

# REGIONAL EXPORT PROMOTION OFFICES AND TRADE MARGINS

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## **Abstract**

This paper investigates the channels through which Spanish regional export promotion offices abroad affect bilateral exports. Using data of regional exports over the period 1993-2008, we find that the network of export promotion offices boost exports and that this effect take place mainly through an increase in both the number of products and the average number of firm transactions per product. The analysis by product categories and industries suggest that they seem to favour an increase in trade margins of exports in differentiated goods. Finally, the results show a large heterogeneity across regions.

Key words: Regional; export promotion, extensive and intensive margins.

JEL Classification numbers: F14, R12.

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## 1. Introduction

Over the last two decades a growing number of Spanish regional governments have established a network of regional export promotion offices (REPOs) abroad, with the aim of providing qualified support, information and advice to regional companies wishing to trade and invest in foreign markets. Catalonia and Valencian Community were the first two regions that opened trade offices abroad and since the mid 1990s other Spanish regions (starting by Basque Country, Murcia, and Aragon) followed their footsteps to such an extent that, nowadays, REPOs have become a popular instrument to boost Spanish regional exports. The economic justification for regional public intervention in export promotion is based on the existence of market failures, such as asymmetric information or externalities.

In recent years there has been a revived interest in the study of the impact of export promotion institutions on trade (e.g. Rose, 2007; Segura and Vilarrubia, 2008; Volpe-Martincus and Carballo, 2008; Volpe-Martincus *et al.*, 2010a and 2010b; Lederman *et al.* 2010; Van Biesebroeck *et al.*, 2010).<sup>1</sup> This renewed branch of research has shown that diplomatic representations and export promotion agencies have had a positive effect on bilateral trade. For the case of Spain, Gil, Llorca and Martínez Serrano (2008) also find a positive impact of REPOs of six regions on total exports over the period 1995-2003.

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<sup>1</sup> Rose (2007) investigates the impact of embassies and consulates using export data for 22 big exporting countries to about 200 destinations finding a positive effect. Segura and Vilarrubia (2008), using a similar sample of countries as Rose but with sectoral data, conclude that diplomatic representations increase the probability of exporting but do not the volume of exports. Volpe-Martincus and Carballo (2008), with data of Peruvian firms, find that export promotion agencies (EPA) are effective mainly through the introduction of new export products (extensive margin), as do Volpe-Martincus *et al.* (2010a) in a cross-country analysis of Latin American and Caribbean countries. Volpe-Martincus *et al.* (2010b) show that EPA of Latin American and Caribbean countries seem to favour the extensive margin of exports of differentiated goods. Lederman *et al.* (2010), using interview data of EPA for 88 countries, find a strong positive effect on countries' total exports. Biesebroeck *et al.* (2010) find a positive impact of trade promotion services on Canadian exporter performance. For a review of the literature, see Section 2.

Documenting evidence of a positive impact of REPOs on exports is of great interest by itself, given its proliferation over the last years and the increasing amount of financial resources that Spanish regional governments spend on their foreign network. However, while the available empirical evidence can be considered both of interest for academics and useful for policy makers, it does not allow us to know how actions taken by Spanish REPOs affect exports (through the different margins of trade) and whether or not there are differences across product categories and industries.

Until recently, the specialised literature made no distinction between the effect of export promotion institutions on the extensive margin (i.e., the introduction of new goods, the access to new markets or the creation of new trading partners) and the effect on the intensive margin (i.e., the increase of exports by current exporters and importers). The lack of bilateral trade data at the firm level has been the main difficulty in identifying effects on these two margins empirically. Since data at the firm level are usually not available, researchers have used sectoral data on the total number of bilateral traded products to proxy the extensive and intensive margins. While insightful, the decomposition made with this kind of data overestimates the impact on exports that takes place through the intensive margin. Additionally, it masks an important channel through which export promotion institutions may affect trade: the effect that they may have on the number of transactions per product. Insofar promotion institutions help to the establishment of new trade relationships, it can be expected that a part of the total effect on exports takes place through an increase in the number of firm transaction per product. Our proposed estimation procedure solves these problems by using transaction data per product.<sup>2</sup>

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<sup>2</sup> Ideally, one would like to have bilateral trade data at the firm level. In the absence of such data, we argue that the best approach is to use transaction data jointly with data on the total number of bilaterally traded products at a high level of disaggregation.

