

The Foreign Service and Foreign Trade: **Embassies as Export Promotion**

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Comments Welcome

Abstract

As communication costs fall, foreign embassies and consulates have lost much of their role in decision-making and information-gathering. Accordingly, foreign services are increasingly marketing themselves as agents of export promotion. I investigate whether exports are in fact systematically associated with diplomatic representation abroad. I use a recent cross-section of data covering twenty-two large exporters and two-hundred import destinations. Bilateral exports rise by approximately six to ten per cent for each additional consulate abroad, controlling for a host of other features including reverse causality. The effect varies by exporter, and is non-linear; consulates have smaller effects than the creation of an embassy.

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1. Introduction

What does the Foreign Service do? More generally, why do countries spend so many resources on embassies, consulates, and the Foreign Service?

In times gone by, embassies, consulates, and the like – hereafter “foreign missions” – were important sources of information and were empowered to make significant decisions. But as communication costs have fallen, much information about foreign countries has become quickly and cheaply available through alternate sources. Key decisions about foreign affairs are increasingly made at home and simply communicated abroad. Consular affairs – passports, visas, and the like – do not seem to justify the expense and prestige of a Foreign Service. In the age of the internet, is there a *raison d’être* for the Foreign Service?

One answer increasingly given is that the Foreign Service promotes exports. Ambassadors, commercial attaches, and other members of the diplomatic corps are said to play a key role in developing and maintaining export markets. This short paper asks the question: are foreign missions in fact systematically linked to exports? To be more concrete, consider the fact that in 2003, both Brazil and Belgium exported seventeen billion dollars of goods to the United States, despite the fact that Belgium’s economy is over twice as big as Brazil’s, and both are approximately the same distance from the United States. Brazil maintains seven consulates (and an embassy) in the United States, while Belgium only has four consulates (and an embassy). Is Brazil’s larger network a material advantage to its exporters, and a reason why it maintains its export presence in the American market?

To answer this question, I link exports from twenty-two important countries to two-hundred destination countries. I take advantage of the fact that countries have varying number of foreign missions abroad. Some embassies cover multiple countries, while some countries host

an embassy and a number of consulates. For instance, in December 2004 the United States had an embassy and six consulates in Canada, an embassy in Cape Verde, and no official presence in the Central African Republic (it is covered from Chad and Cameroon). The Netherlands has over four-hundred foreign missions, while Sweden has less than a hundred. I use such differences to ask whether there is a measurable link between the size of the Foreign Service and exports.

I use annual data averaged over 2002-03, and control for other determinants of trade through a standard “gravity” model. I estimate my cross-section using least-squares, and show my results are robust to inclusion of different types of country-specific fixed effect intercepts. I also account for reverse causality; as instrumental variables I employ variables that are correlated with the importance of countries (e.g., proven oil reserves) and the desirability of living there as a Foreign Service officer (e.g., the number of Condé-Nast top 100 destinations in a country).

I find that the presence of foreign missions is indeed positively correlated with exports. Holding other things constant, I find that each additional consulate is associated with slightly higher exports; my point estimate is around six to ten per cent. This result is statistically significant, and economically plausible in magnitude. It varies by exporter, and also seems to be non-linear; the first foreign mission has a larger effect on exports than successive missions. Still, the Foreign Service does indeed seem to promote exports at the margin.

2. Motivation

Foreign Services are expensive. For instance, the 2004 fiscal year budget request for the US Department of State included \$4.2 billion for diplomatic and consular programs, and \$1.5

billion for embassy security, construction and maintenance.¹ Foreign Services are also glamorous. For instance, ambassadors rank eighth in the American protocol precedence list, just after the Chief Justice of the Supreme Court and former presidents, and just before the Secretary of State and the President of the UN General Assembly.² Entry into the Foreign Service is typically quite competitive, and the diplomatic corps is among the most prestigious parts of the civil service. This paper asks whether this use of financial and human resources is justified, at least in part, by export promotion.

