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Heterogeneous Programs and Heterogeneous Effects

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Abstract ♦

Export promotion agencies provide exporters with a broad range of services, going from counseling to sponsoring their participation in international trade missions and fairs. These services may have heterogeneous effects and thus contribute differently to achieve the goals of these organizations. Empirical evidence on their relative effectiveness is rather limited. This paper aims at filling this gap in the literature. We compare the impact of different public trade promotion programs on the extensive and intensive margin of firms' exports, both to each other and with respect to no participation in these activities, by applying multiple treatment matching difference-in-differences on highly disaggregated export data for the whole population of Colombian exporters over the period 2003-2006. We find that the use of programs combining different services is associated with better export performance, primarily along the country-extensive margin, than their basic individual components.

Keywords: Export Promotion, Multiple Treatment, Colombia
JEL-Code: F13, F14, H32, H40, L15, L25, O17, O24, C23.

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1 Introduction

Information problems are one of the most relevant export barriers both in terms of frequency appearance and degree of severity.[1] Over recent decades several developing countries have established trade promotion organizations with the purpose to help firms overcoming these information problems. In performing this function, they offer to the exporters a wide range of services, from counseling on the export process to sponsoring their participation in trade missions and fairs along with coordination of trade agendas. While there have been a few recent attempts to assess the overall impact of export promotion activities (i.e., participation in any of these activities vs. non-participation) (e.g., Volpe Martincus and Carballo, 2008), the evidence on the relative effectiveness of the different activities (e.g., trade missions vs. trade agendas) is rather scarce. In particular, existing studies looking at this issue either use country- or region-level data or are based on very small samples of firms. More importantly, policy implications of most of these studies are limited because their econometric frameworks are not well suited to determine whether different promotion actions are associated with different export outcomes. In short, there is no comprehensive robust assessment of how the alternative services perform with respect to each other. In this paper, we aim at filling this gap in the literature. More precisely, our main contribution consists of systematically comparing the effects of *different* export promotion actions on the extensive and intensive margin of firms' exports against each other within a unified framework which explicitly accounts for potential selection bias of firms into these actions. In performing these comparisons, we apply *multiple* treatment matching difference-in-differences estimation on highly disaggregated export data for the whole population of Colombian exporters over the period 2003-2006. This analysis is not only of academic interest, but it is also relevant from an economic policy point of view. Our estimations allow us to assess whether trade promotion activities are well targeted, in the sense that those who use a certain service perform better than if they had use another service, or whether there are services that are uniformly better than others (Sianesi, 2005). In other words, unlike most previous research efforts, we do not only determine the average absolute returns of the whole resources invested in export promotion in terms of (potentially) enhanced firms' export performance, but also the relative average returns associated with the allocation of these resources across alternative

activities. Evidently, this information can be extremely valuable in guiding such allocation of public funds in order to maximize their impact and thereby improve existing policies.

Public policies in specific areas usually consist of a variety of programs.[2] Thus, export promotion policies cover a broad spectrum of activities. Trade promotion organizations typically offer training on the export process for inexperienced exporters; provide firms with information on market opportunities and counseling services; coordinate and sometimes co-finance the participation in trade missions, shows, and fairs, and organize these events; arrange meetings with potential customers; and sponsor the creations of export consortia to enhance the competitive position of involved firms in international markets. Even though all these programs have a common purpose, namely, improving export performance of firms, they may differ significantly from each other in terms of their effectiveness.[3] What does the literature tell us about how effective are these diverse activities?

When looking at the results of the existing evaluations, no clear consensus seems to emerge. Head and Ries (2006) estimate a gravity equation on country-level multilateral trade data and find that Canadian trade missions do not lead to increased trade once pre-missions trade levels are controlled for.[4] Using cross-sectional data aggregated at the U.S. state level, Wilkinson and Brouthers (2000a) report that states with comparatively more FDI have greater success in using trade shows to promote high-tech exports. In addition, based on similar data, Wilkinson and Brouthers (2000b) inform that trade shows are positively related to direct exports and high-tech export growth, but trade missions, foreign offices, and objective market information programs do not have a positive impact on either export performance measure. Spence (2003) examine how firm attributes and behavior following trade mission participation affects subsequent export performance on a sample of 113 U.K. firms. She concludes that overseas missions contribute to generate incremental sales in foreign markets by enhancing the relationship-building process between partners.[5] Álvarez (2004) investigates whether trade promotion instruments affect the probability of becoming a permanent export on a sample of 295 Chilean manufacturing firms.

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[1] See, e.g., Leonidou (1995) and Leonidou and Theodosiu (2004). Kneller et al. (2008) present evidence on other important barriers of doing business overseas.

[2] We will use interchangeably assistance, treatments, services, activities, and programs throughout the paper.

[3] Similarly, active labor market policies are generally a combination of measures including job-search assistance, vocational training, public employment, and wage subsidies (e.g., Lechner, 2002a; Lechner, 2002b; Gerfin and Lechner, 2002; Blundell et al., 2004; Sianesi, 2005).

[4] Rose (2007), Nitsch (2007), and Moser et al. (2008) examine the effects of embassies and consulates, state visits, and export credit guarantees on trade, respectively.

[5] Shipley et al. (1993), Blythe (1996), and Pfeiffer et al. (1998) investigate the impact of trade shows on export outcomes.

His results suggest that trade shows and trade missions do not significantly affect this probability, but exporter committees do.

Although undisputedly useful, available assessments of export promotion activities have two major limitations. First, they are based either on highly aggregated data or on narrow samples of firms. Second and more importantly, different export promotion programs have not been explicitly compared against each other while controlling for possible selection bias.

This paper aims to overcome these limitations using data from Colombia. This developing, middle-income country is an interesting case study. Colombia's national export promotion agency, PROEXPORT, assists on average more than 2,500 firms active in international markets per year. This is one of the largest numbers of supported companies observed in Latin America. Further, this public agency has systematized information on which firms have used each of the services provided over recent years. These services include information and market intelligence, development of export plans, organization of trade missions both for domestic sellers and foreign buyers, and coordination of interviews with potential customers. The relatively large overall number of exporters and assisted firms and consequently that of participants in each of these activities enable us to perform pairwise comparison of their effectiveness.

We address one main question: How programs run by PROEXPORT perform relative to each other? In doing this, we use a rich database covering all Colombian exporters, which includes annual firm-level data on exports disaggregated by product and destination country as well as disaggregated information on participation in export promotion activities organized by PROEXPORT over the period 2003-2006.[6]

To assess the relative effectiveness of these programs, we need to estimate the difference between export performance under a specific program and the export performance that had occurred under participation in a different program (including the no participation case). The fundamental evaluation problem is that just one of the possible outcomes can be observed, i.e., export performance under the program the firm actually participates. As a consequence, the counterfactual outcome must be somehow recovered from the data available. In our case, it is clear that potential self-selection of firms into programs precludes directly comparing export indicators of participating and non-participating firms because this would lead to selection bias

[6] In particular, our study aims at providing PROEXPORT and other Latin American and Caribbean export promotion agencies with a set of analytical instruments to evaluate their actions. An assessment of these agencies and their activities from the point of view of social welfare requires contrasting the costs they imply with the benefits they generate. This is beyond the scope of this paper.

and accordingly inability to disentangle differences due to selective participation from those caused by specific services.

Several methods have been proposed in the literature to identify the effects of assistance from comparing only like individuals. One of these methods is matching estimation, a non-parametric procedure which has been recently extended to the multiple-program framework (Imbens, 2000; and Lechner, 2001). This method mimics the idea of randomized experiments by forming comparison groups which are as similar as possible. More precisely, each participating firm is paired with the most similar member of the group of non-participating firms in terms of their observable characteristics. Thus, matching critically relies on two main assumptions. First, conditional on these characteristics, selection into services is independent of potential export outcomes. Second, all firms within the relevant sub-sample have a positive probability of participate in the program in question for the values of the attributes being considered.

A key issue is then to define the set of conditioning variables. In this sense, the empirical literature suggests that firms with different levels of engagement in export activities tend to have different needs in terms of support (e.g., Kotabe and Czinkota, 1992; Naidu and Rao, 1993; Moini, 1998; Francis and Collins-Dodd, 2004). On the other hand, different programs have components that may be primarily targeted to different types of firms according to their degree of internationalization (e.g., PROMPERU, 2007). This degree of internationalization can be fully characterized in terms of the firms' previous experience as measured by the level of exports, the number of countries they export to, and the number of products they sell abroad. This is in fact the basic data that the typical PROEXPORT official has access to when attending an exporter (i.e., general information included in the firm's account in the agency's *CRM*) and also what we know about assisted firms. We argue that firms demand and are assigned to services according to these attributes. Note, however, that there may be several relevant characteristics that are not observable to us and, as a consequence, systematic differences between treated and non-treated outcomes may persist even after conditioning on those observables. Available evidence indicates that allowing for selection on an (time-invariant) unobservable determinant by taking first differences on the outcome variable, i.e., combining matching with difference-in-differences, helps to significantly improve the quality of the estimates relative to that obtained when just

using matching (Smith and Todd, 2005a). In this paper we therefore apply multiple treatment matching differences-in-differences.[7]

We find that an integral accompaniment of firms over the export process through a combination of services is associated with better export outcomes, primarily along the country-extensive margin, than basic individual services. In particular, firms which simultaneously receive counseling, participate in international trade missions and fairs, and get support in setting up an agenda of commercial meetings exhibit higher growth of total exports and the number of countries they export to than comparable firms which only join one of these activities. This clearly suggests that there are significant complementarities among services.

The remainder of the paper is organized as follows: Section 2 explains the empirical methodology, which as mentioned above, is based on the matching difference-in-differences method. Section 3 presents the dataset and descriptive evidence on both firms' export performance and firms' use of different export promotion services. Section 4 reports and discusses the econometric results, and Section 5 concludes.

2 Empirical Methodology

We define export promotion policy implemented by the agency as a bundle of *S* different programs. There are accordingly *(S+1)* different mutually exclusive states (treatments) whose respective outcomes are denoted by $\{Y^0, Y^1, ..., Y^S\}$ and where outcomes correspond to a specific measure of export performance.[8] Thus, Y_i^s is (the natural logarithm of) firm' *i* total exports if this firm is assigned to program *s*.[9] Similarly, Y_i^r is (the natural logarithm of) firm' *i* total exports if this firm is assigned to program *r*, and so forth.[10]

[7] Görg et al. (2008) apply a similar methodology to examine the relationship between government grants of varying size and export activity on a sample of Irish manufacturing firms over the period 1983-2002. They find that large grants are more likely to induce increased intensity of exporting. Our analysis differs from that in Görg et al. (2008) in that, while we examine the effects of different programs with respect to both non-program and other programs (*multiple program* analysis), they focus on different intensities of a given program *(dose* analysis) and do not explicitly compare the effects of these intensities to each other (e.g., there is no test for statistical differences in the estimated coefficients) but to non-program status. Furthermore, unlike those used in Görg et al. (2008), our data allows us to disentangle the channels through which government assistance promotes additional firms' exports, the extensive or the intensive margins.

[8] A common practice in the literature consists of assuming that category "0" denotes no participation.

[9] The use of (natural) logarithm is motivated by the scale problem originated in the fact that the variable identifying the program does not capture the size of the assistance (Lach, 2002).

[10] The presentation hereafter will focus on this measure, but *mutatis mutandis* the same also applies to other indicators of export performance along the extensive margin (e.g., number of products exported) and the intensive margin (e.g., average exports per product,). Unfortunately, we do not have the required data to examine the firms-extensive margin, i.e., the selection of firms into export markets and how assistance by PROEXPORT shapes this selection process (e.g. a list of non-exporting firms assisted by PROEXPORT).

The difference between potential exports Y_i^s and potential exports Y_i^r is the gain or loss in terms of exports that firm *i* would experience if it participates in program *s* relative to what it would register if it participated in program *r*, i.e., this difference is the causal effect of participating in program *s* and not participating in program *r* (Frölich, 2004). Since each firm participates in only one program, ex-ante (i.e., before participation in the program) each of the potential levels of exports is latent and could be observed if the firm participated in the respective program, but ex-post, only exports corresponding to the program in which the firm eventually participated is observed (Frölich, 2004).[11] In other words, it is impossible to observe Y_i^s and Y_i^r for the same unit. [12] Hence, the aforementioned individual treatment effect can never be observed. This is the so-called *fundamental problem of causal inference* (Holland, 1986). The statistical solution to this problem consists of using the population of firms to learn about the properties of the potential outcomes. More specifically, the idea is to compute an average treatment effect. Since we are dealing with programs with voluntary participation, we believe that it is more relevant to determine the effect of these programs on those who participated and accordingly focus on the average treatment effect on the treated. Formally:

$$\hat{\gamma}^{s,r} = E\left(Y^s \mid D = s\right) - E\left(Y^r \mid D = s\right) \tag{1}$$

where $D \in \{0,1,...,S\}$ is a variable indicating participating in a particular program and $\gamma^{s,r}$ is the expected (average) effect of program *s* relative to program *r* for a firm randomly drawn from the population of firms participating in program *s*. Note, first, that $\gamma^{s,s} = 0$ Second, if participants in programs *s* and *r* differ in non-random way, i.e., systematically differ over the distribution of

[11] We assume that the main assumptions of the Roy (1951)-Rubin (1974) model are fulfilled. For instance, the definition of potential outcomes implicitly relies on the assumption of no interference between different units (Cox, 1958) or stable-unit-treatment-value assumption (Rubin, 1980a). Specifically, potential outcomes of each firm are not affected by the allocation of other firms to programs (Frölich, 2004). Hence, in this exercise, we ignore cross- and general equilibrium effects. In particular, we do not consider information spillovers. It is well known that firms may learn about export opportunities from other firms through employee circulation, customs documents, customer lists, and other referrals (Rauch, 1996). Evidence on spillovers has been presented in several papers, e.g., Aitken et al. (1997), Greenaway et al. (2004), and Álvarez et al. (2007). Thus, Aitken et al. (1997) and Greenaway et al. (2004) report significant spillovers from multinational enterprises (MNEs) to domestic firms in Mexico and the United Kingdom, respectively. More precisely, MNE activity is positively related to export propensity of local firms. Álvarez et al. (2007) find that the probability that firms introduce given products to new countries or different products to the same countries increases with the number of firms exporting those products and to those destinations, respectively. If these spillovers would be associated with participation in specific export promotion activities, then the treatment effects, as estimated here, would be underestimated. In order to informally check whether this is an issue, we have regressed firms' total exports on the lagged average number of firms exporting to the same destination countries, the lagged average number of firms exporting in the same sectors, the lagged average number of assisted firms which export to the same countries, the lagged average number of assisted firms in the sectors they register exports (all these variables in natural logarithms), their respective interactions, a binary variable indicating trade assistance status, and firm and year fixed effects. Notice that, if spillovers were important, then the former two variables would be significant and if these spillovers were related to trade promotion assistance, the two interactions would be also significant. Our estimation results suggest that spillover effects do not seem to be present in our dataset, either unconditional or conditional on assistance. Tables with these estimates are available from the authors upon request.

[12] Formally, for each firm, a realization from only one element of $\{Y^0, Y^1, ..., Y^S\}$ is observable. The remaining *S* outcomes are counterfactual and unobservable by definition (Lechner, 2002a).

their characteristics and program effects vary with these characteristics, then the treatment effects on the treated are not symmetric, i.e., $\gamma^{s,r} \neq \gamma^{r,s}$.

In general, the average treatment effect cannot be directly identified from the data. Concretely, estimating this effect by the difference between the average exports of firms participating in program *s* and those of firms participating in program *r* would lead to biased estimates. This bias can be decomposed into three components: differences in the range of values of the relevant observable characteristics of the groups being compared, differences in the distribution of these values over the common range, and differences in outcomes that persist after controlling for observable factors (Heckman et al., 1998).

Hence, identifying assumptions are required to estimate the counterfactual, in this case, the average exports of firms if they had received a service other than *s,* and thus to compute the treatment effect. Two of these assumptions are the conditional independence assumption and the common support condition.[13] The former states that program participation and program outcome are independent conditional on a set of observable attributes. The rationale is that firms which are very similar in terms of the characteristics determining selection into program and potential outcomes should have similar exports when participating, so that the differences in exports between participating and non-participating firms could be used as an estimate of the average treatment effect if enough pairs of similar firms exist (see Rubin, 1974; Frölich, 2004). In particular, in the multiple program framework the conditional independence assumption states that all potential program outcomes are independent of the assignment mechanism into programs for any given values of the vector of attributes (Imbens, 2000; and Lechner, 2001). Formally:

$$Y^0, Y^1, \ldots Y^S \perp D \mid X = \chi \,, \forall\, x \in \chi \qquad (2)$$

where $\perp$ denotes independence, X is a vector of attributes, and χ is the attribute space (Lechner, 2002a). The common support condition requires that for all $\forall\, x \in \chi$ there is a positive probability of the programs to occur. In other words, all firms participating in a given program have a counterpart in the group of firms participating in the program the former is compared to and all firms in the relevant sub-sample are a possible participant in the program being considered (Blundell and Costa Dias, 2002; and Sianesi, 2005).

[13] The conditional independence assumption (Lechner, 1999) is also known as selection on observables (Barnow et al., 1981; Heckman and Robb, 1985) and ignorable treatment assignment (Rosenbaum and Rubin, 1983).

It has been shown that instead of conditioning on the attributes, it is possible to condition on the participation probability conditional on these attributes, i.e., propensity score, *P(X)* (Rubin, 1977; and Rosenbaum and Rubin, 1983, for the binary treatment framework; and Imbens, 2000; and Lechner, 2001, for the multiple-treatment framework). This allows considerably reducing the dimension of the estimation. Hence, the average effect of program *s* compared to program *r* on the participants in program *s* can be expressed as follows:

$$\hat{\gamma}^{s,r} = E\left(Y^s \mid D = s\right) - \underset{P^{r|sr}(X)}{E}\left\{E\left[\left(Y^r \mid P^{r|sr}(X), D = r\right) \middle| D = s\right]\right\} \tag{3}$$

where $P^{r|sr}(x) = P^{r|sr}(D = r \mid D = r \vee D = s, X = x) = \dfrac{P(D = r \mid X = x)}{P(D = s \mid X = x) + P(D = r \mid X = x)}$. If there is a consistent estimator of these probabilities that converges at the parametric rate, the dimension of the estimation problem is reduced to one (Gerfin and Lechner, 2002). Notice that to identify $\gamma^{s,r}$ only information from the sub-samples of participants in programs *s* and *r* is required. When all values of *s* and *r* are of interest, as in our case, one can model and separately estimate binary conditional probabilities over the *S(S-1)/2* sub-samples or formulate the complete choice problem in a model and estimate it on full sample with a multinomial probit (Lechner, 2002a).

Under the assumptions presented above and given a consistent estimate of these probabilities, Equation (3) can be estimated by matching.[14] This non-parametric method has two advantages over parametric ones, namely, it does not impose any functional form assumption nor restrict impact heterogeneity across firms (Gerfin and Lechner, 2002).[15] Matching on the propensity score consists of pairing each firm participating in program *s* with the more similar members of the group of firms participating in program *r* on the basis of their propensity score and then estimating the impact of program *s* relative program *r* by comparing the exports of matched firms. This procedure eliminates the first two sources of the bias referred above, namely, the bias due to differences in the support of the covariates in the treated and comparison groups and the bias due to differences between these groups in the distribution of the covariates over the common support, but it assumes away the third potential source of bias, namely, selection into programs on unobservables (e.g., Heckman et al., 1998).

However, selection on an unobservable determinant can be allowed for if matching is combined with difference-in-differences as long as this determinant lies on separable individual

[14] See, e.g., Heckman et al. (1998); Klette et al. (2000); Jaffe (2002); Blundell and Costa Dias (2002); Lee (2005); and Smith and Todd (2005a).
[15] Estimating the conditional expectation of the outcome variable without imposing a linear functional form restriction avoids potential inconsistency derived from misspecification (Meyer, 1995; Abadie, 2005).

and/or time-specific components of the error term (Blundell and Costa Dias, 2002).[16] This is precisely what we do in this paper. Specifically, we take advantage of our panel of firms over time using the *matching difference-in-differences* approach (e.g., Arnold and Javorcik, 2005; Görg et al., 2008).[17]

The matching difference-in-differences estimator compares the change in before and after exports of firms participating in a given program with that of matched control ones, so that imbalances in the distribution of covariates between both groups are accounted for and time-invariant effects are eliminated. This procedure relies for identification on the assumption that the change in time-varying unobserved effects does not affect selection into programs and exports (Heckman et al., 1997; and Blundell and Costa Dias, 2002).[18] Formally, the estimator is given by:

$$\hat{\gamma}^{s,r\ (MDID)} = \sum_{i \in \{I^s \cap Z^*\}} \left\{ \Delta Y_{it} - \sum_{j \in \{I^r \cap Z^*\}} W_{ij} \Delta Y_{jt} \right\} w_{ij} \qquad (4)$$

where t indexes time, I^r (I^s) is the set of control (treatment) firms; Z^* is the common support; W is the weight placed on comparison observation j for individual i and w accounts for the re-weighting that reconstructs the outcome distribution for the treated sample. The weights W depend on the cross-sectional matching estimator employed.[19]

The propensity score is in fact based on fitting a parameter structure. It is therefore necessary to test whether the estimated score is successful in balancing the values of the covariates between matched treatment and comparison groups. We assess the matching quality using three alternative tests: the standardized differences test; the t-test for equality of means in the matched sample; and the pseudo R^2 along with the likelihood-ratio test of joint insignificance of regressors included in the specification of the propensity score before and after matching (e.g., Lechner, 2002a; Gerfin and Lechner, 2002; Sianesi, 2005; and Caliendo and Kopeinig, 2008).

Furthermore, note that our matching allows using the same comparison observation repeatedly for the implementation of the estimator to be feasible when the number of participants in program s is larger than that of participants in comparison program r and the role of s and r as treatment comparison groups is reversed during the estimation. If very few observations are

[16] See also Heckman et al. (1997), Heckman et al. (1998), Abadie (2005), Smith and Todd (2005a), and Chen et al. (2009).
[17] See, e.g., Angrist and Krueger (1999), Smith (2000) and Jaffe (2002) on the difference-in-differences method.
[18] Formally, $\varepsilon_{t_1} - \varepsilon_{t_0} \perp D \mid X$ (see Blundell and Costa Dias, 2002). This implies that, conditional on observed covariates, in absence of treatment, the average outcome for the treated would have experienced the same variation as the average outcome of the controls (see Abadie, 2005).

heavily used, there is a risk of inflated variance. We explicitly check below whether this is an issue in our estimations.

In order to assess the significance of the treatment effect, we first compute analytical standard errors. Notice, however, that estimation of propensity scores and matching itself both add variation beyond the normal sampling variation, so these errors may then deviate considerably from their sample counterparts (Heckman et al., 1998; and Smith, 2000). We therefore also estimate bootstrapped standard errors based on 500 repetitions.

Finally, we need to account for multiple program participation of the same firm as current and future participation may not be independent of previous participation. In particular, less successful programs may lead firms either to desist from participation or to participate in different programs, while more successful programs may induce firms to continue participating, to participate in additional programs, or, alternatively, to discontinue using certain services of the agency because they have become unnecessary. For instance, in the case of Colombia, it has been reported that trade show participation drives participation in buyer's missions, which in turn drives individual appointments with buyers in the target market (Nathan Associates, 2004). In order to address this potential endogeneity problem, we perform two robustness checks: we control for previous assistance and we evaluate only the first program participation (e.g., Volpe Martincus and Carballo, 2008; Gerfin and Lechner, 2002).

3 Data and Descriptive Evidence

In our empirical analysis we use two databases. The first database has annual firm-level export data disaggregated by product (at the 10-digit HS level) and destination country over the period 2003-2006 from the DANE (Colombian National Statistical Office). The sum of the firms' exports adds up to the total merchandise exports as reported by the Central Bank of Colombia (Banco de la República). The second database consists of an annual list of the firms who participated in each export promotion activity organized by PROEXPORT over this period. These databases have been merged using the firms' tax ID. We have been granted access to this combined dataset after these IDs had been removed and replaced with generic firm identifiers.

[19] See, e.g., Smith and Todd (2005a) for a formal definition of these estimators.

Table 1 presents basic aggregate export and program participation indicators. Total Colombian exports have grown 86.3% between 2003 and 2006. A large fraction of this aggregate export growth can be attributed to significant expansions along the intensive margin, i.e., larger average exports per country and larger average exports per product. The total number of destination countries and that of products have increased moderately, 8.2% and 3.6%, respectively, whereas the number of firms selling their products abroad has risen 15.4% from 2003 to 2006. On average, PROEXPORT has assisted more than 2,500 firms per year. This represents almost 25.0% of the total population of exporters over the period.

PROEXPORT provides Colombian exporters with multiple services. Following a common practice in the literature, we aggregate the basic services into three fairly homogeneous groups: Counseling (C), trade agenda (A), and trade fairs, shows, and missions (M). *Counseling* consist of a wide variety of services including training on the export process, provision of information on business opportunities for Colombian products in international markets in general and specialized data on specific target markets in particular as well as on transport logistics; and support in the formulation and execution of individual and collective export plans. *Trade Agenda* refers to the arrangement of appointments with potential customers through the commercial offices of the agency. In doing this, the product to be offered and the customer profile indicated by the exporter are taken into account. It also covers support to commercial management. *Trade fairs, shows, and missions* are international events in which firms may gain experiential knowledge, show their products, establish contacts, and close deals.[20] Fairs consist of multiple booths in a convention hall in which firms exhibit their products over a period ranging from two days to two weeks (Tanner, 1995; and Wilkinson and Brouthers, 2000a).[21] Missions can be both outgoing and incoming. In the first case, Colombian firms go to a foreign country to explore the market, identify clients, consolidate and increase businesses, follow up and expand the network of distributors, and launch new products. In the second case, foreign buyers are invited to Colombia with the purpose of establishing business relationships leading to exports. PROEXPORT coordinates and co-finances participation in these events.[22]

[20] As surveyed in Spence (2003), Seringhaus and Rosson (1990) suggest that trade shows allow SMEs to further expand their international activities once they are established in targeted markets, while Young (1995) argues that outgoing trade missions help participating firms acquiring first-hand experience with foreign countries' culture through direct contact with businessmen and government officials, thus enabling them to adjust their perceptions of market potential and increase their knowledge of local commercial networks.