The aim of this paper is threefold. Firstly, we provide evidence on the channels through which the foreign network of REPOs affect bilateral trade. To this end, we decompose the total impact of REPOs on exports into three margins: The number of products within industry and good category, the average number of firm transactions per product, and the average value of exports per firm transaction. Secondly, we examine whether and how those regional institutions influence the cited trade margins of exports across goods with varying degree of differentiation. Thirdly, we investigate the impact of REPOs on exports by industry and regions.

To preview our results, using data over the period 1993-2008, we find that REPOs have a significant effect on aggregate exports and that this effect takes place mainly through the increase in both the number of products and the average number of firm transactions per product. Moreover, by product categories and industries, we find that REPOs seem to favour an increase in trade margins of exports in differentiated goods, which is consistent with the facts that REPOs help to reduce informational problems and that information-related impediments to trade are larger for this kind of goods. Finally, the results across regions show a large heterogeneity.

The paper is structured as follows. Section 2 offers a review of the literature about the impact of export promotion institutions on trade. Section 3 presents the empirical methodology. Section 4 describes the data. Section 5 discusses the estimation results. Finally, section 6 concludes the paper.

## **2. Regional export promotion in Spain**

The first Spanish regional trade office abroad was created in 1987 when Catalonia opened a Business Promotion Centre in New York city. Only three years later this Spanish region had 18 trade agencies all over the world and, nowadays, Catalan

foreign network is integrated by 34 Business Promotion Centres which closely monitor the international expansion of Catalan firms. Following Catalonia footsteps, Valencian Community opened its first foreign trade office in 1990 (Tokio) and since the mid 1990s other Spanish regions have progressively added to this process. Today, 13 out of 17 Spanish regions have REPOs operating in foreign markets. Through the regional export promotion agencies and their foreign network, a qualified staff provides a large variety of services aiming regional export promotion. These services include sectoral and macroeconomic information, market research, trade missions, search for marketing channels (distributors, agents, customers,...), promotional activities, technical support, or recruitment of qualified employees.

The number of trade offices abroad for each Spanish region in 2010 and the time sequence of the creation of each network appear in Graph 1 and Table 1. As it is observed, we can split the regions with this type of institutions into two groups: those with a quite consolidated network and those that just began the creation of some agencies. In the first group we find Catalonia, Valencian Community, Basque Country, Aragon, Murcia and, to a lesser extent, Andalusia and Castilla and Leon. In the second group we find Extremadura, Castilla La Mancha, Madrid, Galicia, Canary Islands and Cantabria. As expected, early starters regions in export promotion activities are those regions with a more extensive foreign network. We expect regional exports to be positively affected by REPA especially for those regions located in the first group.

### **3. Empirical methodology**

We empirically examine the effect of REPOs on bilateral exports from the Spanish regions using the gravity model of trade. The gravity model has a long history in international and regional economics. The first application of the gravity model to

international trade was carried out by Nobel laureate Jan Tinbergen (1962) and, over the last decades, it has been considered a very successful tool for investigating the determinants of international trade flows.<sup>3</sup> The gravity model relates bilateral trade flows to economic size, distance and other factors that affect trade barriers (such as the use of a common language or the existence of a common land border). In this framework, we estimate the impact of REPOs on exports by adding a variable that accounts for the presence of regional foreign offices in the destination countries, once we allow for other determinants of international trade.