It seems clear that the Foreign Services of most countries believe that they are agents of export promotion. For instance, the US State Department describes itself as attempting to promote and protect the interests of the United States by (*italics added*):

- “Promoting peace and stability in regions of vital interest;
- *Creating jobs at home by opening markets abroad;*
- *Helping developing nations establish stable economic environments that provide investment and export opportunities ...*

The services the Department provides include:

- Protecting and assisting U.S. citizens living or traveling abroad;
- *Assisting U.S. businesses in the international marketplace...³*

The US Commercial Service (part of the Department of Commerce which operates out of American foreign missions) describes its role in a typical trading partner (the UK) as being:

¹ <http://www.state.gov/secretary/rm/2003/17607.htm>. By way of contrast, the budget for the entire Department of Commerce totaled \$5.8 billion in 2005; <http://www.osec.doc.gov/bmi/budget/05BIB/funding.pdf>. The United States is not alone; the British Foreign and Commonwealth Office spent £868.9 billion in 2003-04 (<http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029395222>), while the Ministry of Foreign Affairs of the Netherlands plans to spend €10.3 billion in 2005 (http://www.minbuza.nl/default.asp?CMS_ITEM=7AEB9D02F1EF43A582F11936DA930A3EX3X56438X84).

² <http://www.hqda.army.mil/protocol/doc/Precedence%20List%20as%20of%2029%20Jun%2004.pdf>

“...part of a global network of trade specialists dedicated to supporting US commercial interests around the world. We offer a variety of services to US exporters and UK importers and our trade specialists are available to help with your enquiries. If you are a US company, we can assist in promoting your goods and services into the UK market by:

- finding suitable UK business partners
- identifying UK trade opportunities
- advising on the UK market potential for your product
- offering UK market research reports and
- helping to launch your company into one of the biggest markets in the world ...”⁴

Other countries also use their Foreign Services to promote exports. For instance, the role of the British Foreign and Commonwealth Office is to provide (italics added); “... a range of essential services to the public – from advising British travellers to issuing UK visas *and promoting trade and investment opportunities overseas.*”⁵ Further, “The UK is the fifth largest trading nation: our exports are vital to our national prosperity. One in four jobs in the UK is linked to business overseas. *So the FCO has a key role in promoting our companies and products abroad. Nearly 1,500 FCO staff equivalents are engaged in commercial and investment work (about 350 UK-based and just over 1,100 locally-engaged).*”⁶

³ <http://www.state.gov/r/pa/ei/rls/dos/436.htm>

⁴ <http://www.buyusa.gov/uk/en/>. Also, see the official American export portal www.export.gov.

⁵ <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029390563>

⁶ <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/ShowPage&c=Page&cid=1007029391386>. Further, “UK Trade & Investment is represented in over 200 FCO posts overseas, providing market information and advice on local issues to companies visiting from the UK. UK Trade & Investment is the Government organisation that supports both companies in the UK trading internationally and overseas enterprises seeking to locate in the UK. UK Trade & Investment has the following targets:

- To develop 5,000 new exporters by 2004, with at least 15% improving their business performance within two years
- To assist 18,000 established exporters into markets new to them
- To assist 50% of established exporters to improve their business performance within two years

UK Trade & Investment has recruited, mainly from the private sector, nine International Trade Directors, one for each English region. The directors and their International Trade Teams have

Similarly, the mandate of the Canadian Department of Foreign Affairs and International Trade is to:

- “conduct all diplomatic and consular relations on behalf of Canada;
- conduct all official communication between the Government of Canada and the government of any other country and between the Government of Canada and any international organization; ...
- *foster the expansion of Canada's international trade;... ”*⁷

This is also true of other large countries. For instance, the German Missions abroad

“can be called Germany's eyes, ears and voice abroad. On instructions from the Federal Foreign Office, they represent our country, defend its interests and protect its citizens in the host country. They negotiate with the government of the host country and promote political relations as well as economic, cultural and scientific cooperation. The essential tasks of the missions include:

- collecting information,
- reporting on issues which are of relevance to the various authorities of the Federation and the Länder,
- helping German citizens in emergencies,
- *assisting German companies with their activities in the host country and generally enhancing mutual trade, ... ”*⁸

been strategically located in the Regional Development Agencies to ensure they play a full role in drawing up regional trade strategies. The first point of contact for inquiries by companies in the UK is their International Trade Advisor, located at their local Business Link.