[21] According to Bonoma (1983), fairs allow exporters to sell products; gain access to decision makers; disseminate facts about services, products, and personnel; identify prospects; maintain image in the industry and with the media; gather intelligence; and enhance and maintain firm morale.

[22] In the case of fairs and shows, PROEXPORT shares half of the costs for trade show booths and air travel, while companies pay for accommodation in full. As for outgoing missions, PROEXPORT only pays for the airline tickets. In order to participate, Colombian firms must

Since firms may participate in more than one of these activities in the same year, we perform our assessment on bundles of activities formed by alternative combinations of the basic ones: A, C, M, AC, CM, MA, ACM, plus NP, which is the no participation status. Firms are then assigned to one of these states each year. Thus, for instance, a firm is assigned to A in a given year if it has received assistance to arrange meetings with potential buyers in this year. Similarly, it will be allocated to ACM if it has simultaneously used the three services, agenda, counseling, and missions, in that year or to NP if it has not been supported.[23] This ensures that treatments are mutually exclusive within a year and allows us to explicitly evaluate whether there are complementarities among services, that is, whether combined services are more effective in promoting exports than individuals ones (e.g., whether participation in a trade mission combined with counseling and previously arranged trade agendas has a larger impact on exports than just trade mission participation).

Figure 1 is a series of box plots showing the distribution of three key variables characterizing the degree of internationalization of the participants in the different programs: total exports, number of countries they export to, and number of products sold abroad.[24] The figure suggests a common pattern across variables. Firms which are more engaged in international trade along the dimensions measured by these variables tend to participate in various activities, thus making a more intensive use of export promotion services provided by PROEXPORT.

This can be clearly seen using the median as a synthetic indicator of these distributions. Table 2 then presents the number of exporters across groups defined by participation status along with the median of the aforementioned variables, whereas Table 3 reports the results of the Pearson t-test statistics for differences in medians allowing for heterogeneous variances along with the respective p-values. Firm not using any service are the largest group (77.8%), while firms participating in trade agenda (A) are the largest group among those who register program participation (8.7%). More importantly, statistics shown in Tables 3 and 4 indicate that there is

establish a team to carry out the mission and prepare a proposal to PROEXPORT that documents their qualifications as exporters who can deliver what they aim to sell. PROEXPORT assesses the feasibility of the mission and in general only refuses if there clearly is no opportunity to export. Finally, PROEXPORT pays part of the cost of airline tickets and the costs of hotel accommodation for selected incoming buyers. These buyers are selected on the basis of their buying potential as verified by PROEXPORT, the type of products in which they are interested, and their sales volume (Nathan Associates, 2004).

[23] Notice then that a firm that used service A in 2003 and service C in 2005, will be in group A in 2003 and group C in 2005, and not in group AC in either year.

[24] This figure has been constructed considering, for each year in our sample period, one year lagged values of the variables characterizing the degree of internationalization of the firms, for these variables to be consistent with those included in the propensity scores specified below.

significant heterogeneity among these groups of participants.[25] These groups systematically differ in terms of the average level of total exports and the average degree of export diversification along the country and product dimensions. These different attributes are therefore likely to play a relevant role in determining selection into specific programs. In the next section we will formally examine this issue as well as the relative impact of the aforementioned programs.

4 Econometric Results

In this section we evaluate the effectiveness of each individual program as defined above both relative to non participation and relative to each other using the methodology outlined in Section 2.[26] More precisely, we discuss the estimation of the participation probabilities in this multiple program setting, assess the quality of the resulting matching, and show the differential average effects of the programs. We then go through several robustness check exercises.

4.1 Multiple Program Evaluation: The Differential Impact of Export Promotion Activities

Participation Probabilities: We estimate the average treatment effect of the different programs on the treated firms applying matching difference-in-differences. The initial step consists of estimating the propensity score. When defining the specification of this score, we need to include those variables that influence the process of selecting firms into programs and export performance, so that program participation and program outcomes are independent. First, the literature suggests that firms at different stages of their internationalization process exhibit significantly different awareness of the different available promotion instruments (e.g., Kedia and Chookar, 1986; Naidu and Rao, 1993; and Ahmed et al., 2002). Further, existent studies also indicate that firms with different degree of international involvement have different needs and face different obstacles (e.g., Diamantopoulos et al., 1993; Naidu and Rao, 1993; Czinkota, 1996; Moini, 1998). Accordingly, they may tend to require and use different export promotion

[25] We have also performed pairwise Kolgomorov-Smirnov tests to check whether the distribution of each of these variables is the same for across groups of firms using different services. In most cases we reject the null hypothesis that the distributions being compared are equal. These results are not reported but are available from the authors upon request.

[26] We have also estimated the average assistance effects on assisted firms when pooling all export promotion programs together into a single one. These estimation results are presented in Appendix A (see Tables A1 and A2). This appendix will not be included in the final version of the manuscript. Estimates will then be available from the authors upon request.

services (e.g., Ogram, 1982; Seringhaus, 1986; Cavusgil, 1990; Kotabe and Czinkota, 1992; Francis and Collins-Dodd, 2004). The degree of export development of the firms is then a key variable to understand their demand of specific assistance. On the supply side, agencies such as PROEXPORT may offer services with components that are primarily targeted depending on the export experience of the firms. For instance, while training on the export process is mainly intended to support beginners (e.g., Expopyme), participation in international fairs and trade missions is likely to presuppose firms which already have reached a minimum level of export involvement (e.g., PROMPERU, 2007). Detailed data on this involvement are the basic information officials have access to when serving an exporter and thus represent a driving factor in the decision to provide a certain service. More specifically, PROEXPORT uses a *CRM* system, according to which an account is created for each firm that approaches the agency. This account includes information on the firms based on both customs data and a so-called strategic assessment performed by the responsible agents. On this basis, officials and entrepreneurs work together towards developing an export plan to take advantage of business opportunities. This plan defines the kind of assistance PROEXPORT will provide the firms and, in particular, the service or set of services that will be used in its implementation (Obando and Gómez Escalante, 2008). Previous export experience is a key data input at the first stages of this process. Several approaches have been proposed to typify firms according to their level of internationalization (e.g., Bilkey and Tessar, 1977; Bilkey, 1978; Cavusgil, 1980, 1984; Czinkota and Johnston, 1981; Czinkota, 1992; Naidu and Rao, 1993; Ahmed et al., 2002; Francis and Collins-Dodd, 2004). Here we characterize the firms' pre-program participation internationalization using the same variables we included in the general propensity score, namely, (lagged) total exports, (lagged) number of countries they export to, and (lagged) number of products exported.[27] As seen in Section 2, these variables vary substantially across the groups of firms using the different programs, i.e., there is a close relationship program usage and extent of preexistent engagement in export business. Furthermore, we also control for previous program participation as firms may reuse services they consider as helpful and switch out of services perceived as not properly working. Finally, it is clear that, as product of the recurrent interaction over time, the staffs of the agency are likely to gain a deeper knowledge of the firms which probably cannot be summarized using only the aforementioned variables. In other words, there might be attributes that are not

[27] Specifically, we use one-year lags. Estimation results when using two-year lags are essentially the same as those presented below. These results

observable to us but are observable to both PROEXPORT officials and firms. Typical examples in this regard are the managerial attitudes, qualification profile of personnel, and innovation capabilities. Admittedly, these unobserved characteristics may play a role in determining both service usage and export performance. Notice, however, that these features only change slowly over time. Given the relatively short of our sample period, they can be safely considered as mostly fixed. In fact, information gathered through interviews with PROEXPORT officials provides support to these priors.[28] Hence, estimating the impacts of interest on first differences allows us to control for these (unobserved) firm-specific time-invariant variables and other such as the location of firms and its main sector of activity. To sum up, we believe that we are able to account for the most important factors that jointly explain firms' demand for particular export programs as well as officials' decisions on what program to propose firms to participate in and therefore assume that they act idiosyncratically given that information.

In order to estimate the participation probabilities in a multiple program framework, we model and estimate each binary choice equation separately by a binary probit (BP), in which estimations are confined to those firms participating in the programs to be compared (Lechner, 2002a). These estimations need to be performed $S(S\text{-}1)/2$=28 times (S=8) on the different possible sub-samples to obtain the required probabilities. This approach is flexible in the sense that it does not impose the independence of irrelevant alternative assumption. Estimation results confirm the presence of heterogeneity in the selection process.[29] In particular, firms with richer experience in international markets tend to combine several services instead of using just one of them.

Matching Quality: Based on these propensity scores, we match treated and control groups using the kernel estimator. The next step is to assess the quality of the resulting matching. In doing this, we implement three tests. First, we compute the standardized bias for each covariate before and after matching using the formulas:

$$SB_{Before} = 100.\frac{\left(\overline{X}^{1} - \overline{X}^{0}\right)}{\sqrt{0.5.\left[V^{1}(X) + V^{0}(X)\right]}} \quad \text{and} \quad SB_{After} = 100.\frac{\left(\overline{X}^{1,M} - \overline{X}^{0,M}\right)}{\sqrt{0.5.\left[V^{1,M}(X) + V^{0,M}(X)\right]}}$$

where $\overline{X}^{1}\left(\overline{V}^{1}\right)$ is the mean (variance) in the group of assisted firms before matching, $\overline{X}^{0}\left(\overline{V}^{0}\right)$ the analogues for the control

are available from the authors upon request.

[28] Moreover, no systematic bias across groups of firms under different treatment statuses seems to be observed along these dimensions.

[29] The results are not reported but are available from the authors upon request.

group, and $\overline{X}^{1,M}\left(\overline{V}^{1,M}\right)$ and $\overline{X}^{0,M}\left(\overline{V}^{0,M}\right)$ are the corresponding values for the matched sample, and estimate the resulting change in the before and after biases (e.g., Sianesi, 2004; Girma and Görg, 2007; Caliendo and Kopeinig, 2008). Matching should be associated with decreased standardized biases (Rosenbaum and Rubin, 1983; Sianesi, 2004; and Caliendo and Kopeinig, 2008). Second, we additionally conduct a two-sample *t-test* to check whether there are significant differences in the covariate means for assisted and control groups (e.g., Girma and Görg, 2007). Third, we estimate the propensity score before and after matching and compare the respective pseudo-R^2. This measure indicates how well observed covariates explain the participation probability. If matching was successful, there should be no systematic differences in the distribution of the explanatory variables between treatment and control groups and the pseudo-R^2 should be lower after matching (Sianesi, 2004).

The results of these tests are shown in Table 4. This table reports the pseudo R^2; the p-value of the likelihood ratio test of joint insignificant of regressors after matching; the minimum and maximum standardized biases over covariates before and after matching; and the number of variables which still have significant differences in means after matching according to the t-test. Recall that effects will be estimated only in those regions of the attribute space where firms from two programs could be observed having a similar participation probability, i.e., subject to the common support condition. We therefore check the number of treated observations that are lost as a consequence of imposing this condition across the different sub-samples and report the corresponding shares in the last column of Table 4. With a few exceptions, most matched sub-samples pass all matching quality tests. Specifically, the pseudo R^2 is below 0.007 in all cases and regressors do not seem to be jointly significant after matching.[30] Further, the bias after matching does never exceed 20 and covariates of treated and control groups end up with means which are not significantly different. This evidence clearly suggests that our matching has successfully balanced the characteristics of the matched sub-groups being pairwisely compared. Finally, the proportion of assisted firms lost due to the common support requirement is very low, ranging from 0.0% to 2.3% with a median value of 0.2%.

Another issue is that our matching algorithm allows using the same comparison observation repeatedly in constructing the comparison group (i.e., matching with replacement). As mentioned

[30] We have also calculated the pseudo R^2s before matching. The mean value is 0.083, while the maximum one is 0.469. The pseudo R^2s dramatically decrease in the matched sample. In addition, all X^2 test statistics are significant at the 1% level before matching (i.e., all p-values are

in Section 2, this may result in larger variances and accordingly less precision. We monitor whether this is the case using a concentration ratio computed as the sum of the weights in the first decile of the weight distribution divided by the total sum of weights in the comparison sample (Lechner, 2002a). These shares are presented in Table 5. They range between 0.1 and 0.5 across program pairs. These values are comparable to those reported in previous studies (Gerfin and Lechner, 2002). After corroborating that our matching procedure approves an exhaustive quality examination and thus establishing that it is able to generate statistically acceptable comparison groups of firms, we are now ready to discuss the treatment effects.

Differential Effects of Export Promotion Programs on Participants: Table 6 reports the estimated average treatment effect of joining a specific program versus not joining (NP) on our six export performance measures, as estimated with the kernel estimator. All export promotion programs have a positive significant effect on the growth of firms' total exports as well as on the growth of the number of countries they export to. Furthermore, all programs combining services are also associated with higher export growth along the product-extensive margin. Thus, the rate of growth of exports is on average 26.1% higher for firms using these sets of combined services, whereas those of the number of countries and the number of products are 12.5% and 9.8% higher, respectively. Interestingly, these estimates suggest that the program bundling counseling, trade agenda, and trade missions has the largest impact on total exports and the two measures of the extensive margin, i.e., number of destination countries and number of products. Finally, some of the programs exert a significant positive effect on the average export growth both in terms of countries and products, too. Note, however, that these effects are less robust across estimations.

Hence, export promotion seems to favor an expansion of firms' exports, essentially along the extensive margin, i.e., an increase of the number of countries served and to some extent the number of products, thus enabling the introduction of new destinations and export goods.[31] This result coincides with our priors. Trade promotion activities aiming at attenuating information problems are likely to have a stronger effect when these problems are acuter, namely, when entering a new market or starting to export a new product than when expanding operations on products already traded or in a country which is already a destination market for the company.

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equal to 0.000), but for the subsamples C-M, AC-CM, and AM-CM. These statistics are not reported here but are available from the authors upon request.

This is even more likely to be the case when different activities are combined together to address the different problems faced throughout the establishment and development of export businesses.

We have just seen that the programs have different quantitative effects on the export performance dimensions we are considering in this study. However, from this separate comparison of individual programs to the non-participation status nothing can be said on the sources of these differences. More specifically, they can be due to differential effectiveness across programs, but they could also originate from the different composition of the groups of firms participating in the various programs. Hence, the previous analysis does not allow us to assess whether services are well targeted, in the sense that those firms that use a given service perform better than if they had use a different one, nor identify whether there is a program that outperform the rest (Sianesi, 2005). Insights into these relevant issues can only be gained by directly comparing the individual programs to each other. This is what we do next.

Table 7 presents the average differential effect of joining a given program rather than the corresponding comparison program for participants in the former one. This table should be read as follows: a positive number *m* indicates that the effect of the program shown in the row on its participants compared to that if they had joined the comparison program given in the respective column is an $[e^m-1]100\%$ additional growth rate of the export variable being considered.

The pairwise program comparisons clearly indicate that a combination of the three basic services, counseling, missions and fairs, and trade agenda, systematically perform better than the other programs. In particular, firms combining these services have significantly higher export growth, along the country and product extensive margin, than if they had used each of these services separately. Specifically, the kernel estimates indicate that the growth rate of exports is on average 17.7% higher, that of number of countries is 11.7% higher, and that of the number of products is 11.0% higher. Further, the aforementioned firms exhibit a higher growth of the number of countries they export to (on average, 9.4% higher), when compared to a situation in which they had used alternative combinations of two of these three services. These results suggest that this service bundle is well targeted. Notice that there is also some evidence that specific combinations of two services are associated with better export performance than their individual components for comparable firms (e.g., trade agenda and counseling versus trade agenda and counseling and trade missions versus trade missions).

[31] In general, it can be expected that, over time, growth in the number of total destinations will be associated with introduction of new trade

Figure 2 illustrates the main result using kernel smoothing regressions. More precisely, it presents the conditional expectation of three outcome variables, growth of exports, growth of the number of countries, and growth of the number of products, conditional on the conditional selection probabilities for firms using a bundle of services combining counseling, trade agenda, and missions and fairs versus firms just using one of these services. The differences between the curves could be seen as an estimate of the treatment effect at specific values of the conditional probabilities (Lechner, 2002a). In most cases, the export performance measures are higher for firms participating simultaneously in the three activities almost all over the common support, which is consistent with the positive relative average treatment effect of this program reported above.[32]

Interestingly, our results also indicate that firms which only participated in missions would have experienced higher export growth, especially along the product-extensive margin, if they had instead resorted to counseling services bundled with arrangement of trade agendas (see Table 10). Hence, contrary to what we have seen before for the combination of the three basic services, the program only consisting of missions and fairs does not seem to be well targeted.

Taking into account that we are working with annual data and that individual services within a bundle may take place at different months, these results can be considered to provide formal support to some arguments found in the literature on export promotion. In particular, preparatory activities before trade missions significantly enhance the gains derived from participation (e.g., Branch, 1990; Hibbert, 1990; Seringhaus and Rosson, 2005; and PROEXPORT, 2008). Thus, a careful investigation of the country's economy, politics, culture, industries, and product lines of interest to the firm is worth done before visiting a country. Obtaining objective knowledge through the agency's counseling and information services may facilitate acquisition of experiential knowledge once in the country. Thus, manager participating in missions learn what to expect from and how to properly behave in the target culture. Moreover, being equipped with this information helps presenting the right range of products together with appropriate promotion material (Spence, 2003). In this regard, generating awareness of potential customers through diverse communication methods (e.g., press releases, product brochures with invitation letters, etc) and properly training booth staff have been reported to have a positive impact on exports

partners. The same applies to products.

associated with participation in international trade fairs (Seringhaus and Rosson, 2005). Setting up a complementary trade agenda is also important. More specifically, it has been reported that pre-arranged meetings with potential customers tend to generate more leads and larger sales. Further, visits to the targeted markets before the trade missions are associated with higher likelihood of closing deals during these events (Spence, 2003). Follow up activities such as phone, fax, and e-mail communications and new visits are also seen as instrumental in increasing the outcome from participation. More specifically, they are likely to contribute to transform contact and leads into concrete exports (Branch, 1990; Hibbert, 1990; and Spence, 2003).

Summing up, successful participation in foreign markets requires from firms to develop a comprehensive and systematic approach for starting export business and building up solid buyer-seller relationships. Export promotion agencies are likely to be more effective and thus contribute most to this goal when they provide integral support throughout this export development process.

4.2 Robustness

In this subsection we examine the robustness of our findings to corrections for potential econometric problems performing several checks. First, estimating participation probabilities through binary probits require handling issues such as evaluation of specification quality and checking of common support condition for several models. An alternative approach to get these probabilities consists of formulating an integrated choice problem within one model, estimate it on the full sample by a multinomial probit (MNP), and then use the estimation results to calculate the probabilities of the various groups conditional on the covariates.[33] We also estimate the participation probabilities using this model. Lechner (2002a) shows that these probabilities as computed from both models are very close to each other. This is also exactly what we observe in our case. Figure B1 in Appendix B is a scatterplot of all participation probabilities derived from both estimation approaches, while Table B1 in this Appendix presents the pairwise correlations for each relevant sub-sample. The dots are tightly clustered around the 45 degrees line (i.e.,

[32] Note, however, that the effects do not necessarily increase with the participation probabilities as ideally would be the case. This suggests that not always those firms which are most likely to participate in the program benefit most on average. Moreover, in some graphs, regression lines cross twice. The impacts are less clear in those cases (Lechner, 2002a).

[33] Notice, however, that this comes at a cost. This model seems to be more restrictive because it is based on fewer coefficients and derived conditional probabilities are interdependent. Thus, it is more likely to suffer from inconsistency as potential misspecification in one equation may contaminate the whole system of equations. Further, its estimation is cumbersome (Lechner, 2002a).

where both probabilities are equal) and the correlations are accordingly very high. Not surprisingly then, the estimation results we obtain based on these probabilities are highly similar to those presented before.[34]

Second, different matching algorithms might potentially lead to different results. We have therefore checked whether our estimates are driven by the specific matching estimator used (i.e., kernel). In particular, we re-estimate all the average effects presented so far using instead the nearest neighbor estimator (each assisted firm is compared to the most similar "non-assisted" one). These results generally support the conclusions drawn before.[35]

Third, as mentioned before, participation may be correlated across programs and over time as, say, firms may reuse services they perceive as effective in helping them achieve their goals or change service bundles after unsuccessful experiences. To check whether this might be affecting our estimates, we confine our attention to the first program participation (e.g., Lechner, 2002a; and Gerfin and Lechner, 2002). In particular, for each sample we only consider those firms that were never assisted before, so that once they participated in some activity organized by PROEXPORT, they do not enter again neither in the treated nor in the control group. Thus, for 2004 we exclude firms receiving a service in 2003; for 2005 we drop out firms assisted in 2003 or 2004; and for 2006, we remove firms participating in 2003, 2004, or 2005. This procedure obviously implies eliminating a relatively large number of observations. Hence, we only present in Table B2 in Appendix B estimation results corresponding to those sub-samples whose size exceed a minimum threshold defined in 500.[36] Specifically, we only report comparisons of each program to the non-participation status and those involving trade agenda. In general, these results exhibit the same patterns as the baselines ones. The same holds when we estimate the average assistance effects on a less restricted sample which includes each year only those firms that were not assisted the previous year (Lach, 2002). These estimates are reported in Table B3 in Appendix B.

Fourth, since our benchmark estimations pool over years, export performance differences across years might influence the estimated effects of trade promotion activities. In order to control for this potential influence, we impose the restriction that matched control firms must be only from the same year as the treated firms (Arnold and Javorcik, 2005). Results under this

[34] These results are not reported here, but are available from the authors upon request.
[35] These estimation results are reported in Appendix C.

specification are shown in Table B4 in Appendix B. The estimates are qualitatively similar to those reported here. This is hardly surprising given the relatively short length of our sample period.

Fifth, factors that actually codetermine use of services and outcomes may create selection bias when not properly accounted for. Clearly, firm size may play an important role in selecting firms into specific programs (e.g., Expopyme in the case of Colombia) and, according to the empirical literature, it is, at the same time, one relevant determinant of their export behavior (e.g., Roberts and Tybout, 1997; and Bernard and Jensen, 2004). Unfortunately, we do not have data on firm size for the whole population of Colombian exporters. However, we do have data on firm size categories (i.e., micro, small, medium, and large) and age for a sample of exporters. Hence, we have performed matching difference-in-differences estimations using an expanded propensity score specification which explicitly includes binary variables capturing the firm's size category as defined by the DANE, and these variables along with (lagged) age, on the reduced sample for which we have data on these variables.[37] The results are presented in Tables B5 and B6 in Appendix B and are in line with those shown above.

Sixth, the main assumption the matching difference-in-differences estimator is based on, i.e., temporary firm-specific shocks are independent of selection into programs conditional on covariates, would be also violated if there are time-varying systematic patterns across assistance programs for groups of firms. This would happen if the export promotion agency prioritizes specific sectors in particular years and this prioritization is associated with certain services. For instance, this institution may favor trade missions to promote exports of a particular set of products in a given year and then use these instruments to stimulate exports of other non-overlapping set of products the subsequent year. We account for this possibility adding two control variables in the propensity score, namely, for each firm-year we include the sectoral shares of exporters participating in the programs being compared averaged over the 2-digit sectors in which the firm is an active exporter. We report the estimates in Table B7 in Appendix B. These estimates corroborate our main findings.

A similar problem would arise if firms' changing mix of products results in demand of different promotion services over time. It is well known that firms selling abroad differentiated

[36] Zhao (2004) uses Monte Carlo simulations to show that the propensity score matching does not perform well when the sample size is relatively small.

products tend to face more severe information problems. Thus, firms with an increasing share of these products in their export baskets are likely to move from basic assistance to more integral support throughout the export process (e.g., from individual services to bundled services). A similar argument can apply to firms exporting to more sophisticated markets such as those of the OECD countries. Types of goods traded and destination may also contribute to shape export outcomes. Differentiated goods are heterogeneous both in terms of their characteristics and their quality. This interferes with the signaling function of prices thus creating trade frictions. This is especially important for firms from a developing country such as Colombia, whose products, due to national reputation effects, might be perceived by buyers as less technologically advanced and of poorer quality than those from developed countries (e.g., Chiang and Masson, 1988; Hudson and Jones, 2003).[38] Exigencies when exporting to well-known neighbor countries tend to be smaller for than those faced when exporting to distant, developed country markets. In this latter case, firms must undergo product upgrades as well as marketing upgrades to succeed in exporting goods to these markets.[39] We therefore include the lagged ratio of exports of differentiated products as defined in terms of the classification proposed by Rauch (1999) to firms' total exports and the lagged ratio of exports to OECD countries also to firms' total exports, and re-estimate the program relative effects using our difference-in-differences matching procedure. Estimation results based on this modified version of the propensity score, which are shown in Table B8 in Appendix B, do not significantly differ from the original ones.[40]

Seventh, the precision of the propensity score matching estimator may be reduced in finite samples when the covariates have significantly different effects on the participation probabilities and the potential outcomes. In particular, firms with identical propensity scores may be very dissimilar with respect to the relative importance of the determinants of these outcomes. Since the main purpose of the matching is to balance particularly the covariates that are highly influential on the outcomes, conditioning only on the propensity score may not be the most efficient method. An alternative strategy proposed in the literature consists of matching on the

[37] The definition of the size categories is as follows: micro: 1 to 10 employees; small: 11 to 50 employees; medium: 51 to 200 employees; and large: more than 200 employees.