We begin by estimating the gravity equation (1) using conventional Ordinary Least Squares (OLS):

$$\begin{aligned} \ln V_{ijt} = & \beta_0 + \beta_1 \ln(GDP_{it} * GDP_{jt}) + \beta_3 \ln Dist_{ij} + \beta_4 Contiguity_{ij} \\ & + \beta_5 Islands_{ij} + \beta_6 Landlocked_{ij} + \beta_7 Language_{ij} + \beta_8 REPA_{ijt} \\ & + \delta_i^{k,z} + \eta_j^{k,z} + \mu_k + \alpha_z + \lambda_t + u_{ijt} \end{aligned} \quad (1)$$

where  $k$  indexes industries,  $z$  categories of goods (homogeneous, referenced-priced, and differentiated),  $i$  exporter regions,  $j$  importer countries, and  $t$  time and the variables are defined as follows:  $V$  denotes the value of exports,  $GDP$  denotes the Gross Domestic Product,  $Dist$  denotes the great-circle distance between Spain and the destination countries,  $Contiguity$  is a binary dummy variable that takes the value of one if the trading partners are France or Portugal,  $Islands$  is the number of islands in the pair (0, 1 and 2),  $Landlocked$  is the number of landlocked country-regions in the pair (0, 1 and 2),  $Language$  is a binary dummy variable that is unity if  $i$  and  $j$  share a common language

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<sup>3</sup> The gravity model of trade has solid theoretical foundations. See, among others, Anderson (1979), Bergstrand (1985, 1989), Evenett and Keller (2002), Anderson and van Wincoop (2003, 2004) and Helpman, Melitz and Rubinstein (2008).

and *REPO* is a binary variable that takes the value of one if the trade promotion organization of the exporter region has an office in the importer country.  $\delta_i$ ,  $\eta_j$ ,  $\mu_k$ ,  $\alpha_z$ , and  $\lambda_t$  are exporter, importer, industry, category and year fixed effects;  $u$  is the stochastic error term.

Note that  $V=N*(V/N)=N*(T/N)*(V/T)$ , where for each industry and good category,  $N$  is the number of products (six-digit Harmonized System codes) exported from each region to each country in a particular year, and  $T$  is the number of firm transactions.<sup>4</sup> In absence of transaction data, the first part of this equality can be used to proxy the extensive margin of exports by  $N$  and the intensive margin of exports by  $(V/N)$ .<sup>5</sup> However, this decomposition presents two limitations. First, it masks an important channel through which export promotion institutions may affect trade, that is, the effect that they may have on the number of transactions per product. Second, it underestimates the impact that takes place through the extensive margin and overestimates the impact that takes place through the intensive margin. In this paper, we go beyond the existing literature by using the decomposition made in the second part of the equality. It decomposes total exports into the number of products ( $N$ ), that we call the “pure extensive” margin, the average number of transactions per product ( $T/N$ ), that we call the “mixed” margin, and the average value of exports per firm transaction, that we call the “pure intensive” margin ( $V/T$ ). We call “mixed” to the second margin because it combines transactions that can be considered part of either the extensive or the intensive margin. Each export transaction is invoiced by an exporting firm to a particular importer. Hence, an increase in the average number of transactions per product captures either new exporting firms or new trading partners of existing firms or higher frequency in transactions between existing trading partners. The first two

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<sup>4</sup> Subscripts ( $i, j$  and  $t$ ) and superscripts ( $k$  and  $z$ ) are suppressed for simplicity.

<sup>5</sup> See, for example, Volpe-Martincus *et al* (2010a).

elements of the “mixed” margin can be considered part of the “extensive” margin while the third is part of the “intensive” margin. The lack of bilateral trade data at the firm level precludes explicitly disentangling the elements of the “mixed” margin.

Since OLS is a linear operator, regressions of those three factors on the set of the explanatory variables used in equation (1) additively decompose their effects on the three export margins. Specifically, to investigate these separate effects, we estimate:

$$\begin{aligned} \ln N_{ijt} = & \beta_0 + \beta_1 \ln(GDP_{it} * GDP_{jt}) + \beta_3 \ln Dist_{ij} + \beta_4 Contiguity_{ij} \\ & + \beta_5 Island_{ij} + \beta_6 Landlooked_{ij} + \beta_7 Language_{ij} + \beta_8 REPA_{ijt} \\ & + \delta_i^{k,z} + \eta_j^{k,z} + \mu_k + \alpha_z + \lambda_t + u_{ijt} \end{aligned} \quad (2)$$