UK Trade & Investment services include:

- Your Passport to Export Success- UK Trade & Investment’s flagship assessment and skills-based programme that provides new and inexperienced exporters with the training, planning and on-going support they need to succeed overseas.
- Export Explorer, an integrated package of help and advice that enables small and medium size firms to experience new and accessible export markets at minimal cost...

Teams of commercial officers at British Diplomatic posts overseas work to understand the local business environment and match opportunities to the capabilities of UK firms. Help for existing exporters takes a variety of forms aimed at meeting a wide range of customer needs. It ranges from the straightforward provision of information, through detailed advice in response to specific enquiries, to lobbying overseas on behalf of UK companies.”⁶

⁷ <http://www.dfait-maeci.gc.ca/departement/mandate-en.asp>. Further, International Trade Canada provides “Help from our officers located in more than 140 cities worldwide to assess your export potential, identify key foreign contacts, and obtain relevant advice and intelligence.” (http://www.itcan-cican.gc.ca/cdn_bus-en.asp)

⁸ http://www.auswaertiges-amt.de/www/en/aamt/aufgaben/aufgaben_av_html

Similarly, the Australian Department of Foreign Affairs and Trade describes their own objectives as:

“The department’s aim is to advance the interests of Australia and Australians internationally. This aim is the driving force behind our work and underpins all the department’s goals, priorities, values and culture.

The department’s goals are to:

- enhance Australia’s security
- *contribute to growth in Australia’s economy, employment and standard of living...*⁹

The relevant question is not whether Foreign Services believe they are in the business of export promotion (at least in part), but whether they are effective at it. I now investigate that issue.

3. Methodology

I am interested in estimating the effect of a country’s Foreign Service on its exports, allowing for other determinants of trade. To accomplish the latter, I use a conventional bilateral “gravity” model of trade, which links exports positively to economic mass (proxied by population and income), and negatively to economic distance. The gravity model has a long history in international and regional economics; Anderson and van Wincoop (2003) provide a good recent treatment. The gravity model takes into account more traditional economic reasons for international trade; I ask below whether there is any room left over in the residual for the presence and number of foreign missions.

I estimate the following cross-sectional equation:

⁹ <http://www.dfat.gov.au/dept/whatwedo.html>

$$\begin{aligned} \ln(X_{ij}) = & \beta_0 + \beta_1 \ln D_{ij} + \beta_2 \ln(Y_i) + \beta_3 \ln(Y_j) + \beta_4 \ln(\text{Pop}_i) + \beta_5 \ln(\text{Pop}_j) + \beta_6 \text{Lang}_{ij} + \beta_7 \text{Cont}_{ij} \\ & + \beta_7 \text{Landl}_{ij} + \beta_8 \text{Island}_{ij} + \beta_9 \ln(\text{Area}_i \text{Area}_j) + \beta_{10} \text{Col}_{ij} + \beta_{11} \text{CU}_{ij} + \beta_{12} \text{FTA}_{ij} \\ & + \gamma \text{EmbCon}_{ij} + \varepsilon_{ij} \end{aligned}$$

where i denotes the exporter, j denotes the importer, $\ln(\cdot)$ denotes the natural logarithm operator, and the variables are defined as:

