Moderating effects of the relationship between offshore outsourcing and the export capability of firms

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This paper analyzes the effect of offshore outsourcing on the export performance of firms, based on the theories of international business, the resource-based view of the firm and the transaction cost theory.

Outsourcing can reduce production costs and increase flexibility. It can also provide new resources and market knowledge. However, the impact of offshore outsourcing depends on the resources and capabilities of firms to manage a network of foreign suppliers, and to absorb knowledge of foreign markets.

Using a database of about 1,000 manufacturing companies in Mexico in 2011, we found that offshore outsourcing increases the performance of exports. The effects are stronger in export markets from which the company also imports intermediate goods.

The results also show that the size of the company, the organization of intra-firm imports and export experience moderate the effects of outsourcing in a positive way.

Introduction

Offshore outsourcing consists of acquiring intermediate goods from independent foreign vendors (Kotabe & Murray, 2004; Lei & Hitt, 1995; Mol, Van Tulder & Beije, 2005).

Outsourcing has attracted growing attention from communication media and the business, political and academic worlds in recent years (Rasheed & Gilley, 2005) due in large part to trade liberalization and economic progress.

There is a controversy in developed countries towards more offshore outsourcing, as firms seek a competitive advantage (Kotabe & Mudambi, 2009; Nibouche & Belmokhtar, 2009), fundamentally through lower labor costs. This can sometimes result in a generalized belief among a large part of the population that outsourcing has negative effects, such as decelerated economic activity in the country and, as a result, lower domestic employment levels. To this negative impact on employment, especially on low skill workers, we can add a carry-over effect on suppliers and related activity sectors, and the dumping competitive risk to reduce taxes and attract or maintain certain economic activities (Geishecker, Görg & Munch, 2007).

In fact, there are macroeconomic studies[1], like Falk and Wolfmayr's (2008) that in the EU's framework utilizes sectorial data from seven countries in the 1995-2000 period, or Egger and Egger's (2005), in 20 manufacturing industries in Germany in the 1990-1998 period, or Cadarso, Gómez, López and Tobarra (2008), with data from 92 Spanish industrial sectors, that outsource in east countries and central Europe and EU candidates in sectors with medium to high technologic content, in the 1993-2003 period, concluding that intermediate imports in low income countries have negative effects on employment, especially in sectors requiring lower qualification. Amiti and Wei (2006) calculated the substitution elasticity between local workers and imports of intermediate goods for US data and they found, in that case, a complementary effect (positive).

Other research at a micro level, with plant-level information on the Irish electronics sector in 1990-1995, reached similar results, with negative effects on employment for certain kind of offshoring.

However, in contrast, in destination countries of these outsourcing, the substitution effect must induce logically an

[1] Most of the research papers about offshoring utilize data from the input-output tables (IOT), as these tables offer information about intermediate consumption divided in sectors, differentiating between domestic and imported consumption (Cadarso *et al*., 2009).

increase in the level of employment and economic growth in these industries that benefit from this external demand of their products. This can even have a positive boomerang effect for the economy and employment of those countries whose firms outsource due to the stimulation in growth of underdeveloped countries that own those outsourced firms, leading to an increase in imports of goods with greater value added of developed countries (Farell, 2005).

At the company level, many empirical studies have examined the factors that determine a firm's export performance (Doh, Bunyaratavej & Hahn, 2009), but few have researched offshore outsourcing as one of these factors (Mol *et al.*, 2005; Di Gregorio, Musteen & Thomas, 2009).

Given the timeliness of this topic, the goal of this work is to study the microeconomic effects of offshore outsourcing on the export performance of firms, using perspectives from international trade, the resource and capabilities theory and the transaction costs theory.

From these theories it can be inferred that outsourcing abroad increases a firm's export capability, not only by reducing production costs but also by increasing flexibility and acquisition of new resources and market knowledge.

Not all companies acquire these aspects (flexibility, new resources or market knowledge) to the same extent. Factors such as the size and export experience of the company, as well as their experience with importing intermediate products, especially within the business group's network or in the same export market, increase the firm's capability to absorb information and develop capabilities to make exports more efficient.

