Sizing Up the Uneven Impact of Embassies on Exports*

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Abstract

The purpose of this study is to test for the effects of trade promotion via the foreign service. We develop a Melitz-based model where firms are heterogeneous with respect to productivity and must pay a fixed cost to entry the entry market, which can be reduced by goverment spending on trade promotion. The model predicts that unilateral trade facilitation allows less productive firms to export. We test this prediction using Swedish firm-level data and information on the opening of Swedish embassies abroad using Norwegian firms as control group. Our results lend support to the predictions of the model, with medium-sized firms responding most strongly to the opening of embassies.

JEL Classification: D21, D22, F12, F15
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1 Introduction

Virtually all countries have foreign representation e.g. in the form of embassies and consulates. However, as information costs fall in the era of the internet, the raison d ´être of foreign representations is in question, as pointed out by Rose (2007). The response of the foreign services in many countries is that their activities are important for promoting trade. This would be particularly true for Sweden, which is a small open economy that has not been involved in military conflicts for 200 years.[1] Given the large sums spent on maintaining embassies abroad and the popular aim of governments to promote the exports of "Small- and Medium-Sized Enterprises" (SMEs) it is surprising how little we know about how trade promotion via the foreign service affects different types of firms.

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[1] Sweden has however contributed troops to UN-missions.

This paper uses Swedish firm level data from 1997-2007 to test what effect Swedish embassies have on Swedish exports. We start out from a theoretical framework of heterogenous firms a la Melitz (2003), where the role of embassies is to diminish firms' fixed entry cost to the country where an embassy is located. One central result from the model is that export promotion allows smaller firms to export. However, the largest firms that already export and the very small firms that never export are not affected by lower entry costs. The theoretical results from this exercise is taken to data.

We test for the effect of trade promotion on the extensive margin by combining firm-level data on the exports of Swedish firms with information on the location of Swedish embassies abroad. We find that medium-sized firms begin exporting to countries after Sweden opens an embassy. This evidence lends support to our theoretical model. We first perform the analysis at the industry-level and find that embassies are associated with a 5%-7% increase in the number of exporters. We when perform the analysis dividing exporters into quartiles dependent on the number of employees relative to other firms in their industry. Using this more disaggregated data we find that the effect of opening an embassy is strongest in the 2nd and 3rd quartiles of the firm size distribution. The point estimates suggest that embassies are assocaited with a 10% increase in the number of exporters from the 2nd and 3rd quartiles.

In order to establish that our results are consistent with the hypothesis that export promotion via the foreign service reduce entry barriers we examine the extensive margin of exporting before, during, and after the embassies were built. We detect a distinct increase in medium-sized exporters after an embassy is built, even after removing quartile-specific trends.

Our results are robust to a several robustness checks. First, we use data on Norwegian exports as a control group, since Norwegian and Swedish firms are from a global perspective highly similar in many respects, including location. In a placebo regression we find that the number of Norwegian exporters did not respond to the opening of Swedish embassies, which suggests that the results are not driven spuriously by other factors that affect both economic and diplomatic openness. We also use a difference-in-difference approach with Swedish firms in the treatment group and Norwegian firms in the control group.[2] Our results are also robust to restricting the sample to industries with low levels of firm concentration and to expanding the sample to include countries where Swedish embassies were closed.

While many studies have studied the impact of trade promotion in its many forms on aggregate trade and various extensive and intensive margins of trade, the heterogenous response in terms of firm size has received less attention.[3] Using aggregate cross-country data, Rose (2007) finds a positive and significant effect of a country's foreign service on it's export, Lederman, Olarreaga, and Payton (2010) find that national export promotion agencies have a positive impact on exports, and Nitsch (2007) finds that state visits promote trade. These results on ag-

[2] An exception is of course the Norwegian oil industry, which is left outside our analysis.

[3] Our paper is also related to the large literature on the effects of unilateral trade reforms at the firm level (see e.g. Trefler (2004) , and Breinlich and Cuñat (2010))

gregate trade flows do not inform us of whether export promotion promote export by increasing the exports of existing exporters (intensive margin) or if they make it easier for new firms to enter the market (extensive margin), and recent work has therefore turned to firm level data.[4]

Recent work has also studied how firm characteristics affect the response of the intensive margin to export subsidies and grants. Girma, Gong, Görg, and Yu (2009) find that the intensive margin of exports is more responsive to export subsidies for profit-making firms, firms in capital-intensive industries, and firms in non-coastal regions. Görg, Henry, and Strobl (2008) find the intensive margin of exports response more to export grants in larger firms, measured as the number of employees.

The studies most related to our work are the empirical studies by Volpe Martincus and Carballo (2008, 2010), who analyse the effect of export promotion by Peru's national export promotion agency PROMPEX. Their identification strategy is to match firms on observables and then to perform a difference in difference in difference estimation comparing treated firms before and after treatment to matched non-treated firms in the same time intervals. Volpe Martincus and Carballo (2008) find that export promotion has a postive effect on the extensive margin, but no significant effect on the intensive margin. With the same data Volpe Martincus and Carballo (2010) uses a similar approach but now also divides firms into quantiles according to export growth. Here they find significant positive effects on the export volume for firms in the lower quantiles, while the number of export countries increase in the lower and upper quantiles. A difficulty is that firm export growth not directly translates into firm size. Estimating kernel densities of firm export levels the previous year shows that export promotion on average is more efficient for small firms.

Our paper instead focuses on the foreign service and uses a difference-in-difference strategy using Norwegian export data as the control group. We also divide firms into quartiles based on size. Our estimates show positive significant effects on the extensive margin (new firms starting to export) for firms in the third quartile of the firm size distribution. This is highly consistent with our theory model, where export promotion is effective for firms of intermediate size.

The paper is organized as follows: Section 2 contains the theoretical model. The data are presented in Section 3, and the empirical specification and main results are presented in Section 4. The robustness checks, including using Norwegian firms as a control, are described in Section 5. Finally, Section 6 concludes the paper.

2 The Model

2.1 Basics

This paper employs a modified version of the Melitz (2003) monopolistic competition trade model with heterogeneous firms. There are m countries. Each country j has a single pri-

[4] Some papers have used sector level data, and e.g. Persson (2012) finds that trade facilitation leads to a lager number of exported products at the 8-digit (Combined Nomenclature) sector level.

mary factor of production labour, L_j, used in the A-sector and the M-sector. The A-sector is a Walrasian, homogenous-goods sector with costless trade. The M-sector (manufactures) is characterized by increasing returns, Dixit-Stiglitz monopolistic competition and iceberg trade costs. M-sector firms face constant marginal production costs and three types of fixed costs. The first fixed cost, F_E, is the standard Dixit-Stiglitz cost of developing a new variety. The second F_D is a 'beachhead' costs reflecting the one-time expense of introducing a new variety into the domestic market. There is also a 'beachhead' cost for the foreign market, but this cost can be lowered by trade promotion from the government. The entry cost in the foreign market is therefore $F_X/d_{jk}(t)$, where $d_{jk}(t)$ is the level of trade promotion, which is a function of the tax rate t. We assume that the beachhead costs are symmetric in order to simplify notation but countries' spending on trade promotion is allowed to be asymmetric. Our approach to modelling asymmetric fixed export costs is similar to Akerman and Forslid (2007). The properties of the d function are described in the next section.