- X_{ij} denotes annual real exports from i to j in dollars, averaged between 2002 and 2003,
- EmbCon_{ij} is the number of embassies, consulates, and official foreign missions that i has in j ,
- D is the distance between i and j ,
- Y is annual real GDP per capita in dollars, averaged between 2002 and 2003,
- Pop is average population,
- Lang is a binary “dummy” variable which is unity if i and j have a common language and zero otherwise,
- Cont is a binary variable which is unity if i and j share a land border,
- Landl is the number of landlocked countries in the country-pair (0, 1, or 2).
- Island is the number of island nations in the pair (0, 1, or 2),
- Area is the area of the country (in square kilometers),
- Col is a binary variable which is unity if i and j are colonies at time t ,
- CU is a binary variable which is unity if i and j use the same currency at time t ,
- FTA is a binary variable that is unity if i and j both belong to the same regional trade agreement,
- β is a vector of nuisance coefficients, and
- ε_{ij} represents the omitted other influences on bilateral exports, assumed to be well behaved.

The coefficient of interest to me is γ , which represents the marginal effect of an additional foreign mission on exports.

I estimate this equation in a number of different ways. I begin with conventional OLS, using a robust covariance estimator to handle heteroskedasticity. I also account for the panel nature of the data set by allowing for exporter fixed effect intercepts, importer fixed effects, or both. Heavy trade may induce countries to set up more consulates, so that there may be reverse causality from exports to foreign missions. Accordingly, I also estimate the equation with instrumental variables.

I use a two-pronged strategy to choose my instrumental variables. First, I use variables that measure the potential geo-political importance of a country. The relevant variables I consider include: a) proven oil reserves (in bbl); b) proven gas reserves (in cu m); and c) military spending (in \$). The preferences of the diplomatic corps may also help determine the location and number of foreign missions. Accordingly, I also use variables that measure the desirability of residing in a particular country. The relevant variables I consider in this category include the number (in an import destination country) of: a) Condé-Nast top 100 destinations; b) Zagat surveys; c) Ritz hotels; d) Four Seasons hotels; e) Luxury hotels (Westin, Sheraton, St. Regis, and W hotels, all owned by Starwood hotels); f) Baedeker guides; g) Blue guides; h) Lonely Planet guides; i) Michelin guides; j) Economist city guides; k) whether the country experiences monsoonal rains; and l) the number of Google hits for the search ‘ +“Travel Destination” +“city” +”x” ’ where x is the name of the capital city.¹⁰

The series for the regressand comes from the August 2004 “Direction of Trade” (DoT) CD-ROM data set developed by the International Monetary Fund (IMF). It records bilateral merchandise exports in \$ between IMF trading entities; I average 2002 and 2003 exports

¹⁰ I have experimented with other climatic dummy variables without success.

(deflating 2003 exports by the relevant American CPI inflation rate.¹¹ I include data for 22 large exporters (listed in Appendix Table A1) and 200 destination countries that the IMF includes (listed in Appendix Table A2). (Not all the trading entities are “countries” in the traditional sense of the word; for instance, most countries have consulates in Hong Kong, SAR China. I use the word simply for convenience.)¹²

I gather data on the location of foreign missions from the export countries’ Foreign Services. (I count an embassy and a separate chancery or consulate in the same city as a single foreign mission; I also exclude honorary consulates.¹³) Unfortunately, it is only possible to identify the exact number of individuals in a given embassy/consulate that are actively engaged in export promotion for a small number of countries.¹⁴ Since there is no easy way to measure the importance of different foreign missions, I am forced to treat them all as equal.¹⁵

Population and real GDP data per capita (in constant 1995 American dollars) have been obtained from the online version of the World Bank’s *World Development Indicators*; holes were filled with data from the online CIA *World Factbook*.¹⁶ I also exploit the *Factbook* for a number of country-specific variables. These include: latitude and longitude, land area, landlocked and

¹¹ The 2002 CPI, as recorded in the 2004 *Economic Report of the President* Table B60 was 179.9; the 2003 CPI was 184.

¹² I exclude a number of small entities because of data difficulties, including: Andorra, East Timor, Marshall Islands, Micronesia, Monaco, Palestine, Puerto Rico, San Marino, and the Vatican. I also exclude international organizations, and Taiwan, province of China.