As a result, this work seeks to demonstrate that offshore outsourcing improves a company's export performance and efficiency, and to identify the factors that mediate this relationship.

The theoretical framework and formulating the hypothesis

Outsourcing refers to a strategy of international competitiveness, where firms fragment production and search the cheapest localizations or suppliers, within a given quality, all over the world to obtain cost advantages.

In Cadarso's opinion (2009), literature follows the same evolution as the studied phenomenon. It started twenty years ago and it was developed in the last ten years. Numerous macro studies are centralized in the evolution of the delocalization, for different data and countries, and in their determinants. This literature is originated with Feenstra and Hanson (1996, 1999), and it branches into studies that analyze the determinants of the offshoring (concrete revisions can be found of this literature on Grossman & Rossi-Hansberg, 2006 and Diaz & Fandoy, 2007) and in their evolution (Campa & Goldberg, 1997, with macroeconomic data from US, Canada, United Kingdom and Japan; Girma & Görg, 2004, with microeconomic information from United Kingdom; and for the Spanish economy Minondo & Rubert, 2001; Díaz & Gandoy, 2005 and Gómez, López & Tobarra, 2006).

Globalization theory identifies three main channels by which outsourcing can increase a company's competitive advantages and, indirectly, levels of export sales (Kotabe & Murray, 2004; Kotabe & Mudambi, 2009).

- First, offshore outsourcing allows companies to reduce their production costs by, for example, buying cheaper inputs from foreign vendors, lowering salaries in developing countries or using superior technology from developed countries and benefitting from large economies of scale (Rasheed & Gilley, 2005).
- Second, outsourcing allows for greater flexibility, as the company that outsources is less committed to a single type of technology, and it facilitates reassigning resources to activities that constitute the firm's basic competencies (Weerakkody & Zahir, 2010).
- Third, outsourcing abroad helps firms complement their resource inventories and knowledge from foreign vendors (Grant, 1991).

In general, we see international trade as an important channel of diffusion, not only for technological knowledge and organization, but also for market information (Karlsen, Silseth, Benito & Welch, 2003; Salomon & Jin, 2008). When searching for and negotiating with foreign vendors, firms develop their network of external contacts and learn about foreign markets.

At the same time, this can increase the transfer of resources that companies use to export. For example, while technology is seen as highly fungible, marketing resources are not (Salomon & Shaver, 2005).

In summary, outsourcing can provide companies with indirect export advantages by reducing costs, increasing flexibility, providing additional resources and/or market knowledge. With this, we can propose the first research hypothesis.

> *Hypothesis 1: Offshore outsourcing is positively related to export performance.*

The benefits of offshore outsourcing are more direct when the import and export markets are identical. First, the value of knowledge related to the market where outsourcing occurs is greater when the firm focuses its exports in the country where it outsources. Interactions with vendors and other agents in the country allow the firm to better understand consumer preferences regarding specific products, as well as the products of competitors (Karlsen *et al.*, 2003; Welch & Luostarinen, 1993).

These companies become familiar with the local context, and how to reduce specific disadvantages in each place

(Barkema, Bell & Pennings, 1996), as well as specific transaction costs for exports (Verwaal & Donkers, 2002).
Second, working with foreign vendors provides advantages that facilitate exports to those countries (Anand & Delios, 1997). Exporting companies no longer have to adapt imported inputs to the situation of the export market (for example, to different technical standards) or incur the costs for local adoption. Moreover, vendors are more sensitive to changes in the market.

Finally, importing inputs from the export market may be an essential condition for exportation, as in the case of countertrade or compensation trade (Choi, Lee & Kim, 1999; Esteban de la Rosa, 2011). Governments may require companies to incorporate inputs manufactured in the export country in their final products. Countertrade can also be voluntarily used to enter into markets characterized by strong environmental limits and market imperfections.

