondly, to a lack of effectiveness in law enforcement and a lack of a legal system that penalizes this behaviour. According to Vodafone, "*the protection of intellectual property in Spain is absolutely no problem. Indeed the reverse is true – it is considered a strong point*". Of the approximately 30 patents that Vodafone's subsidiary registers annually, all are triadic; first they are registered in Spain, then they are passed on to the multinational group which registers them on a European and then a worldwide level.

Discretionary regulatory powers and corruption also reduce the competitiveness of countries with emerging economies. While in Spain expropriations, nationalizations or a sudden rejection of the obligations taken on by government long ago ceased to be a threat to political stability, in emerging economies this is a threat that is still latent today.

There is no doubt that the lack of development and maturity of political and economic institutions in emerging countries makes it less likely that foreign multinationals will invest in innovation, and this places more developed countries such as Spain in an advantageous position. In order for multinationals to opt to locate innovation activity in emerging countries, they need to be well compensated by other environmental factors more closely related to the growth and potential of their markets and also to the possibility of public funding and tax incentives. As far as ThyssenKrupp is concerned, "*half of the market is currently in China, and therefore it would be useful to have innovation centres inside the country so as to benefit from all the tax advantages the government can give them*".

### Factors related to the labour market

Of the factors related to the technology offered, those involving the labour market for research staff in order to access new resources and technological capacities appear in third place when it comes to considering the location of international innovation activities. In this

respect Spain scores very well compared to the BRIC countries, especially as regards the availability of qualified personnel and the quality of its higher education. However, according to Alstom, "*although there are some excellent universities in Spain that turn out highly competitive engineers and scientists on an international level, they still need to take action to train people in entrepreneurial initiative*".

As far as learning foreign languages is concerned, this was a definite weak point in Spain in the past but has improved over time. For Sony, "*English is now not a problem in Spain. More people speak it, although not as well as they might*". According to Hero, "*the level of English among Spanish research staff isn't as high as it could be, but they can certainly be said to get by*".

As for the mobility of scientific personnel and the quality of life for attracting and retaining scientific staff, Sony believes that "*Spain offers a very attractive quality of life as far as human relations, food, climate, physical exercise and so on are concerned, and this makes it much easier to attract and retain scientific talent*". Indeed at Vodafone, "*over the last few years the Spanish subsidiary has been a popular destination for expatriates within the English multinational*".

Another crucial subject in the process for deciding on locations for international R&D is the cost of scientific personnel because, according to Sony, "*the cost of an R&D centre is basically made up of researchers' salaries*". In this respect Spain is perceived by the managers interviewed as being less competitive than the emerging countries, although according to Hero "*multinationals do not decide on the location of R&D on the basis of costs alone, but also on expected results, and in this respect Spain offers a better quality-to-price ratio than you would find in Brazil, China or India*". Hewlett Packard agrees that "*to equal the return on one Spanish researcher you would need to consider the work of more than one Chinese or Indian researcher*". This happens especially with radical innovations (new developments that involve a break) rather than incremental innovations (new versions of a development that already exists), because they require a great deal of knowledge transfer that can become complicated if there is a lack of close communication and good understanding between the parties involved.

Another key reason for the lower competitiveness of emerging countries is the lack of loyalty or commitment among company employees, which means a high turnover of research staff. This high turnover results in a definite decrease in performance and an

increase in employee costs because the associated cost of replacing staff has to be taken into account. According to Hewlett Packard, *"sometimes in these emerging countries you not only need to pay the engineer or researcher you employ, but also the substitute who is "on the bench" waiting to find out if the regular player will decide to leave halfway through the project"*. All this means higher salary costs that can eventually wipe out any difference in payroll costs, especially as regards qualified personnel. ArcelorMittal explain that *"a recently qualified engineer in India has a slightly lower salary than a recently qualified engineer in Spain, but the costs equal out when other additional expenses such as travel allowances and visas, etc. are taken into account."*

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### HEWLETT PACKARD AND THE RELOCATION OF R&D FROM EMERGING COUNTRIES TO SPAIN

In 2011 the US multinational Hewlett Packard moved part of its R&D, which had previously been located in Brazil and India, to a new base in the Technology Park in León (a small Spanish provincial capital), adding a new Software Development Centre to its already existing Retail Solutions Centre. In total HP has invested 10 million euros in León and has 300 highly qualified staff.