$$\begin{aligned} \ln \left( \frac{T}{N} \right)_{ijt} = & \beta_0 + \beta_1 \ln(GDP_{it} * GDP_{jt}) + \beta_3 \ln Dist_{ij} + \beta_4 Contiguity_{ij} \\ & + \beta_5 Island_{ij} + \beta_6 Landlooked_{ij} + \beta_7 Language_{ij} + \beta_8 REPA_{ijt} \\ & + \delta_i^{k,z} + \eta_j^{k,z} + \mu_k + \alpha_z + \lambda_t + u_{ijt} \end{aligned} \quad (3)$$

$$\begin{aligned} \ln \left( \frac{V}{T} \right)_{ijt} = & \beta_0 + \beta_1 \ln(GDP_{it} * GDP_{jt}) + \beta_3 \ln Dist_{ij} + \beta_4 Contiguity_{ij} \\ & + \beta_5 Island_{ij} + \beta_6 Landlooked_{ij} + \beta_7 Language_{ij} + \beta_8 REPA_{ijt} \\ & + \delta_i^{k,z} + \eta_j^{k,z} + \mu_k + \alpha_z + \lambda_t + u_{ijt} \end{aligned} \quad (4)$$

#### 4. Estimation results

We begin by estimating the effect of Spanish REPOs on the total value of exports. Column 1 of Table 1 reports estimates of equation (1). The results suggest that Spanish REPOs have had a positive effect on bilateral exports, which is in line with the findings of the recent literature on the impact of export promotion institutions on trade. In particular, we find that, all else equal, the presence of regional offices abroad increases exports by 32%  $[(\exp(0.274)-1)*100]$ . As noted in the introductory material, while useful for policy makers, this evidence does not provide information about how actions taken by Spanish REPOs affect bilateral exports.



Export promotion offices abroad provide services that try to ameliorate some of the obstacles that firms face when selling in export markets. Among the most prominent obstacles to international trade that face firms are information-related problems. Since services offered by REPOs mainly aims to alleviate information problems, it can be expected that these services have a larger impact when these problems are more severe (see, e.g. Volpe-Martincus and Carballo, 2008). Thus, we expect a larger effect on the introduction of new products (the pure extensive margin), than on the increase in the average value of exports per firm transaction (the pure intensive margin). Moreover, we also expect a positive impact of REPOs on exports through the increase in the number of transactions per product (the mixed margin) since this channel incorporates the effect that takes place through the increase of two types of transactions that are part of the extensive margin: the emergence of new exporting firms or the creation of new trading relations of existing exporters with new trading partners in a particular destination country.

Columns 2 to 4 of Table 1 provide evidence on the channels through which Spanish promotion offices abroad affect regional exports. As expected, we find that a large part of the impact of REPOs on exports has taken place through an increase in the number of products exported. In particular, the estimated coefficient on the pure extensive margin is 0.142 and it is statistically significant at the 1 per cent level. With regard to the mixed margin, we also find a positive (0.082) and statistically significant coefficient at the 1 per cent level. In contrast, the estimated coefficient for the pure intensive margin is much smaller (0.048) and, additionally, it only reaches the statistical significance at the 10 per cent level.<sup>6</sup>

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<sup>6</sup> The evidence that trade offices have a larger impact on the extensive margin of exports is in line with that reported by Volpe-Martincus *et al* (2010a) for exports from Latin American and Caribbean countries.

We next examine the effect of Spanish REPOs abroad on both total exports and the three trade margins distinguishing across goods with varying degree of differentiation. In addressing this issue, we follow the classification developed by Rauch (1999) according to the degree of severity of the information problems that firms face in trade. It allows us to group the 6-digit HS products into three categories: homogeneous goods (those whose prices are quoted in organized exchanges), reference-priced goods (those whose prices are only quoted in specialized trade publications) and differentiated goods (with no reference prices).<sup>7</sup> Information-related impediments to international trade are likely to differ across groups of goods. In particular, it can be expected that information problems are larger for more differentiated goods, for which prices cannot convey all relevant information to trade given the particular characteristics of this kind of products. So, since REPOs ameliorate information problems, their effects on exports can be also expected to differ across goods according to the degree of differentiation.