¹³ The Netherlands is treated differently, for data availability reasons. The Netherlands states on its website (http://www.minbuza.nl/default.asp?CMS_ITEM=837443D4B4F640FEA322D347FD3BDA01X3X36627X13) that it has 110 embassies, 27 consulates-general, 15 permanent missions, and some 360 consulates headed by unpaid honorary consuls. I have been unable to determine which of the 52 consulates-general (http://www.minbuza.nl/default.asp?CMS_ITEM=MBZ456668) and numerous consulates (http://www.minbuza.nl/default.asp?CMS_ITEM=MBZ456418) are honorary. I err on the side of inclusiveness and include them all. I also exclude French “agence consulaires” and American “consular agents.”

¹⁴ Belgium, Canada, the UK, and the USA provide this information for my sample.

¹⁵ Over 40% of potential exporter-destination pairs do not have any foreign missions. Thus, the 22 exporters I consider simply do not maintain foreign missions in a significant fraction of (mostly small) foreign countries. At the other end of the spectrum, Mexico maintains an embassy and 42 consulates inside the United States, while the Netherlands and Switzerland each maintain 27 foreign missions to the USA.

¹⁶ Available at <http://www.odci.gov/cia/publications/factbook/index.html>

island status, physically contiguous neighbors, language, colonizers, climate, and dates of independence. I use these to create great-circle distance and the other controls. I add information on whether the pair of countries was involved in a currency union, using Glick-Rose (2002). I obtain data from the World Trade Organization to create an indicator of regional trade agreements, and include sixteen RTAs, including: ASEAN, EEC/EC/EU; US-Israel FTA; NAFTA; CARICOM; PATCRA; ANZCERTA; CACM, SPARTECA, Mercosur, Canada-Costa Rica, US-Jordan, and Japan-Singapore.¹⁷ I initially assume that all RTA's have the same effect on trade, but check the sensitivity of this assumption.

Descriptive statistics are provided in Appendix Table A3. I also tabulate the simple correlation between the number of foreign missions and the other variables. The strongest correlation between the number of foreign missions and other regressors (in particular, the log of importer population) is only .39, indicating that multicollinearity is not likely to be a serious problem.

4. Results

My benchmark results are tabulated in Table 1. This presents coefficients estimated in five different ways: a) OLS; b)-d) adding exporter fixed effects, importer fixed effects, and both; and e) using instrumental variables to account for reverse causality between exports and embassies/consulates. The default instrumental variables I use for the number of embassies/consulates in an importer include: a) the number of Zagat's guides in an importer; b)

¹⁷ Available at http://www.wto.org/english/tratop_e/region_e/region_e.htm.

the number of Condé-Nast Top 100 destinations; c) the number of Lonely Planet guides; d) the number of Economist city guides/importer; and e) proven oil reserves.

The gravity model of exports that underlies the estimation works well in two senses. First, the model fits the data well, explaining over three quarters of the variation in bilateral exports. Second, the coefficients are, on the whole, intuitive in sign and size, and both economically and statistically significant. For instance, countries export less to destinations that are further away; the elasticity is about $-.75$ and highly statistically significant. Richer and larger exporters and importers do more business, as do countries linked by regional trade agreements, a land border, or a common language. Landlocked and physically large countries do less trade; colonies trade more with their colonizers. All this is conventional, reasonable, and bolsters confidence in the underlying framework.

Above and beyond these effects, there is still a role for the Foreign Service. In particular, each additional consulate placed abroad is associated with a rise of bilateral exports of between six and ten per cent. This estimate seems economically plausible, but is small compared to the effects of e.g., a common language, land border, or regional trade agreement. The effect differs only a little across estimation techniques. Least squares gives an estimate of about ten per cent with little variation depending on whether fixed effects are added or not.¹⁸ Instrumental variables delivers a lower estimate, but one that is still statistically significant (the associated t-statistic is 3.1); I consider this in further detail below.