The decision to relocate was due to the fact that HP's activities in emerging countries were affected by serious interrelationship barriers (distance in geography, language and culture, which makes communication, coordination and understanding between group units more difficult) and problems involving the high turnover of research staff and salary inflation typical of these emerging countries. Small cities in Spain, however, are cost-competitive compared to emerging countries and are also close to good universities that provide a source of highly qualified personnel.

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### Factors related to the national innovation system (NIS)

In fourth place, the national innovation systems (NISs) of the different countries also play an important role when it comes to deciding on location because they enable MNCs to access new technology resources and capacities. For Vodafone, *"the search for talent and closer relations between the scientific and business worlds is fundamental for the multinationals' innovation processes. Countries should work towards building a network of innovation capable of using and retaining any talent that may appear"*.

Spain has competitive advantages compared to the economies of emerging countries, scoring positively as regards the availability of scientific institutions and the ability to attract scientific talent, but the BRIC countries are gradually catching up in this respect. According to Hero, "*Spain's level of science is good although more investment needs to be made*". However, Spain does not score so well when it comes to the presence of technology clusters and the separation between the scientific and business worlds. Asian countries are clearly in the lead as far as technology clusters are concerned. Bangalore is home to some of the most prestigious schools and research centres in India, as well as important software, aerospace engineering and telecommunications companies. On the east coast of China there are also numerous clusters, such as those for electronic products in Dongguan (Guangdong), transport equipment in Shandong and chemicals in Shanghai[32]. But according to ThyssenKrupp, "*there is much concentration of suppliers and industry in China, but they can't be considered true technology clusters because they're not really organized*".

The gap between the scientific-academic world and the business world is another key factor that could be improved in the case of Spain. For Sony, "*there is significant separation because, despite the high potential of Spanish research centres and the resources invested, their objectives are very different and quite removed from those of the business system*". Bridges would therefore need to be built to improve collaboration and knowledge transfer between the two systems. In this respect Hewlett Packard and Alstom propose that a directory should be compiled containing up-to-date information on groups and lines of research in universities, technology centres and public institutions in Spain. "*Companies are often faced with problems of a complexity that requires the help of an outside expert to solve them. However, they don't know where to go for advice. A directory of this type would help researchers and companies to contact each other, whether to collaborate on specific problems or to develop joint research projects*". It would also encourage the creation of a nationwide innovation network in which both the public sector and the business sector could participate, thereby contributing to the consistency and improvement of competitiveness in the country's NIS.

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[32] For more information on industrial clusters in China, go to: http://www.chinasourcingblog.org/2011/11/chinas-industrial-clusters.html

The multinationals believe that another way of improving the competitiveness of the Spanish NIS would be to encourage scientific talent to be attracted to the country. For Alstom, "*it is vital to create real possibilities to enable those researchers who have had to leave Spain in order to develop their research career abroad to return. In other words the current brain drain must be reversed*".

### Factors related to production networks

In fifth place are those factors related to production networks. Although these aspects are more closely linked to international location decisions involving production activity for market demand reasons in order to keep transaction costs down, they also have an effect on project allocation, especially when related to development activities. According to Hero, "*infrastructures and suppliers need to be close, reliable and responsible otherwise it's impossible to innovate*". Hewlett Packard also believe that "*the best thing would be to find a country with suppliers both competitive in production costs and with the necessary resources and capacities to carry out R&D activities*".

According to the managers interviewed, Spain has a competitive advantage over India as regards both the availability of qualified suppliers and its infrastructures and logistics systems, but not China or the countries of Eastern Europe. The need for reliable production networks is of crucial importance for Hero: "*the emerging countries with the highest levels of infrastructure are China, Russia and Brazil. India lags behind, apart from Bangalore...*

*in fact as far as emerging countries are concerned, infrastructure levels should be analysed by area rather than by actual country"*. On Chinese suppliers, ThyssenKrupp comment that *"it's more about quantity than quality, and therefore you need a certain critical mass to be able to buy in China"*.

## Factors related to a country's culture and geography

In sixth position are factors related to geography and cultural differences. As regards geographical distance (availability of connections, direct flights, obtaining visas, etc.), ArcelorMittal, with one of its R&D centres in a small city in the north of Spain (Avilés, Asturias), says that *"interconnectivity is very important, especially with customers. The cutting of flight routes from secondary airports is a big handicap in terms of cost and productivity because it takes more time to do the same journey"*. There are also difficulties with visas and red tape that need to be dealt with before being able to travel, which is a problem generally experienced by employees of subsidiaries in emerging countries. In this respect Sony points out that *"Brazilian, Chinese and Indian researchers always have problems with visas before they can come for short three-month stays in our country"*.