[38] Export promotion activities may potentially have different effects on export performance over firms exporting good bundles with different degrees of differentiation and thus facing varying levels of information incompleteness. More precisely, trade promotion actions can be expected to have a stronger impact on the extensive margin of firms exporting differentiated goods, i.e., on the introduction of additional differentiated products and/or the incorporation of more countries to the set of destinations these products are exported to.

[39] Properly shaping the marketing strategy is an information-intensive activity. For instance, firms need to learn and understand the preferences of foreign consumers; the nature of competition in foreign markets; the structure of distribution networks, and the requirements, incentives and constraints of the distributors (e.g., Artopoulos et al., 2007).

propensity score and a subset of covariates (Lechner, 2002a; Lechner, 2002b; and Gerfin and Lechner, 2002; and Frölich, 2004). We therefore check whether our results are robust to augmenting the propensity score with lagged total exports as a measure of previous export experience. In this case, firms are matched according to their closeness in the propensity score and this attribute as defined by the Mahalanobis distance.[41] The estimates obtained with this alternative matching procedure are shown in Table B9 in Appendix B. In general, they also confirm our main results.

The results of the several checks addressing key potential econometric problems that have been performed in this subsection make us feel confident that our findings are robust.

5 Concluding Remarks

Information problems are more important for firms operating internationally than for those just operating domestically. Export promotion agencies provide firms with diverse services to ameliorate these problems. These services include counseling and general information on targeted markets, arrangements of meetings with potential customers, and organization and sponsorship of participation in international events such as trade missions and fairs. These heterogeneous activities may have heterogeneous effects on export performance of comparable firms. In particular, some programs may be more effective than others in helping companies to expand and diversify their exports. Insights on which specific programs have stronger impact may be a valuable instrument in guiding the allocation of the limited resources export promotion agencies are endowed with among competitive uses.

In this paper, we have attempted to illustrate how this information could be obtained using highly disaggregated firm-level data on exports and participation in trade promotion activities from Colombia over the period 2003-2006. More specifically, we have assessed the relative effectiveness of different promotion programs carried out by Colombia's PROEXPORT by directly comparing their effects to each other on several measures of export performance with a multiple treatment matching difference-in-differences approach.

[40] Estimations based on an alternative specification including binary variables for exports of differentiated products and exports to OECD countries instead of their shares yield similar results and are available from the authors upon request.
[41] See Rubin (1980b) for an explanation of this measure. Zhao (2004) shows that Mahalanobis matching is relatively robust under different sample sizes and correlation patterns between covariates and program participation and outcomes.

We find that bundled services combining counseling, trade agenda, and trade missions and fairs that can be thought as providing exporters with an integral accompaniment throughout the process of starting export businesses and building up buyer-seller relationships with foreign partners are more effective than isolated assistance actions, e.g., trade missions and fairs alone. The largest effect is observed precisely where the lack of information is likely to be more severe, namely, when expanding exports on the extensive margin and especially on the country dimension. These results are robust to corrections for multiple potential econometric problems.

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Table 1

Aggregate Export and Treatment Indicators

Year	Total Exports	Number of Countries	Number of Products	Number of Exporting Firms	Number of Exporters Served by PROEXPORT
2003	13,100	182	4,516	9,881	2,933
2004	16,700	192	4,639	11,189	2,109
2005	21,200	185	4,688	11,695	2,690
2006	24,400	197	4,679	11,399	2,752

Source: Own elaboration on data provided by PROEXPORT.
Total exports are expressed in millions of US dollars.

Table 2

Characterization of Exporters Participating in the Different Programs: Median Export Indicators and Relative Size of Groups

Treatment	Total Exports	Number of Countries	Number of Products	Percentage of Exporters
NP	12.043	1.000	1.000	77.750
A	53.628	2.000	3.000	8.720
C	150.725	3.000	4.000	1.220
M	117.969	3.000	4.000	1.550
AC	246.141	4.000	5.000	2.690
AM	233.162	4.000	5.000	3.140
CM	369.531	4.000	5.000	0.490
ACM	509.456	6.000	8.000	4.440

Source: Own elaboration on data provided by PROEXPORT.
Exports are expressed in thousands of US dollars. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table 3

Pairwise Pearson Test of Differences in Medians								
Sample	**NP**	**A**	**C**	**M**	**AC**	**AM**	**CM**	**ACM**
Total Exports								
A	640.081							
	[0.000]♦							
C	298.112	94.462						
	[0.000]♦	[0.000]♦						
M	291.309	52.211	3.286					
	[0.000]♦	[0.000]♦	[0.070]*					
AC	738.308	245.911	13.518	33.194				
	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦				
AM	826.621	228.987	10.918	28.219	0.171			
	[0.000]♦	[0.000]♦	[0.001]♦	[0.000]♦	[0.679]			
CM	166.648	56.588	15.039	21.777	2.172	2.153		
	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.141]	[0.142]		
ACM	1569.343	725.009	88.341	120.997	52.826	44.924	3.967	
	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.046]#	
Number of Countries								
A	1056.987							
	[0.000]♦							
C	530.796	99.042						
	[0.000]♦	[0.000]♦						
M	548.807	73.021	1.422					
	[0.000]♦	[0.000]♦	[0.233]					
AC	1252.526	259.910	7.003	18.721				
	[0.000]♦	[0.000]♦	[0.008]♦	[0.000]♦				
AM	1612.982	312.380	11.978	35.771	0.963			
	[0.000]♦	[0.000]♦	[0.001]♦	[0.000]♦	[0.326]			
CM	294.599	79.455	8.247	14.858	0.092	0.051		
	[0.000]♦	[0.000]♦	[0.004]♦	[0.000]♦	[0.762]	[0.821]		
ACM	2942.269	980.968	103.748	181.523	90.486	87.090	22.823	
	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	
Number of Products								
A	499.403							
	[0.000]♦							
C	232.834	43.622						
	[0.000]♦	[0.000]♦						
M	233.222	34.094	0.401					
	[0.000]♦	[0.000]♦	[0.527]					
AC	747.869	166.983	12.257	26.778				
	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦				
AM	894.318	178.235	10.603	24.608	0.176			
	[0.000]♦	[0.000]♦	[0.001]♦	[0.000]♦	[0.675]			
CM	127.110	39.553	4.969	7.689	0.235	0.069		
	[0.000]♦	[0.000]♦	[0.026]#	[0.006]♦	[0.628]	[0.793]		
ACM	1936.746	643.690	93.584	158.871	64.940	90.592	23.302	
	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	[0.000]♦	

Source: Own calculations on data from PROEXPORT.
A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.
* significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level

Table 4

Multiple Program Evaluation: Matching Quality
Binary Probit Estimates Based on Kernel Matching

PROG	N^T	Control	N^C	Ps. R^2 After	Pr>χ^2 After	Min B. Before	Max B. Before	Min B. After	Max B. After	Num. t-tests	Lost to CS%
A	1791	**NP**	13216	0.001	[0.190]	23.160	76.408	0.079	8.497	0	0.06%
C	471	**NP**	13216	0.005	[0.158]	42.449	126.372	1.653	17.051	0	0.21%
M	414	**NP**	13216	0.004	[0.308]	35.661	106.773	6.803	15.397	0	0.00%
AC	924	**NP**	13216	0.001	[0.538]	60.625	177.120	0.962	7.595	0	0.54%
AM	746	**NP**	13216	0.001	[0.867]	55.086	169.662	2.468	5.864	1	0.27%
CM	189	**NP**	13216	0.009	[0.311]	53.727	166.959	11.951	19.414	0	0.00%
ACM	1472	**NP**	13216	0.000	[0.917]	92.792	240.536	0.072	2.577	0	0.27%
A	1786	**C**	472	0.000	[0.678]	-40.113	-17.114	-3.646	0.417	0	0.34%
A	1774	**M**	414	0.000	[0.697]	-25.956	-12.211	-4.776	-0.444	1	1.01%
A	1784	**AC**	929	0.001	[0.246]	-73.737	-37.324	-2.440	4.812	1	0.45%
A	1791	**AM**	748	0.000	[0.692]	-69.182	-32.124	-3.804	2.668	0	0.06%
A	1771	**CM**	189	0.007	[0.000]♦	-67.561	-30.118	-17.963	0.341	1	1.19%
A	1790	**ACM**	1476	0.001	[0.458]	-107.904	-65.896	-3.797	4.398	1	0.11%
C	472	**A**	1792	0.000	[0.986]	17.114	40.113	1.548	3.038	0	0.00%
C	467	**M**	414	0.000	[0.965]	-3.705	14.441	-3.153	1.556	1	1.07%
C	471	**AC**	929	0.000	[0.997]	-31.653	-17.980	-1.772	1.189	0	0.21%
C	472	**AM**	748	0.002	[0.719]	-33.454	-13.049	-7.388	4.746	0	0.00%
C	465	**CM**	189	0.001	[0.916]	-33.180	-10.519	-3.614	2.919	0	1.51%
C	472	**ACM**	1476	0.000	[0.985]	-62.842	-50.280	-2.550	2.068	0	0.00%
M	413	**A**	1792	0.000	[0.980]	12.211	25.956	1.549	4.338	0	0.24%
M	414	**C**	472	0.000	[0.983]	-14.441	3.705	-2.286	3.390	0	0.00%
M	414	**AC**	929	0.000	[0.974]	-46.467	-19.051	-4.018	-0.122	0	0.00%
M	414	**AM**	748	0.000	[0.999]	-42.182	-20.398	-1.650	1.439	0	0.00%
M	406	**CM**	189	0.002	[0.681]	-40.671	-18.048	-7.420	3.077	2	1.97%
M	414	**ACM**	1476	0.001	[0.944]	-78.241	-48.778	-1.742	3.148	0	0.00%
AC	918	**A**	1792	0.001	[0.865]	37.324	73.737	-2.382	2.903	0	1.20%
AC	925	**C**	472	0.000	[0.980]	17.980	31.653	0.823	2.731	0	0.43%
AC	925	**M**	414	0.001	[0.630]	19.051	46.467	-0.258	7.028	0	2.27%
AC	922	**AM**	748	0.000	[0.929]	-10.954	4.704	-0.437	3.083	0	0.76%
AC	922	**CM**	189	0.002	[0.419]	-7.821	7.725	-4.731	3.840	0	0.76%
AC	928	**ACM**	1476	0.000	[0.964]	-37.614	-28.559	-2.881	2.005	0	0.11%
AM	743	**A**	1792	0.000	[0.957]	32.124	69.182	-2.018	2.556	0	0.67%
AM	742	**C**	472	0.001	[0.771]	13.049	33.454	-0.915	5.891	0	0.81%
AM	741	**M**	414	0.000	[0.935]	20.398	42.182	0.294	3.753	0	0.94%
AM	747	**AC**	929	0.000	[0.972]	-4.704	10.954	-2.339	1.880	0	0.13%
AM	748	**CM**	189	0.001	[0.857]	1.442	8.474	0.915	5.588	2	0.00%
AM	746	**ACM**	1476	0.000	[0.985]	-36.750	-16.981	-2.492	0.823	0	0.27%
CM	189	**A**	1792	0.001	[0.963]	30.118	67.561	1.781	6.925	0	0.00%
CM	189	**C**	472	0.001	[0.977]	10.519	33.180	-2.706	5.057	0	0.00%
CM	189	**M**	414	0.001	[0.977]	18.048	40.671	-1.667	5.968	0	0.00%
CM	189	**AC**	929	0.002	[0.890]	-7.725	7.821	-6.254	5.460	0	0.00%
CM	187	**AM**	748	0.001	[0.943]	-8.474	-1.442	-7.019	-1.113	0	1.07%
CM	187	**ACM**	1476	0.001	[0.984]	-40.599	-22.863	-4.692	-0.475	0	1.07%
ACM	1466	**A**	1792	0.000	[0.893]	65.896	107.905	-1.815	1.429	0	0.68%
ACM	1472	**C**	472	0.002	[0.128]	50.280	62.842	-1.487	7.301	0	0.27%
ACM	1470	**M**	414	0.001	[0.535]	48.778	78.241	0.574	6.453	0	0.41%
ACM	1475	**AC**	929	0.000	[0.978]	28.559	37.614	0.492	2.337	0	0.07%
ACM	1473	**AM**	748	0.000	[0.892]	16.981	36.750	-2.283	1.190	0	0.20%
ACM	1476	**CM**	189	0.003	[0.022]#	22.863	40.599	-1.207	10.131	0	0.00%

Source: Own calculations on data from PROEXPORT.

The table reports for each sub-sample of firms using the programs being compared the pseudo R^2 after matching, the p-value of the likelihood-ratio test testing the null hypothesis of joint insignificance of all regressors included in the propensity score specification after matching, the minimum and maximum percentage standardized biases before and after matching, the number of covariates which still have significant differences in their means after matching (at least at 10%) according to the t-test, and the percentage of treated observations falling outside the common support. Variables included in the propensity score specification are: lagged (natural logarithm of) export earnings, lagged (natural logarithm of) number of products exported, lagged (natural logarithm of) number of countries served, and lagged treatment status. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table 5

Excess Use of Single Observations							
	A	**C**	**M**	**AC**	**AM**	**CM**	**ACM**
NP	0.1767	0.1391	0.1256	0.2002	0.1857	0.1270	0.2772
A		0.1790	0.1731	0.2397	0.2241	0.1455	0.3264
C	0.4160		0.2391	0.3259	0.3127	0.2037	0.4185
M	0.4259	0.2719		0.3459	0.3313	0.1905	0.4510
AC	0.3742	0.2134	0.2150		0.2376	0.1746	0.3142
AM	0.3903	0.2161	0.2258	0.2771		0.1684	0.3367
CM	0.5048	0.3581	0.3411	0.4290	0.4071		0.4953
ACM	0.3849	0.2161	0.2198	0.2263	0.2212	0.1497	

Source: Own calculations on data from PROEXPORT.
The table reports the concentration ratio computed as the sum of the weights in the first decile of the weight distribution divided by the total sum of weights in the comparison sample (see Lechner, 2002a).
Note: A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table 6

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Sample 2004-2006
Matching Difference-in-Differences Estimates Based on Kernel Matching

Export Performance Indicator	SE	A	C	M	AC	AM	CM	ACM
Total Exports		0.138	0.150	0.097	0.254	0.155	0.228	0.285
	An	(0.035)♦	(0.058)♦	(0.062)	(0.048)♦	(0.056)♦	(0.070)♦	(0.054)♦
	Bo	(0.036)♦	(0.060)♦	(0.061)	(0.042)♦	(0.049)♦	(0.064)♦	(0.035)♦
Number of Products		0.048	0.032	0.009	0.098	0.070	0.071	0.135
	An	(0.018)♦	(0.033)	(0.030)	(0.026)♦	(0.029)♦	(0.042)*	(0.028)♦
	Bo	(0.020)♦	(0.038)	(0.029)	(0.024)♦	(0.026)♦	(0.042)*	(0.025)♦
Number of Destination Countries		0.064	0.082	0.075	0.090	0.105	0.095	0.179
	An	(0.014)♦	(0.025)♦	(0.026)♦	(0.020)♦	(0.021)♦	(0.034)♦	(0.020)♦
	Bo	(0.016)♦	(0.026)♦	(0.025)♦	(0.019)♦	(0.020)♦	(0.035)♦	(0.018)♦
Average Exports per Country and Product		0.027	0.036	0.013	0.067	-0.020	0.062	-0.028
	An	(0.034)	(0.056)	(0.057)	(0.045)	(0.052)	(0.068)	(0.051)
	Bo	(0.037)	(0.060)	(0.055)	(0.040)*	(0.049)	(0.070)	(0.037)
Average Exports per Product		0.090	0.118	0.088	0.157	0.085	0.157	0.151
	An	(0.033)♦	(0.054)#	(0.057)	(0.045)♦	(0.053)	(0.069)#	(0.051)♦
	Bo	(0.032)♦	(0.060)*	(0.057)	(0.037)♦	(0.045)*	(0.066)♦	(0.039)♦
Average Exports per Country		0.075	0.067	0.022	0.164	0.050	0.133	0.107
	An	(0.033)#	(0.053)	(0.057)	(0.044)♦	(0.052)	(0.061)#	(0.050)#
	Bo	(0.035)#	(0.056)	(0.054)	(0.037)♦	(0.046)	(0.055)♦	(0.031)♦

Source: Own calculations on data from PROEXPORT.
The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT on six measures of export performance for participating firms relative to the non-participation status. These estimates are based on the participation probabilities derived from binary probit models and are obtained using the the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table 7

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Kernel Matching

PROG	SE	Total Exports							Number of Products							Number of Countries						
		A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM
A			-0.066	0.011	-0.230	-0.115	-0.030	-0.312		-0.033	0.027	-0.130	-0.069	0.027	-0.115		-0.052	-0.017	-0.085	-0.090	0.004	-0.197
	An		(0.065)	(0.068)	(0.057)♦	(0.066)*	(0.089)	(0.062)♦		(0.037)	(0.034)	(0.032)♦	(0.034)#	(0.055)	(0.035)♦		(0.029)*	(0.028)	(0.026)♦	(0.026)♦	(0.044)	(0.028)♦
	Bo		(0.066)	(0.069)	(0.058)♦	(0.067)*	(0.090)	(0.064)♦		(0.039)	(0.034)	(0.033)♦	(0.035)#	(0.055)	(0.036)♦		(0.029)*	(0.029)	(0.027)♦	(0.027)♦	(0.046)	(0.029)♦
C		0.027		0.068	-0.098	-0.001	-0.042	-0.208	-0.004		0.033	-0.074	-0.048	-0.023	-0.098	0.031		0.013	-0.012	-0.034	0.011	-0.137
	An	(0.062)		(0.079)	(0.064)	(0.071)	(0.088)	(0.065)♦	(0.035)		(0.042)	(0.038)*	(0.039)	(0.054)	(0.037)♦	(0.027)		(0.035)	(0.030)	(0.030)	(0.043)	(0.030)♦
	Bo	(0.062)		(0.081)	(0.064)	(0.074)	(0.088)	(0.067)♦	(0.035)		(0.042)	(0.039)*	(0.041)	(0.054)	(0.039)♦	(0.029)		(0.035)	(0.030)	(0.030)	(0.043)	(0.030)♦
M		-0.024	-0.072		-0.158	-0.041	-0.061	-0.270	-0.031	-0.042		-0.122	-0.065	-0.026	-0.139	0.017	-0.020		-0.035	-0.032	0.013	-0.154
	An	(0.066)	(0.079)		(0.071)#	(0.075)	(0.094)	(0.071)♦	(0.033)	(0.042)		(0.037)♦	(0.038)*	(0.054)	(0.037)♦	(0.028)	(0.034)		(0.031)	(0.031)	(0.045)	(0.031)♦
	Bo	(0.064)	(0.077)		(0.068)#	(0.083)	(0.097)	(0.086)♦	(0.033)	(0.041)		(0.038)♦	(0.041)	(0.058)	(0.040)♦	(0.027)	(0.034)		(0.031)	(0.030)	(0.045)	(0.033)♦
AC		0.133	0.134	0.171		0.063	0.036	-0.098	0.058	0.084	0.092		0.015	0.007	-0.046	0.027	0.024	0.003		-0.029	-0.001	-0.125
	An	(0.054)♦	(0.066)#	(0.074)#		(0.057)	(0.074)	(0.046)#	(0.030)#	(0.039)#	(0.038)♦		(0.031)	(0.045)	(0.027)*	(0.023)	(0.030)	(0.032)		(0.024)	(0.037)	(0.022)♦
	Bo	(0.044)♦	(0.054)♦	(0.060)♦		(0.063)	(0.070)	(0.054)*	(0.026)#	(0.037)#	(0.034)♦		(0.031)	(0.045)	(0.029)	(0.021)	(0.028)	(0.029)		(0.024)	(0.036)	(0.023)♦
AM		0.044	0.023	0.049	-0.058		-0.032	-0.142	0.029	0.027	0.070	-0.018		0.008	-0.079	0.052	0.028	0.031	0.028		0.029	-0.092
	An	(0.060)	(0.071)	(0.078)	(0.057)		(0.078)	(0.053)♦	(0.031)	(0.041)	(0.039)*	(0.031)		(0.046)	(0.028)♦	(0.024)#	(0.032)	(0.033)	(0.024)		(0.037)	(0.022)♦
	Bo	(0.051)	(0.057)	(0.065)	(0.057)		(0.080)	(0.057)♦	(0.029)	(0.035)	(0.036)#	(0.032)		(0.045)	(0.030)♦	(0.021)♦	(0.028)	(0.029)	(0.023)		(0.036)	(0.022)♦
CM		0.108	0.141	0.162	-0.025	0.041		-0.097	0.032	0.052	0.081	-0.013	-0.000		-0.062	0.032	0.029	0.018	0.009	0.000		-0.108
	An	(0.075)	(0.086)	(0.091)*	(0.074)	(0.078)		(0.071)	(0.045)	(0.052)	(0.051)	(0.045)	(0.046)		(0.044)	(0.036)	(0.042)	(0.042)	(0.037)	(0.037)		(0.036)♦
	Bo	(0.070)	(0.079)*	(0.079)#	(0.074)	(0.080)		(0.076)	(0.043)	(0.050)	(0.047)*	(0.044)	(0.046)		(0.043)	(0.034)	(0.039)	(0.041)	(0.034)	(0.034)		(0.038)♦
ACM		0.133	0.174	0.175	0.099	0.123	0.063		0.074	0.120	0.120	0.071	0.059	0.048		0.114	0.135	0.084	0.118	0.082	0.069	
	An	(0.059)#	(0.076)#	(0.088)#	(0.047)#	(0.055)#	(0.075)		(0.032)#	(0.044)♦	(0.044)♦	(0.027)♦	(0.029)#	(0.046)		(0.024)♦	(0.035)♦	(0.038)#	(0.022)♦	(0.022)♦	(0.038)*	
	Bo	(0.037)♦	(0.047)♦	(0.047)♦	(0.041)♦	(0.044)♦	(0.057)		(0.024)♦	(0.031)♦	(0.032)♦	(0.024)♦	(0.026)#	(0.042)		(0.020)♦	(0.029)♦	(0.027)♦	(0.020)♦	(0.021)♦	(0.032)#	

Source: Own calculations on data from PROEXPORT.
The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total exports, number of products exported, and number of countries the firms export to for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

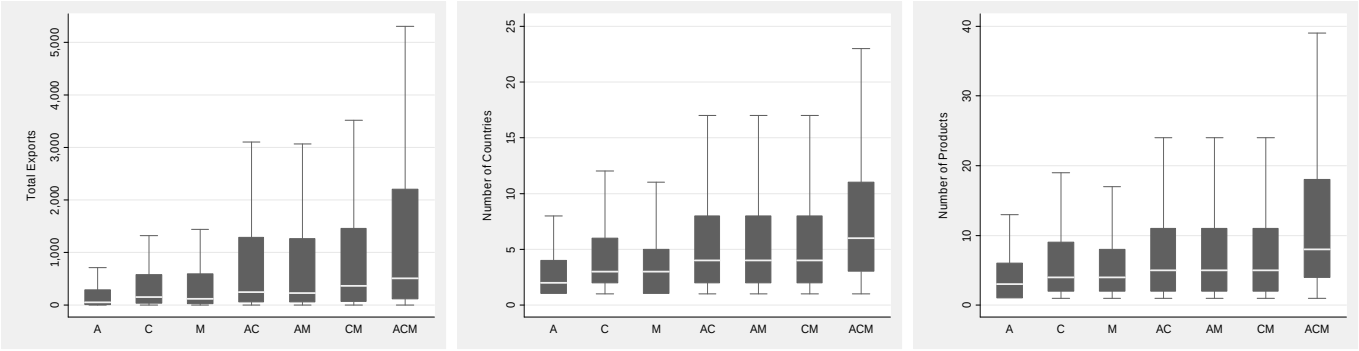
Table 7 (cont.)