Table 2 presents the results allowing for individual coefficients for each one of the three categories of products. The results are in line with our expectations. We find that REPOs increase exports of goods which are more affected by information-related trade obstacles (differentiated goods), which is consistent with the evidence reported by Volpe-Martincus *et al* (2010b) for developing countries in Latin America and the Caribbean. Moreover, the analysis of the margins of trade reveals that the impact of REPOs on exports of differentiated goods operates through the three margins, but mainly through the pure extensive margin. However, in the cases of both reference-priced and homogeneous goods we do not find evidence of a positive impact neither for total exports nor through any trade margin.

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<sup>7</sup> Since Rauch's (1999) original classification is based on the 4-digit SICT Revision 2 to map this classification into our 6-digit HS classification we use the conversion tables available in COMTRADE.

We next investigate the effect of REPOs on exports and trade margins across the 22 2-digit NACE industries. The results obtained from industry-by-industry estimations are reported in Table 3. According to these results, with the exceptions of agriculture and fishing; extractive products; and other manufactures, trade promotion offices have had a positive effect on exports in 19 out of 22 industries. However, it is worth noting that the estimated coefficient of the variable of interest for paper; office machinery; automobiles; and other transport equipment reaches the statistical significance only at the 10 percent. The range of positive and statistically significant coefficients (at least at the 10 per cent level) goes from 0.204 (automobiles) to 0.567 (metals).

Turning to the analysis of the REPOs effect on the three trade margins by industry, we find that regional offices abroad seem to be effective in increasing the pure extensive margin of exports in all the industries. The coefficients range between 0.084 (statistically significant at the 10 per cent level) for extractive products and 0.284 for food and beverages. With regard the impact that takes place through and increase in the average number of transactions per product, we show evidence of a positive effect in 13 out of 22 industries. In contrast, in almost all cases there is no evidence of a positive effect through the pure intensive margin. In particular, the estimated coefficient is positive and statistically significant at the 10 per cent level in four industries (print and edition; electric products; electronic products; and precision products).

Finally, the effects of regional offices abroad on exports may differ from region to region. In order to explore whether this is the case, we re-estimate equations (1) to (4) for differentiated goods relaxing the assumption that the estimated coefficients for REPOs are the same across regions. Spanish regions with REPOs abroad can be split into two groups. The first group includes those regions with a more extensive and consolidated network of offices in foreign markets (Catalonia, Valencian Community,

Basque Country, Aragon, Murcia and, to a lesser extent, Andalusia and Castilla y Leon). The second group is integrated by regions with a less extensive export promotion network (Extremadura, Castilla-La Mancha, Madrid, Galicia, Canary Islands and Cantabria). For the first group of regions we allow for region-specific coefficients whereas we keep the equality restrictions on the respective coefficients for regions in the second group (rest of regions with REPOs). The estimated coefficients of the variable of interest are reported in Table 4. The results show that there is a large heterogeneity across regions. In particular, the largest effect appears in the cases of Catalonia and Valencian Community. This result is consistent with the fact that these two regions were the first that opened export promotion offices abroad and with the extension in their network of offices all over the world. For the cases of the Basque Country and Andalusia we also find a positive effect but not for Aragon, Murcia, Castilla y Leon and the aggregate of the rest of regions with REPOs. With regard to the channels, Catalonia is the only region in which the impact of REPOs on exports operates through the three margins. For Valencian Community and the Basque Country all the effect operates mainly through the pure extensive margin but also through the mixed margin. Finally, in the case of Andalusia all the effect takes place through the pure extensive margin.

## **5. Conclusions**

Over the last two decades, Spanish regional governments have developed a network of regional export promotion offices abroad with the aim of boosting exports by correcting market failures such as asymmetric information or externalities. This paper explores the impact of these regional export promotion offices on total exports and, most importantly, the channels through which they affect bilateral trade. To this

end, we propose a decomposition of total exports into three components: the number of products, that we call the “pure extensive” margin, the average number of transactions per product, that we call the “mixed” margin, and the average value of exports per firm transaction, that we call the “pure intensive” margin.