As for the cultural differences between countries (work practices, communication problems, cultural barriers) that increase institutional distance, multinationals are aware of the inconveniences involved and are therefore constantly learning how to deal with them to minimize their effects. Hence for multinationals like the Swedish Ericsson, with 17 R&D centres employing 22,400 engineers worldwide, *"multiculturality is a requirement when introducing innovation because it forms part of business culture. In fact we train employees in multicultural communication and management"*. ArcelorMittal corroborate this idea: *"cultural factors today are not an obstacle for the company when it comes to locating R&D activity abroad. We're used to living alongside many different cultures, so as long as people can communicate in English there's no problem"*.

The multinationals believe that China is the country that presents the biggest problems for interaction. According to Hero, *"it's easy to make yourself understood with a Brazilian or an Indian, but it's very difficult with someone Chinese. They're very ethnocentric: their way of thinking, their personal relationships, language problems, all make them very different. They also have a conception of business in which personal relationships are very important. This characteristic is closer to Latin culture than to Anglo-Saxon culture"*. For ThyssenKrupp, *"due to the low cost per hour, the way work is carried out in China is very*

*different from the way we work in Europe; whereas here we analyse an idea, develop it and test it only when we are very clear about it, in China they use trial and error as normal procedure. This involves a lot of protocol problems"*. And according to Hewlett Packard, "*it is difficult to find supervisors in China because their cultural vision of hierarchical structures makes decision making difficult. Only staff educated outside China manage to overcome this problem*". These results are only to be expected bearing in mind that most big multinationals belong to triad countries.

## Factors related to market demand

Finally, factors related to home market demand also influence innovation location with the aim of transferring technology in order to exploit the MNC's competitive advantage in the destination country. According to Hero, "*when a market gains weight it justifies more investment in innovation because a large volume of business in the country means that development activities are also carried out, especially those involving adaptation to that market*".

The size, dynamism and potential of the Spanish market do not reach the levels of the Chinese, Indian and Brazilian markets, but they are larger than in the countries of Eastern Europe. This is only to be expected bearing in mind the high growth forecast for these emerging economies[33]. However, as regards connections with neighbouring markets, Spain scores higher than India and Russia because it is a good springboard for entry into the markets of southern Europe, Latin America and North Africa. For Alstom "*the Spanish subsidiary is an extremely important location for the commercialization of the multinational's products in South America: the language, culture and pace of life make entry into that region so much easier.*"

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[33] According to the International Monetary Fund, in 2015 China will grow by 8.70% of GDP, India by 7.72%, Brazil by 4.12% and Russia by 3.93%.

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ALSTOM AND EMERGING MARKETS: CHINA AND BRAZIL

The rolling stock (trains and railways) business unit of the French multinational Alstom Transport believes that, although the Chinese market is constantly growing, it has limited market potential. Despite China's size, growth is basically concentrated in a few economically strong urban nuclei on the east coast. As a result, the demand for trains is restricted to connecting these areas but not all rural areas, where building railway lines would not be profitable.

However, Brazil and Latin America (especially Chile, Panama, the Dominican Republic and Ecuador) form a market with great growth potential for Alstom's transport business because they are creating infrastructure and also renewing all current rolling stock. If the high expectations for growth are fulfilled, the multinational may consider setting up more production centres and therefore locating innovation activities linked to manufacturing in the future. Alstom develops its products in close collaboration with the customer, and so proximity is absolutely vital because technological innovation is very specific and linked to different local environments.

The multinational's wind turbine business, Alstom Wind, also considers Brazil to be a key market. Proof of this is that the Brazilian wind power market grew by 54.2% in 2010 in terms of total installed capacity.

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## Discussion and conclusions

The appearance of emerging countries on the innovation location map opens up new possibilities for locating FDI and provides a basis for the relocation of technological activities to different territories, emerging as a result of the new pattern of geographical distribution for international R&D. This may mean the beginning of the end for the supremacy of the developed countries that until now have been leaders in innovation, and also the loss of competitive advantages for those countries considered intermediate innovators. In this context, the discussions we have had with foreign subsidiaries regarding the case of Spain have provided a starting point for the answer as to whether these intermediate countries are losing the ability to attract FDI of high added value.