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Kernel Matching

PROG	SE	Average Exports per Country and Product							Average Exports per Product							Average Exports per Country						
		A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM
A			0.019	0.001	-0.015	0.044	-0.061	-0.000		-0.033	-0.016	-0.100	-0.046	-0.057	-0.197		-0.014	0.028	-0.145	-0.025	-0.034	-0.115
	An		(0.063)	(0.063)	(0.056)	(0.062)	(0.087)	(0.062)		(0.062)	(0.063)	(0.054)*	(0.062)	(0.089)	(0.061)♦		(0.060)	(0.063)	(0.052)♦	(0.061)	(0.077)	(0.057)#
	Bo		(0.064)	(0.065)	(0.056)	(0.062)	(0.089)	(0.062)		(0.063)	(0.063)	(0.055)*	(0.065)	(0.089)	(0.063)♦		(0.060)	(0.064)	(0.053)♦	(0.064)	(0.077)	(0.058)#
C		0.001		0.021	-0.011	0.081	-0.031	0.027	0.031		0.035	-0.024	0.047	-0.019	-0.110	-0.004		0.055	-0.085	0.033	-0.054	-0.071
	An	(0.060)		(0.075)	(0.063)	(0.068)	(0.086)	(0.064)	(0.059)		(0.074)	(0.061)	(0.067)	(0.087)	(0.062)*	(0.058)		(0.073)	(0.059)	(0.066)	(0.078)	(0.060)
	Bo	(0.062)		(0.076)	(0.063)	(0.070)	(0.089)	(0.066)	(0.062)		(0.076)	(0.063)	(0.070)	(0.087)	(0.063)*	(0.060)		(0.074)	(0.062)	(0.066)	(0.080)	(0.060)
M		-0.009	-0.009		-0.001	0.055	-0.048	0.023	0.008	-0.029		-0.036	0.024	-0.035	-0.131	-0.041	-0.052		-0.123	-0.009	-0.074	-0.116
	An	(0.062)	(0.075)		(0.067)	(0.070)	(0.090)	(0.068)	(0.062)	(0.074)		(0.066)	(0.070)	(0.092)	(0.068)*	(0.062)	(0.073)		(0.065)*	(0.070)	(0.084)	(0.066)*
	Bo	(0.059)	(0.076)		(0.066)	(0.072)	(0.090)	(0.078)	(0.062)	(0.075)		(0.067)	(0.074)	(0.086)	(0.083)	(0.059)	(0.071)		(0.064)*	(0.071)	(0.077)	(0.080)
AC		0.048	0.026	0.076		0.077	0.030	0.073	0.075	0.050	0.079		0.048	0.029	-0.052	0.106	0.110	0.168		0.092	0.037	0.027
	An	(0.052)	(0.064)	(0.069)		(0.055)	(0.073)	(0.046)	(0.051)	(0.063)	(0.069)		(0.054)	(0.074)	(0.045)	(0.049)#	(0.061)*	(0.068)♦		(0.053)*	(0.065)	(0.042)
	Bo	(0.043)	(0.060)	(0.062)		(0.056)	(0.069)	(0.051)	(0.042)*	(0.059)	(0.061)		(0.052)	(0.065)	(0.051)	(0.041)♦	(0.055)#	(0.054)♦		(0.057)	(0.062)	(0.050)
AM		-0.037	-0.032	-0.053	-0.068		-0.069	0.029	0.015	-0.003	-0.021	-0.040		-0.040	-0.063	-0.008	-0.005	0.018	-0.086		-0.061	-0.050
	An	(0.057)	(0.068)	(0.073)	(0.055)		(0.076)	(0.051)	(0.057)	(0.067)	(0.073)	(0.054)		(0.077)	(0.051)	(0.056)	(0.066)	(0.072)	(0.052)		(0.069)	(0.049)
	Bo	(0.047)	(0.064)	(0.057)	(0.057)		(0.074)	(0.052)	(0.049)	(0.057)	(0.056)	(0.055)		(0.078)	(0.053)	(0.045)	(0.056)	(0.056)	(0.052)		(0.069)	(0.053)
CM		0.043	0.059	0.064	-0.021	0.042		0.073	0.076	0.089	0.081	-0.012	0.042		-0.035	0.075	0.111	0.145	-0.034	0.041		0.011
	An	(0.073)	(0.084)	(0.087)	(0.072)	(0.076)		(0.070)	(0.074)	(0.084)	(0.088)	(0.073)	(0.077)		(0.071)	(0.066)	(0.077)	(0.082)*	(0.064)	(0.069)		(0.062)
	Bo	(0.066)	(0.084)	(0.080)	(0.073)	(0.072)		(0.072)	(0.067)	(0.081)	(0.085)	(0.075)	(0.079)		(0.073)	(0.058)	(0.071)	(0.068)#	(0.063)	(0.070)		(0.064)
ACM		-0.055	-0.081	-0.029	-0.090	-0.018	-0.055		0.059	0.054	0.055	0.028	0.065	0.014		0.019	0.039	0.091	-0.018	0.041	-0.007	
	An	(0.057)	(0.074)	(0.082)	(0.047)*	(0.052)	(0.074)		(0.056)	(0.072)	(0.082)	(0.046)	(0.053)	(0.076)		(0.055)	(0.070)	(0.081)	(0.043)	(0.051)	(0.065)	
	Bo	(0.039)	(0.053)	(0.050)	(0.041)#	(0.041)	(0.061)		(0.039)	(0.050)	(0.052)	(0.040)	(0.042)	(0.059)		(0.034)	(0.049)	(0.048)*	(0.036)	(0.040)	(0.056)	

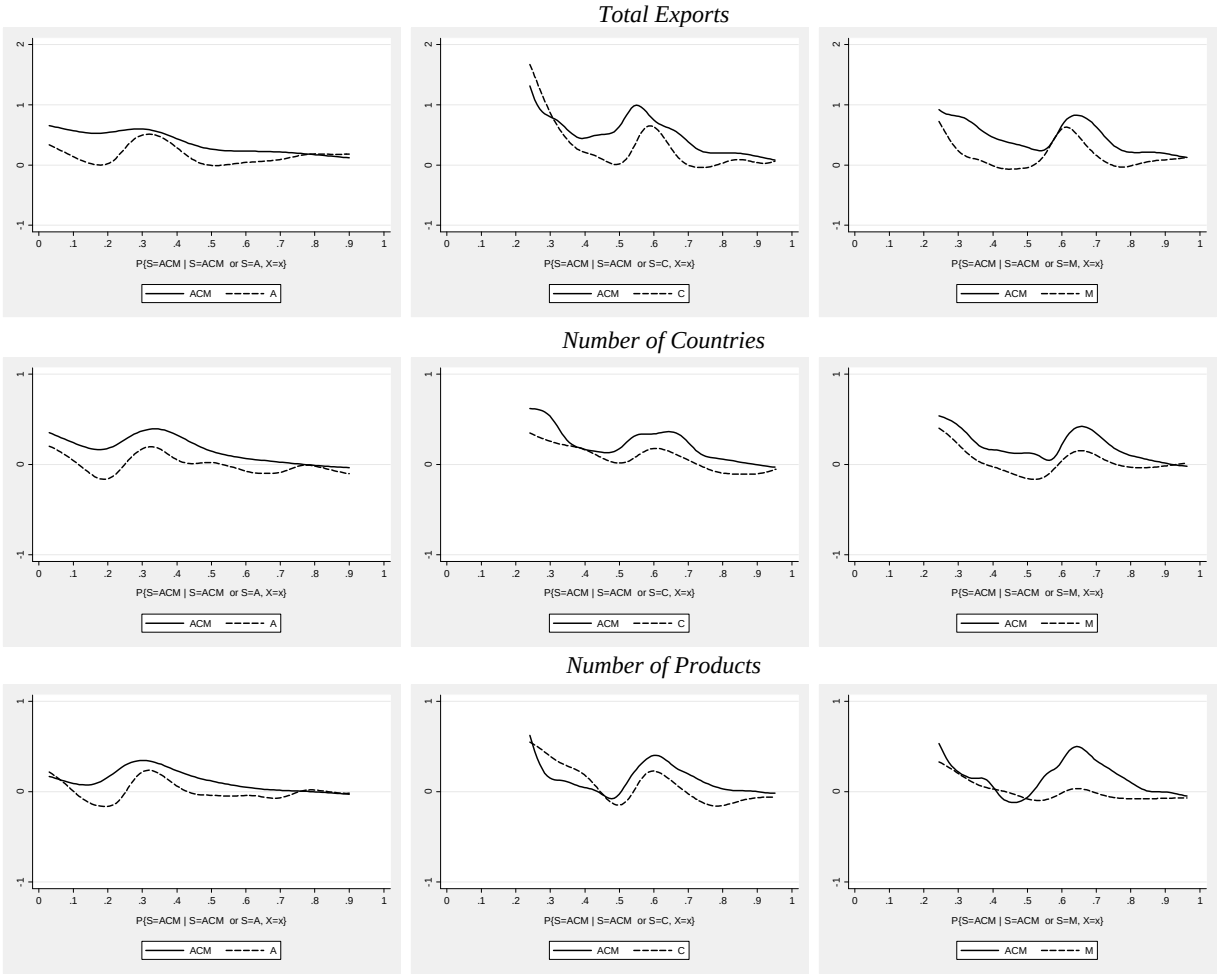
Source: Own calculations on data from PROEXPORT.
The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Figure 1
Distribution of Total Exports, Number of Countries, and Number of Products across Groups of Firms Participating in Different Export Promotion Programs



Note: Exports are expressed in thousands of US dollars.
Source: Own elaboration on data provided by PROEXPORT.

Figure 2
Nonparametric Regressions of the Outcome Variables on the Conditional Participation Probabilities in Respective Sub-Samples: ACM vs. A, ACM vs. C, and ACM vs. M



Source: Own elaboration on data provided by PROEXPORT.

Appendix A
Single Program Evaluation:
The Overall Impact of Export Promotion Activities

As explained in Section 2, we estimate the average treatment effect on the treated firms applying matching difference-in-differences. We first perform a pooled estimation, i.e., different export promotion activities are aggregated into a single program, so that we use a single binary indicator which takes the value of one if the firm is assisted by the agency and 0 otherwise. The initial step consists of estimating the propensity score. This requires defining what determines the propensity to participate in the activities organized by PROEXPORT. In principle, this agency could attend all firms that request assistance. However, PROEXPORT, like almost all Latin American and Caribbean trade promotion organizations, provides several services with components that tend to be targeted to firms with limited experience in export business (e.g., Entrepreneurs' Center for International Trade –Zeiky-, Expopyme Program, and Export Plan, which are grouped into "Counseling"). On the other hand, it may be also possible that firms self-select into assistance. More precisely, relatively larger and more experienced firms may be more likely to be aware of export promotion services and to use them (e.g., Reid, 1984; Kedia and Chhokar, 1986; and Ahmed et al., 2002). Thus, in the case of Colombia, among other media, activities are primarily marketed through the web page of PROEXPORT and information thereon is provided via e-mails and over the phone. The aforementioned firms are clearly better equipped in terms of information technologies and can then be expected to have an easier access to data on and in the end to the actual services. Alternatively, companies which are smaller and with less exposure to international markets can be thought to be more inclined to resort to trade promotion assistance as they may be more likely to perceive this assistance as an adding value support to overcome barriers that otherwise will dissuade them from trading across borders. We therefore include three measures of previous export experience, (lagged) total exports, the (lagged) number of countries firms export to, and the (lagged) number of products exported, as determinants of the propensity score (Ashenfelter, 1978; Becker and Egger, 2007). Note that, if adding a new destination country or a new product requires incurring specific sunk costs of entry, then trading with a larger number of countries or a larger number of products will reflect higher productivity (Bernard et al, 2006). Thus, by including those export indicators, to some extent we are also implicitly accounting for productivity differences across (groups of) firms and henceforth at least

partially controlling for the possibility that the agency picks "winners".[42] In addition, previous use of services provided by PROEXPORT may affect current participation. For instance, firms satisfied with these services are more likely to come back to the agency for additional assistance. Accordingly, we also control for previous treatment status by incorporating a binary variable indicating whether the firm received assistance in the previous period (Görg et al., 2008).

We then match each assisted firm with the more similar non-assisted firms as determined by their respective propensity scores, first, on the pooled sample, i.e., pooling over programs and over years. In doing this, we consider the kernel estimator (each assisted firm is compared to all non-assisted firms within an area around the propensity score inversely weighted with the difference between their propensity scores and that of the relevant assisted firm).[43] In this case, a proper identification of the parameter of interest relies on the assumption that these procedures are able to balance the distribution of the relevant variables in both the control and the treatment groups. We therefore examine the quality of the matching using three tests commonly implemented in the evaluation literature: the standardized bias for each covariate before and after matching along with the corresponding change in the before and after biases; two-sample t-test to check whether there are significant differences in the covariate means for assisted and control groups; and the pseudo-R^2 of the propensity score before and after matching along with a likelihood ratio-test of the null hypothesis of joint insignificance of all regressors (e.g., Lechner, 2002a; Sianesi, 2004; Sianesi, 2005; Smith and Todd, 2005b; Lee, 2006; Girma and Görg, 2007; and Caliendo and Kopeinig, 2008).

The first panel of Table A1 suggests that matching is associated with decreased standardized biases. The average reduction is 97.4%. Further, the standardized differences after matching do not exceed 3.7% for all variables. Moreover, the test t statistics reported in the first panel of Table A1 indicate that, after matching, differences are not statistically different from zero and accordingly covariates are balanced across groups. Finally, statistics included in the second panel of Table 1 confirm that the pseudo-R^2 is lower and that the null hypothesis of joint insignificance of all regressors. This hypothesis should not be rejected after matching.

[42] If anything, the remaining potential for cream-skimming participants is limited by the incentives created by the evaluation model used by PROEXPORT. According to this scheme, officials must achieve commercial goals, but in terms of both export and number of companies.

[43] The parameters used in these estimations are specified in the text below the tables showing the results. Estimates based on alternative specifications of these parameters, including that resulting from applying Silverman´s (1986) "rule of thumb", are similar to those reported here and are available from the authors upon request. We perform matching using the software provided by Leuven and Sianesi (2003).

Summing up, there is robust evidence suggesting that our matching procedure has been successful in finding appropriate non-assisted firms to compare with each assisted firm. This procedure results in all distances in propensity scores within matched pairs being less than 0.8%, with a standard deviation of 0.1. Finally, before turning to the results, we should recall herein that effects are estimated on first differentiated variables, so all time-invariant specific factors are automatically accounted for.

Table A2 reports matching difference-in-differences estimates of the assistance by PROEXPORT on assisted firms pooling over years. Note that, since we are including lagged values of treatment and additional covariates, estimations are performed on the period 2004-2006. The results indicate that export promotion activities performed by PROEXPORT are, on average, associated with an increased rate of growth of exports, number of countries firms export to, and number of products exported. More specifically, the rate of growth of exports is 23.7% ($(e^{0.213}-1)x100=23.7$) higher for firms assisted by PROEXPORT than for non-assisted firms, while those of the number of countries and the number of products are 12.1% and 8.2% higher, respectively. Thus, for instance, the sample average (logarithm) annual growth rate of the number of countries is 2.0%, so this would imply that treated firms would have a rate 0.2 percentage points higher than non-treated firms. PROEXPORT's trade promotion actions also seem to have a significant impact on the intensive margin of firms' exports. In particular, these actions seem to stimulate larger exports per country and per product. This might be explained by the fact that the agency can help to obtain new business contacts in regions other than those they are exporting to in the countries that are already among their destination markets.[44]

[44] Using a similar econometric approach in the same single program framework, Volpe Martincus and Carballo (2008) find that export promotion activities have a positive effect on the extensive margin of firms' exports but they do not have any robust impact on the intensive margin in the case of Peru. The magnitude of the effects on the extensive margin of exports is similar to those found in this country.

Table A1

Single Program Evaluation: Matching Quality							
Panel 1: Standardized Bias and t-test							
Covariates	**Kernel**						
	Sample	**Mean**		**%Bias**	**%Bias Reduction**	**t-test**	
		Treated	**Control**			**t**	**p-value**
Total Exports	Matched	12.309	12.283	1.085	98.304	0.591	0.554
Number of Countries	Matched	1.325	1.314	1.272	98.440	0.642	0.521
Number of Products	Matched	1.639	1.600	3.694	92.975	0.892	0.374
Treatment	Matched	0.715	0.713	0.398	99.711	0.197	0.844
Panel 2: Pseudo-R^2 and X^2-Test of Joint Insignificance of Regressors							
Estimator	**Pseudo R^2**		**X^2-test of Joint Insignificance of Regressors**				**%. Lost to CS**
			Before		**After**		
	Before	**After**	**X^2-test**	**p-value**	**X^2-test**	**p-value**	
Kernel	0.282	0.000	6753.2	0.000	6.030	0.197	0.104

Source: Own calculations on data from PROEXPORT.
The table reports, for each covariate included in the probit model assessing selection into treatment, the percentage standardized bias after matching, the reduction in the standardized bias, the t-test statistics for the difference in means between treated and control groups after matching, estimates of the pseudo-R^2 from the probit model, and the $\mathbf{X^2}$-test statistics of joint significance of the covariates. Variables included in the propensity score specification are: lagged (natural logarithm of) export earnings, lagged (natural logarithm of) number of products exported, lagged (natural logarithm of) number of countries served, and lagged treatment status.
Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04.
* significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level

Table A2

Single Program Evaluation
Average Effect of Assistance by PROEXPORT on Assisted Firms
Sample 2004-2006
Matching Difference-in-Differences Estimates
Kernel Estimator

Export Performance Indicator	Standard Error	Effect
Total Exports		0.213
	Analytical	(0.032)♦
	Bootstrapped	(0.023)♦
Number of Products		0.079
	Analytical	(0.017)♦
	Bootstrapped	(0.014)♦
Number of Countries		0.114
	Analytical	(0.012)♦
	Bootstrapped	(0.011)♦
Average Exports per Country and Product		0.020
	Analytical	(0.030)
	Bootstrapped	(0.023)
Average Exports per Product		0.134
	Analytical	(0.030)♦
	Bootstrapped	(0.022)♦
Average Exports per Country		0.099
	Analytical	(0.030) ♦
	Bootstrapped	(0.020) ♦

Source: Own elaboration on data provided by PROEXPORT.
Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors.

Appendix B

Table B1

Correlations of the Estimated Probabilities Obtained from the BP and the MNP Models								
	NP	**A**	**C**	**M**	**AC**	**AM**	**CM**	**ACM**
NP								
A	0.999							
C	0.998	0.997						
M	0.998	0.995	0.999					
AC	0.999	0.999	0.995	0.997				
AM	0.997	0.999	0.994	0.997	0.988			
CM	0.997	0.998	0.989	0.990	0.985	0.928		
ACM	0.999	0.999	0.993	0.994	0.990	0.984	0.984	

Source: Own calculations on data from PROEXPORT.
A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B2

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Kernel Matching
Sample: Only First Assistance

PROG	SE	Total Exports			Number of Products			Number of Countries			Average Exports per Country and Product			Average Exports per Product			Average Exports per Country		
		NP	A	A'	NP	A	A'	NP	A	A'	NP	A	A'	NP	A	A'	NP	A	A'
A		0.113			0.046			0.080			-0.013			0.067			0.033		
	An	(0.062)*			(0.031)			(0.022)♦			(0.058)			(0.058)			(0.057)		
	Bo	(0.060)*			(0.032)			(0.022)♦			(0.060)			(0.053)			(0.056)		
C		0.333	0.316	-0.279	0.182	0.147	-0.142	0.129	0.083	-0.075	0.023	0.086	-0.062	0.151	0.170	-0.137	0.205	0.233	-0.203
	An	(0.129)♦	(0.143)#	(0.144)*	(0.069)♦	(0.076)*	(0.076)*	(0.053)♦	(0.058)	(0.058)	(0.124)	(0.137)	(0.137)	(0.120)	(0.133)	(0.134)	(0.122)*	(0.135)*	(0.136)
	Bo	(0.131)♦	(0.129)♦	(0.129)#	(0.067)♦	(0.077)*	(0.078)*	(0.054)♦	(0.055)	(0.059)	(0.126)	(0.138)	(0.127)	(0.113)	(0.121)	(0.118)	(0.122)*	(0.133)*	(0.130)
M		0.123	0.132	-0.100	0.047	0.035	-0.010	0.060	0.022	-0.017	0.016	0.075	-0.073	0.076	0.096	-0.090	0.063	0.110	-0.083
	An	(0.166)	(0.176)	(0.178)	(0.066)	(0.073)	(0.073)	(0.061)	(0.064)	(0.065)	(0.144)	(0.155)	(0.156)	(0.147)	(0.158)	(0.159)	(0.152)	(0.162)	(0.163)
	Bo	(0.171)	(0.168)	(0.180)	(0.070)	(0.073)	(0.075)	(0.061)	(0.064)	(0.065)	(0.139)	(0.157)	(0.163)	(0.150)	(0.152)	(0.161)	(0.148)	(0.156)	(0.180)
AC		0.415	0.391	-0.405	0.288	0.223	-0.194	0.223	0.145	-0.171	-0.095	0.023	-0.040	0.128	0.169	-0.210	0.193	0.246	-0.234
	An	(0.107)♦	(0.124)♦	(0.126)♦	(0.069)♦	(0.075)♦	(0.078)♦	(0.061)♦	(0.065)#	(0.068)♦	(0.105)	(0.118)	(0.123)	(0.113)	(0.127)	(0.131)	(0.089)#	(0.105)#	(0.108)#
	Bo	(0.105)♦	(0.118)♦	(0.131)♦	(0.071)♦	(0.076)♦	(0.065)♦	(0.062)♦	(0.069)#	(0.071)♦	(0.106)	(0.107)	(0.104)	(0.115)	(0.118)	(0.116)*	(0.089)#	(0.096)♦	(0.108)#
AM		0.415	0.339	-0.435	0.061	0.069	-0.073	0.136	0.118	-0.138	0.219	0.151	-0.224	0.355	0.270	-0.362	0.279	0.220	-0.297
	An	(0.199)#	(0.208)	(0.215)#	(0.079)	(0.085)	(0.087)	(0.056)♦	(0.060)#	(0.062)#	(0.165)	(0.174)	(0.180)	(0.174)#	(0.183)	(0.188)*	(0.181)	(0.189)	(0.195)
	Bo	(0.211)#	(0.208)	(0.239)*	(0.076)	(0.079)	(0.091)	(0.056)♦	(0.057)#	(0.058)♦	(0.166)	(0.180)	(0.209)	(0.180)#	(0.187)	(0.215)*	(0.183)	(0.175)	(0.217)
CM		0.233	0.119	-0.167	-0.157	-0.194	0.180	0.017	-0.047	-0.025	0.372	0.360	-0.322	0.390	0.313	-0.347	0.216	0.166	-0.142
	An	(0.163)	(0.128)	(0.197)	(0.086)*	(0.090)#	(0.104)*	(0.075)	(0.077)	(0.089)	(0.175)#	(0.134)♦	(0.209)	(0.197)#	(0.138)#	(0.233)	(0.127)*	(0.102)	(0.156)
	Bo	(0.162)	(0.117)	(0.179)	(0.088)*	(0.093)#	(0.093)*	(0.076)	(0.080)	(0.101)	(0.172)#	(0.139)♦	(0.206)	(0.192)#	(0.136)#	(0.220)	(0.119)*	(0.096)*	(0.143)
ACM		0.597	0.535	-0.529	0.052	0.053	-0.019	0.249	0.219	-0.215	0.295	0.263	-0.295	0.544	0.482	-0.510	0.347	0.316	-0.314
	An	(0.147)♦	(0.158)♦	(0.162)♦	(0.092)	(0.097)	(0.099)	(0.077)♦	(0.080)♦	(0.081)♦	(0.140)#	(0.151)*	(0.154)*	(0.138)♦	(0.149)♦	(0.153)♦	(0.132)♦	(0.143)#	(0.146)#
	Bo	(0.143)♦	(0.154)♦	(0.167)♦	(0.094)	(0.100)	(0.098)	(0.075)♦	(0.079)♦	(0.086)♦	(0.142)#	(0.147)*	(0.147)#	(0.140)♦	(0.149)♦	(0.150)♦	(0.127)♦	(0.146)#	(0.147)#

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on six measures of export performance for participating firms relative to the other programs (in columns, but in the case of A' which denotes treated group). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. Only results from subsamples with size above 500 are reported (see Zhou, 2004). A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B3

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Kernel Matching
Sample: Only Firms that Were Not Assisted the Previous Year

PROG	SE	Total Exports			Number of Products			Number of Countries			Average Exports per Country and Product			Average Exports per Product			Average Exports per Country		
		NP	A	A'	NP	A	A'	NP	A	A'	NP	A	A'	NP	A	A'	NP	A	A'
A		0.138			0.049			0.064			0.026			0.090			0.075		
	An	(0.035)♦			(0.018)♦			(0.014)♦			(0.034)			(0.033)♦			(0.033)#		
	Bo	(0.036)♦			(0.019)♦			(0.015)♦			(0.036)			(0.035)♦			(0.034)#		
C		0.151	0.028	-0.063	0.032	-0.002	-0.035	0.083	0.030	-0.052	0.035	0.000	0.024	0.118	0.030	-0.029	0.068	-0.002	-0.011
	An	(0.058)♦	(0.062)	(0.065)	(0.033)	(0.035)	(0.037)	(0.025)♦	(0.027)	(0.029)*	(0.056)	(0.06)	(0.063)	(0.054)#	(0.059)	(0.061)	(0.053)	(0.058)	(0.06)
	Bo	(0.062)♦	(0.061)	(0.06)	(0.036)	(0.031)	(0.03)	(0.026)♦	(0.024)	(0.023)#	(0.059)	(0.067)	(0.054)	(0.057)#	(0.063)	(0.052)	(0.059)	(0.06)	(0.056)
M		0.098	-0.024	0.018	0.009	-0.031	0.027	0.076	0.017	-0.017	0.012	-0.010	0.008	0.088	0.007	-0.009	0.022	-0.040	0.035
	An	(0.042)#	(0.066)	(0.068)	(0.03)	(0.033)	(0.034)	(0.026)♦	(0.028)	(0.028)	(0.057)	(0.062)	(0.063)	(0.057)	(0.062)	(0.063)	(0.057)	(0.062)	(0.063)
	Bo	(0.047)#	(0.074)	(0.071)	(0.035)	(0.035)	(0.032)	(0.028)♦	(0.033)	(0.026)	(0.063)	(0.065)	(0.07)	(0.058)	(0.066)	(0.069)	(0.065)	(0.069)	(0.067)
AC		0.255	0.128	-0.233	0.096	0.054	-0.124	0.090	0.028	-0.084	0.070	0.046	-0.025	0.159	0.074	-0.109	0.165	0.100	-0.149
	An	(0.048)♦	(0.053)♦	(0.057)♦	(0.026)♦	(0.029)*	(0.032)♦	(0.02)♦	(0.023)	(0.026)♦	(0.045)	(0.052)	(0.056)	(0.045)♦	(0.051)	(0.054)#	(0.044)♦	(0.049)#	(0.052)♦
	Bo	(0.049)♦	(0.047)♦	(0.047)♦	(0.028)♦	(0.026)#	(0.033)♦	(0.019)♦	(0.02)	(0.024)♦	(0.044)	(0.046)	(0.051)	(0.046)♦	(0.043)*	(0.05)#	(0.043)♦	(0.042)♦	(0.046)♦
AM		0.158	0.039	-0.116	0.069	0.026	-0.060	0.106	0.053	-0.089	-0.017	-0.040	0.033	0.089	0.013	-0.056	0.052	-0.013	-0.027
	An	(0.056)♦	(0.06)	(0.066)*	(0.029)♦	(0.031)	(0.034)*	(0.021)♦	(0.023)#	(0.026)♦	(0.052)	(0.057)	(0.062)	(0.053)	(0.057)	(0.062)	(0.052)	(0.056)	(0.061)
	Bo	(0.05)♦	(0.055)	(0.063)*	(0.028)♦	(0.03)	(0.04)	(0.019)♦	(0.022)♦	(0.024)♦	(0.049)	(0.048)	(0.046)	(0.046)*	(0.051)	(0.049)	(0.048)	(0.045)	(0.056)
CM		0.229	0.092	-0.084	0.066	0.020	0.009	0.093	0.030	-0.007	0.070	0.042	-0.086	0.163	0.072	-0.093	0.135	0.062	-0.077
	An	(0.07)♦	(0.075)	(0.088)	(0.042)	(0.045)	(0.054)	(0.034)♦	(0.036)	(0.043)	(0.068)	(0.073)	(0.086)	(0.07)#	(0.074)	(0.088)	(0.061)#	(0.066)	(0.076)
	Bo	(0.081)♦	(0.068)	(0.071)	(0.047)	(0.044)	(0.041)	(0.035)♦	(0.038)	(0.037)	(0.071)	(0.079)	(0.066)	(0.076)#	(0.071)	(0.074)	(0.062)#	(0.06)	(0.058)
ACM		0.291	0.129	-0.329	0.133	0.072	-0.118	0.179	0.117	-0.199	-0.022	-0.060	-0.012	0.157	0.057	-0.211	0.112	0.012	-0.130
	An	(0.054)♦	(0.059)#	(0.062)♦	(0.029)♦	(0.032)#	(0.035)♦	(0.021)♦	(0.024)♦	(0.028)♦	(0.051)	(0.057)	(0.062)	(0.051)♦	(0.056)	(0.061)♦	(0.05)#	(0.055)	(0.057)#
	Bo	(0.043)♦	(0.038)♦	(0.071)♦	(0.027)♦	(0.02)♦	(0.035)♦	(0.019)♦	(0.018)♦	(0.03)♦	(0.045)	(0.035)*	(0.077)	(0.042)♦	(0.037)	(0.08)♦	(0.039)♦	(0.035)	(0.07)*