Our findings indicate that regional export promotion offices have had a significant effect on aggregate exports and that, as expected, this effect takes place mainly through the increase in both the number of products and the average number of firm transactions per product. The analysis by categories of products and industries reveal that regional offices seem to favour an increase in trade margins of exports in differentiated goods, which is consistent with the fact that information-related impediments to trade are larger for this kind of goods. Finally, the results across regions show a large heterogeneity. In general, we find a positive effect for those regions with more tradition in export promotion activities and a broad network of offices abroad.

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**Graph 1: Number of REPO by regions. Year 2010.**

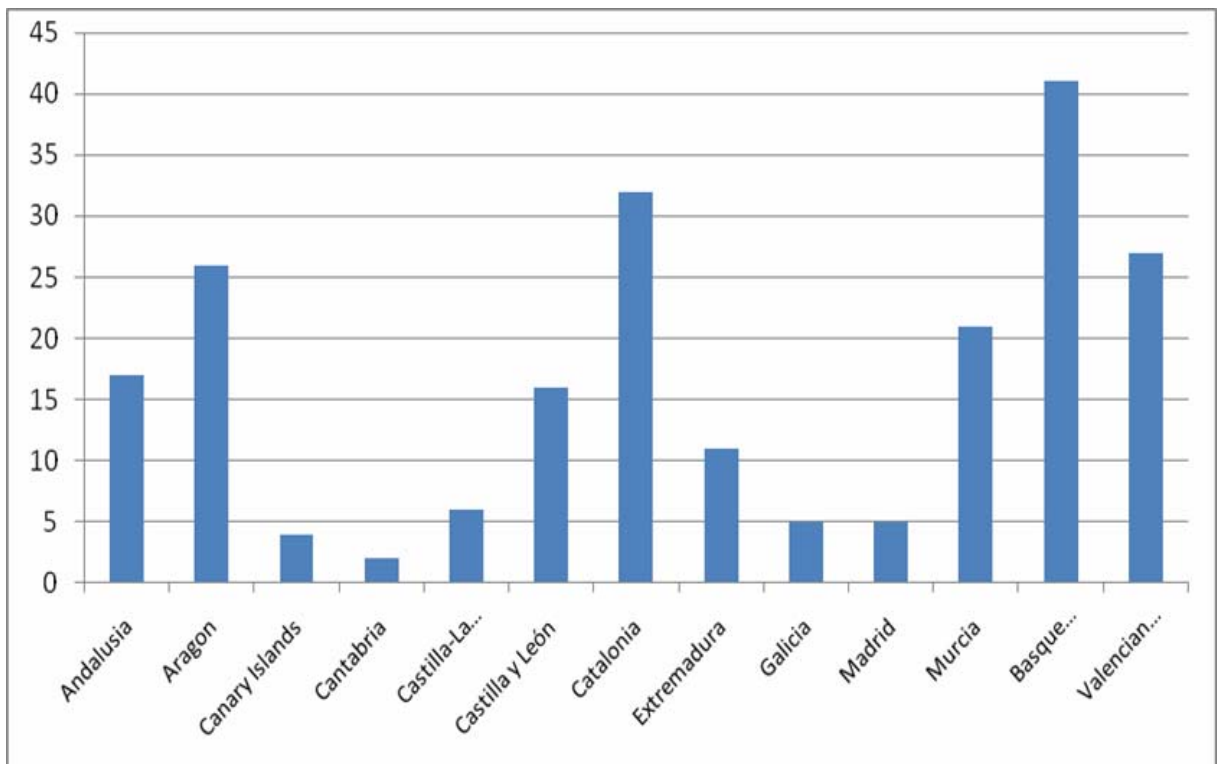


Table 1. Number of regional export promotion offices abroad of the Spanish regions by year of creation

	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04	05	06	07	08	09	Total	
Andalusia											2		4	3	1	2	3					3		18	
Aragon									4				1		1	2	1			7	9	2		27	
Canary Islands												1					2	1	1			1		5	
Cantabria													9						1				1	3	
Castilla-La Mancha																				2	2	2		6	
Castilla y León												4	1	2	2	1		1	1		1	1	3	17	
Catalonia	1	1	10	6	5	2	1	1		1			1	1			1		1		1			33	
Extremadura														2	1		1	1	1				3	3	12
Galicia							1		1			1							2					5	
Madrid																	3			1		1		5	
Murcia							2	5		1	1	1		2	1	1	1	2	2	1		2		22	
Basque Country								7		1		2		5		4	1	2	2	5	6	6		41	
Valencian Community				1	1	2	1		2		2					1	1	5	3	4		4	1	28	

Source: Elaborated by the authors using information provided by the Spanish regional agencies.