According to the subsidiaries interviewed, the emerging economies have caught up with Spain in factors involving demand (except as a springboard for accessing neighbouring markets) and, in particular, factors connected with R&D support policies. As discussed

in previous sections, the policies adopted by some emerging economies to develop their NISs are producing results, and these countries today are comparable to Spain when it comes to the availability of scientific talent at competitive cost and the quality of their universities and research centres. This is consistent with the investment recently made by these countries in their respective university systems, which produce a large number of scientific personnel with the necessary skills for participating in the development of knowledge-intensive research projects. However, macroeconomic instability, the insecurity of their institutions and uncertainty in the business environment mean that good performance in the previous factors has not yet translated into an effective improvement in their position to attract FDI in innovation. Therefore as soon as these emerging economies resolve the problems in their institutional framework, they may be able to occupy the place of intermediate countries, moving them to the bottom of the list in the competition for international R&D. Nevertheless, as the subsidiaries we interviewed made clear, they still have a long way to go before they can put all these aspects in order.

In this situation, the challenge for countries that, like Spain, find themselves in an intermediate position consists of strengthening whatever makes their technology supply different before they are overtaken by the emerging economies. To both retain and attract FDI in innovation, they will need to introduce various cross-sectional measures that will involve all the NIS players and affect different areas of national policy. In this respect our analysis has also been useful for discerning some of these possible measures.

To begin with, the market conditions and business climate necessary to encourage open innovation business practices need to be created. Then the generation of ideas, knowledge transfer and entrepreneurial initiatives could originate from outside the internal limits of organizations, and cooperation with local external professionals would become fundamental. This would call for improvements in the interrelationships between the various economic agents on a national and international level. In this context, universities and research centres should offer new perspectives and solutions to companies and become centres of attraction for the R&D activities of MNCs. This strategy could be carried out in three action areas.

Firstly, more support needs to be given for the development of research centres and top-class universities so that they can become international benchmarks. These institutions are vital for competitiveness and international positioning not only because of their capacity and potential for innovation, but also because of their ability to train research personnel. Positive

measures in this area would be the establishment of a good grants system for training young research staff, better practical training for researchers to give them skills in management and entrepreneurship, and programmes aimed at attracting and retaining scientific talent (reverse brain drain). Secondly, the gap between the scientific and business worlds needs to be narrowed, coordinating objectives and building bridges of dialogue to improve collaboration and knowledge transfer. Recommended actions would include the construction of a road map with up-to-date information identifying groups and lines of research and the creation of a national innovation network, in which both the public sector and business would participate. Thirdly, it would be a good idea to think of new formulas for encouraging inter-company collaboration. R&D alliances between local and non-local companies could serve as bridges for transferring knowledge to the territory. Hence the country would become more attractive because local partners would have better technological capacities.

These actions should be accompanied by a legal framework and a stable and efficient incentives system to encourage innovation. Unlike in emerging countries, policies supporting R&D in Spain have not – with the necessary continuity – been part of the government's budgetary priorities and have been directed more towards injecting resources than to transferring technology to the business fabric and society. The public R&D system needs to pay more attention to the joint participation of foreign MNCs, local companies and scientific institutions in national R&D programmes.

In short, it can be seen from these recommendations that, rather than one-off actions aimed at improving Spain's "technological image" in the eyes of the multinationals, the advance of intermediate countries towards truly knowledge-intensive economies that are more competitive on the international stage calls for a joint effort by all the players involved in the NIS. Moreover, this analysis conducted in a Western European economy in downturn may well be of relevance to other countries for devising new patterns for international involvement in today's complex world economic situation. In order for multinationals to regain their belief in these economies and continue to locate innovation activities there, apart from establishing policies aimed at achieving macroeconomic stability, it is vital that the current economic situation should not lead to innovation policies being removed from the political agenda.

These policy recommendations should, however, be treated with a certain amount of caution. Not all FDIs are equal and not all intermediate countries are the same. This study has focused on eight subsidiaries located in Spain with a very narrow profile, i.e. subsidiaries

that have successfully set up consolidated R&D centres in the territory and play a generally integrating or innovating role within their corporation. Hence the context of this study is fairly specific and the explanatory power of our findings may be limited to intermediate countries with certain characteristics. Future research should carry out quantitative studies using a wider sample in more heterogeneous technological environments and countries and include the perception of headquarters. That will enable the conclusions stated here to be strengthened.

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