There is heterogeneity with respect to firms' marginal costs. Each Dixit-Stiglitz firm/variety is associated with a particular labour input coefficient – denoted as a_i for firm i. After sinking F_E units of labour in the product innovation process, the firm is randomly assigned an 'a_i' from a probability distribution $G(a)$.

Our analysis exclusively focuses on steady-state equilibria and intertemporal discounting is ignored; the present value of firms is kept finite by assuming that firms face a constant Poisson hazard rate δ of "death".

Consumers in each nation have two-tier utility functions with the upper tier (Cobb-Douglas) determining the consumer's division of expenditure among the sectors and the second tier (CES), dictating the consumer's preferences over the various differentiated varieties within the M-sector.

All individuals in country j have the utility function

$$U_j = C_{Mj}^{\mu} C_{Aj}^{1-\mu}, \tag{1}$$

where $\mu \in (0,1)$, and C_{Aj} is consumption of the homogenous good. Manufactures enter the utility function through the index C_{Mj}, defined by

$$C_{Mj} = \left[\int_0^{N_j} c_{ij}^{(\sigma-1)/\sigma} di \right]^{\sigma/(\sigma-1)}, \tag{2}$$

N_j being the mass of varieties consumed in country j, c_{ij} the amount of variety i consumed in country j, and $\sigma > 1$ the elasticity of substitution.

Each consumer spends a share μ of his income on manufactures, and demand for a variety i in country j is therefore

$$x_{ij} = \frac{p_{ij}^{-\sigma}}{P_j^{1-\sigma}} \mu E_j, \tag{3}$$

where p_{ij} is the consumer price of variety i in country j, E_j is expenditures, and $P_j \equiv \left(\int_0^{N_j} p_{ij}^{1-\sigma} di \right)^{\frac{1}{1-\sigma}}$ the price index of manufacturing goods in country j.

The unit factor requirement of the homogeneous good is one unit of labour. This good is freely traded and since it is chosen as the numeraire

$$p_A = w = 1; \tag{4}$$

w being the nominal wage of workers in all countries.

Shipping the manufactured good involves a frictional trade cost of the "iceberg" form: for one unit of a good from country j to arrive in country k, $\tau > 1$ units must be shipped. It is assumed that trade costs are equal in both directions and that $\tau_{jj} = 1$. Profit maximization by a manufacturing firm i located in country j leads to consumer price

$$p_{ijk} = \frac{\sigma}{\sigma - 1}\tau a_i \tag{5}$$

in country k.

Manufacturing firms draw their marginal cost, a, from the probability distribution $G(a)$ after having sunk F_E units of labour to develop a new variety. Having learned their productivity, firms decide on entry in the domestic and foreign market**,** respectively. Firms will enter a market as long as the operating profit in this market is sufficiently large to cover the beachhead (market entry) cost associated with the market. Because of the constant mark-up pricing, it is easily shown that operating profits equal sales divided by σ. Using this and (3), the critical 'cut-off' levels of the marginal costs are given by:

$$a_{Dj}^{1-\sigma} B_j = F_D, \tag{6}$$

$$a_{Xjk}^{1-\sigma} \phi B_k = F_X / d_{jk}(t), \tag{7}$$

where $B_j \equiv \frac{\mu E_j}{P_j^{1-\sigma}}$, and $\phi \equiv \tau^{1-\sigma} \in [0,1]$ represents trade freeness. Trade promotion enters the model through d_{jk}, where $d_{jk} > 1$ implies that trade promotion by country j is reducing the fixed cost of export for its firms in country k. d_{jk} is financed through taxation t, which we discuss further in the next section. Firms will take the entry cost F_X/d_{jk} as given when deciding which markets to enter.

Finally, free entry ensures that the ex-ante expected profit of developing a new variety in country j equals the investment cost:

$$\int_0^{a_{Dj}} \left(a^{1-\sigma} B_j - F_D\right) dG(a) + \sum_{k,k\neq j} \int_0^{a_{Xjk}} \left(\phi a^{1-\sigma} B_k - F_X/d_{jk}(t)\right) dG(a) = F_E. \tag{8}$$

2.2 Solving for the Long-run Equilibrium

In this section, we apply two simplifying assumptions. First, the model is solved with two countries, j and k. We refer to j as "Home" and k as "Foreign". Second, we follow Helpman, Melitz, and Yeaple (2004) in assuming the probability density function to be Pareto:

$$G(a) = a^{\theta}.$$

Integrating (8) and using (6) and (7) gives B_{jk},

$$B_j = \left(\frac{F_E F_{Dj}^{\beta-1} \cdot (\beta - 1)\left(1 - d_{jk}^{\beta-1}\Omega\right)}{1 - d_{jk}^{\beta-1} d_{kj}^{\beta-1}\Omega^2} \right)^{\frac{1}{\beta}}, \tag{9}$$

where $\beta \equiv \frac{\theta}{\sigma-1} > 1$, and $\Omega \equiv \phi^{\beta}\left(\frac{F_X}{F_D}\right)^{1-\beta} \in [0,1]$ is an index of trade freeness. Using this expression, (6) and (7) gives the cut-off marginal costs. The cut-off for a domestic non-exporters is given by:

$$a_{Dj}^{\theta} = \frac{(\beta - 1) F_E (1 - d_{jk}^{\beta-1}\Omega)}{F_D (1 - d_{jk}^{\beta-1} d_{kj}^{\beta-1}\Omega^2)}, \tag{10}$$

where $d_{jk}^{\beta-1}\Omega \in [0,1]\ \forall j,k$ ensures a positive solution for the cutoff. The cut-off cost for exporters is given by

$$a_{Xj}^{\theta} = \frac{F_E (\beta - 1)\Omega d_{jk}^{\beta}(1 - d_{kj}^{\beta-1}\Omega)}{F_X (1 - d_{jk}^{\beta-1} d_{kj}^{\beta-1}\Omega^2)}. \tag{11}$$

PROPOSITION 1 *(Home Country Effects): Unilateral home country export promotion will increase the marginal cost cut-off for exporters at Home, and decrease the marginal cost cut-off for non-exporters at Home if* $\Omega < 1$.

Proof: Home export promotion's positive effect on the marginal cost cut-offs for Home exporters follows from (11). See appendix A.1 for a proof that unilateral export promotion decreases the marginal-cost cut-offs for Home non-exporters if $\Omega < 1$.

This model with asymmetric trade promotion leads to the prediction that unilateral trade promotion at Home leads to a softer cutoff for Home exporters due to the lower export beachhead cost. This means that trade promotion at home leads to lower average productivity among those firms exporting to the particular destination. However, the marginal cost cut-off becomes tougher at Home for non-exporters. This is a general equilibrium effect due to entry of new firms in Home. Lower export costs increase expected profits for Home firms, which leads to increased entry. The entry effect of trade promotion can clearly be seen in the equation describing the mass of firms in each country, which is derived below.