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on six measures of export performance for participating firms relative to the other programs (in columns, but in the case of A' which denotes treated group). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. Only results from subsamples with size above 500 are reported (see Zhou, 2004). A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B4

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Kernel Matching
Firms Matched Only with Pairs from the Same Year

PROG	SE	Total Exports								Number of Products								Number of Countries							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.120		-0.172	0.054	-0.369	0.017	-0.216	-0.251	0.026		-0.104	0.051	-0.173	-0.101	0.028	-0.148	0.064		-0.069	-0.022	-0.102	-0.101	-0.065	-0.194
	Bo	(0.051)♦		(0.097)*	(0.089)	(0.081)♦	(0.100)	(0.194)	(0.131)*	(0.025)		(0.044)♦	(0.039)	(0.042)♦	(0.047)#	(0.073)	(0.045)♦	(0.019)♦		(0.036)*	(0.032)	(0.036)♦	(0.030)♦	(0.055)	(0.040)♦
C		0.226	0.081		0.111	-0.058	0.012	-0.094	-0.153	0.033	0.017		0.060	-0.054	-0.054	-0.031	-0.082	0.110	0.076		0.004	0.002	0.009	0.043	-0.162
	Bo	(0.089)♦	(0.085)		(0.110)	(0.087)	(0.100)	(0.106)	(0.089)*	(0.047)	(0.047)		(0.057)	(0.050)	(0.060)	(0.064)	(0.053)	(0.037)♦	(0.039)*		(0.043)	(0.042)	(0.047)	(0.054)	(0.043)♦
M		0.192	-0.063	-0.062		-0.159	-0.044	-0.426	-0.172	0.033	-0.050	0.012		-0.130	0.009	-0.045	-0.134	0.115	-0.001	-0.025		-0.027	-0.056	-0.044	-0.129
	Bo	(0.098)#	(0.104)	(0.096)		(0.091)*	(0.122)	(0.157)♦	(0.132)	(0.048)	(0.052)	(0.062)		(0.057)#	(0.070)	(0.078)	(0.051)♦	(0.037)♦	(0.039)	(0.049)		(0.047)	(0.047)	(0.054)	(0.048)♦
AC		0.219	0.157	0.100	0.112		0.015	0.051	-0.104	0.081	0.055	0.070	0.064		0.019	0.026	-0.036	0.119	0.028	0.016	-0.004		0.011	0.029	-0.133
	Bo	(0.064)♦	(0.066)♦	(0.070)	(0.070)		(0.082)	(0.075)	(0.075)	(0.038)#	(0.032)*	(0.043)	(0.038)*		(0.041)	(0.051)	(0.041)	(0.024)♦	(0.030)	(0.037)	(0.036)		(0.032)	(0.042)	(0.035)♦
AM		0.170	0.043	0.009	0.032	-0.099		-0.143	-0.206	0.115	0.027	0.067	0.106	-0.055		0.048	-0.117	0.117	0.094	0.042	0.025	0.003		0.003	-0.095
	Bo	(0.066)♦	(0.070)	(0.070)	(0.087)	(0.073)		(0.105)	(0.071)♦	(0.042)♦	(0.039)	(0.042)	(0.044)♦	(0.042)		(0.054)	(0.040)♦	(0.028)♦	(0.030)♦	(0.039)	(0.036)	(0.035)		(0.044)	(0.033)♦
CM		0.258	0.016	0.192	-0.010	0.040	0.270		-0.307	0.073	-0.023	0.063	0.114	-0.129	-0.008		-0.131	0.112	-0.021	0.040	0.009	-0.010	-0.000		-0.170
	Bo	(0.115)#	(0.111)	(0.119)	(0.109)	(0.115)	(0.147)*		(0.125)♦	(0.071)	(0.065)	(0.077)	(0.064)*	(0.066)#	(0.072)		(0.074)*	(0.053)#	(0.055)	(0.070)	(0.060)	(0.058)	(0.060)		(0.065)♦
ACM		0.271	0.185	0.153	0.208	0.063	0.188	0.088		0.113	0.092	0.063	0.136	0.078	0.068	0.088		0.173	0.119	0.124	0.074	0.122	0.088	0.112	
	Bo	(0.049)♦	(0.046)♦	(0.059)♦	(0.060)♦	(0.053)	(0.054)♦	(0.071)		(0.032)♦	(0.030)♦	(0.040)	(0.033)♦	(0.033)#	(0.033)#	(0.054)		(0.024)♦	(0.023)♦	(0.032)♦	(0.031)#	(0.026)♦	(0.025)♦	(0.041)♦	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total export, number of products exported, and number of countries firms export to for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04 and only among firms from the same year. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B4 (cont.)

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Kernel Matching
Firms Matched Only with Pairs from the Same Year

PROG	SE	Average Exports per Country and Product								Average Exports per Product								Average Exports per Country							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.030		0.000	0.025	-0.094	0.219	-0.178	0.091	0.094		-0.068	0.003	-0.197	0.118	-0.243	-0.103	0.056		-0.103	0.076	-0.267	0.118	-0.150	-0.058
	Bo	(0.047)		(0.089)	(0.084)	(0.071)	(0.081)♦	(0.206)	(0.118)	(0.047)#		(0.090)	(0.078)	(0.074)♦	(0.093)	(0.240)	(0.124)	(0.044)		(0.087)	(0.082)	(0.067)♦	(0.090)	(0.168)	(0.128)
C		0.083	-0.012		0.047	-0.006	0.057	-0.107	0.091	0.193	0.064		0.051	-0.004	0.066	-0.063	-0.071	0.116	0.004		0.107	-0.060	0.003	-0.137	0.010
	Bo	(0.087)	(0.092)		(0.101)	(0.085)	(0.099)	(0.115)	(0.088)	(0.083)#	(0.090)		(0.096)	(0.082)	(0.096)	(0.111)	(0.093)	(0.074)	(0.084)		(0.100)	(0.079)	(0.092)	(0.095)	(0.083)
M		0.043	-0.013	-0.049		-0.002	0.003	-0.336	0.091	0.159	-0.014	-0.074		-0.029	-0.053	-0.381	-0.038	0.076	-0.063	-0.038		-0.132	0.012	-0.382	-0.043
	Bo	(0.086)	(0.087)	(0.091)		(0.093)	(0.104)	(0.166)#	(0.124)	(0.083)*	(0.089)	(0.085)		(0.098)	(0.105)	(0.190)#	(0.121)	(0.083)	(0.092)	(0.091)		(0.087)	(0.109)	(0.146)♦	(0.118)
AC		0.018	0.074	0.014	0.051		-0.015	-0.004	0.065	0.137	0.102	0.030	0.048		-0.004	0.025	-0.069	0.099	0.129	0.084	0.116		0.004	0.022	0.029
	Bo	(0.060)	(0.067)	(0.076)	(0.069)		(0.073)	(0.075)	(0.070)	(0.060)#	(0.064)	(0.072)	(0.064)		(0.069)	(0.076)	(0.066)	(0.057)*	(0.060)#	(0.063)	(0.068)*		(0.075)	(0.067)	(0.061)
AM		-0.061	-0.078	-0.100	-0.099	-0.047		-0.194	0.006	0.055	0.016	-0.058	-0.075	-0.044		-0.191	-0.089	0.054	-0.051	-0.033	0.007	-0.102		-0.146	-0.110
	Bo	(0.063)	(0.068)	(0.073)	(0.073)	(0.075)		(0.107)*	(0.072)	(0.065)	(0.061)	(0.071)	(0.078)	(0.069)		(0.110)*	(0.076)	(0.060)	(0.059)	(0.063)	(0.079)	(0.068)		(0.095)	(0.069)
CM		0.074	0.059	0.088	-0.133	0.179	0.278		-0.006	0.186	0.039	0.128	-0.124	0.169	0.278		-0.176	0.146	0.036	0.151	-0.020	0.050	0.270		-0.137
	Bo	(0.113)	(0.123)	(0.122)	(0.118)	(0.121)	(0.150)*		(0.122)	(0.112)*	(0.107)	(0.117)	(0.115)	(0.106)	(0.147)*		(0.128)	(0.102)	(0.095)	(0.119)	(0.109)	(0.102)	(0.143)*		(0.120)
ACM		-0.016	-0.025	-0.034	-0.002	-0.136	0.032	-0.111		0.158	0.093	0.090	0.072	-0.014	0.119	0.001		0.097	0.067	0.030	0.134	-0.059	0.100	-0.023	
	Bo	(0.044)	(0.047)	(0.062)	(0.060)	(0.050)♦	(0.053)	(0.069)		(0.049)♦	(0.047)#	(0.060)	(0.059)	(0.054)	(0.052)#	(0.066)		(0.042)#	(0.041)	(0.052)	(0.054)♦	(0.049)	(0.050)#	(0.064)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04 and only among firms from the same year. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B5

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including Firm Size Categories in Terms of Employment and Kernel Matching

PROG	SE	Total Exports								Number of Products								Number of Countries							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.094		-0.126	-0.015	-0.163	-0.123	-0.147	-0.238	0.059		-0.037	-0.008	-0.115	-0.094	-0.047	-0.170	0.036		-0.045	-0.018	-0.050	-0.070	-0.014	-0.196
	An	(0.045)#		(0.074)*	(0.076)	(0.063)♦	(0.068)*	(0.091)	(0.066)♦	(0.024)♦		(0.044)	(0.041)	(0.036)♦	(0.037)♦	(0.065)	(0.037)♦	(0.018)#		(0.035)	(0.033)	(0.028)*	(0.029)♦	(0.051)	(0.03)♦
	Bo	(0.047)#		(0.069)*	(0.079)	(0.052)♦	(0.064)*	(0.074)#	(0.076)♦	(0.026)#		(0.035)	(0.038)	(0.037)♦	(0.044)#	(0.05)	(0.037)♦	(0.019)*		(0.027)	(0.03)	(0.026)*	(0.027)♦	(0.044)	(0.032)♦
C		0.120	0.087		0.074	-0.064	0.001	-0.058	-0.128	0.062	0.003		0.010	-0.056	-0.077	-0.067	-0.130	0.052	0.032		0.001	-0.010	-0.031	0.016	-0.120
	An	(0.064)*	(0.073)		(0.091)	(0.073)	(0.076)	(0.094)	(0.072)*	(0.029)#	(0.042)		(0.051)	(0.043)	(0.044)*	(0.065)	(0.043)♦	(0.026)#	(0.033)		(0.042)	(0.034)	(0.035)	(0.052)	(0.034)♦
	Bo	(0.068)*	(0.072)		(0.056)	(0.071)	(0.06)	(0.076)	(0.074)*	(0.031)#	(0.038)		(0.036)	(0.045)	(0.036)#	(0.062)	(0.046)♦	(0.027)*	(0.029)		(0.027)	(0.034)	(0.031)	(0.049)	(0.035)♦
M		0.087	0.038	-0.077		-0.135	-0.068	-0.180	-0.172	0.074	0.001	-0.024		-0.090	-0.076	-0.069	-0.137	0.058	0.021	-0.020		-0.029	-0.032	-0.007	-0.150
	An	(0.032)♦	(0.075)	(0.091)		(0.079)*	(0.082)	(0.098)*	(0.08)#	(0.038)*	(0.041)	(0.051)		(0.044)#	(0.044)*	(0.066)	(0.044)♦	(0.031)*	(0.033)	(0.041)		(0.035)	(0.036)	(0.053)	(0.036)♦
	Bo	(0.036)♦	(0.084)	(0.078)		(0.06)#	(0.094)	(0.091)#	(0.08)#	(0.044)*	(0.044)	(0.032)		(0.036)♦	(0.058)	(0.057)	(0.046)♦	(0.033)*	(0.039)	(0.031)		(0.029)	(0.035)	(0.045)	(0.035)♦
AC		0.179	0.126	0.119	0.137		0.043	-0.002	-0.060	0.072	0.054	0.090	0.077		-0.002	0.014	-0.064	0.056	0.012	0.019	-0.017		-0.029	-0.009	-0.119
	An	(0.056)♦	(0.06)#	(0.077)	(0.082)		(0.06)	(0.077)	(0.031)*	(0.03)♦	(0.034)	(0.045)#	(0.045)*		(0.033)	(0.053)	(0.029)#	(0.024)#	(0.026)	(0.036)	(0.037)		(0.026)	(0.043)	(0.023)♦
	Bo	(0.057)♦	(0.053)♦	(0.064)*	(0.039)♦		(0.044)	(0.065)	(0.032)*	(0.033)#	(0.031)*	(0.039)#	(0.03)♦		(0.02)	(0.048)	(0.031)#	(0.023)♦	(0.023)	(0.034)	(0.022)		(0.017)*	(0.038)	(0.022)♦
AM		0.114	0.051	0.015	0.061	-0.029		-0.065	-0.057	0.068	0.048	0.067	0.074	0.006		0.021	-0.054	0.082	0.043	0.032	0.019	0.028		0.013	-0.077
	An	(0.06)*	(0.061)	(0.083)	(0.086)	(0.059)		(0.079)	(0.03)*	(0.032)#	(0.035)	(0.049)	(0.047)	(0.033)		(0.054)	(0.03)*	(0.025)♦	(0.027)	(0.038)	(0.038)	(0.026)		(0.043)	(0.024)♦
	Bo	(0.053)#	(0.056)	(0.043)	(0.066)	(0.049)		(0.057)	(0.03)*	(0.031)#	(0.034)	(0.026)♦	(0.038)*	(0.024)		(0.036)	(0.03)*	(0.023)♦	(0.025)*	(0.023)	(0.027)	(0.02)		(0.03)	(0.025)♦
CM		0.220	0.180	0.159	0.192	0.016	0.076		-0.047	0.097	0.042	0.059	0.062	-0.006	-0.017		-0.076	0.078	0.033	0.026	0.010	0.016	-0.001		-0.097
	An	(0.075)♦	(0.079)#	(0.094)*	(0.098)*	(0.074)	(0.078)		(0.026)*	(0.044)#	(0.054)	(0.062)	(0.062)	(0.053)	(0.053)		(0.042)*	(0.041)*	(0.042)	(0.05)	(0.05)	(0.043)	(0.042)		(0.041)♦
	Bo	(0.086)♦	(0.072)♦	(0.079)#	(0.08)♦	(0.083)	(0.084)		(0.024)*	(0.05)*	(0.052)	(0.069)	(0.064)	(0.051)	(0.054)		(0.041)*	(0.042)*	(0.044)	(0.058)	(0.046)	(0.045)	(0.04)		(0.041)♦
ACM		0.197	0.111	0.160	0.123	0.072	0.076	0.046		0.113	0.082	0.152	0.100	0.069	0.037	0.085		0.152	0.105	0.128	0.069	0.110	0.078	0.080	
	An	(0.06)♦	(0.063)*	(0.086)*	(0.063)#	(0.039)*	(0.038)#	(0.027)*		(0.032)♦	(0.035)#	(0.051)♦	(0.05)#	(0.029)♦	(0.03)	(0.036)♦		(0.024)♦	(0.027)♦	(0.04)♦	(0.041)	(0.024)♦	(0.024)♦	(0.044)*	
	Bo	(0.048)♦	(0.041)♦	(0.059)♦	(0.062)#	(0.038)*	(0.037)#	(0.023)*		(0.029)♦	(0.022)♦	(0.038)♦	(0.036)♦	(0.025)♦	(0.024)	(0.035)♦		(0.021)♦	(0.02)♦	(0.027)♦	(0.029)#	(0.019)♦	(0.019)♦	(0.028)♦	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total export, number of products exported, and number of countries firms export to for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. The definition of the size categories is as follows: micro: 1 to 10 employees; small: 11 to 50 employees; medium: 51 to 200 employees; and large: more than 200 employees. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B5 (cont.)

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including Firm Size Categories in Terms of Employment and Kernel Matching

PROG	SE	Average Exports per Country and Product								Average Exports per Product								Average Exports per Country							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.018		-0.044	0.011	0.001	0.040	-0.086	0.127	0.054		-0.089	-0.007	-0.048	-0.029	-0.099	-0.069	0.028		-0.081	0.003	-0.114	-0.053	-0.133	-0.042
	An	(0.043)		(0.071)	(0.072)	(0.062)	(0.067)	(0.097)	(0.066)*	(0.042)		(0.069)	(0.07)	(0.06)	(0.067)	(0.093)	(0.064)	(0.043)		(0.069)	(0.071)	(0.059)*	(0.064)	(0.081)	(0.061)
	Bo	(0.046)		(0.06)	(0.08)	(0.056)	(0.05)	(0.074)	(0.082)	(0.045)		(0.059)	(0.077)	(0.056)	(0.053)	(0.078)	(0.084)	(0.045)		(0.065)	(0.075)	(0.052)#	(0.058)	(0.061)#	(0.075)
C		0.056	0.053		0.063	0.002	0.109	-0.007	0.121	0.108	0.085		0.064	-0.007	0.078	0.009	0.002	0.068	0.056		0.073	-0.054	0.032	-0.074	-0.008
	An	(0.063)	(0.068)		(0.086)	(0.07)	(0.073)	(0.095)	(0.069)*	(0.062)*	(0.066)		(0.084)	(0.067)	(0.072)	(0.092)	(0.068)	(0.061)	(0.066)		(0.084)	(0.066)	(0.07)	(0.082)	(0.065)
	Bo	(0.066)	(0.076)		(0.052)	(0.071)	(0.064)*	(0.081)	(0.073)	(0.066)	(0.071)		(0.05)	(0.065)	(0.062)	(0.076)	(0.076)	(0.067)	(0.069)		(0.049)	(0.067)	(0.061)	(0.068)	(0.073)
M		0.025	0.016	-0.033		-0.015	0.041	-0.104	0.115	0.083	0.037	-0.053		-0.044	0.008	-0.111	-0.035	0.029	0.018	-0.057		-0.105	-0.035	-0.174	-0.022
	An	(0.066)	(0.071)	(0.085)		(0.076)	(0.08)	(0.102)	(0.078)	(0.065)	(0.069)	(0.083)		(0.074)	(0.078)	(0.098)	(0.076)	(0.066)	(0.07)	(0.083)		(0.074)	(0.077)	(0.089)*	(0.075)
	Bo	(0.073)	(0.074)	(0.058)		(0.063)	(0.075)	(0.09)	(0.077)	(0.067)	(0.073)	(0.06)		(0.059)	(0.073)	(0.09)	(0.075)	(0.076)	(0.077)	(0.067)		(0.057)*	(0.078)	(0.081)#	(0.077)
AC		0.051	0.060	0.009	0.077		0.074	-0.008	0.122	0.107	0.072	0.028	0.060		0.045	-0.016	0.004	0.123	0.114	0.100	0.154		0.072	0.006	0.059
	An	(0.053)	(0.059)	(0.072)	(0.079)		(0.059)	(0.081)	(0.051)♦	(0.052)#	(0.057)	(0.07)	(0.077)		(0.058)	(0.078)	(0.049)	(0.051)♦	(0.056)#	(0.069)	(0.077)#		(0.055)	(0.068)	(0.047)
	Bo	(0.051)	(0.052)	(0.066)	(0.04)*		(0.04)*	(0.064)	(0.056)#	(0.054)#	(0.049)	(0.061)	(0.035)*		(0.036)	(0.064)	(0.052)	(0.05)♦	(0.048)♦	(0.056)*	(0.036)♦		(0.039)*	(0.057)	(0.052)
AM		-0.036	-0.041	-0.085	-0.032	-0.063		-0.100	0.074	0.045	0.002	-0.053	-0.013	-0.034		-0.087	-0.003	0.032	0.008	-0.017	0.042	-0.057		-0.078	0.020
	An	(0.058)	(0.06)	(0.079)	(0.083)	(0.059)		(0.084)	(0.054)	(0.058)	(0.059)	(0.077)	(0.081)	(0.058)		(0.081)	(0.053)	(0.056)	(0.058)	(0.075)	(0.081)	(0.055)		(0.071)	(0.05)
	Bo	(0.055)	(0.051)	(0.044)*	(0.063)	(0.042)		(0.063)	(0.059)	(0.05)	(0.053)	(0.042)	(0.064)	(0.043)		(0.059)	(0.054)	(0.051)	(0.047)	(0.038)	(0.066)	(0.041)		(0.058)	(0.053)
CM		0.085	0.105	0.074	0.120	0.006	0.094		0.166	0.163	0.138	0.101	0.130	0.022	0.093		0.069	0.142	0.147	0.133	0.182	0.000	0.077		0.090
	An	(0.079)	(0.082)	(0.094)	(0.099)	(0.077)	(0.083)		(0.078)#	(0.076)#	(0.079)*	(0.091)	(0.096)	(0.072)	(0.08)		(0.075)	(0.067)#	(0.071)#	(0.083)	(0.09)#	(0.066)	(0.07)		(0.065)
	Bo	(0.082)	(0.089)	(0.086)	(0.091)	(0.073)	(0.088)		(0.078)#	(0.083)#	(0.076)*	(0.084)	(0.086)	(0.074)	(0.079)		(0.076)	(0.068)#	(0.064)#	(0.072)*	(0.073)♦	(0.068)	(0.074)		(0.062)
ACM		-0.068	-0.076	-0.120	-0.047	-0.107	-0.040	-0.120		0.084	0.029	0.007	0.023	0.004	0.038	-0.041		0.046	0.006	0.032	0.053	-0.038	-0.003	-0.035	
	An	(0.057)	(0.062)	(0.08)	(0.089)	(0.051)#	(0.055)	(0.082)		(0.057)	(0.06)	(0.078)	(0.087)	(0.05)	(0.054)	(0.079)		(0.055)	(0.06)	(0.077)	(0.087)	(0.048)	(0.051)	(0.068)	
	Bo	(0.05)	(0.039)#	(0.052)#	(0.064)	(0.041)♦	(0.039)	(0.05)♦		(0.047)*	(0.04)	(0.055)	(0.061)	(0.041)	(0.041)	(0.047)		(0.043)	(0.039)	(0.049)	(0.056)	(0.039)	(0.035)	(0.044)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. The definition of the size categories is as follows: micro: 1 to 10 employees; small: 11 to 50 employees; medium: 51 to 200 employees; and large: more than 200 employees. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B6

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including Firm Size Categories in Terms of Employment and Age and Kernel Matching