To summarize, outsourcing in the country of exportation can give companies the specific resources and knowledge of each country. With this, we proceed to the second hypothesis:

> *Hypothesis 2: Ceteris paribus, the positive effects of offshore outsourcing on export performance are greater when the export markets coincide with the country in which the firm imports intermediate goods.*

In the same way that there is an argument in favor of offshore outsourcing to increase competitive advantages, and as a result, improve export performance, firms must also take into account the costs and risks associated with offshore outsourcing (Mesquita, Anand & Brush, 2008). These costs include acquisition and transaction costs, both *ex ante* (search and negotiation) and *ex post* (supervision and execution) (Leiblein, Reuer & Dalsace, 2002).

Offshore outsourcing results in greater coordination costs due to the increased geographic and cultural distance from vendors. These costs may be excessive when the firms do not have the organizational and technological resources to supervise and coordinate relationships with remote vendors. As such, these firms need to be able to assimilate, combine and use external resources and knowledge (Zahra & George, 2002).

This ability is more prevalent among large multinational companies, which generally have decisive advantages when it comes to offshore outsourcing.

Large companies have a greater stock of administrative and financial resources and are more able to handle their own supply chains, which reduces transaction and coordination costs related to outsourcing.

Their absorption capability is also likely higher, because they have the experience and labor to create sophisticated hiring systems based on supporting technology (Elmaghraby, 2000), which reduces the cost of coordinating with foreign vendors. For example, Rangan (2000) affirms that multinational companies face lower search (identifying partners) and decision-making (evaluating capacity and trustworthiness) costs. By operating in different countries, these companies are well inserted into the broad social and business networks. Levy (2005) emphasizes that over time, large companies have increased their organizational and technological capability to divide and coordinate the geographic distribution of their vendor networks.

Companies that outsource may become overly dependent on their vendors, and in this way lose control of the outsourced activity, and be the victim of opportunist behavior. However, large companies can generate economies of scale in the governing structure to improve the capability to evaluate and supervise transactions with foreign vendors (Verwaal & Donkers, 2002). In conclusion, transaction costs may be lower because large companies have the power to negotiate, which limits the opportunist behavior of foreign vendors. With this, we propose the third hypothesis:

> *Hypothesis 3: The relationship between offshore outsourcing and exports is positively affected by the size of the company*

It has previously been argued that multinational companies may be different in terms of their absorption capability (Eriksson & Chetty, 2003), which determines the ability to recognize the value of external knowledge and resources abroad, to assimilate and positively apply these to the export markets.

As a result of this greater absorption capability, multinational companies that purchase intermediate products abroad will generate more knowledge and develop more internal resources.

Moreover, if intermediate products are not only acquired through external outsourcing, but also through branches or associates, supplied through their network, absorption of external knowledge or know-how will be even greater. Intra-firm trade leads to greater communication and more exchange of information (Rangan, 2000), which increases the advantages of information for foreign hiring.

In fact, if the outsourced activity has been done somewhere within the company's own network, its absorption capability will be even greater for having developed internal experience and acquired specific knowledge of the activity to be outsourced.

Even though the work of Puranam and Srikanth (2007) mention the possibility of a negative effect when firms stop producing intermediate goods and outsource them, in terms of losing organizational routines or employee motivation, these effects are not sufficiently contrasted, and on the contrary it exists significant empirical evidence of this complementary relationship between external acquired resources and internally developed resources in research and development literature, (Cassiman & Veugelers, 2006) as well as in studies on strategy (Parmigiani, 2007; Rothaermel, Hitt & Jobe, 2006).

As such, we propose the following working hypothesis:

> *Hypothesis 4: Ceteris paribus, the positive effects of offshore outsourcing on export performance are greater when firms also import intermediate products from firms within the same multinational group.*

Absorption capability can be improved not only through export experience with intermediate products in foreign markets, but also through the firm's own export activities.

Exportation requires a firm to search for, interpret and use information from foreign markets (Cadogan, Diamantopoulos & Siguaw, 2002; Souchon & Diamantopoulos, 1996).

For example, companies with no export experience may pay less attention to new information for foreign vendors and other agents in the country of importation, although this information may be crucial for the exportation market. These firms are thus less able to not only identify the value of information and knowledge, but also to take advantage of it and incorporate this knowledge into their export operations.