PROPOSITION 2 *(Foreign Country Effects): Unilateral home country export promotion will increase the marginal cost cut-off for non-exporting firms at Foreign and decrease the marginal cost cut-off for exporters at Foreign if* $\Omega < 1$.

Proof: Home trade promotion's positive effect on the marginal cost cut-offs for Foreign non-exporters follows from (10). See appendix A.2 for a proof that unilateral export promotion decreases the marginal-cost cut-offs for Foreign exporters if $\Omega < 1$.

There are two forces that affect firms at Foreign. The presence of a greater number of Home exporters in the Foreign market toughens competition, while the lower expected profits of operating in Foreign lead to fewer firms at Foreign. The Home competition effect dominates for Foreign exporters, while the reduced entry leads to a softer cutoff for Foreign non-exporters.

We will assume that, in spite of trade promotion, it will never be easier to export than to sell in the domestic market, which implies that $a_{Xj} < a_{Dj}\ \forall j,k$. The condition for this to hold is $F_X/\Omega F_D > \left(d_{jk}^{\beta}(1-d_{kj}^{\beta-1}\Omega_{kj})\right)/\left(1-d_{jk}^{\beta-1}\Omega_{jk}\right)$ for all j,k. The model reduces to the standard Melitz model if there is no trade promotion ($d_{jk}=d_{kj}=1$).

The price index in country j may be written as

$$P_j^{1-\sigma} = \Psi\frac{\beta}{\beta-1}\left(n_j a_{Dj}^{1-\sigma} + n_k\phi a_{Dk}^{1-\sigma}\left(\frac{a_{Xk}}{a_{Dk}}\right)^{\theta+1-\sigma}\right), \tag{12}$$

where $\Psi = \left(\frac{\sigma}{\sigma-1}\right)^{1-\sigma}$.The effect of trade promotion on the cut-offs for both exporters and non-exporters is summarised by the following proposition. The mass of firms in each country can be calculated using (6), (10), (11), and (12) together with the fact that $B_j = \frac{\mu L_j}{P_j^{1-\sigma}}$:

$$n_j = \frac{\mu\left(\beta-1\right)}{F_D\beta}\frac{L_j(1-d_{kj}^{\beta-1}\Omega) - L_k(1-d_{jk}^{\beta-1}\Omega)d_{kj}^{\beta-1}\Omega}{(1-d_{kj}^{\beta-1}\Omega)(1-d_{jk}^{\beta-1}d_{kj}^{\beta-1}\Omega^2)}. \tag{13}$$

This equation shows how an increase in country $j's$ level of trade promotion, d_{jk}, will make it a more attractive location (base) for exporting firms. Trade promotion will affect the ex ante attractiveness of entry in country j, and it will therefore lead to a higher mass of firms in equilibrium. This also implies that the number (mass) of exporters increases in the level of export promotion.

PROPOSITION 3 *The number (mass) of Home exporters increases in the Home level of export promotion.*

Proof: Proposition 1 implies that a larger share of the firms in Home export because of export promotion, and since $\frac{\partial n_j}{\partial d_{jk}} > 0$ by inspection of (13) the proposition follows.

Using (9), the CES price index in each country is given by

$$P_j^{1-\sigma} = \frac{\mu L_j}{B_j} = \frac{\mu L_j\left(1-d_{jk}^{\beta-1}d_{kj}^{\beta-1}\Omega^2\right)^{\frac{1}{\beta}}}{\left(F_E F_D^{\beta-1}\left(\beta-1\right)\left(1-d_{jk}^{\beta-1}\Omega\right)\right)^{\frac{1}{\beta}}}. \tag{14}$$

The following section calculates the optimal level of trade promotion. As in the Melitz model, welfare always increases (P decreases) with trade liberalization; that is, with a higher ϕ (a higher Ω).

2.2.1 The governments problem

The government taxes taxes income to finance the trade promotion. Since labour is supplied inelastically this amounts to a lump sum tax. The government maximises indirect utility with respect to t taking the long-run solutions for the cut-offs into account:

$$\max_{t} \quad V_j = k\frac{(1-t_j)w_j}{p_{Aj}^{1-\mu}P_j^{\mu}}$$

where $p_{Aj} = w_j = 1 \quad \forall j$. Domestic trade promotion increases the ex ante expected profit of entry in the domestic market. Entry restores equilibrium with a zero expected profit. Entry also reduces the domestic price index, which constitute the welfare gains from trade promotion. The underlying intuition for the positive welfare effects of export promotion is that the government is supplying a public good to the exporters, in the form of lower beachhead costs to foreign markets.

Using (10), (11), (14), and (13), we can rewrite the maximization problem as:

$$\max_{t_j} \quad V_j = (1-t_j)\left(\frac{\mu(1-t_j)L_j\left(1-d(t_j)_{jk}^{\beta-1}d(t_k)_{kj}^{\beta-1}\Omega^2\right)^{\frac{1}{\beta}}}{\left(F_E F_{Dj}^{\beta-1}(\beta-1)(1-d(t_j)_{jk}^{\beta-1}\Omega)\right)^{\frac{1}{\beta}}}\right)^{\frac{\mu}{\sigma-1}} \tag{15}$$

This expression reveals that foreign export promotion, ceteris paribus, decreases domestic welfare. The reason for this is the general equilibrium effect whereby the mass of firms increase in Foreign and decrease at Home since Foreign becomes a more attractive platform for exports. The expression (15) is in general very non-linear, and we therefore limit the discussion of domestic trade promotion to two simpler cases.

Domestic export promotion has a more positive effect on welfare when there is no Foreign export promotion, $d_{kj} = 0$.The governments problem in this case reduces to

$$\max_{t_j} \quad V_j = (1-t_j)\left(\frac{\mu(1-t_j)L_j}{\left(F_E F_{Dj}^{\beta-1}(\beta-1)(1-d(t_j)_{jk}^{\beta-1}\Omega)\right)^{\frac{1}{\beta}}}\right)^{\frac{\mu}{\sigma-1}}. \tag{16}$$

A higher d increases welfare but higher taxes do not. Welfare goes to zero for $t = 1$. A positive but bounded level of unilateral export promotion will therefore be optimal provided that trade promotion is efficient enough in reducing the entry costs of foreign markets. Similarly in symmetric case (when country size and trade promotion is symmetric) (15) reduces to:

$$\max_{t} \quad V = (1-t)\left(\frac{\mu(1-t)L\left(1+d(t)\Omega\right)^{\frac{1}{\beta}}}{\left(F_E F_D^{\beta-1}(\beta-1)\right)^{\frac{1}{\beta}}}\right)^{\frac{\mu}{\sigma-1}} \tag{17}$$

Again this expression indicates that there is an optimal positive but bounded level of symmetric (multilateral) trade promotion provided that trade promotion is efficient enough in reducing the entry costs of foreign markets.

3 Data

We use annual manufacturing census data at the firm level from Statistics Sweden combined with data on opening dates of Swedish embassies abroad between 1997 and 2007. The firm level data contains detailed information about firm exports by destination and firm, as well as the number of employees per firm, which we use as our proxy for firm size.