PROG	SE	Total Exports								Number of Products								Number of Countries							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.092		-0.162	0.004	-0.189	-0.150	-0.118	-0.220	0.052		-0.036	-0.009	-0.130	-0.084	-0.048	-0.178	0.040		-0.059	-0.020	-0.066	-0.052	-0.007	-0.180
	An	(0.047)*		(0.078)#	(0.077)	(0.067)♦	(0.071)#	(0.087)	(0.069)♦	(0.025)#		(0.046)	(0.042)	(0.038)♦	(0.038)#	(0.065)	(0.039)♦	(0.019)#		(0.036)	(0.034)	(0.03)#	(0.03)*	(0.054)	(0.031)♦
	Bo	(0.049)*		(0.073)#	(0.081)	(0.055)♦	(0.067)#	(0.07)	(0.079)♦	(0.027)*		(0.037)	(0.039)	(0.039)♦	(0.045)*	(0.05)	(0.039)♦	(0.02)#		(0.028)#	(0.031)	(0.027)♦	(0.027)*	(0.047)	(0.033)♦
C		0.163	0.122		0.127	-0.012	0.007	0.009	-0.093	0.059	0.009		0.019	-0.059	-0.071	-0.026	-0.129	0.072	0.045		0.027	0.000	-0.007	0.052	-0.081
	An	(0.07)#	(0.075)		(0.093)	(0.077)	(0.079)	(0.09)	(0.052)*	(0.024)♦	(0.044)		(0.053)	(0.046)	(0.046)	(0.066)	(0.045)♦	(0.032)#	(0.034)		(0.043)	(0.036)	(0.036)	(0.054)	(0.036)#
	Bo	(0.075)#	(0.074)		(0.057)#	(0.075)	(0.062)	(0.073)	(0.054)*	(0.026)#	(0.04)		(0.037)	(0.048)	(0.037)*	(0.063)	(0.049)♦	(0.033)#	(0.03)		(0.028)	(0.036)	(0.032)	(0.051)	(0.037)#
M		0.094	0.008	-0.144		-0.138	-0.153	-0.065	-0.144	0.045	-0.005	-0.038		-0.085	-0.081	-0.056	-0.139	0.052	0.015	-0.037		-0.037	-0.030	0.036	-0.140
	An	(0.048)*	(0.076)	(0.093)		(0.082)	(0.085)*	(0.099)	(0.082)*	(0.024)*	(0.042)	(0.053)		(0.046)*	(0.046)*	(0.071)	(0.046)♦	(0.031)	(0.033)	(0.043)		(0.037)	(0.037)	(0.059)	(0.037)♦
	Bo	(0.054)*	(0.085)	(0.08)*		(0.063)#	(0.098)	(0.092)	(0.082)*	(0.026)*	(0.045)	(0.033)		(0.038)#	(0.06)	(0.062)	(0.048)♦	(0.033)	(0.039)	(0.032)		(0.03)	(0.036)	(0.05)	(0.036)♦
AC		0.181	0.109	0.090	0.130		0.053	0.034	-0.071	0.053	0.052	0.095	0.072		0.012	0.054	-0.051	0.063	0.012	0.017	-0.006		-0.018	0.001	-0.102
	An	(0.059)♦	(0.063)*	(0.08)	(0.086)		(0.062)	(0.076)	(0.038)*	(0.026)#	(0.036)	(0.048)#	(0.048)		(0.034)	(0.055)	(0.03)*	(0.025)♦	(0.027)	(0.038)	(0.039)		(0.027)	(0.045)	(0.024)♦
	Bo	(0.06)♦	(0.055)#	(0.067)	(0.041)♦		(0.046)	(0.064)	(0.04)*	(0.028)*	(0.032)	(0.042)#	(0.032)#		(0.02)	(0.049)	(0.03)*	(0.024)♦	(0.024)	(0.036)	(0.023)		(0.018)	(0.039)	(0.023)♦
AM		0.129	0.062	0.021	0.072	-0.027		-0.044	-0.097	0.054	0.043	0.058	0.073	-0.006		0.024	-0.050	0.080	0.031	0.015	0.032	0.015		0.009	-0.070
	An	(0.063)#	(0.067)	(0.085)	(0.091)	(0.062)		(0.077)	(0.045)#	(0.033)	(0.036)	(0.051)	(0.05)	(0.034)		(0.054)	(0.027)*	(0.025)♦	(0.028)	(0.04)	(0.041)	(0.027)		(0.045)	(0.024)♦
	Bo	(0.056)#	(0.061)	(0.044)	(0.069)	(0.052)		(0.056)	(0.045)#	(0.032)	(0.035)	(0.027)#	(0.041)*	(0.024)		(0.036)	(0.027)*	(0.023)♦	(0.026)	(0.024)	(0.029)	(0.021)		(0.031)	(0.025)♦
CM		0.192	0.136	0.135	0.149	0.010	0.053		-0.075	0.047	0.035	0.053	0.061	-0.033	-0.020		-0.066	0.076	0.020	0.029	0.030	0.008	-0.004		-0.084
	An	(0.073)♦	(0.077)*	(0.09)	(0.1)	(0.075)	(0.076)		(0.04)*	(0.024)*	(0.054)	(0.064)	(0.064)	(0.054)	(0.054)		(0.035)*	(0.043)*	(0.044)	(0.052)	(0.054)	(0.044)	(0.045)		(0.043)*
	Bo	(0.084)#	(0.07)*	(0.076)*	(0.082)*	(0.084)	(0.082)		(0.034)#	(0.027)*	(0.052)	(0.071)	(0.066)	(0.052)	(0.055)		(0.035)*	(0.044)*	(0.046)	(0.06)	(0.05)	(0.046)	(0.043)		(0.043)*
ACM		0.176	0.099	0.164	0.106	0.070	0.064	0.071		0.087	0.065	0.131	0.098	0.053	0.049	0.095		0.136	0.091	0.119	0.068	0.096	0.071	0.079	
	An	(0.062)♦	(0.066)	(0.088)*	(0.054)#	(0.034)#	(0.028)#	(0.040)*		(0.033)♦	(0.036)*	(0.053)♦	(0.052)*	(0.031)*	(0.028)*	(0.055)*		(0.025)♦	(0.028)♦	(0.042)♦	(0.044)	(0.025)♦	(0.024)♦	(0.046)*	
	Bo	(0.049)♦	(0.043)#	(0.06)♦	(0.036)♦	(0.034)#	(0.028)#	(0.040)*		(0.03)♦	(0.023)♦	(0.04)♦	(0.037)♦	(0.027)#	(0.024)*	(0.035)♦		(0.022)♦	(0.021)♦	(0.029)♦	(0.032)#	(0.02)♦	(0.019)♦	(0.029)♦	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total export, number of products exported, and number of countries firms export to for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. The definition of the size categories is as follows: micro: 1 to 10 employees; small: 11 to 50 employees; medium: 51 to 200 employees; and large: more than 200 employees. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B6 (cont.)

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including Firm Size Categories in Terms of Employment and Age and Kernel Matching

PROG	SE	Average Exports per Country and Product								Average Exports per Product								Average Exports per Country							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.009		-0.067	0.033	0.006	-0.015	-0.062	0.138	0.049		-0.126	0.013	-0.060	-0.066	-0.069	-0.042	0.022		-0.103	0.024	-0.123	-0.099	-0.111	-0.040
	An	(0.045)		(0.074)	(0.074)	(0.065)	(0.07)	(0.095)	(0.069)#	(0.044)		(0.071)*	(0.072)	(0.063)	(0.07)	(0.088)	(0.068)	(0.044)		(0.071)	(0.072)	(0.062)#	(0.067)	(0.079)	(0.064)
	Bo	(0.048)		(0.063)	(0.082)	(0.059)	(0.052)	(0.073)	(0.085)	(0.047)		(0.061)#	(0.079)	(0.059)	(0.055)	(0.074)	(0.089)	(0.046)		(0.067)	(0.076)	(0.055)#	(0.061)	(0.06)*	(0.079)
C		0.071	0.068		0.082	0.047	0.085	-0.016	0.117	0.144	0.113		0.109	0.047	0.078	0.035	0.036	0.090	0.076		0.100	-0.012	0.013	-0.043	-0.012
	An	(0.066)	(0.071)		(0.089)	(0.073)	(0.077)	(0.096)	(0.073)	(0.064)#	(0.069)		(0.086)	(0.071)	(0.075)	(0.088)	(0.071)	(0.064)	(0.069)		(0.086)	(0.07)	(0.073)	(0.081)	(0.068)
	Bo	(0.069)	(0.079)		(0.054)	(0.074)	(0.068)	(0.081)	(0.077)	(0.068)#	(0.074)		(0.051)#	(0.069)	(0.064)	(0.073)	(0.079)	(0.071)	(0.072)		(0.05)#	(0.071)	(0.063)	(0.067)	(0.077)
M		0.004	-0.002	-0.069		-0.016	-0.041	-0.046	0.135	0.056	0.013	-0.106		-0.053	-0.071	-0.010	-0.005	0.010	-0.007	-0.106		-0.101	-0.122	-0.102	-0.004
	An	(0.068)	(0.073)	(0.089)		(0.08)	(0.083)	(0.107)	(0.081)	(0.066)	(0.071)	(0.085)		(0.077)	(0.081)	(0.098)	(0.078)	(0.067)	(0.072)	(0.086)		(0.077)	(0.079)	(0.09)	(0.077)
	Bo	(0.075)	(0.076)	(0.061)		(0.067)	(0.078)	(0.094)	(0.08)	(0.068)	(0.075)	(0.061)*		(0.062)	(0.076)	(0.09)	(0.077)	(0.077)	(0.08)	(0.069)		(0.059)*	(0.08)	(0.082)	(0.079)
AC		0.045	0.045	-0.022	0.065		0.060	-0.021	0.103	0.108	0.057	-0.005	0.058		0.041	-0.020	0.000	0.118	0.097	0.073	0.137		0.072	0.033	0.052
	An	(0.056)	(0.062)	(0.076)	(0.084)		(0.061)	(0.082)	(0.052)#	(0.056)*	(0.06)	(0.073)	(0.081)		(0.061)	(0.076)	(0.051)	(0.054)#	(0.059)	(0.072)	(0.081)*		(0.058)	(0.068)	(0.049)
	Bo	(0.054)	(0.055)	(0.07)	(0.042)		(0.041)	(0.065)	(0.057)*	(0.058)*	(0.051)	(0.064)	(0.037)		(0.037)	(0.063)	(0.054)	(0.053)#	(0.05)*	(0.058)	(0.038)♦		(0.041)*	(0.057)	(0.055)
AM		-0.004	-0.012	-0.052	-0.034	-0.035		-0.076	0.073	0.075	0.018	-0.037	-0.002	-0.021		-0.068	0.003	0.049	0.031	0.006	0.039	-0.042		-0.053	0.023
	An	(0.061)	(0.066)	(0.082)	(0.089)	(0.061)		(0.083)	(0.055)	(0.061)	(0.065)	(0.08)	(0.087)	(0.061)		(0.078)	(0.055)	(0.058)	(0.063)	(0.078)	(0.086)	(0.058)		(0.07)	(0.051)
	Bo	(0.058)	(0.056)	(0.046)	(0.068)	(0.044)		(0.063)	(0.06)	(0.053)	(0.058)	(0.044)	(0.069)	(0.045)		(0.057)	(0.056)	(0.053)	(0.051)	(0.04)	(0.07)	(0.043)		(0.057)	(0.054)
CM		0.069	0.081	0.053	0.059	0.035	0.077		0.137	0.145	0.101	0.082	0.089	0.043	0.073		0.053	0.116	0.117	0.106	0.119	0.002	0.057		0.071
	An	(0.078)	(0.082)	(0.093)	(0.103)	(0.081)	(0.082)		(0.077)*	(0.073)#	(0.077)	(0.087)	(0.097)	(0.075)	(0.077)		(0.071)	(0.066)*	(0.071)	(0.081)	(0.092)	(0.068)	(0.069)		(0.063)
	Bo	(0.081)	(0.089)	(0.085)	(0.094)	(0.077)	(0.087)		(0.077)*	(0.079)*	(0.074)	(0.081)	(0.087)	(0.077)	(0.076)		(0.072)	(0.067)*	(0.064)*	(0.07)	(0.075)	(0.071)	(0.073)		(0.06)
ACM		-0.046	-0.057	-0.086	-0.060	-0.086	-0.036	-0.103		0.089	0.034	0.033	0.008	0.011	0.035	-0.024		0.040	0.008	0.045	0.038	-0.033	-0.006	-0.008	
	An	(0.059)	(0.065)	(0.083)	(0.093)	(0.053)	(0.056)	(0.081)		(0.059)	(0.063)	(0.081)	(0.09)	(0.052)	(0.056)	(0.075)		(0.057)	(0.062)	(0.08)	(0.09)	(0.049)	(0.052)	(0.066)	
	Bo	(0.052)	(0.04)	(0.054)	(0.067)	(0.043)#	(0.04)	(0.049)#		(0.049)*	(0.042)	(0.058)	(0.063)	(0.043)	(0.042)	(0.045)		(0.044)	(0.04)	(0.051)	(0.058)	(0.039)	(0.035)	(0.042)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. The definition of the size categories is as follows: micro: 1 to 10 employees; small: 11 to 50 employees; medium: 51 to 200 employees; and large: more than 200 employees. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B7

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including Sectoral Shares of Assisted Exporters and Kernel Matching

PROG	SE	Total Exports								Number of Products								Number of Countries							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.152		-0.044	0.030	-0.210	-0.204	-0.067	-0.306	0.047		0.031	0.028	-0.137	-0.076	0.022	-0.123	0.076		-0.034	-0.017	-0.093	-0.099	-0.008	-0.215
	An	(0.036)♦		(0.075)	(0.068)	(0.061)♦	(0.071)♦	(0.091)	(0.062)♦	(0.019)♦		(0.043)	(0.034)	(0.035)♦	(0.037)#	(0.056)	(0.035)♦	(0.014)♦		(0.034)	(0.029)	(0.028)♦	(0.028)♦	(0.045)	(0.029)♦
	Bo	(0.051)♦		(0.080)	(0.091)	(0.063)♦	(0.076)#	(0.101)	(0.109)♦	(0.020)#		(0.044)	(0.040)	(0.043)♦	(0.058)	(0.059)	(0.047)♦	(0.020)♦		(0.032)*	(0.033)	(0.032)♦	(0.032)#	(0.054)	(0.042)♦
C		0.148	0.045		0.188	-0.098	-0.100	-0.104	-0.262	0.030	-0.027		0.029	-0.073	-0.039	-0.043	-0.114	0.080	0.034		0.031	-0.013	-0.057	-0.013	-0.162
	An	(0.057)♦	(0.067)		(0.121)	(0.064)	(0.101)	(0.092)	(0.064)♦	(0.033)	(0.038)		(0.062)	(0.038)*	(0.054)	(0.056)	(0.037)♦	(0.025)♦	(0.029)		(0.052)	(0.030)	(0.041)	(0.045)	(0.030)♦
	Bo	(0.093)#	(0.086)		(0.101)	(0.091)	(0.091)	(0.096)	(0.097)#	(0.053)	(0.044)		(0.054)	(0.054)*	(0.056)*	(0.069)	(0.054)#	(0.039)♦	(0.035)♦		(0.043)	(0.041)	(0.045)	(0.053)	(0.044)♦
M		0.094	-0.026	-0.112		-0.165	-0.149	-0.099	-0.295	0.011	-0.031	-0.023		-0.097	-0.094	-0.030	-0.144	0.078	0.015	-0.069		-0.040	-0.052	-0.022	-0.163
	An	(0.062)	(0.066)	(0.109)		(0.087)*	(0.078)*	(0.099)	(0.072)♦	(0.031)	(0.033)	(0.061)		(0.047)#	(0.039)♦	(0.057)	(0.037)♦	(0.026)♦	(0.028)	(0.048)		(0.039)	(0.032)	(0.047)	(0.032)♦
	Bo	(0.097)	(0.101)	(0.111)		(0.088)*	(0.132)	(0.119)	(0.109)♦	(0.053)	(0.051)	(0.056)		(0.057)♦	(0.071)	(0.060)	(0.057)#	(0.041)♦	(0.045)	(0.049)		(0.044)	(0.042)	(0.050)	(0.047)♦
AC		0.258	0.141	0.135	0.179		0.025	-0.035	-0.095	0.095	0.055	0.082	0.095		0.053	0.009	-0.047	0.090	0.026	0.024	0.022		-0.033	-0.005	-0.119
	An	(0.049)♦	(0.057)♦	(0.066)#	(0.105)*		(0.097)	(0.076)	(0.047)#	(0.027)♦	(0.031)*	(0.039)#	(0.053)*		(0.050)	(0.047)	(0.027)*	(0.020)♦	(0.024)	(0.030)	(0.045)		(0.038)	(0.038)	(0.023)♦
	Bo	(0.066)♦	(0.065)♦	(0.071)	(0.076)		(0.095)	(0.083)	(0.072)	(0.030)#	(0.036)*	(0.043)	(0.045)		(0.041)	(0.053)	(0.039)	(0.028)♦	(0.029)	(0.036)	(0.036)		(0.036)	(0.042)	(0.030)♦
AM		0.166	0.041	0.068	0.079	-0.077		0.052	-0.154	0.101	0.035	0.107	0.075	0.009		0.027	-0.055	0.127	0.074	-0.037	0.043	0.044		0.017	-0.084
	An	(0.061)♦	(0.065)	(0.125)	(0.082)	(0.083)		(0.105)	(0.056)♦	(0.031)♦	(0.034)	(0.072)	(0.041)*	(0.046)		(0.063)	(0.030)*	(0.023)♦	(0.026)♦	(0.056)	(0.034)	(0.037)		(0.051)	(0.024)♦
	Bo	(0.072)♦	(0.073)	(0.077)	(0.074)	(0.078)		(0.093)	(0.078)#	(0.041)♦	(0.040)	(0.044)	(0.043)	(0.041)		(0.051)	(0.043)*	(0.029)♦	(0.031)	(0.036)*	(0.032)	(0.035)		(0.041)	(0.035)♦
CM		0.228	0.088	0.179	0.244	0.012	0.029		-0.144	0.071	0.026	0.072	0.064	-0.023	-0.017		-0.045	0.095	0.024	0.025	0.035	0.006	-0.082		-0.125
	An	(0.070)♦	(0.076)	(0.088)#	(0.107)#	(0.074)	(0.095)		(0.076)*	(0.042)*	(0.045)	(0.053)	(0.058)	(0.045)	(0.053)		(0.046)	(0.034)♦	(0.036)	(0.042)	(0.049)	(0.037)	(0.042)*		(0.038)♦
	Bo	(0.129)♦	(0.108)	(0.109)	(0.119)*	(0.126)	(0.156)		(0.110)	(0.042)*	(0.066)	(0.079)	(0.069)#	(0.067)	(0.073)		(0.070)	(0.052)*	(0.058)	(0.059)	(0.060)	(0.060)	(0.052)		(0.059)♦
ACM		0.300	0.173	0.179	0.183	0.104	0.144	0.112		0.141	0.089	0.127	0.130	0.079	0.072	0.063		0.184	0.141	0.126	0.091	0.114	0.079	0.104	
	An	(0.054)♦	(0.060)♦	(0.080)#	(0.087)#	(0.050)#	(0.062)#	(0.065)*		(0.028)♦	(0.032)♦	(0.047)♦	(0.043)♦	(0.029)♦	(0.032)#	(0.036)*		(0.020)♦	(0.025)♦	(0.037)♦	(0.037)♦	(0.024)♦	(0.025)♦	(0.043)♦	
	Bo	(0.047)♦	(0.050)♦	(0.062)♦	(0.063)♦	(0.047)♦	(0.054)♦	(0.063)#		(0.032)♦	(0.028)♦	(0.042)♦	(0.040)♦	(0.032)♦	(0.031)#	(0.034)*		(0.024)♦	(0.024)♦	(0.032)♦	(0.033)*	(0.025)♦	(0.025)♦	(0.035)#	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total export, number of products exported, and number of countries firms export to for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B7 (cont.)

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including Sectoral Shares of Assisted Exporters and Kernel Matching

PROG	SE	Average Exports per Country and Product								Average Exports per Product								Average Exports per Country							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.028		-0.042	0.019	0.020	-0.029	-0.081	0.032	0.105		-0.075	0.002	-0.073	-0.127	-0.089	-0.183	0.075		-0.011	0.048	-0.118	-0.105	-0.059	-0.091
	An	(0.034)		(0.073)	(0.064)	(0.059)	(0.068)	(0.089)	(0.063)	(0.033)♦		(0.071)	(0.063)	(0.058)	(0.068)*	(0.091)	(0.062)♦	(0.033)#		(0.070)	(0.064)	(0.056)#	(0.066)	(0.079)	(0.058)
	Bo	(0.049)		(0.074)	(0.090)	(0.068)	(0.068)	(0.094)	(0.110)	(0.049)♦		(0.071)	(0.089)	(0.069)♦	(0.072)	(0.105)	(0.118)	(0.048)		(0.076)	(0.087)	(0.063)♦	(0.083)	(0.082)	(0.105)
C		0.038	0.038		0.129	-0.012	-0.004	-0.048	0.014	0.118	0.072		0.160	-0.025	-0.061	-0.061	-0.149	0.068	0.011		0.157	-0.085	-0.043	-0.091	-0.100
	An	(0.055)	(0.065)		(0.114)	(0.063)	(0.096)	(0.090)	(0.064)	(0.054)#	(0.064)		(0.113)	(0.061)	(0.096)	(0.091)	(0.062)♦	(0.053)	(0.063)		(0.113)	(0.059)	(0.094)	(0.081)	(0.060)*
	Bo	(0.083)	(0.089)		(0.094)	(0.089)	(0.097)*	(0.095)*	(0.091)	(0.085)♦	(0.086)		(0.091)	(0.084)	(0.095)	(0.096)	(0.095)	(0.085)	(0.082)		(0.092)	(0.086)	(0.091)	(0.084)	(0.090)
M		0.005	-0.011	-0.020		-0.027	-0.003	-0.048	0.013	0.083	0.005	-0.089		-0.067	-0.055	-0.070	-0.150	0.016	-0.042	-0.044		-0.124	-0.097	-0.077	-0.132
	An	(0.057)	(0.062)	(0.105)		(0.083)	(0.073)	(0.095)	(0.069)	(0.057)	(0.062)	(0.103)		(0.082)	(0.073)	(0.097)	(0.068)#	(0.058)	(0.062)	(0.101)		(0.080)	(0.072)	(0.088)	(0.066)#
	Bo	(0.091)	(0.094)	(0.094)		(0.094)	(0.101)	(0.108)	(0.101)	(0.083)	(0.093)	(0.093)		(0.089)	(0.102)	(0.116)	(0.102)#	(0.094)	(0.093)	(0.100)		(0.081)	(0.110)	(0.101)	(0.102)*
AC		0.073	0.059	0.028	0.061		0.005	-0.039	0.072	0.163	0.085	0.052	0.084		-0.028	-0.043	-0.047	0.168	0.115	0.111	0.157		0.058	-0.030	0.025
	An	(0.046)	(0.055)	(0.064)	(0.098)		(0.091)	(0.075)	(0.047)	(0.046)♦	(0.054)	(0.063)	(0.098)		(0.092)	(0.076)	(0.046)	(0.044)♦	(0.053)#	(0.061)*	(0.097)		(0.089)	(0.066)	(0.043)
	Bo	(0.058)	(0.060)*	(0.076)	(0.072)		(0.082)	(0.075)	(0.072)*	(0.063)♦	(0.058)*	(0.072)	(0.068)		(0.076)	(0.081)	(0.070)	(0.057)♦	(0.057)♦	(0.063)	(0.068)#		(0.082)	(0.071)	(0.069)
AM		-0.062	-0.068	-0.002	-0.040	-0.131		0.008	-0.014	0.065	0.006	-0.039	0.003	-0.087		0.024	-0.099	0.039	-0.033	0.105	0.036	-0.122		0.035	-0.069
	An	(0.057)	(0.062)	(0.121)	(0.076)	(0.080)		(0.102)	(0.054)	(0.058)	(0.061)	(0.118)	(0.076)	(0.079)		(0.105)	(0.054)*	(0.057)	(0.061)	(0.116)	(0.076)	(0.076)		(0.092)	(0.052)
	Bo	(0.070)	(0.067)	(0.079)	(0.071)	(0.070)		(0.099)	(0.082)	(0.066)	(0.069)	(0.077)	(0.073)	(0.070)		(0.098)	(0.078)	(0.068)	(0.062)	(0.073)	(0.072)	(0.065)		(0.095)	(0.075)
CM		0.063	0.038	0.082	0.146	0.029	0.128		0.025	0.158	0.062	0.107	0.180	0.035	0.046		-0.100	0.134	0.064	0.154	0.210	0.006	0.111		-0.019
	An	(0.068)	(0.074)	(0.086)	(0.101)	(0.073)	(0.091)		(0.075)	(0.069)#	(0.075)	(0.086)	(0.102)*	(0.074)	(0.092)		(0.076)	(0.061)#	(0.067)	(0.078)#	(0.097)#	(0.065)	(0.085)		(0.067)
	Bo	(0.119)*	(0.115)	(0.110)	(0.120)	(0.113)	(0.149)		(0.115)	(0.125)♦	(0.101)	(0.114)	(0.120)	(0.116)*	(0.139)		(0.120)	(0.104)♦	(0.096)	(0.100)	(0.106)	(0.111)	(0.141)		(0.104)
ACM		-0.025	-0.057	-0.075	-0.038	-0.089	-0.008	-0.045		0.159	0.084	0.051	0.053	0.025	0.071	0.059		0.116	0.032	0.052	0.092	-0.010	0.064	0.008	
	An	(0.051)	(0.058)	(0.079)	(0.082)	(0.049)*	(0.059)	(0.084)		(0.051)♦	(0.057)	(0.076)	(0.081)	(0.048)	(0.060)	(0.086)		(0.050)#	(0.056)	(0.075)	(0.081)	(0.045)	(0.058)	(0.074)	
	Bo	(0.051)	(0.046)	(0.062)	(0.065)	(0.050)	(0.054)	(0.066)		(0.047)♦	(0.048)*	(0.064)	(0.062)	(0.050)	(0.058)	(0.068)		(0.042)♦	(0.045)	(0.054)	(0.055)#	(0.045)	(0.049)	(0.063)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B8

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including the Shares of Differentiated Goods and OECD in Total Exports and Kernel Matching