As a result, export experience increases the capability to absorb knowledge derived from offshore outsourcing and use it in export activities, in this way generating a virtuous cycle, although there is little empirical research to back this up (Karlsen *et al*., 2003).

With this, we propose our final working hypothesis:

> *Hypothesis 5: The relationship between offshore outsourcing and exports is positively affected by a firm's export experience*.

Some company or country characteristics may influence our variable of export performance. As such, the effects of these factors should be controlled so as not to distort the results obtained in our study.

We decided to control for unit labor costs at the company level. *Ceteris paribus*, greater unit labor cost reduces advantages based on costs and consequently negatively affects export capability (Bobillo, Rodriguez & Tejerina, 2007). This cost may vary independently from the decision to outsource, due to the innovation processes chosen or new management practices.

It was also deemed useful to consider the sector in which the export company works, to control for the effect of industry.

Finally, we took into account the size of the export market on a national level, as in the work Kuntluru, Muppani and Khan (2012), as well as the geographic and cultural distance between Mexico and the exportation countries. Firms hope to export more to markets that are larger and more similar, and less distant, both geographically and culturally (Kogut, 1985; Morosini, Shane & Singh, 1998; Chang & Rosenzweig, 2001; Ruigrok & Wagner, 2003).

Research methodology

Gathering the data

This research has made use of secondary information sources. Specifically, we used the Bancomext Directory of Exporters and foreign trade statistics developed by the Working Group for Foreign Trade Statistics, made up of Bank of Mexico, INEGI (Statistics Institute), The Tax Administration Service and the Ministry of Economy.

The exporting directory of Bancomext is an official publication that contains information of all the exporters in Mexico and on the products they export, as well as the tariff codes and countries to which they export; INEGI statistics allow us to know the trade with all countries, as well as the tariff codes subject to this commercial interchange, which can be analyzed from the point of view of intermediate consumption goods.

In this database, in conjunction with the statistics generated by the work group, we were able to select the group of firms that was used to do this work of investigation, as they contain data at a firm's level and enable us to use the variables selected in this work.

The variables used allowed us to get closer to the operations of outsourcing and to analyze its effects on the external commerce activities of Mexico.

With it, we compile a database, with an equivalent sample of about 1,000 companies, which covers about 70% of exports and imports of Mexican manufactures. The data corresponds to 2011.

For the study on the used basis, all the information available was used, filtering on the country at which they target their exportation, as only the main developed and underdeveloped countries were used, which covers most of the international commerce of the Mexican exporting companies. This filter let us avoid an excessive heterogeneity on the analyzed companies without erasing significant companies from the sample.

For each tariff bracket, the database describes the distribution of imports by country of origin and exports by country of destination, on the product level.

For each transaction, the value and type of good being commercialized is indicated (intermediate or final goods), as well as the operation that has been established with independent vendors (external outsourcing) or with foreign partners (intra-supply company).

Because these data are cross-sectional, outsourcing performance was analyzed at a determined point in time, and not during the process. In this way, we cannot tell whether the firm originally worked with foreign vendors, or if it is outsourcing by substitution, that is, if the activities

were internally coordinated before being outsourced (Holcomb & Hitt, 2007; Rasheed & Gilley, 2005).

Finally, to measure the determining factors on the country level, we had to reduce the number of export destination countries to approximately 70 exportation markets (major developed and developing countries were included). These countries have thorough data available regarding GDP (obtained from World Bank statistics) as well as cultural distance from Mexico, according to studies by Hofstede (1983, 1991).

Metrics

The dependent variable of our study was export performance. The first option to measure this variable is by using final sales of exported goods (Ito & Pucik, 1993), by which export sales are calculated for each firm in each of the 70 export countries in our sample. However, in this study, we used the logarithm of exports, as empirical literature has shown that this is a better adjustment (Stein & Daude, 2007). Still, the export variable has a large number of zeros, so calculating the logarithm excludes many observations, and this may lead to a biased estimate. A common solution, which we used, is to use the transformation log (Export+1). Log (Export) is very close to log (Export+1) for large export values, which was the case in our study, and makes error very manageable (Wooldridge, 2002, 2009).