We measure export promotion using data on the presense or absence of Swedish embassies in several countries during the period 1997-2007 as a measure of trade promotion. Of the 173 countries in the data for which we have data on the presence of an embassy, new embassies were set up in 9 countries over this period. A list of Swedish embassy openings between 1997 and 2007 is provided in Table 1. The countries in our sample tend to be smaller and/or distant markets in Europe, Africa and the Middle-East. We construct a dummy variable to capture the presence of an embassy, which takes a value of one in the years where an embassy is present in a country and zero otherwise.

We limit our analyis to embassies and do not control for embassy closures since we think of exporting costs as sunk and thus less responsive to closures[5]. We do not include consulates in the analysis since these often serve a very limited purpose and are operated by locals.

As a robustness check we use Norwegian firm level data for our control group. This data is aggregated by firm size quartiles and destination for each 4-digit NACE rev.1.1 sector.

Our dependent variable is the logged number of exporters by firm size quartile, destination and 4-digit NACE rev.1.1 sector. Starting with the firm-level data, we thus assign each firm to a size quartile each year they are present in the data, then sum the number of exporters within each quartile by destination and sector. The size quartiles are calculated based on the entire sample for firms with 10 employees or more, which includes both exporters and non-exporters.

We include a number of control variables in the analysis such as population and GDP per capita (taken from CEPII data), which controls for destination country market potential. We also control for official development assistance transfers to each country as well as an EU membership dummy variable. We use average manufacturing tariffs[6] (taken from the World Development Indicators) to proxy for changes in trade costs. Descriptive statistics for these variables are provided in Table 2. The export destinations in our sample differ widely in terms of population size and GDP per capita. More detailed export statistics by destination country are given in Table 3. There is a wide degree of export heterogeneity across 4-digit NACE industries, with the number of firms exporting in a given year and destination ranging from zero to 31 firms. The value of exports also varies across sectors, but Table 3 highlights the fact that exports to all of these destinations are non-negligible.We conclude the description of the data with a look at the firm size distribution among those industries included in the regressions. Table 4 describes the mean, minimum and maximum number of employees within

[5] Our results are robust to including embassy closures as well, and are available from the authors by request.

[6] "Tariff rate, applied, simple mean, manufactured products"

Table 1: Embassy openings and closures

Country	year opened	year closed
Congo, Dem. Rep.	1998	
Lebanon	1998	2001
Slovenia	1999	
Uganda	1999	
Senegal	2000	
Guinea-Bissau		2000
Venezuela		2000
United Arab Emirates	2001	
Kuwait		2001
Peru		2001
Tunisia		2001
Cyprus	2003	
Slovakia	2003	
Macedonia	2005	
Ivory Coast		2007

Source: Swedish Ministry of Foreign Affairs

each size quartile for each 4-digit NACE industry for the year 2005. There is a clear variation in the mean number of employees across quartiles. Table 4 also shows the subtantial variation in the number of employees across industries. This highlights the importance of measuring firm size in relative terms using within-industry quartiles instead of using a raw employee measure in the regression analysis.

4 Empirical Specification and Main Results

We test for the effect of embassies in two main specifications in our analysis. First we test the effect of embassies on the number of exporters each year at the industry-destination-level.[7] We then disaggregate the industry-level data by firm size quartiles and test whether the effect of embassies differs across quartiles of the firm size distribution.

4.1 Industry-Level Results

Our industry-destination-level regressions use the following specification:

$$\log\left(N_{ict+1}\right) = \beta_0 + \beta_1 Emb\_dum_{ct} + controls_{ct} + d_t + d_{ic} + \varepsilon_{ict}, \tag{18}$$

[7] An alternative is to test for the effects of export promotion on exporter productivity. However, productivity is more subject to swings in the business cycle and therefore much more volatile than employment. There are also several issues concerning the measurement of productivity. We have nevertheless run regressions with firms productivity measured using the Lehvinson Petrin method. These regressions give very similar results as the regressions using the number of firms in the paper but with somewhat weaker precision.

Table 2: Industry and Destination Statistics, 2005

	Mean	Min	Max
Number of firms in industry	64	4	610
population (millions)	4.3	0.8	28.2
GDP per capita (USD)	23997	366	47249
tariff (weighted, percent)	3.5	1.6	13.8
Official Development Assistance (MSEK)	2.5	0.0	51.6

Note: Based on observations included in regression in Table 5, column (3).
Source: Statistics Sweden

Table 3: Export Statistics by Destination Country

	Number of exporters per industry			Value of exports per industry, MSEK		
	Mean	Min	Max	Mean	Min	Max
Congo, Dem. Rep.	0.4	0	2	10.0	0	165
Lebanon	2.2	0	20	3.7	0	223
Slovenia	3.6	0	21	7.3	0	944
Uganda	1.2	0	7	2.8	0	123
Senegal	1.2	0	10	2.0	0	42
United Arab Emirates	3.8	0	30	17.1	0	561
Cyprus	2.6	0	31	3.6	0	346
Slovakia	3.4	0	22	8.0	0	364
Macedonia	1.5	0	9	2.3	0	57

Note: Based on observations included in regression in Table 5, column (2).
Source: Statistics Sweden, authors' calculations

Table 4: Firm Size Statistics, 2005

	Avg. number of employees per industry		
	Mean	Min	Max
1st quartile	13.6	10.0	64.0
2nd quartile	32.1	13.7	194.5
3rd quartile	72.3	19.3	387.4
4th quartile	541.0	34.4	5992.5

Note: Based on observations included in regression in Table 6, column (3). Source: Statistics Sweden, authors' calculations

where N_{ict+1} is the number of exporters from 4-digit NACE rev.1.1 industry i to destination country c in year $t+1$. Emb_dum_{ct} is the embassy dummy, interacted with four size quartile dummy variables. d_t and d_{ic} are year and industry*country fixed effects and ε_{ict} is the error term. Our theoretical model implies that at least some of the $\beta's$ should have a positive sign.

We begin by measuring the effect of opening an embassy on the number of exporters by destination and sector. The results regressing equation (18) are presented in Table 4. The results in column (1) include country*industry fixed effects, meaning that the results can be interpreted as the effect of embassy presence on the firm extensive margin over time. The year dummies controls for any type of trend in export patterns over time. Column (2) includes country*industry fixed effects plus industry*year fixed effects in order to control for differences in export growth across industries that may drive our results. Across all specifications the embassy dummy, Emb_dum_{ct}, has a positive coefficient and is significant at the 10% level. The coefficient on emb_dum indicates that opening an embassy is associated with a 5-7% increase in the number of exporters within a 4-digit NACE rev. 1.1 industry, depending on the number of fixed effects used.

4.2 Industry-Quartile-Level Results

Our more dissaggregated industry-quartile-destination-level regressions use the following specification:

$$\log\left(N_{qict+1}\right) = \beta_0 + \sum_{r=1}^{4} \beta_r \left(Emb\_dum_{ct} \times Q^r\right) + controls_{ct} + d_t + d_{qic} + \varepsilon_{qict}, \qquad (19)$$

where N_{qict+1} is the number of exporters in quartile q from 4-digit NACE rev.1.1 industry i to destination country c in year $t+1$. Emb_dum_{ct} is now interacted with four size quartile indicator variables Q^r, which take the value of 1 when an observation belongs to quartile r. d_t and d_{qic} are year and industry*quartile*country fixed effects and ε_{qict} is the error term. Theory implies that at least some of the $\beta's$ should have a positive sign.