PROG	SE	Total Exports								Number of Products								Number of Countries							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.138		-0.063	0.018	-0.233	-0.116	-0.084	-0.329	0.049		-0.035	0.027	-0.124	-0.060	0.009	-0.118	0.064		-0.052	-0.017	-0.084	-0.089	-0.007	-0.199
	An	(0.035)♦		(0.065)	(0.068)	(0.057)♦	(0.066)*	(0.088)	(0.062)♦	(0.018)♦		(0.037)	(0.034)	(0.032)♦	(0.034)*	(0.054)	(0.035)♦	(0.014)♦		(0.029)*	(0.028)	(0.026)♦	(0.026)♦	(0.043)	(0.028)♦
	Bo	(0.036)♦		(0.06)	(0.071)	(0.047)♦	(0.063)*	(0.071)	(0.071)♦	(0.019)♦		(0.03)	(0.032)	(0.033)♦	(0.04)	(0.041)	(0.035)♦	(0.015)♦		(0.023)#	(0.026)	(0.024)♦	(0.024)♦	(0.037)	(0.03)♦
C		0.151	0.028		0.059	-0.116	-0.007	-0.096	-0.217	0.032	-0.002		0.030	-0.073	-0.046	-0.041	-0.110	0.083	0.030		0.012	-0.014	-0.035	0.002	-0.135
	An	(0.058)♦	(0.062)		(0.079)	(0.065)*	(0.071)	(0.086)	(0.065)♦	(0.033)	(0.035)		(0.042)	(0.038)*	(0.039)	(0.054)	(0.037)♦	(0.025)♦	(0.027)		(0.035)	(0.03)	(0.03)	(0.043)	(0.03)♦
	Bo	(0.062)♦	(0.061)		(0.049)	(0.064)*	(0.056)	(0.069)	(0.072)♦	(0.036)	(0.031)		(0.029)	(0.039)*	(0.032)	(0.052)	(0.04)♦	(0.026)♦	(0.024)		(0.023)	(0.03)	(0.026)	(0.041)	(0.031)♦
M		0.098	-0.024	-0.072		-0.185	-0.054	-0.140	-0.285	0.009	-0.031	-0.041		-0.123	-0.070	-0.031	-0.146	0.076	0.017	-0.019		-0.038	-0.040	-0.002	-0.158
	An	(0.042)#	(0.066)	(0.079)		(0.071)♦	(0.075)	(0.093)	(0.071)♦	(0.03)	(0.033)	(0.042)		(0.037)♦	(0.038)*	(0.054)	(0.037)♦	(0.026)♦	(0.028)	(0.034)		(0.031)	(0.031)	(0.045)	(0.031)♦
	Bo	(0.047)#	(0.074)	(0.068)		(0.054)♦	(0.086)	(0.086)	(0.071)♦	(0.035)	(0.035)	(0.026)		(0.031)♦	(0.05)	(0.047)	(0.038)♦	(0.028)♦	(0.033)	(0.026)		(0.025)	(0.03)	(0.038)	(0.03)♦
AC		0.255	0.128	0.125	0.171		0.064	0.006	-0.106	0.096	0.054	0.083	0.093		0.014	0.019	-0.052	0.090	0.028	0.026	0.001		-0.030	-0.009	-0.125
	An	(0.048)♦	(0.053)♦	(0.067)*	(0.074)#		(0.057)	(0.075)	(0.046)#	(0.026)♦	(0.029)*	(0.039)#	(0.038)♦		(0.031)	(0.046)	(0.027)*	(0.02)♦	(0.023)	(0.031)	(0.032)		(0.024)	(0.037)	(0.022)♦
	Bo	(0.049)♦	(0.047)♦	(0.056)#	(0.036)♦		(0.042)	(0.064)	(0.048)#	(0.028)♦	(0.026)#	(0.034)♦	(0.026)♦		(0.018)	(0.041)	(0.028)*	(0.019)♦	(0.02)	(0.029)	(0.019)		(0.016)*	(0.032)	(0.021)♦
AM		0.158	0.039	0.030	0.052	-0.055		-0.056	-0.142	0.069	0.026	0.027	0.069	-0.019		-0.003	-0.076	0.106	0.053	0.037	0.032	0.028		0.019	-0.091
	An	(0.056)♦	(0.06)	(0.073)	(0.078)	(0.057)		(0.078)	(0.053)♦	(0.029)♦	(0.031)	(0.041)	(0.039)*	(0.031)		(0.046)	(0.028)♦	(0.021)♦	(0.023)#	(0.032)	(0.033)	(0.024)		(0.037)	(0.022)♦
	Bo	(0.05)♦	(0.055)	(0.038)	(0.06)	(0.048)		(0.057)	(0.053)♦	(0.028)♦	(0.03)	(0.022)	(0.032)#	(0.022)		(0.031)	(0.028)♦	(0.019)♦	(0.022)♦	(0.019)*	(0.023)	(0.018)		(0.026)	(0.023)♦
CM		0.229	0.092	0.122	0.151	-0.011	0.053		-0.100	0.066	0.020	0.039	0.069	-0.022	0.005		-0.059	0.093	0.030	0.028	0.016	0.008	-0.013		-0.110
	An	(0.07)♦	(0.075)	(0.087)	(0.091)	(0.073)	(0.078)		(0.051)#	(0.042)	(0.045)	(0.053)	(0.051)	(0.045)	(0.046)		(0.029)#	(0.034)♦	(0.036)	(0.042)	(0.043)	(0.037)	(0.037)		(0.035)♦
	Bo	(0.081)♦	(0.068)	(0.074)	(0.075)#	(0.081)	(0.084)		(0.051)#	(0.047)	(0.044)	(0.059)	(0.053)	(0.044)	(0.047)		(0.029)#	(0.035)♦	(0.038)	(0.049)	(0.04)	(0.039)	(0.036)		(0.035)♦
ACM		0.291	0.129	0.181	0.164	0.107	0.122	0.066		0.133	0.072	0.113	0.120	0.069	0.054	0.050		0.179	0.117	0.138	0.078	0.119	0.082	0.072	
	An	(0.054)♦	(0.059)#	(0.078)#	(0.088)*	(0.048)#	(0.055)#	(0.035)*		(0.029)♦	(0.032)#	(0.045)♦	(0.044)♦	(0.027)♦	(0.029)*	(0.029)*		(0.021)♦	(0.024)♦	(0.035)♦	(0.038)#	(0.022)♦	(0.022)♦	(0.038)*	
	Bo	(0.043)♦	(0.038)♦	(0.053)♦	(0.059)♦	(0.036)♦	(0.038)♦	(0.025)♦		(0.027)♦	(0.02)♦	(0.034)♦	(0.031)♦	(0.023)♦	(0.023)#	(0.029)*		(0.019)♦	(0.018)♦	(0.024)♦	(0.027)♦	(0.018)♦	(0.017)♦	(0.024)♦	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total export, number of products exported, and number of countries firms export to for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B8 (cont.)

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on a Propensity Score Specification Including the Shares of Differentiated Goods and OECD in Total Exports and Kernel Matching

PROG	SE	Average Exports per Country and Product								Average Exports per Product								Average Exports per Country							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.026		0.024	0.008	-0.025	0.033	-0.086	-0.012	0.090		-0.029	-0.009	-0.109	-0.056	-0.093	-0.211	0.075		-0.011	0.035	-0.149	-0.027	-0.077	-0.130
	An	(0.034)		(0.063)	(0.063)	(0.056)	(0.062)	(0.086)	(0.062)	(0.033)♦		(0.061)	(0.063)	(0.054)#	(0.062)	(0.088)	(0.061)♦	(0.033)#		(0.06)	(0.063)	(0.052)♦	(0.061)	(0.076)	(0.057)#
	Bo	(0.036)		(0.054)	(0.07)	(0.051)	(0.046)	(0.066)	(0.077)	(0.035)♦		(0.052)	(0.069)	(0.05)#	(0.049)	(0.074)	(0.08)♦	(0.034)#		(0.056)	(0.067)	(0.046)♦	(0.056)	(0.058)	(0.07)*
C		0.035	0.000		0.018	-0.029	0.074	-0.058	0.028	0.118	0.030		0.029	-0.042	0.038	-0.056	-0.107	0.068	-0.002		0.048	-0.102	0.028	-0.099	-0.083
	An	(0.056)	(0.06)		(0.075)	(0.063)	(0.068)	(0.085)	(0.064)	(0.054)#	(0.059)		(0.074)	(0.062)	(0.067)	(0.086)	(0.063)*	(0.053)	(0.058)		(0.073)	(0.06)*	(0.066)	(0.076)	(0.06)
	Bo	(0.059)	(0.067)		(0.045)	(0.064)	(0.06)	(0.072)	(0.068)	(0.057)#	(0.063)		(0.044)	(0.061)	(0.057)	(0.071)	(0.07)	(0.059)	(0.06)		(0.042)	(0.061)	(0.057)	(0.063)	(0.068)
M		0.012	-0.010	-0.012		-0.024	0.057	-0.107	0.019	0.088	0.007	-0.031		-0.062	0.016	-0.109	-0.139	0.022	-0.040	-0.053		-0.147	-0.014	-0.138	-0.127
	An	(0.057)	(0.062)	(0.075)		(0.067)	(0.07)	(0.09)	(0.068)	(0.057)	(0.062)	(0.074)		(0.066)	(0.07)	(0.091)	(0.068)#	(0.057)	(0.062)	(0.073)		(0.065)#	(0.07)	(0.083)	(0.066)*
	Bo	(0.063)	(0.065)	(0.051)		(0.056)	(0.065)	(0.079)	(0.067)	(0.058)	(0.066)	(0.053)		(0.053)	(0.066)	(0.083)	(0.067)#	(0.065)	(0.069)	(0.059)		(0.05)♦	(0.071)	(0.076)*	(0.068)*
AC		0.070	0.046	0.016	0.077		0.079	-0.004	0.071	0.159	0.074	0.042	0.078		0.049	-0.013	-0.054	0.165	0.100	0.098	0.170		0.093	0.015	0.018
	An	(0.045)	(0.052)	(0.065)	(0.069)		(0.055)	(0.073)	(0.046)	(0.045)♦	(0.051)	(0.063)	(0.069)		(0.054)	(0.074)	(0.045)	(0.044)♦	(0.049)#	(0.062)	(0.068)♦		(0.053)*	(0.065)	(0.042)
	Bo	(0.044)	(0.046)	(0.06)	(0.035)#		(0.037)#	(0.058)	(0.05)	(0.046)♦	(0.043)*	(0.055)	(0.031)♦		(0.033)	(0.061)	(0.048)	(0.043)♦	(0.042)♦	(0.05)*	(0.032)♦		(0.037)♦	(0.054)	(0.047)
AM		-0.017	-0.040	-0.034	-0.049	-0.064		-0.072	0.024	0.089	0.013	0.002	-0.017	-0.036		-0.053	-0.066	0.052	-0.013	-0.007	0.020	-0.082		-0.075	-0.052
	An	(0.052)	(0.057)	(0.07)	(0.073)	(0.055)		(0.076)	(0.051)	(0.053)	(0.057)	(0.069)	(0.073)	(0.054)		(0.077)	(0.051)	(0.052)	(0.056)	(0.067)	(0.072)	(0.052)		(0.069)	(0.049)
	Bo	(0.049)	(0.048)	(0.039)	(0.056)	(0.039)		(0.057)	(0.056)	(0.046)*	(0.051)	(0.038)	(0.058)	(0.04)		(0.056)	(0.052)	(0.048)	(0.045)	(0.034)	(0.059)	(0.039)#		(0.057)	(0.052)
CM		0.070	0.042	0.056	0.066	0.004	0.061		0.069	0.163	0.072	0.083	0.082	0.012	0.048		-0.041	0.135	0.062	0.095	0.136	-0.019	0.066		0.010
	An	(0.068)	(0.073)	(0.085)	(0.087)	(0.072)	(0.076)		(0.07)	(0.07)#	(0.074)	(0.085)	(0.088)	(0.073)	(0.077)		(0.071)	(0.061)#	(0.066)	(0.078)	(0.082)	(0.064)	(0.069)		(0.061)
	Bo	(0.071)	(0.079)	(0.078)	(0.08)	(0.068)	(0.08)		(0.07)	(0.076)#	(0.071)	(0.079)	(0.079)	(0.075)	(0.076)		(0.072)	(0.062)#	(0.06)	(0.067)	(0.067)#	(0.066)	(0.073)		(0.058)
ACM		-0.022	-0.060	-0.070	-0.035	-0.082	-0.014	-0.062		0.157	0.057	0.068	0.044	0.037	0.068	0.009		0.112	0.012	0.043	0.086	-0.013	0.040	-0.012	
	An	(0.051)	(0.057)	(0.076)	(0.082)	(0.047)*	(0.052)	(0.074)		(0.051)♦	(0.056)	(0.074)	(0.082)	(0.046)	(0.053)	(0.076)		(0.05)#	(0.055)	(0.072)	(0.082)	(0.043)	(0.051)	(0.065)	
	Bo	(0.045)	(0.035)*	(0.05)	(0.059)	(0.038)#	(0.037)	(0.045)		(0.042)♦	(0.037)	(0.053)	(0.058)	(0.038)	(0.04)*	(0.045)		(0.039)♦	(0.035)	(0.046)	(0.052)	(0.035)	(0.035)	(0.042)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the kernel matching estimator. Kernel matching is based on the Epanechnikov kernel with a bandwidth of 0.04. Bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B9

Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Mahalanobis Matching

PROG	SE	Total Exports								Number of Products								Number of Countries							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.150		-0.270	-0.058	-0.281	-0.126	-0.083	-0.193	0.034		-0.065	0.053	-0.158	-0.173	0.016	-0.085	0.071		-0.077	-0.058	-0.033	-0.121	-0.036	-0.156
	An	(0.053)♦		(0.119)#	(0.138)	(0.096)♦	(0.119)	(0.185)	(0.093)#	(0.028)		(0.072)	(0.064)	(0.050)♦	(0.059)♦	(0.100)	(0.048)*	(0.020)♦		(0.052)	(0.054)	(0.042)	(0.046)♦	(0.090)	(0.042)♦
	Bo	(0.056)♦		(0.133)*	(0.147)	(0.101)♦	(0.123)	(0.171)	(0.153)	(0.029)		(0.078)	(0.056)	(0.049)♦	(0.065)♦	(0.101)	(0.047)*	(0.021)♦		(0.049)	(0.044)	(0.038)	(0.043)♦	(0.082)	(0.049)♦
C		0.209	0.182		0.077	-0.058	-0.016	-0.451	-0.337	0.039	0.071		0.071	0.010	-0.122	-0.096	-0.105	0.107	0.114		-0.108	-0.008	-0.054	-0.130	-0.127
	An	(0.086)♦	(0.123)		(0.172)	(0.134)	(0.157)	(0.270)*	(0.106)♦	(0.053)	(0.062)		(0.093)	(0.071)	(0.086)	(0.142)	(0.064)	(0.040)♦	(0.048)♦		(0.073)	(0.056)	(0.060)	(0.107)	(0.055)#
	Bo	(0.096)#	(0.141)		(0.199)	(0.148)	(0.174)	(0.283)	(0.115)♦	(0.054)	(0.065)		(0.110)	(0.080)	(0.091)	(0.145)	(0.071)	(0.043)♦	(0.055)#		(0.082)	(0.064)	(0.072)	(0.126)	(0.059)#
M		0.133	0.153	-0.250		-0.277	-0.159	-0.257	-0.154	0.060	-0.019	-0.140		-0.171	-0.115	-0.395	-0.156	0.132	0.121	0.016		-0.042	-0.038	0.049	-0.064
	An	(0.102)	(0.133)	(0.157)		(0.133)#	(0.158)	(0.216)	(0.122)	(0.052)	(0.060)	(0.097)		(0.063)♦	(0.085)	(0.124)♦	(0.062)♦	(0.042)♦	(0.051)♦	(0.068)		(0.055)	(0.064)	(0.117)	(0.056)
	Bo	(0.110)	(0.140)	(0.178)		(0.162)*	(0.165)	(0.226)	(0.142)	(0.059)	(0.066)	(0.112)		(0.072)♦	(0.094)	(0.145)#	(0.071)#	(0.048)♦	(0.052)#	(0.082)		(0.062)	(0.080)	(0.119)	(0.062)
AC		0.318	0.282	0.059	0.374		0.101	0.166	-0.139	0.157	0.135	0.047	0.225		0.052	0.084	-0.053	0.143	0.083	0.004	0.035		-0.019	0.041	-0.153
	An	(0.074)♦	(0.080)♦	(0.120)	(0.137)♦		(0.098)	(0.174)	(0.083)*	(0.040)♦	(0.044)♦	(0.072)	(0.065)♦		(0.053)	(0.089)	(0.045)	(0.034)♦	(0.036)#	(0.053)	(0.057)		(0.040)	(0.071)	(0.036)♦
	Bo	(0.074)♦	(0.093)♦	(0.163)	(0.167)#		(0.108)	(0.195)	(0.093)	(0.041)♦	(0.048)♦	(0.077)	(0.073)♦		(0.058)	(0.109)	(0.048)	(0.037)♦	(0.041)#	(0.062)	(0.059)		(0.045)	(0.090)	(0.038)♦
AM		0.222	0.025	-0.015	0.132	-0.158		-0.212	-0.066	0.016	0.092	0.094	0.148	-0.032		-0.041	-0.047	0.123	0.110	0.051	0.050	0.042		0.015	-0.080
	An	(0.091)♦	(0.108)	(0.169)	(0.158)	(0.096)		(0.165)	(0.085)	(0.046)	(0.051)*	(0.082)	(0.084)*	(0.052)		(0.092)	(0.045)	(0.035)♦	(0.042)♦	(0.062)	(0.064)	(0.042)		(0.084)	(0.040)#
	Bo	(0.095)#	(0.117)	(0.179)	(0.173)	(0.113)		(0.194)	(0.102)	(0.047)	(0.057)	(0.095)	(0.085)	(0.057)		(0.110)	(0.049)	(0.039)♦	(0.044)#	(0.075)	(0.065)	(0.046)		(0.086)	(0.040)#
CM		0.327	0.241	0.493	0.275	-0.086	0.064		-0.087	0.157	0.063	0.126	0.411	-0.039	0.011		-0.122	0.088	0.095	0.117	-0.005	-0.065	-0.037		-0.037
	An	(0.153)#	(0.156)	(0.295)*	(0.221)	(0.189)	(0.162)		(0.120)	(0.082)*	(0.081)	(0.140)	(0.133)♦	(0.093)	(0.101)		(0.086)	(0.068)	(0.075)	(0.105)	(0.118)	(0.075)	(0.086)		(0.069)
	Bo	(0.179)*	(0.179)	(0.351)	(0.257)	(0.211)	(0.236)		(0.146)	(0.088)	(0.098)	(0.164)	(0.142)#	(0.118)	(0.125)		(0.096)	(0.073)	(0.085)	(0.129)	(0.123)	(0.090)	(0.099)		(0.075)
ACM		0.373	0.218	0.344	0.214	0.025	0.174	0.157		0.131	0.086	0.146	0.152	-0.022	0.027	0.013		0.201	0.140	0.135	0.107	0.115	0.099	0.091	
	An	(0.061)♦	(0.074)♦	(0.115)♦	(0.106)#	(0.082)	(0.082)#	(0.123)		(0.036)♦	(0.041)#	(0.070)#	(0.059)♦	(0.046)	(0.046)	(0.076)		(0.029)♦	(0.034)♦	(0.053)♦	(0.050)#	(0.036)♦	(0.038)♦	(0.067)	
	Bo	(0.063)♦	(0.078)♦	(0.138)#	(0.118)*	(0.078)	(0.087)#	(0.125)		(0.034)♦	(0.042)	(0.072)*	(0.060)#	(0.047)	(0.047)	(0.091)		(0.031)♦	(0.036)♦	(0.060)#	(0.048)#	(0.034)♦	(0.037)♦	(0.072)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total export, number of products exported, and number of countries firms export to for participating firms relative to the other programs (in columns). Assisted firms are matched with the closest non-assisted in terms of the propensity score and (the natural logarithm of) total exports in the previous period according to the Mahalanobis distance. Caliper c=0.04. Participation probabilities are derived from binary probit models. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table B9 (cont.)

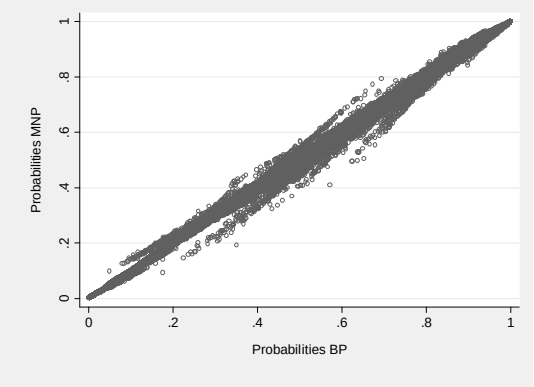
Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Mahalanobis Matching

PROG	SE	Average Exports per Country and Product								Average Exports per Product								Average Exports per Country							
		NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM	NP	A	C	M	AC	AM	CM	ACM
A		0.045		-0.128	-0.053	-0.090	0.168	-0.063	0.048	0.116		-0.205	-0.111	-0.123	0.047	-0.099	-0.108	0.078		-0.193	-0.000	-0.248	-0.005	-0.047	-0.037
	An	(0.050)		(0.113)	(0.128)	(0.091)	(0.104)	(0.175)	(0.093)	(0.050)#		(0.111)*	(0.126)	(0.091)	(0.106)	(0.180)	(0.091)	(0.050)		(0.109)*	(0.130)	(0.088)♦	(0.108)	(0.161)	(0.087)
	Bo	(0.055)		(0.124)	(0.149)	(0.097)	(0.107)	(0.150)	(0.143)	(0.050)#		(0.113)*	(0.142)	(0.107)	(0.114)	(0.168)	(0.149)	(0.051)		(0.133)	(0.143)	(0.093)♦	(0.112)	(0.145)	(0.136)
C		0.062	-0.003		0.114	-0.060	0.161	-0.224	-0.105	0.170	0.111		0.006	-0.068	0.107	-0.354	-0.232	0.101	0.068		0.185	-0.050	0.039	-0.320	-0.210
	An	(0.086)	(0.117)		(0.167)	(0.124)	(0.147)	(0.242)	(0.105)	(0.082)#	(0.118)		(0.164)	(0.122)	(0.148)	(0.248)	(0.102)#	(0.080)	(0.113)		(0.156)	(0.122)	(0.143)	(0.236)	(0.095)#
	Bo	(0.089)	(0.134)		(0.173)	(0.151)	(0.165)	(0.229)	(0.121)	(0.093)*	(0.132)		(0.185)	(0.146)	(0.165)	(0.249)	(0.120)#	(0.095)	(0.132)		(0.162)	(0.148)	(0.148)	(0.251)	(0.112)*
M		-0.059	0.051	-0.126		-0.064	-0.006	0.088	0.065	0.073	0.172	-0.110		-0.107	-0.043	0.137	0.002	0.000	0.032	-0.266		-0.235	-0.121	-0.307	-0.091
	An	(0.096)	(0.128)	(0.163)		(0.125)	(0.147)	(0.200)	(0.115)	(0.095)	(0.126)	(0.159)		(0.124)	(0.143)	(0.207)	(0.117)	(0.095)	(0.126)	(0.144)*		(0.124)*	(0.146)	(0.191)	(0.109)
	Bo	(0.102)	(0.130)	(0.186)		(0.145)	(0.152)	(0.220)	(0.129)	(0.103)	(0.129)	(0.181)		(0.146)	(0.149)	(0.238)	(0.134)	(0.098)	(0.120)	(0.161)		(0.143)*	(0.139)	(0.197)	(0.132)
AC		0.017	0.064	0.007	0.115		0.068	0.041	0.067	0.161	0.147	0.011	0.149		0.049	0.083	-0.086	0.174	0.199	0.054	0.339		0.120	0.125	0.014
	An	(0.071)	(0.076)	(0.119)	(0.122)		(0.094)	(0.159)	(0.081)	(0.069)#	(0.076)*	(0.114)	(0.122)		(0.092)	(0.166)	(0.080)	(0.069)♦	(0.072)♦	(0.113)	(0.126)♦		(0.092)	(0.153)	(0.077)
	Bo	(0.071)	(0.089)	(0.151)	(0.132)		(0.114)	(0.196)	(0.083)	(0.067)#	(0.085)*	(0.148)	(0.140)		(0.105)	(0.196)	(0.085)	(0.072)♦	(0.088)#	(0.142)	(0.150)♦		(0.100)	(0.169)	(0.090)
AM		0.083	-0.177	-0.160	-0.067	-0.168		-0.186	0.061	0.206	-0.068	-0.109	-0.017	-0.126		-0.171	-0.019	0.099	-0.085	-0.066	0.081	-0.200		-0.227	0.013
	An	(0.081)	(0.100)*	(0.156)	(0.145)	(0.094)*		(0.158)	(0.087)	(0.083)♦	(0.101)	(0.156)	(0.142)	(0.093)		(0.159)	(0.084)	(0.083)	(0.099)	(0.155)	(0.145)	(0.087)#		(0.145)	(0.081)
	Bo	(0.082)	(0.107)*	(0.171)	(0.151)	(0.109)		(0.204)	(0.096)	(0.085)#	(0.117)	(0.162)	(0.152)	(0.104)		(0.203)	(0.103)	(0.092)	(0.108)	(0.163)	(0.142)	(0.102)*		(0.158)	(0.094)
CM		0.082	0.084	0.250	-0.130	0.018	0.090		0.072	0.170	0.179	0.367	-0.135	-0.047	0.053		0.035	0.239	0.146	0.376	0.281	-0.021	0.101		-0.050
	An	(0.136)	(0.151)	(0.252)	(0.212)	(0.178)	(0.173)		(0.144)	(0.142)	(0.152)	(0.261)	(0.220)	(0.182)	(0.171)		(0.133)	(0.131)*	(0.140)	(0.265)	(0.194)	(0.168)	(0.147)		(0.110)
	Bo	(0.165)	(0.174)	(0.274)	(0.242)	(0.202)	(0.239)		(0.171)	(0.157)	(0.182)	(0.288)	(0.248)	(0.214)	(0.248)		(0.161)	(0.143)	(0.183)	(0.297)	(0.227)	(0.195)	(0.208)		(0.139)
ACM		0.042	-0.008	0.063	-0.045	-0.068	0.048	0.052		0.243	0.132	0.198	0.062	0.047	0.147	0.143		0.173	0.078	0.210	0.108	-0.090	0.075	0.065	
	An	(0.062)	(0.068)	(0.111)	(0.102)	(0.078)	(0.085)	(0.126)		(0.059)♦	(0.068)*	(0.110)*	(0.099)	(0.076)	(0.082)*	(0.126)		(0.057)♦	(0.067)	(0.104)#	(0.097)	(0.074)	(0.078)	(0.104)	
	Bo	(0.063)	(0.078)	(0.141)	(0.118)	(0.076)	(0.088)	(0.146)		(0.062)♦	(0.074)#	(0.132)	(0.115)	(0.068)	(0.079)*	(0.136)		(0.062)♦	(0.073)	(0.130)	(0.111)	(0.073)	(0.084)	(0.109)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). Assisted firms are matched with the closest non-assisted in terms of the propensity score and (the natural logarithm of) total exports in the previous period according to the Mahalanobis distance. Caliper c=0.04. Participation probabilities are derived from binary probit models. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Figure B1
Estimated Conditional Participation Probabilities Obtained from the BP and MNP Models



Source: Own elaboration on data provided by PROEXPORT.