Our independent variable was offshore outsourcing. We have added the value of inputs supplied by independent foreign vendors for each firm (more than 90% of companies in the sample outsource abroad). This measurement was divided by total sales to control for size.

In Hypothesis 2, a variable was invented, bilateral trade, which took the value of 1 when the import and export companies were the same. This dummy variable was built for each pair of countries.

The moderating effect of this variable was measured by creating a new variable, which was the product of the following interacting variables: offshore outsourcing × bilateral trade.

The size variable was measured by the number of employees. This variable is frequently used to approximate a company's resources (Dhanaraj & Beamish, 2003) or the economies of scale a firm generates. As the third hypothesis analyzes the moderating effect of size on the effect of offshore outsourcing on exports (Herath & Kishore, 2009), a new interaction variable was created: offshore outsourcing × size.

To contrast with hypothesis 4, we created a dummy variable regarding supplies within the companies (intra-firm supply) and its interactive variable with offshore outsourcing: offshore outsourcing × intra-firm supply. This variable took the value of 1 if the company imported inputs within its own multinational network, and 0 if not. Around 40% of firms have intra-firm imports.

Finally, for the fifth hypothesis, we used the variable of export experience (Leonidou, Palihawadana & Theodosiou, 2011), measured by the number of years that a company has been exporting. To measure the mediating effect of this variable, we created the following interaction variable: offshore outsourcing × export experience.

Regarding the control variables that may have had some type of effect on exports, the unit labor cost variable was measured by the relationship of cost of labor over added value (Bobillo *et al.*, 2007), the size of the export market was measured using GDP (Kuntluru *et al.*, 2012), geographic distance was measured in kilometers of separation between the countries (Morosini *et al.*, 1998), and cultural distance was measured using Hofstede's measurements of cultural distance (Hofstede, 1983, 1991; Kogut, 1985; Chang & Rosenzweig, 2001; Ruigrok & Wagner, 2003).

Econometric model

Our first model used an ordinary least squares regression (LSR) with robust standard error.

The second model controlled for endogeneity and simultaneity, as exports can affect the use of offshore outsourcing, as previously mentioned. We used the two-stage least squares method (2SLS) (Salomón & Shaver, 2005; Wooldridge, 2002).

Results

Our work sought to evaluate the effects of international delocalization on export sales. Table 1 presents the main results obtained.

In Model 1 (LSR), columns 1-5 contain information on research hypotheses 1-5, respectively, and columns 6-10 replicate these estimates for model 2 (2SLS).

Table 1. Results of the models

SUBJECTS	*Model 1*	*Model 1*	*Model 1*	*Model 1*	*Model 1*	*Model 2*	*Model 2*	*Model 2*	*Model 2*	*Model 2*
Constant	−3.723***	−3.210***	−3.717***	−3.741***	−3.737***	−5.861***	−5.215***	−5.325***	−5.660***	−5.754***
	(0.098)	(0.095)	(0.103)	(0.098)	(0.098)	(0.243)	(0.248)	(0.314)	(0.245)	(0.244)
Unit Labor Costs	−0.260***	−0.240***	−0.259***	−0.262***	−0.261***	−0.285***	−0.262***	−0.271***	−0.287***	−0.274***
	(0.018)	(0.018)	(0.019)	(0.018)	(0.018)	(0.020)	(0.020)	(0.049)	(0.020)	(0.020)
GDP	0.311***	0.253***	0.311***	0.312***	0.311***	0.325***	0.267***	0.326***	0.325***	0.326***
	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)
Geographic Distance	−0.400***	−0.316***	−0.400***	−0.399***	−0.400***	−0.424***	−0.337***	−0.423***	−0.423***	−0.424***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)	(0.008)	(0.008)	(0.007)	(0.008)	(0.007)
Cultural Distance	−0.446***	−0.414***	−0.445***	−0.445***	−0.447***	−0.460***	−0.425***	−0.460***	−0.458***	−0.461***
	(0.021)	(0.021)	(0.022)	(0.020)	(0.021)	(0.023)	(0.023)	(0.022)	(0.022)	(0.023)
Size	0.356***	0.315***	0.351***	0.358***	0.356***	0.356***	0.317***	0.325***	0.353***	0.362***
	(0.007)	(0.006)	(0.009)	(0.007)	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)
Internal Outsourcing	0.068***	0.031***	0.041*	0.050**	0.049***	0.073***	0.066***	0.062**	0.065**	0.071***
	(0.012)	(0.012)	(0.024)	(0.020)	(0.016)	(0.028)	(0.025)	(0.031)	(0.033)	(0.024)
Export Experience	0.035***	0.034***	0.044***	0.034***	0.046***	0.037***	0.036***	0.050***	0.036***	0.051***
	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.001)	(0.008)
Offshore Outsourcing	0.073***	0.041***	0.121***	0.051***	0.053***	0.358***	0.320***	0.509***	0.381***	0.397***
	(0.005)	(0.004)	(0.005)	(0.006)	(0.004)	(0.017)	(0.017)	(0.026)	(0.025)	(0.019)
Bilateral Trade		2.239***					1.431***			
		(0.113)					(0.126)			
Offshore Outsourcing × Bilateral Trade		0.168***					0.118**			
		(0.044)					(0.050)			
Offshore Outsourcing × Size			0.027***					0.169***		
			(0.002)					(0.020)		
Offshore Outsourcing × Intra-Firm Outsourcing				0.089***					0.294***	
				(0.004)					(0.027)	
Offshore Outsourcing × Export Experience					0.015***					0.094***
					(0.001)					(0.003)
R 2	0.15	0.17	0.16	0.16	0.16	0.13	0.15	0.14	0.14	0.14