The effect of embassy presence on the number of exporters across different quartiles of the firm size distribution, as described in equation (19), is presented in Table 6. The coefficients of interest are the four interactions of Emb_dum_{ct} with the firm size quartile indicator variables. We find that the third quartile is the most responsive to embassy presence, with the largest coefficients compared to other size quartiles and statistically significant at the 1% or 5% level, depending on the controls used. Column (1) of Table 6 uses country*industry*quartile fixed effects plus year fixed effects, meaning that the coefficients can be interpreted as the effect of opening an embassy over time for any country*industry*quartile. The year dummies controls for any general trends in export behavior over time. Industry*year fixed effects are added in column (2), which controls for any industry-specific trends in the extensive margin that may drive our results. Finally, we add size quartile*year fixed effects in column (3) in order to remove quartile-specific trends that may be driving our results. Our finding that firms of medium size respond most strongly to embassy presence is robust in all specifications, with embassy presence

Table 5: Effect of embassies on the number of exporters

	(1)	(2)
emb_dum_{ct}	0.053	0.071
	(0.029)*	(0.038)*
ln_pop_{ct}	-0.734	-0.959
	-0.494	-0.697
ln_cgdp_{ct}	0.33	0.329
	(0.127)**	(0.169)*
$tariff_{ct}$	0.007	0.008
	(0.002)***	(0.003)**
oda_{ct}	0.001	0.001
	(0.000)**	-0.001
$EUdum_{ct}$	-0.05	-0.101
	(0.039)	(0.064)
Country*industry fixed effects	YES	YES
Year fixed effects	YES	NO
industry*year fixed effects	NO	YES
Observations	4743	4743
R^2	0.016	

Notes: This table presents estimtes of Eq. (18). Dependent variable: log(number of exporters) from 4-digit NACE rev. 1.1 industry i to country c in year t+1. Robust standard errors in parentheses, clustered at country*year level. *** p<0.01, ** p<0.05, * p<0.1

leading to an 11% and 9% increase in the number of exporters in the 2nd and 3rd quartiles of the firm size distribution respectively. The result for the 3rd quartile is robust to at least the 95% level across specifications while the result for the 2nd quartile is weaker, with 90% significance reached only in one specification. We find no statistical significant point estimates for the 1st and 4th quartiles of the firm size distribution. Overall, these initial results are promising and fit our theoretical prediction that medium-sized firms will respond to lower fixed costs to export via promotion activities.

The results in Table 6 provide a much richer picture of the heterogeneous impact of embassies on the firm extensive margin and emphasize that firm size is an important factor when measuring the impact of the foreign service. Given that the export destinations we study are smaller and more distant we find it reassuring that it is the third quartile that responds most to embassy

Table 6: Effect of embassies on the number of exporters, by size quartile

	(1)	(2)	(3)
emb_dum_{ct} x 1st quartile	0.012	0.041	0.068
	(0.040)	(0.051)	(0.081)
emb_dum_{ct} x 2nd quartile	0.027	0.023	0.11
	(0.040)	(0.060)	(0.057)*
emb_dum_{ct} x 3rd quartile	0.154	0.154	0.091
	(0.029)***	(0.038)***	(0.040)**
emb_dum_{ct} x 4th quartile	0.004	0.015	0.016
	(0.026)	(0.033)	(0.036)
ln_pop_{ct}	-0.911	-0.673	-0.564
	(0.444)**	(0.644)	(0.652)
ln_cgdp_{ct}	0.469	0.394	0.391
	(0.105)***	(0.156)**	(0.154)**
$tariff_{ct}$	0.008	0.009	0.008
	(0.002)***	(0.003)***	(0.003)**
oda_{ct}	0.00	-0.001	-0.001
	(0.00)	(0.001)	(0.001)
$EUdum_{ct}$	-0.084	-0.097	-0.081
	(0.039)**	(0.058)*	(0.058)
Country*industry*quartile fixed effects	YES	YES	YES
Year fixed effects	YES	NO	NO
industry*year fixed effects	NO	YES	YES
quartile*year fixed effects	NO	NO	YES
Observations	6778	6778	6778
R^2	0.025		

Notes: This table presents the estimates of Eq. (19). Dependent variable: log(number of exporters) from employment quartile q of 4-digit NACE rev. 1.1 industry i to country c in year t+1. Robust standard errors in parentheses, clustered at country*year level. *** p<0.01, ** p<0.05, * p<0.1

presence, as these destinations are arguably more "exotic" and would not be served by small firms.

5 Robustness

5.1 Pretreatment and Posttreatment Effects

Our theoretical approach assumes that embassies make it easier for some firms to export. However, one may argue that embassies may be built in places where medium-sized firms have already begun exporting. In order to establish that our results are consistent with the hypothesis that export promotion via the foreign service reduce entry barriers we examine the extensive margin of exporting before, during, and after the embassies were built. If embassies cause exporting then we should find no increase in the number of exporters prior to the opening of embassies. We perform this analysis using both the aggregate data at both the industry-level and the industry-quartile-level.

Our industry-destination-level regressions use the following specification, which is an extension of equation (18) to test for effects up to three years before and after each embassy is built:

$$\begin{aligned} \log(N_{ict}) &= \beta_0 + \sum_{s=-2}^{3} \beta_{t+s} Emb\_open_{c,t+s} + \beta_{t-3} Emb\_dum_{c,t-3} \\ &\quad + controls_{ct} + d_t + d_{ic} + \varepsilon_{ict}. \end{aligned} \tag{20}$$

Note that the dependent variable, N_{ict}, is now the concurrent number of exporters from 4-digit NACE rev.1.1 industry i to destination country c, and not the lagged number of exporters used to show the main results. $Emb\_open_{c,t+s}$ indicates whether or not an embassy was built at year $t+s$ in country c. All the six indicators, $Emb\_open_{c,t-2}$ to $Emb\_open_{c,t+3}$, are equal to one only in the relevent year and are zero otherwise. For example, $Emb\_open_{c,t+3}$ is equal to one when the embassy is built three years after date t.

The indicator variable $Emb\_dum_{c,t-3}$ measures whether the the embassy in country c was opened at least three years before the date t. Consider Senegal, where the Swedish embassy was built in the year 2000. The variable $Emb\_dum_{c,t-3}$ will be equal to one in the years 2003-2007 and zero in all years prior to 2003.

This specification allows a well-defined reference period covering four years prior to the actual year of the embassy opening and earlier. This is the only period where all the dummy variables, $Emb\_open_{c,t+s}$ and $Emb\_dum_{c,t-3}$, are zero. This set of indicators allows for two posttreatment yearly effects (β_{t-1}, β_{t-2}) and three pretreatment yearly effects (β_{t+1}, β_{t+2}, β_{t+3}). All coefficients are relative to the period covering four years prior to embassy opening and earlier. The coefficient β_{t-3} measures the effect on the number of exporters three years after the embassy opening and later relative to the same reference period. We use the same controls and fixed effects as the baseline regressions.