Table 1. The impact of regional export promotion agencies on exports - OLS estimates

	(1)	(2)	(3)	(4)
	Total	Pure extensive margin	Mixed margin	Pure Intensive margin
	Value of exports ln(V)	Number of products within industry & good category ln(N)	Average number of firm transactions per product ln (T/N)	Average value of exports per firm transaction ln (V/T)
GDP i * GDP j	0.524*** [0.0361]	0.201*** [0.0212]	0.102*** [0.0146]	0.221*** [0.0227]
distance ij	-1.355*** [0.184]	-0.641*** [0.0748]	-0.386*** [0.0621]	-0.328*** [0.0876]
contiguity ij	0.595** [0.261]	0.390*** [0.118]	0.202 [0.180]	0.0031 [0.088]
common language ij	2.896*** [0.867]	1.574*** [0.422]	0.604 [0.393]	0.717 [0.607]
island ij	2.521*** [0.842]	1.385*** [0.410]	0.595 [0.377]	0.54 [0.599]
landlocked ij	0.239*** [0.0709]	0.0975*** [0.0313]	0.0387 [0.0286]	0.102*** [0.0339]
REPO ijt	0.274*** [0.0613]	0.142*** [0.0266]	0.0825*** [0.0273]	0.048* [0.0259]
Constant	7.352*** [1.952]	-0.243 [0.835]	1.516** [0.683]	6.079*** [0.887]
Observations	409,684	409,684	409,684	409,684
Adjusted R-squared	0.373	0.559	0.274	0.194

Note: The regressions include dummies for exporter, importer, industry, category and time.

Table 2. The impact of regional export promotion offices (REPO) on exports by good category - OLS estimates

	Total ln(V)	Pure extensive margin ln(N)	Mixed margin ln (T/N)	Pure intensive margin ln (V/T)
<b>Differentiated goods (N.obs.: 344661)</b>				
REPO	0.347*** [0.0643]	0.164*** [0.0289]	0.112*** [0.0313]	0.0716*** [0.0269]
<b>Reference-priced goods (N.obs.: 62527)</b>				
REPO	-0.091 [0.0834]	-0.0059 [0.0237]	-0.0067 [0.0337]	-0.0782 [0.0530]
<b>Homogenous goods (N.obs.: 9593)</b>				
REPO	-0.0366 [0.170]	-0.0017 [0.0230]	-0.0792 [0.0567]	0.0443 [0.134]

Note: The table reports OLS estimates of equation (1) to (4) distinguishing across categories of goods defined in terms of their degree of differentiation (Rauch, 1999). Regressions include dummies for exporter, importer, industry, and time. \*, \*\*, and \*\*\* denote significance at the 10, 5 and 1 per cent, respectively.

Table 3. The impact of regional export promotion offices (REPO) on trade industry by industry for differentiated products - OLS estimates