Notes:
Robust standard errors in parentheses.
Model 1, LSR; Model 2, 2SLS.
* Significant at 10%, ** significant at 5%, *** significant at 1%.

Neither of the models showed severe multicollinearity. For all estimates, the value of the variance inflation factor was less than the critical threshold of 10. An incremental F-test was also performed. We have confirmed that including interactive values provides better data adjustment.

In columns 1 (model 1) and 6 (model 2), it can be seen that before introducing the interaction effects, the variable of Offshore Outsourcing is positive and its relationship is statistically significant at 1%, which supports our first hypothesis. The value of the coefficient (interpreted as elasticity) is much greater in model 2 when potential simultaneity and endogeneity are controlled.

In both models, the control variables ended up having a significant effect on the export behavior of the companies included in this study. This means that Unit Labor Costs, Geographic Distance and Cultural Distance are inversely related with the dependent variable. However, Export Market Size, measured by GDP, is directly related to exports.

The variables Size of Company, Internal Outsourcing and Previous Export Experience improve the export results for companies *ceteris paribus.* The variable Bilateral Trade was included in both models only in columns 2 and 7, where it is positive and significant. Including this variable as a control variable in other cases did not affect the results.

Hypotheses 2 and 5, proposed in terms of interactions, had contrasting results for each model. In hypothesis 2, the variable Bilateral Trade and its interactive variable Offshore Outsourcing x Bilateral trade produced positive and significant results, as was the case for the interaction variables Offshore Outsourcing x Export Market Size (hypothesis 3), Offshore Outsourcing x Intra-Firm Outsourcing (hypothesis 4) and Offshore Outsourcing x Export Experience (hypothesis 5).

There is a good general level of adjustment in the models. The R^2 value is relatively low, between 0.13 and 0.17, but these levels are typically observed in cross-section data with a large number of observations[2].

Conclusions

The fundamental goal of this work was to examine the impact of offshore outsourcing on the export performance of firms. The authors detected a gap in empirical researched on the micro level regarding this relationship (Salomon & Shaver, 2005).

Our research defends and provides empirical evidence to support the idea that in general, outsourcing abroad increases international competitiveness for large multinational firms, and as a result, their export capability, which could not be demonstrated in work from Mol *et al.* (2005). They used a more reduced sample size (200 Dutch firms) and were unable to find significant effects on economic performance.

It may even be said that the findings of our work could complement findings from Di Gregorio *et al.* (2009), which showed that in a sample of 100 small and medium-sized enterprises in the US, outsourcing abroad (especially in the area of technical and administrative services) increases export performance. Still, they suggest, but do not prove, that offshore outsourcing may not be beneficial for large multinational companies, and that the effects depend on the heterogeneity of these firms.