We use the following specification to measure pretreatment and posttreatment effects in the quartile-industry-level data, based on equation (19):

$$\begin{aligned}\log(N_{qict}) &= \beta_0 + \sum_{s=-2}^{3}\sum_{r=1}^{4}\beta_{r,t+s}\left(Emb\_open_{c,t+s}\times Q^r\right) + \sum_{r=1}^{4}\beta_{r,t-3}\left(Emb\_dum_{c,t-3}\times Q^r\right) \\ &\quad + controls_{ct} + d_t + d_{qic} + \varepsilon_{qict}.\end{aligned} \tag{21}$$

N_{qict} is the number of exporters in quartile q from 4-digit NACE rev.1.1 industry i to destination country c in year t. The various pretreatment and posttreatment effects are interacted with four size quartile indicator variables Q^r, which take the value of 1 when an observation belongs to quartile r. We employ the same controls and fixed effects as the baseline regressions.

The results of the pretreatment and posttreatment estimation using the industry-level data is graphically depicted in Figure 1[8]. The regression used to estimate these effects employs industry-country and industry-year fixed effects. The figure shows that there is a distinct increase in the number of exporters around the time the embassy is opened relative to the positive trend. One can also see that the 95% confidence interval widens as we move further from $t = 0$. This is caused by the fact that there are fewer and fewer countries left to identify these effects the more pretreatment and posttreatment effects are included in the specification (though the number of observations will be the same). We use the Democratic Republic of Congo as an example. Since the embassy was opened there in 1998, can only be used to identify effects one year before the embassy opening, not three years before. The underlying positive trend in exporter numbers that we see in Figure 1 suggests that the industry-year dummies do not fully control for time trends in the export data.

The results of the pretreatment and posttreatment estimation for the third quartile of the firm size distribution is graphically depicted in figure 2. We focus on the third quartile here because the regression results in Table 6 suggest that it was the quartile that responded most vigorously to the embassy openings. The regression used to estimate these effects employs industry-country-quartile, industry-year and quartile-year fixed effects.

Figure 2 shows that there is a distinct increase in the number of exporters in the 3rd size quartile one year after the embassy is opened, with almost no effect before the year the embassy is opened. This positive effect seems to disappear two years after the embasssy. Moreover, we do not see statistically significant effects at the 95% level at any time after the embassy is opened. The results also suggest that using the quartile-year fixed effects allows us to remove the positive trend in exporter numbers that we observed in figure 1.

5.2 Using Norway as Control

Our analysis so far has not considered the fact that trade patterns and diplomatic relations may both be determined by some third factor such as a political or economic event in the destination

[8] The estimation output corresponding to this figure is available from the authors upon request.

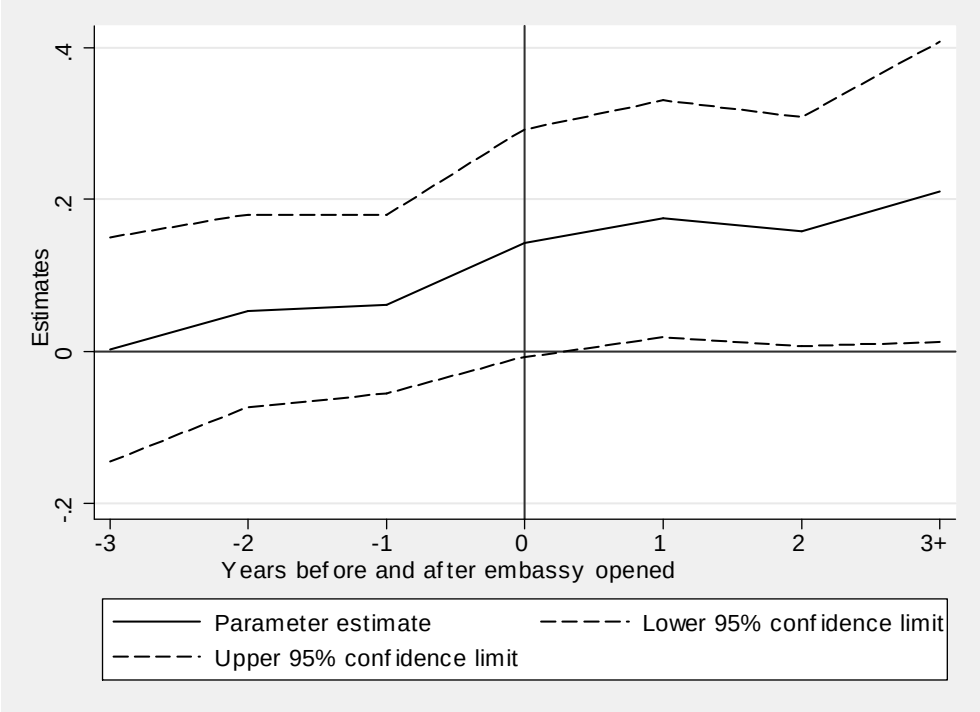

Figure 1: Industry-level estimates and the 95% confidence interval from three years before to three years after opening an embassy. Notes: This graph presents the estimtes of Eq.(20).

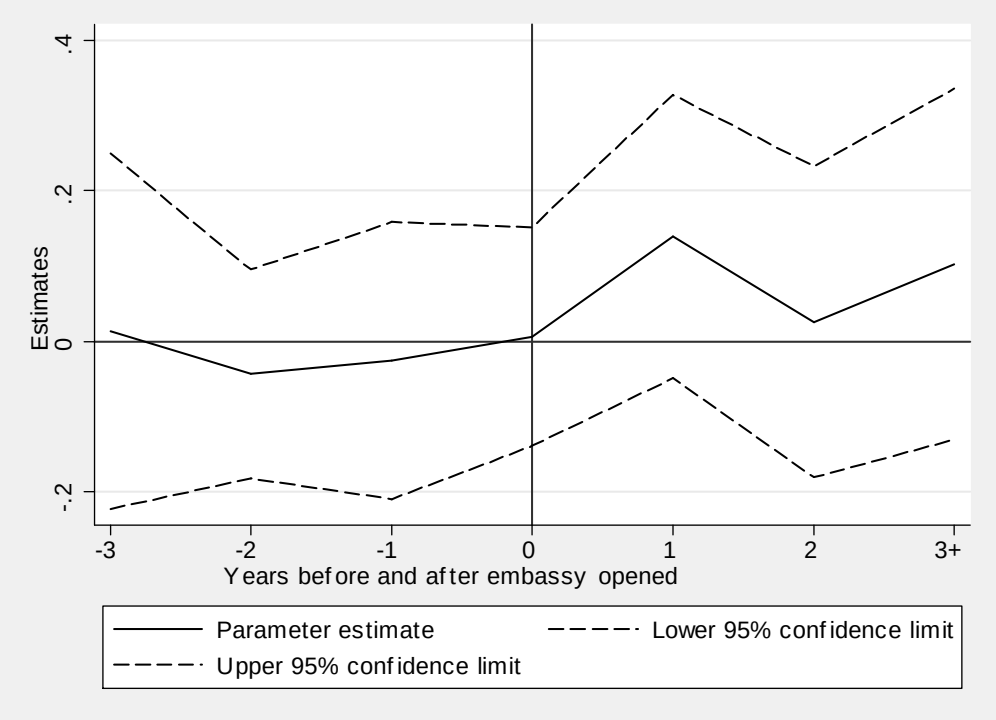

Figure 2: Third quartile estimates and the 95% confidence interval from three years before to three years after opening an embassy. Notes: This graph presents the estimates of Eq.(21)

country. Spurious correlation between diplomatic and economic openness of countries in our sample may be a serious concern.