	Total		Pure extensive margin		Mixed margin		Pure intensive margin	
	ln(V)		ln(N)		ln (T/N)		ln (V/T)	
	REPO coeff	t-stat	REPO coeff	t-stat	REPO coeff	t-stat	REPO coeff	t-stat
Agriculture & fishing	0.174	[0.192]	0.126**	[0.0610]	-0.0144	[0.0895]	0.0624	[0.105]
Extractive products	0.275	[0.213]	0.0837*	[0.0476]	0.187*	[0.110]	0.00355	[0.104]
Food and beverages	0.356***	[0.119]	0.284***	[0.0440]	0.0571	[0.0577]	0.0147	[0.068]
Textile	0.413***	[0.139]	0.272***	[0.0558]	0.0889	[0.0665]	0.0517	[0.074]
Clothes	0.305**	[0.131]	0.154**	[0.0633]	0.0656	[0.0659]	0.0858	[0.068]
Leather and shoes	0.361**	[0.141]	0.157***	[0.0429]	0.128*	[0.0780]	0.0753	[0.088]
Wood products	0.596***	[0.167]	0.251***	[0.0442]	0.168***	[0.0528]	0.176	[0.107]
Paper	0.290*	[0.161]	0.203***	[0.0486]	0.073	[0.0614]	0.0141	[0.103]
Print and Edition	0.492***	[0.136]	0.207***	[0.0384]	0.120*	[0.0627]	0.164*	[0.088]
Chemical products	0.277**	[0.114]	0.209***	[0.0433]	0.104**	[0.0463]	-0.0361	[0.069]
Rubber and plastic	0.409***	[0.117]	0.178***	[0.0408]	0.133**	[0.0532]	0.0976	[0.075]
Non-metals	0.318***	[0.119]	0.197***	[0.0425]	0.118**	[0.0577]	0.00329	[0.067]
Metals	0.597***	[0.198]	0.253***	[0.0594]	0.171**	[0.0814]	0.173	[0.105]
Metal products	0.346***	[0.109]	0.225***	[0.0435]	0.131***	[0.0473]	-0.011	[0.068]
Mechanical engineering	0.300***	[0.082]	0.211***	[0.0412]	0.0994**	[0.0395]	-0.0113	[0.049]
Office machinery	0.286*	[0.159]	0.137***	[0.0379]	0.145*	[0.0849]	0.00386	[0.087]
Electric products	0.383***	[0.119]	0.169***	[0.0432]	0.182***	[0.0589]	0.121*	[0.071]
Electronic products	0.384**	[0.156]	0.176***	[0.0454]	0.0507	[0.0636]	0.157*	[0.094]
Precision products	0.418***	[0.115]	0.173***	[0.0467]	0.113**	[0.0535]	0.132*	[0.072]
Automobile	0.204*	[0.117]	0.184***	[0.0402]	0.104	[0.0767]	-0.0838	[0.085]
Other transport equip.	0.269*	[0.156]	0.181***	[0.0571]	-0.0107	[0.0791]	0.0991	[0.109]
Other manufactures	0.147	[0.110]	0.189***	[0.0440]	0.0307	[0.0519]	-0.073	[0.055]

Note: The table reports OLS estimates of equation (1) to (4) distinguishing across 2-digit NACE industries. Regressions include dummies for exporter, importer, category, and time. \*, \*\*, and \*\*\* denote significance at the 10, 5 and 1 per cent, respectively.

Table 4. The impact of each regional export promotion agencies (REPO) on exports for differentiated products - OLS estimates

	Total ln(V)	Pure extensive margin ln(N)	Mixed margin ln (T/N)	Pure intensive margin ln (V/T)
Andalusia	0.346* [0.200]	0.223*** [0.0862]	-0.0736 [0.0907]	0.039 [0.0735]
Aragón	-0.0514 [0.0874]	-0.0395 [0.0327]	-0.0304 [0.0383]	0.0261 [0.0594]
Castilla-Leon	-0.0296 [0.141]	-0.0251 [0.0688]	-0.212*** [0.0586]	-0.0417 [0.0446]
Cataluña	1.095*** [0.0781]	0.371*** [0.0342]	0.431*** [0.0522]	0.201*** [0.0336]
Murcia	-0.432** [0.168]	-0.130** [0.0532]	-0.104* [0.0614]	-0.212** [0.103]
Basque Country	0.217** [0.104]	0.159*** [0.0468]	0.0512* [0.0330]	0.0331 [0.0391]
Valencia	0.425*** [0.125]	0.253*** [0.0503]	0.155** [0.0608]	0.0483 [0.0552]
Rest of regions with REPOs	-0.07 [0.205]	-0.0556 [0.0473]	-0.0408 [0.0377]	-0.0583 [0.0683]

Note: The table reports OLS estimates of equation (1) to (4) allowing for region-specific coefficients. Regressions include dummies for exporter, importer, category, and time. \*, \*\*, and \*\*\* denote significance at the 10, 5 and 1 per cent, respectively.