Besides finding empirical evidence of the positive relationship between offshore outsourcing and export levels, this research advanced by contributing knowledge regarding heterogeneity factors that moderate this relationship for multinational firms.

In this way, we can observe that the effects of offshore outsourcing are conditioned by factors such as country of exportation, as well as the firms themselves. Empirical results support this statement.

Positive effects on exports, associated with outsourcing abroad, are greater when imports and exports are done in the same country. Importing intermediate goods in the market to which the firm's exports are directed allows the firm to obtain valuable information on the local markets, which reduces specific disadvantages associated with each place and strengthens the firm's presence in the export market.

On the other hand, the impact of outsourcing abroad is likely heterogeneous among multinational companies. This heterogeneity reflects differences among each firm's resources and absorption capacities. An important source of heterogeneity is the size of the firm. In keeping with the results observed in the meta-analysis of multi-nationality and performance from Bausch and Krist (2007), we found that being a bigger firm helps companies overcome strategic and operational difficulties that may arise with offshore outsourcing, through scale effects and improved resource availability.

Many multinational firms have followed an international vertical integration strategy with some level of outsourcing to various levels of success, using a global network of independent vendors.

Ghemawat (2007) calls upon researchers to obtain more systematic empirical evidence on the global supply chain and its role in the strategy of multinational companies. In this sense, our research demonstrates the complementary relationship between external acquired resources and internally developed resources (which is facilitated by importing intermediate products from companies in the same group), and how these also improve a firm's export performance.

Similarly, previous export activities generate greater capacities for the firms that contribute to developing new export abilities by absorbing knowledge. This knowledge is a product of their experience with offshore outsourcing as well as export activities themselves. As such, there is a reinforcing effect that was assumed in our last working hypothesis.

The practical implications of this study

A few ideas stand out from the results of this study, and should be taken into account by both business and political decision-makers.

In this sense, during a period of economic and financial turbulence, like we are currently undergoing, political leaders may be tempted to defend greater economic protectionism, in order to defend their local economies. However, our results show that this would be a costly choice, in terms of the competitiveness of large multinational companies. In a global market, where national firms are faced with less need to outsource to foreign

[2] See Gujarati (2004) or Wooldridge (2009).

vendors, outsourcing can be a determining factor of international competitiveness. Protective measures that limit outsourcing may be counterproductive, as their end result is to affect the volume of exports.

We think that our study contributes to the demonstration of the beneficial character that the alliances of outsourced firms, in underdeveloped countries, and outsourcers firms, in developed countries, have. Based on this, for example, the Program for the outsourcing and the industrial alliances, from the United Nations Industrial Development Organization (UNIDO), has been establishing at a global level, since 1982, stocks of outsourcing and industrial alliances (BSA/SPX). This seems to be the right way to support and promote the small and medium enterprises making them more competitive, and it's the given line for the present work.

From the point of view of the firm managers, the work shows them that offshore outsourcing is an essential component of the industrial and commercial politics and it operates, from a strategic point of view, as a synonym of competitive advantages.

This way, the executives must convince themselves that simply sharing internal knowledge may increase not only international transfer of resources and capabilities for multinational companies, but also their absorption capability, which in turn increases transfer of knowledge among organizations.

Limits of this work and suggestions for future research

Finally, we would like to highlight some of the limits of this work, which also provide opportunities for future research.
First, the database does not provide the identity of the foreign vendors, and as such, we were unable to explore the effects of interaction between purchasers and vendors (for example, complementary resources).

Another limitation is the context in which this research has been developed. Because it focused on Mexican export companies, we cannot appreciate the differences among countries in the observed relationships between outsourcing and performance, in terms of exports. As such, this study should be replicated in other economic contexts and markets of resources.

Finally, this was a cross-sectional study, and we believe it would be interesting to explore the effects of outsourcing abroad on the export capability of companies many years later, as we understand that developing derived knowledge is not instantaneous, and may take a few years to be consolidated.

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