We address this issue by using Norwegian firms as a control group since they should not be affected by the opening of Swedish embassies. This identification strategy assumes that percentage changes in the extensive margin of Norwegian firms ought to mimic Swedish firms except in the case when Sweden opens a new embassy.

There are many reasons that Norwegian firms serve as a highly appropriate control group. First, Norway and Sweden share a border and have thus similar trade costs to reach the various countries where embassies were opened. Second, Sweden and Norway are very similar countries in terms of income and institutional development. Third, Norway did not always open embassies at the same time as Sweden for the countries we study. Norway opened embassies in Slovenia in 2003 and Slovakia in 2004, which we control for in our analysis.

5.2.1 Norway Placebo Treatment

We first run a placebo specification by regressing the Swedish embassy data on the number of Norwegian exporters within each size quartile. We predict that there should be no effect of opeing Swedish embassies on Norwegian exporters. The results are presented in Table 7. The regression results using panel fixed effects and year dummies are reported in column (1), where we find negative and significant effects on the first and third quartile of the firm size distribution. However, subsequently adding industry-year and quartile-year fixed effects results in no statistical significant estimates across all quartiles, as the results in columns (2) and (3) indicate. These findings help to reassure us that our main results are not driven spuriously by a general increase in economic and diplomatic openness that would affect other countries' exports.

5.2.2 Sweden-Norway Difference-in-Differences

We also employ a difference-in-differences empirical strategy using the Norwegian exporter data and Norwegian embassy openings as a control. For each industry-quartile-destination for which we have both Swedish and Norwegian data on the number of exporters each year we calculate the difference between the log number of Swedish firms and the log number of Norwegian firms. This identification strategy arguably controls for unobservable factors that may affect the extensive margin for any industry-quartile-country combination. One drawback to this approach is that we do not always have a match between the Swedish and Norwegian data, which leads to a smaller number of observations in the first-differenced sample.

Our first-differenced specification takes the following form:

$$\Delta \log\left(N_{qict+1}\right) = \beta_0 + \sum_{r=1}^{4} \beta_r \left(\Delta Emb\_dum_{ct} \times Q^r\right) + controls_{ct} + d_{qt} + d_{ct} + \varepsilon_{qict}, \qquad (22)$$

where $\Delta \log\left(N_{qict+1}\right) = \log\left(N_{qict+1\_Swe}\right) - \log\left(N_{qict+1\_Nor}\right)$ is the percentage difference

Table 7: Robustness using Norwegian exporters

	(1)	(2)	(3)
emb_dum_{ct} x 1st quartile	-0.073	-0.27	-0.279
	(0.032)**	(0.151)*	(0.179)
emb_dum_{ct} x 2nd quartile	-0.053	-0.15	-0.006
	(0.05)	(0.11)	(0.108)
emb_dum_{ct} x 3rd quartile	-0.083	-0.118	-0.115
	(0.037)**	(0.085)	(0.087)
emb_dum_{ct} x 4th quartile	-0.046	-0.056	-0.078
	(0.028)	(0.057)	(0.065)
ln_pop_{ct}	0.056	0.058	-0.084
	(0.604)	(1.056)	(1.093)
ln_cgdp_{ct}	0.056	0.276	0.241
	(0.162)	(0.318)	(0.31)
$tariff_{ct}$	0.011	0.008	0.009
	(0.004)***	(0.007)	(0.007)
oda_{ct}	-0.001	0.003	0.002
	(0.003)	(0.005)	(0.006)
$EUdum_{ct}$	0.092	0.126	0.113
	(0.044)**	(0.082)	(0.082)
Country*industry*quartile fixed effects	YES	YES	YES
Year fixed effects	YES	NO	NO
industry*year fixed effects	NO	YES	YES
quartile*year fixed effects	NO	NO	YES
Observations	1868	1868	1868
R^2	0.017		

Notes: Dependent variable log(number of exporters) from employment quartile q of 4-digit NACE rev. 1.1 industry i to country c in year t+1. Robust standard errors in parentheses, clustered at country*year level. *** p<0.01, ** p<0.05, * p<0.1

in the number of exporters in quartile q from 4-digit NACE rev.1.1 industry i to destination country c in year $t+1$ from Sweden and Norway respectively. We first-difference the embassy dummy variables, where $\Delta Emb\_dum_{ct} = Emb\_dum_{ct\_Swe} - Emb\_dum_{ct\_Nor}$. As in the previous specification, the embassy dummy term is interacted with four size quartile indicator variables. ε_{qict} is the error term. d_{qt} and d_{ct} are quartile-year and country-year fixed effects respectively. Our theory implies that at least some of the $\beta's$ should have a positive sign.

Our results using the Norwegian data and regressing equation (22) are presented in Table 8. Column (1) reports the results when using year and quartile dummies, while industry dummies are included in the regression reported in column (2). Finally, column (3) reports the estimates when using a combination of industry-year and quartile-year dummy variables. Across all specifications we find a statistically significant effect of embassies on the 1st and 2nd quartile of the firm size distribution. The result in the first quartile is likely due to the fact that we had a negative effect on the first quartile of the Norwegian firm size distribution, while the result for the second quartile is driven by the positive effect we observe in the Swedish data. Once again, this result provides further reassurance that our results are not spurious.

5.3 Minimum 20 Firms per Industry

Another potential concern is that our results are driven by industries where there are few firms. We address this concern by restricting the regression analysis to industries that have at least 20 firms operating each year. The results using this restricted sample are provided in the Appendix. We find that our significant result for the third quartile is robust to excluding industries with less than 20 firms.

5.4 Including Embassy Closures

While our theory best captures the impact of opening embassies, one can argue that it is also relevent for explaining how firms react when embassies are closed. In particular, the model predicts that closing an embassy will entail to higher per-period fixed export costs, which would force marginal exporters to cease exporting and marginal newborn firms to serve only the domestic market. While firms that already export are less likely to leave the market due to an embassy closure, it may be the case that closing an embassy makes it more difficult for new potential exporters to begin exporting after the embassy is closed.

As a robustness check we include embassy closures as well as openings. The embassy dummy takes a value equal to one if an embassy is open and zero if there is no embassy. This approach adds six destination countries to our analysis (Guinea-Bissau, Venezuela, Kuwait, Peru, Tunisia, and Ivory Coast).

The results of including embassy closures in our analyis is given in the Appendix. We find that our results for the 3rd quartile are robust to including embassy closures, and are in fact stronger, with significance at the 99% level even when using the full set of controls.