Appendix C

Table C1

Single Program Evaluation: Matching Quality

Panel 1: Standardized Bias and t-test

Covariates	Nearest Neighbor						
	Sample	Mean		%Bias	%Bias Reduction	t-test	
		Treated	Control			t	p-value
Total Exports	Matched	12.309	12.316	-0.315	99.508	-0.171	0.864
Number of Countries	Matched	1.325	1.327	-0.304	99.627	-0.153	0.879
Number of Products	Matched	1.639	1.643	-0.305	99.419	-0.159	0.873
Treatment	Matched	0.715	0.714	0.204	99.852	0.101	0.920

Panel 2: Pseudo-R^2 and X^2-Test of Joint Insignificance of Regressors

Estimator	Pseudo R^2		X^2-test of Joint Insignificance of Regressors				%. Lost to CS
			Before		After		
	Before	After	X^2-test	p-value	X^2-test	p-value	
Nearest Neighbor	0.282	0.000	6753.2	0.000	0.062	1.000	0.104

Source: Own calculations on data from PROEXPORT.

The table reports, for each covariate included in the probit model asessing selection into treatment, the percentage standardized bias after matching, the reduction in the standardized bias, the t-test statistics for the difference in means between treated and control groups after matching, estimates of the pseudo-R^2 from the probit model, and the $\mathbf{X^2}$-test statistics of joint significance of the covariates. Variables included in the propensity score specification are: lagged (natural logarithm of) export earnings, lagged (natural logarithm of) number of products exported, lagged (natural logarithm of) number of countries served, and lagged treatment status.

Nearest neighbor matching is performed imposing a caliper c=0.04.

* significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level.

Table C2

Single Program Evaluation
Average Effect of Assistance by PROEXPORT on Assisted Firms
Sample 2004-2006
Matching Difference-in-Differences Estimates
Nearest Neighbor Estimator

Export Performance Indicator	Standard Error	Effect
Total Exports		0.209
	Analytical	(0.039)♦
	Bootstrapped	(0.030)♦
Number of Products		0.101
	Analytical	(0.022)♦
	Bootstrapped	(0.020)♦
Number of Countries		0.113
	Analytical	(0.016)♦
	Bootstrapped	(0.014)♦
Average Exports per Country and Product		-0.005
	Analytical	(0.037)
	Bootstrapped	(0.030)
Average Exports per Product		0.108
	Analytical	(0.037)♦
	Bootstrapped	(0.031)♦
Average Exports per Country		0.096
	Analytical	(0.036) ♦
	Bootstrapped	(0.026) ♦

Source: Own elaboration on data provided by PROEXPORT.
Nearest neighbor matching is performed imposing a caliper c=0.04. Standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors.

Table C3

Multiple Program Evaluation: Matching Quality
Binary Probit Estimates Based on Nearest Neighbor Matching

PROG	N^T	Control	N^C	Ps. R^2 After	Pr>χ^2 After	Min B. Before	Max B. Before	Min B. After	Max B. After	Num. t-tests	Lost to CS%
A	1791	**NP**	13216	0.000	[0.838]	23.160	76.408	-1.067	2.954	0	0.06%
C	471	**NP**	13216	0.001	[0.913]	42.449	126.372	-3.444	1.429	0	0.21%
M	414	**NP**	13216	0.001	[0.885]	35.661	106.773	-6.334	1.689	0	0.00%
AC	924	**NP**	13216	0.001	[0.585]	60.625	177.120	-5.527	1.157	0	0.54%
AM	746	**NP**	13216	0.002	[0.494]	55.086	169.662	-9.107	1.759	1	0.27%
CM	189	**NP**	13216	0.001	[0.966]	53.727	166.959	-5.761	4.138	0	0.00%
ACM	1472	**NP**	13216	0.001	[0.681]	92.792	240.536	-3.891	2.344	0	0.27%
A	1786	**C**	472	0.001	[0.625]	-40.113	-17.114	-1.852	3.272	0	0.34%
A	1774	**M**	414	0.001	[0.281]	-25.956	-12.211	-5.876	1.091	1	1.01%
A	1784	**AC**	929	0.001	[0.268]	-73.737	-37.324	-1.879	5.963	1	0.45%
A	1791	**AM**	748	0.000	[0.800]	-69.182	-32.124	-0.986	3.846	0	0.06%
A	1771	**CM**	189	0.004	[0.000]♦	-67.561	-30.118	-9.395	4.228	1	1.19%
A	1790	**ACM**	1476	0.002	[0.067]*	-107.904	-65.896	-2.222	6.161	1	0.11%
C	472	**A**	1792	0.001	[0.891]	17.114	40.113	-6.126	1.752	0	0.00%
C	467	**M**	414	0.003	[0.478]	-3.705	14.441	-11.090	-1.793	1	1.07%
C	471	**AC**	929	0.001	[0.794]	-31.653	-17.980	-2.968	6.953	0	0.21%
C	472	**AM**	748	0.001	[0.928]	-33.454	-13.049	-3.409	4.032	0	0.00%
C	465	**CM**	189	0.003	[0.475]	-33.180	-10.519	-3.177	8.026	0	1.51%
C	472	**ACM**	1476	0.000	[0.996]	-62.842	-50.280	-1.340	1.620	0	0.00%
M	413	**A**	1792	0.001	[0.875]	12.211	25.956	-7.185	1.960	0	0.24%
M	414	**C**	472	0.003	[0.577]	-14.441	3.705	-2.268	8.517	0	0.00%
M	414	**AC**	929	0.003	[0.480]	-46.467	-19.051	-8.485	5.593	0	0.00%
M	414	**AM**	748	0.000	[0.973]	-42.182	-20.398	-1.740	2.367	0	0.00%
M	406	**CM**	189	0.007	[0.102]	-40.671	-18.048	-14.879	9.878	2	1.97%
M	414	**ACM**	1476	0.001	[0.941]	-78.241	-48.778	-1.835	5.052	0	0.00%
AC	918	**A**	1792	0.001	[0.814]	37.324	73.737	-3.812	1.127	0	1.20%
AC	925	**C**	472	0.000	[0.884]	17.980	31.653	-4.239	1.008	0	0.43%
AC	925	**M**	414	0.000	[0.894]	19.051	46.467	-2.687	1.926	0	2.27%
AC	922	**AM**	748	0.001	[0.547]	-10.954	4.704	1.375	6.943	0	0.76%
AC	922	**CM**	189	0.001	[0.753]	-7.821	7.725	-5.742	0.820	0	0.76%
AC	928	**ACM**	1476	0.001	[0.827]	-37.614	-28.559	-1.932	4.273	0	0.11%
AM	743	**A**	1792	0.001	[0.661]	32.124	69.182	-1.559	4.969	0	0.67%
AM	742	**C**	472	0.001	[0.544]	13.049	33.454	-7.703	3.407	0	0.81%
AM	741	**M**	414	0.000	[0.914]	20.398	42.182	-4.012	0.611	0	0.94%
AM	747	**AC**	929	0.000	[0.906]	-4.704	10.954	2.037	5.093	0	0.13%
AM	748	**CM**	189	0.004	[0.090]*	1.442	8.474	3.547	11.273	2	0.00%
AM	746	**ACM**	1476	0.001	[0.903]	-36.750	-16.981	-3.672	0.927	0	0.27%
CM	189	**A**	1792	0.003	[0.807]	30.118	67.561	-4.648	8.708	0	0.00%
CM	189	**C**	472	0.002	[0.867]	10.519	33.180	-9.678	2.419	0	0.00%
CM	189	**M**	414	0.004	[0.734]	18.048	40.671	-2.358	13.333	0	0.00%
CM	189	**AC**	929	0.003	[0.772]	-7.725	7.821	1.448	9.688	0	0.00%
CM	187	**AM**	748	0.006	[0.554]	-8.474	-1.442	0.000	16.440	0	1.07%
CM	187	**ACM**	1476	0.001	[0.956]	-40.599	-22.863	0.287	6.699	0	1.07%
ACM	1466	**A**	1792	0.002	[0.175]	65.896	107.905	-4.616	2.883	0	0.68%
ACM	1472	**C**	472	0.004	[0.003]♦	50.280	62.842	-6.220	5.629	0	0.27%
ACM	1470	**M**	414	0.001	[0.576]	48.778	78.241	-4.196	1.255	0	0.41%
ACM	1475	**AC**	929	0.000	[0.774]	28.559	37.614	-2.642	2.026	0	0.07%
ACM	1473	**AM**	748	0.000	[0.734]	16.981	36.750	-1.927	2.778	0	0.20%
ACM	1476	**CM**	189	0.001	[0.336]	22.863	40.599	-1.534	3.525	0	0.00%

Source: Own calculations on data from PROEXPORT.
The table reports for each sub-sample of firms using the programs being compared the pseudo R^2 after matching, p-value of the likelihood-ratio test testing the null hypothesis of joint insignificance of all regressors included in the propensity score specification after matching, the minimum and maximum percentage standardized biases before and after matching, the number of covariates which still have significant differences in their means after matching (at least at 10%) according to the t-test, and the percentage of treated observations falling outside the common support. Variables included in the propensity score specification are: lagged (natural logarithm of) export earnings, lagged (natural logarithm of) number of products exported, lagged (natural logarithm of) number of countries served, and lagged treatment status. Nearest neighbor matching is performed imposing a caliper c=0.04. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table C4

Average Effect of Assistance by PROEXPORT on Assisted Firms
Sample 2004-2006
Matching Difference-in-Differences Estimates Based on Nearest Neighbor Matching

Export Performance Indicator	SE	A	C	M	AC	AM	CM	ACM
Total Exports		0.130	0.190	0.239	0.307	0.210	0.249	0.247
	An	(0.049)♦	(0.076)♦	(0.084)♦	(0.059)♦	(0.067)♦	(0.117)#	(0.057)♦
	Bo	(0.050)♦	(0.081)#	(0.089)♦	(0.060)♦	(0.069)♦	(0.132)*	(0.050)♦
Number of Products		0.037	0.074	0.077	0.125	0.097	0.134	0.121
	An	(0.026)	(0.047)	(0.045)*	(0.038)♦	(0.038)♦	(0.071)*	(0.034)♦
	Bo	(0.027)	(0.055)	(0.049)	(0.042)♦	(0.040)♦	(0.077)*	(0.031)♦
Number of Destination Countries		0.071	0.069	0.081	0.104	0.116	0.113	0.157
	An	(0.019)♦	(0.034)#	(0.035)#	(0.027)♦	(0.030)♦	(0.052)#	(0.026)♦
	Bo	(0.020)♦	(0.035)#	(0.038)#	(0.027)♦	(0.029)♦	(0.057)#	(0.023)♦
Average Exports per Country and Product		0.022	0.047	0.081	0.077	-0.003	0.002	-0.031
	An	(0.046)	(0.075)	(0.076)	(0.056)	(0.063)	(0.105)	(0.055)
	Bo	(0.048)	(0.082)	(0.086)	(0.062)	(0.063)	(0.122)	(0.049)
Average Exports per Product		0.093	0.116	0.163	0.182	0.113	0.115	0.126
	An	(0.046)#	(0.072)	(0.078)#	(0.055)♦	(0.063)*	(0.107)	(0.054)#
	Bo	(0.045)#	(0.085)	(0.084)*	(0.057)♦	(0.064)*	(0.128)	(0.048)♦
Average Exports per Country		0.059	0.120	0.158	0.202	0.094	0.136	0.090
	An	(0.045)	(0.071)*	(0.076)#	(0.053)♦	(0.061)	(0.101)	(0.052)*
	Bo	(0.047)	(0.076)	(0.080)#	(0.053)♦	(0.063)	(0.116)	(0.041)#

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT on six measures of export performance for participating firms relative to the non-participation status. These estimates are based on the participation probabilities derived from binary probit models and are obtained using the nearest neighbor matching estimator. Nearest neighbor matching is performed imposing a caliper c=0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table C5

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Nearest Neighbor Matching

PROG	SE	Total Exports							Number of Products							Number of Countries						
		A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM
A			-0.171	-0.036	-0.306	-0.051	-0.069	-0.283		-0.065	0.009	-0.139	-0.074	0.001	-0.117		-0.061	-0.050	-0.104	-0.074	-0.003	-0.183
	An		(0.085)#	(0.088)	(0.074)♦	(0.093)	(0.111)	(0.088)♦		(0.048)	(0.042)	(0.041)♦	(0.045)	(0.067)	(0.047)♦		(0.038)	(0.036)	(0.033)♦	(0.034)#	(0.055)	(0.040)♦
	Bo		(0.082)#	(0.094)	(0.066)♦	(0.089)	(0.096)	(0.110)♦		(0.044)	(0.039)	(0.041)♦	(0.061)	(0.059)	(0.046)♦		(0.031)*	(0.035)	(0.033)♦	(0.032)#	(0.051)	(0.043)♦
C		0.088		0.121	-0.136	0.032	-0.079	-0.206	0.006		0.017	-0.096	-0.098	0.075	-0.117	0.085		0.026	-0.009	-0.054	0.017	-0.108
	An	(0.086)		(0.096)	(0.086)	(0.101)	(0.107)	(0.086)♦	(0.048)		(0.054)	(0.050)*	(0.053)*	(0.065)	(0.051)#	(0.036)♦		(0.045)	(0.039)	(0.041)	(0.054)	(0.040)♦
	Bo	(0.092)		(0.102)	(0.090)	(0.098)	(0.101)	(0.096)#	(0.047)		(0.054)	(0.054)*	(0.057)*	(0.066)	(0.051)#	(0.036)#		(0.041)	(0.040)	(0.045)	(0.058)	(0.044)♦
M		-0.096	-0.001		-0.158	-0.006	-0.057	-0.340	-0.062	-0.037		-0.139	0.020	0.005	-0.113	0.016	-0.078		-0.031	0.037	0.032	-0.144
	An	(0.093)	(0.106)		(0.089)*	(0.107)	(0.120)	(0.100)♦	(0.045)	(0.060)		(0.051)♦	(0.058)	(0.068)	(0.053)#	(0.038)	(0.048)		(0.043)	(0.044)	(0.055)	(0.046)♦
	Bo	(0.099)	(0.098)		(0.094)*	(0.127)	(0.111)	(0.110)♦	(0.049)	(0.057)		(0.052)♦	(0.071)	(0.060)	(0.051)#	(0.043)	(0.047)		(0.043)	(0.044)	(0.049)	(0.047)♦
AC		0.159	0.078	0.114		0.047	0.074	-0.045	0.062	0.013	0.072		0.003	0.027	-0.030	-0.002	-0.004	-0.031		-0.038	-0.002	-0.142
	An	(0.069)#	(0.088)	(0.096)		(0.081)	(0.091)	(0.067)	(0.038)	(0.049)	(0.049)		(0.039)	(0.055)	(0.035)	(0.029)	(0.038)	(0.041)		(0.032)	(0.045)	(0.030)♦
	Bo	(0.063)♦	(0.072)	(0.078)		(0.092)	(0.091)	(0.074)	(0.036)*	(0.045)	(0.045)		(0.042)	(0.054)	(0.038)	(0.029)	(0.033)	(0.034)		(0.034)	(0.042)	(0.031)♦
AM		-0.020	0.087	-0.019	-0.023		-0.064	-0.183	0.032	0.050	0.062	-0.043		0.030	-0.084	0.048	0.065	0.028	0.008		0.028	-0.095
	An	(0.078)	(0.092)	(0.096)	(0.073)		(0.098)	(0.075)♦	(0.041)	(0.051)	(0.050)	(0.041)		(0.057)	(0.038)#	(0.032)	(0.039)*	(0.040)	(0.033)		(0.047)	(0.032)♦
	Bo	(0.073)	(0.077)	(0.075)	(0.079)		(0.097)	(0.079)#	(0.039)	(0.043)	(0.043)	(0.041)		(0.053)	(0.045)*	(0.031)	(0.034)*	(0.032)	(0.032)		(0.043)	(0.034)♦
CM		0.054	0.118	0.210	0.172	-0.067		-0.165	0.081	0.014	0.137	-0.034	-0.007		-0.103	0.089	0.029	0.035	0.031	0.047		-0.181
	An	(0.100)	(0.109)	(0.110)*	(0.115)	(0.126)		(0.099)*	(0.062)	(0.069)	(0.067)#	(0.068)	(0.067)		(0.063)	(0.051)*	(0.058)	(0.058)	(0.057)	(0.051)		(0.053)♦
	Bo	(0.102)	(0.111)	(0.113)*	(0.123)	(0.153)		(0.118)	(0.068)	(0.078)	(0.069)#	(0.074)	(0.068)		(0.070)	(0.060)	(0.056)	(0.058)	(0.058)	(0.051)		(0.061)♦
ACM		0.153	0.163	0.181	0.061	0.085	0.059		0.072	0.110	0.105	0.024	0.063	0.066		0.121	0.117	0.063	0.088	0.084	0.076	
	An	(0.068)#	(0.090)*	(0.103)*	(0.059)	(0.074)	(0.088)		(0.039)*	(0.052)#	(0.057)*	(0.035)	(0.035)*	(0.054)		(0.030)♦	(0.042)♦	(0.051)	(0.028)♦	(0.028)♦	(0.046)*	
	Bo	(0.053)♦	(0.058)♦	(0.056)♦	(0.046)	(0.057)	(0.064)		(0.029)♦	(0.039)♦	(0.041)♦	(0.031)	(0.030)#	(0.044)		(0.024)♦	(0.033)♦	(0.032)*	(0.024)♦	(0.025)♦	(0.034)#	

Source: Own calculations on data from PROEXPORT.
The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of total exports, number of products exported, and number of countries the firms export to for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the nearest neighbor matching estimator. Nearest neighbor matching is performed imposing a caliper c=0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.

Table C5 (cont.)

Multiple Program Evaluation: Average Differential Effects of Assistance Programs Performed by PROEXPORT on Assisted Firms
Matching Difference-in-Differences Estimates Based on Nearest Neighbor Matching

PROG	SE	Average Exports per Country and Product							Average Exports per Product							Average Exports per Country						
		A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM	A	C	M	AC	AM	CM	ACM
A			-0.045	0.005	-0.063	0.097	-0.066	0.016		-0.106	-0.045	-0.167	0.023	-0.070	-0.166		-0.111	0.014	-0.202	0.024	-0.066	-0.100
	An		(0.080)	(0.081)	(0.072)	(0.085)	(0.108)	(0.089)		(0.080)	(0.080)	(0.071)#	(0.086)	(0.111)	(0.088)*		(0.078)	(0.081)	(0.068)♦	(0.086)	(0.096)	(0.082)
	Bo		(0.075)	(0.085)	(0.070)	(0.073)	(0.093)	(0.096)		(0.075)	(0.086)	(0.067)♦	(0.078)	(0.097)	(0.107)		(0.075)	(0.087)	(0.064)♦	(0.084)	(0.076)	(0.112)
C		-0.002		0.078	-0.031	0.184	-0.172	0.019	0.082		0.104	-0.040	0.130	-0.155	-0.089	0.004		0.095	-0.126	0.087	-0.097	-0.098
	An	(0.083)		(0.087)	(0.080)	(0.095)*	(0.109)	(0.088)	(0.081)		(0.089)	(0.079)	(0.095)	(0.110)	(0.084)	(0.081)		(0.084)	(0.079)	(0.093)	(0.095)	(0.081)
	Bo	(0.090)		(0.091)	(0.088)	(0.095)*	(0.093)*	(0.096)	(0.083)		(0.089)	(0.082)	(0.099)	(0.100)	(0.090)	(0.083)		(0.094)	(0.087)	(0.093)	(0.087)	(0.090)
M		-0.049	0.113		0.012	-0.063	-0.095	-0.083	-0.034	0.036		-0.019	-0.026	-0.063	-0.227	-0.112	0.076		-0.127	-0.043	-0.090	-0.196
	An	(0.085)	(0.100)		(0.088)	(0.102)	(0.116)	(0.093)	(0.085)	(0.098)		(0.086)	(0.100)	(0.120)	(0.096)♦	(0.086)	(0.098)		(0.081)	(0.098)	(0.105)	(0.089)#
	Bo	(0.093)	(0.101)		(0.090)	(0.106)	(0.106)	(0.101)	(0.095)	(0.094)		(0.087)	(0.105)	(0.118)	(0.103)#	(0.094)	(0.103)		(0.077)*	(0.118)	(0.107)	(0.101)*
AC		0.100	0.069	0.073		0.082	0.048	0.126	0.098	0.065	0.042		0.043	0.047	-0.015	0.162	0.082	0.146		0.085	0.075	0.096
	An	(0.067)	(0.085)	(0.090)		(0.078)	(0.088)	(0.064)#	(0.065)	(0.084)	(0.089)		(0.078)	(0.090)	(0.065)	(0.065)♦	(0.082)	(0.089)		(0.075)	(0.078)	(0.060)
	Bo	(0.063)	(0.073)	(0.072)		(0.077)	(0.079)	(0.073)*	(0.061)	(0.073)	(0.071)		(0.082)	(0.081)	(0.073)	(0.058)♦	(0.070)	(0.068)#		(0.085)	(0.070)	(0.069)
AM		-0.100	-0.028	-0.109	0.012		-0.122	-0.004	-0.052	0.037	-0.081	0.020		-0.094	-0.099	-0.068	0.023	-0.046	-0.031		-0.092	-0.088
	An	(0.072)	(0.086)	(0.095)	(0.069)		(0.093)	(0.074)	(0.073)	(0.085)	(0.094)	(0.069)		(0.096)	(0.073)	(0.071)	(0.084)	(0.093)	(0.065)		(0.085)	(0.070)
	Bo	(0.071)	(0.080)	(0.072)	(0.068)		(0.101)	(0.085)	(0.065)	(0.078)	(0.071)	(0.070)		(0.097)	(0.076)	(0.063)	(0.073)	(0.068)	(0.069)		(0.087)	(0.076)
CM		-0.116	0.074	0.038	0.175	-0.108		0.119	-0.027	0.104	0.073	0.206	-0.060		-0.062	-0.035	0.088	0.175	0.140	-0.114		0.016
	An	(0.098)	(0.113)	(0.104)	(0.111)	(0.129)		(0.107)	(0.098)	(0.107)	(0.105)	(0.111)*	(0.128)		(0.106)	(0.089)	(0.104)	(0.096)*	(0.102)	(0.120)		(0.087)
	Bo	(0.106)	(0.120)	(0.110)	(0.123)	(0.139)		(0.124)	(0.108)	(0.106)	(0.115)	(0.119)*	(0.148)		(0.119)	(0.101)	(0.096)	(0.107)	(0.110)	(0.139)		(0.104)
ACM		-0.040	-0.065	0.014	-0.052	-0.062	-0.083		0.081	0.053	0.077	0.037	0.022	-0.007		0.032	0.046	0.118	-0.027	0.001	-0.017	
	An	(0.063)	(0.088)	(0.103)	(0.059)	(0.069)	(0.087)		(0.062)	(0.087)	(0.100)	(0.056)	(0.070)	(0.089)		(0.061)	(0.083)	(0.096)	(0.054)	(0.069)	(0.076)	
	Bo	(0.048)	(0.061)	(0.064)	(0.050)	(0.054)	(0.066)		(0.048)*	(0.062)	(0.057)	(0.046)	(0.056)	(0.063)		(0.046)	(0.055)	(0.056)#	(0.043)	(0.050)	(0.057)	

Source: Own calculations on data from PROEXPORT.

The table reports the matching difference-in-differences estimates of the average effect of specific assistance programs carried out by PROEXPORT (in rows) on the growth of average exports per country and product, average exports per product, and average exports per country for participating firms relative to the other programs (in columns). These estimates are based on the participation probabilities derived from binary probit models and are obtained using the nearest neighbor matching estimator. Nearest neighbor matching is performed imposing a caliper c=0.04. Analytical (An) and bootstrapped (Bo) standard errors reported in parentheses. Bootstrapped standard errors based on 500 replications. * significant at the 10% level; # significant at the 5% level; ♦ significant at the 1% level. The significance indicator is reported with the standard errors corresponding to each method used to compute these errors. A: Trade Agenda; C: Counseling; M: Trade Missions, Shows, and Fairs; AC, AM, CM, and ACM are combination of these services.