Table 8: Sweden-Norway Difference-in-Differences

	(1)	(2)	(3)
emb_dum_{ct} x 1st quartile	0.067	0.142	0.14
	(0.044)	(0.057)**	(0.072)*
emb_dum_{ct} x 2nd quartile	0.083	0.083	0.11
	(0.045)*	(0.044)*	(0.054)**
emb_dum_{ct} x 3rd quartile	0.05	0.056	0.041
	(0.038)	(0.037)	(0.043)
emb_dum_{ct} x 4th quartile	0.013	0.04	0.044
	(0.028)	(0.03)	(0.034)
ln_pop_{ct}	0.136	0.157	0.167
	(0.020)***	(0.023)***	(0.024)***
ln_cgdp_{ct}	0.195	0.282	0.291
	(0.039)***	(0.042)***	(0.045)***
$tariff_{ct}$	-0.013	-0.019	-0.021
	(0.005)**	(0.007)***	(0.007)***
oda_{ct}	-0.002	-0.002	-0.002
	(0.001)**	(0.001)**	(0.001)**
$EUdum_{ct}$	0.184	0.206	0.205
	(0.047)***	(0.050)***	(0.052)***
year fixed effects	YES	YES	NO
quartile fixed effects	YES	YES	NO
industry fixed effects	NO	YES	NO
quartile*year fixed effects	NO	NO	YES
industry*year fixed effects	NO	NO	YES
Observations	3961	3961	3961
R^2	0.148	0.496	0.564

Notes: This tables presents estimates of Eq.(22). Dependent variable: difference in log(number of exporters) from employment quartile q of 4-digit NACE rev. 1.1 industry i to country c in year t+1 between Sweden and Norway. Robust standard errors in parentheses, clustered at country*year level. *** p<0.01, ** p<0.05, * p<0.1

6 Conclusion

The purpose of this study was to investigate the effects of export promotion by Swedish embassies. We view the export promotion of embassies as decreasing the barrier to entry foreign markets. The importance of a fixed foreign market entry cost will depend on the firm size, and we therefore focus on firm size in determining how the extensive margin of exports responds to opening embassies. In doing we directly test the prediction of the Melitz model with unilateral trade liberalization that trade liberalization allows less productive firms to begin exporting. We develop a Melitz-based model where firms are heterogeneous with respect to productivity and must pay a fixed cost to entry the entry market, which can be reduced by goverment spending on trade promotion. The model predicts that unilateral trade promotion allows new medium-sized firms to export. We test this prediction using Swedish firm-level data and information on the opening of Swedish embassies abroad. Our results hold in several robustness checks, including when we use Norwegian firms as a control group. Moreover, the results suggest that the number of exporters increases after the embassy is built, which is consistent with the prediction of our theoretical framework. Our results suggest that embassies play an important role in promoting the exports of medium-sized firms.

A Mathematical Appendix

A.1 Proof of Proposition 1:

The effect of home country trade promotion on home's domestic firms's marginal cost cutoff can be seen in the following derivative:

$$\frac{\partial a_{Dj}^{\theta}}{\partial d_{jk}} = \frac{F_E\left(\beta-1\right)^2\Omega d_{jk}^{\beta-2}(-1+d_{kj}^{\beta-1}\Omega)}{F_X(-1+d_{jk}^{\beta-1}d_{kj}^{\beta-1}\Omega^2)^2} \tag{23}$$

The derivative is negative for $d_{kj}=1$ and $\Omega\in[0,1)$ $\forall j,k$.

A.2 Proof of Proposition 2:

The effect of unilateral foreign country trade promotion on home's marginal cost cutoff can be seen in the following derivative:

$$\frac{\partial a_{Xj}^{\theta}}{\partial d_{kj}} = \frac{F_E\left(\beta-1\right)^2\Omega^2 d_{kj}^{\beta-2}d_{jk}^{\beta}(-1+d_{jk}^{\beta-1}\Omega)}{F_X(-1+d_{jk}^{\beta-1}d_{kj}^{\beta-1}\Omega^2)^2} \tag{24}$$

The derivative is positive for $d_{jk}=1$ and $\Omega<1$.

B Appendix Tables

Table B1 : Robustness: Minimum 20 Firms per Industry

	(1)	(2)	(3)
emb_dum_{ct} x 1st quartile	0.028	0.062	0.079
	(0.051)	(0.060)	(0.086)
emb_dum_{ct} x 2nd quartile	0.029	0.021	0.104
	(0.052)	(0.070)	(0.064)
emb_dum_{ct} x 3rd quartile	0.194	0.188	0.114
	(0.035)***	(0.046)***	(0.046)**
emb_dum_{ct} x 4th quartile	0.031	0.033	0.04
	(0.032)	(0.041)	(0.046)
ln_pop_{ct}	-1.277	-0.963	-0.825
	(0.537)**	(0.761)	(0.771)
ln_cgdp_{ct}	0.572	0.505	0.488
	(0.122)***	(0.170)***	(0.168)***
$tariff_{ct}$	0.01	0.011	0.01
	(0.003)***	(0.004)***	(0.003)***
oda_{ct}	0	-0.001	-0.001
	(0.00)	(0.001)	(0.001)
$EUdum_{ct}$	-0.099	-0.11	-0.092
	(0.048)**	(0.069)	(0.068)
Country*industry*quartile fixed effects	YES	YES	YES
Year fixed effects	YES	NO	NO
industry*year fixed effects	NO	YES	YES
quartile*year fixed effects	NO	NO	YES
Observations	4919	4919	4919
R^2	0.037		

Notes: Dependent variable log(number of exporters) from employment quartile q of 4-digit NACE rev. 1.1 industry i to country c in year t+1. Robust standard errors in parentheses, clustered at country*year level.
*** p<0.01, ** p<0.05, * p<0.1

Table B2: Robustness: Including Embassy Closures

	(1)	(2)	(3)
emb_dum_{ct} x 1st quartile	0.013	0.024	0.052
	(0.029)	(0.043)	(0.054)
emb_dum_{ct} x 2nd quartile	0.029	0.017	0.048
	(0.031)	(0.044)	(0.038)
emb_dum_{ct} x 3rd quartile	0.106	0.115	0.089
	(0.026)***	(0.032)***	(0.028)***
emb_dum_{ct} x 4th quartile	0.033	0.047	0.049
	(0.019)*	(0.025)*	(0.025)**
ln_pop_{ct}	-0.7	-0.507	-0.369
	(0.365)*	(0.492)	(0.495)
ln_cgdp_{ct}	0.213	0.165	0.127
	(0.070)***	(0.095)*	(0.092)
$tariff_{ct}$	-0.002	-0.002	-0.002
	(0.003)	(0.003)	(0.003)
oda_{ct}	0.001	0	0
	(0.001)	(0.001)	(0.001)
$EUdum_{ct}$	-0.054	-0.071	-0.058
	(0.030)*	(0.044)	(0.044)
Country*industry*quartile fixed effects	YES	YES	YES
Year fixed effects	YES	NO	NO
industry*year fixed effects	NO	YES	YES
quartile*year fixed effects	NO	NO	YES
Observations	9119	9119	9119
R^2	0.017		

Notes: Dependent variable log(number of exporters) from employment quartile q of 4-digit NACE rev. 1.1 industry i to country c in year t+1. Robust standard errors in parentheses, clustered at country*year level.
*** p<0.01, ** p<0.05, * p<0.1

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