¹⁸ It is not possible to compute sensible Hausman tests and compare the least-squares estimates; the chi-squared test statistics are negative. This is because the variance matrices do not satisfy the (asymptotic) ‘overlap’ conditions in the sample. However, the coefficient of interest, γ , is economically and statistically similar when least squares is used for all sets of fixed effects (none/exporter/importer/both).

Table 2 provides sensitivity analysis. I tabulate the benchmark pooled OLS result at the top for convenience, and ten additional perturbations of the basic estimation. First, I loosen the constraint that all (sixteen) different regional trade agreements have a common effect by allowing for RTA-specific slopes. Next I drop all industrial countries from the sample, then all developing countries.¹⁹ I then drop all countries with populations of less than one million, then all countries with annual GDP per capita of less than \$1,000. I consider two regional checks, dropping all African countries, then all countries from Latin America or the Caribbean. Finally I use random effects (instead of fixed effects) for exporters, importers, and both. None of these robustness checks has any substantial effect on the slope except the (somewhat contrived) exercise of dropping all industrial countries. The effect remains positive and statistically significant throughout, though it is typically modest in size.

Although the point estimates for OLS and IV were similar in Table 1, the issue of reverse causality is potentially serious and deserves further attention. In Table 3, I provide eight different sets of instrumental variable estimates. First, I reproduce the IV estimate of γ tabulated in Table 1. I then add exporter-specific fixed effect intercepts, the importer analogues, and then both together. In the lower half of the table, I use a larger set of instrumental variables, adding an additional five to the original set of five IVs; again, I report the results for four different combinations of fixed effects. I consistently estimate the effect of foreign missions on exports to be positive. Without any fixed effects the effect is about half that of least squares (five to six per cent), and statistically distinguishable from zero. It is somewhat smaller and statistically marginal when I include exporter intercepts. However, the effect is much more significant (in

¹⁹ I follow the IMF in equating industrial countries with those whose IFS code is less than two hundred. Thus my sample of industrial countries is: USA; UK; Austria; Belgium; Denmark; France; Germany; Italy; Luxembourg;

both the economic and statistical senses) when destination fixed effects are included, with or without exporter intercepts.²⁰ The exact choice of instrumental variables does not seem to matter greatly. I conclude that accounting for reverse causality does not destroy my results.²¹ Rather than take the IV results with importer fixed effects literally, I take a conservative approach below and try to interpret the size of the coefficient of interest cautiously.²²

The results in Tables 1-3 pool all the data across both exporters and destination countries. However, they may disguise cross-country heterogeneity in the effect of foreign missions on exports. Table 4 takes account of country-specific coefficients in three different ways. At the left is a set of estimate of γ – the effect of foreign missions on exports – when I estimate the equation country by country. Most of the effects are positive, and they differ dramatically across countries. Still, the coefficient is usually estimated without precision. Accordingly, in the middle column I pool the data again, but allow for country-specific slopes. Thus, the nuisance coefficients are constrained to be common across countries, but each country is allowed its own slope for the effect of foreign missions on trade (country-specific γ 's). There is still evidence of substantial heterogeneity (and indeed the hypothesis of a common γ slope is rejected by the data), though estimation precision remains typically poor. This is also true of the last column on the right, which pools nuisance coefficients across countries (as with the middle column), but adds

Netherlands; Norway; Sweden; Switzerland; Canada; Japan; Finland; Greece; Iceland; Ireland; Malta; Portugal; Spain; Turkey; Australia; New Zealand; and South Africa.

²⁰ Again, Hausman tests are not possible because of small-sample issues. However, it is clear that adding importer fixed effects makes for an enormous difference in the coefficient of interest, when IV is used as an estimator.

²¹ In Appendix Table A4 I present the estimates of the first stage estimation (without fixed effects). These show that the most successful plausibly exogenous determinants of the number of foreign missions are: a) the number of top-100 Condé-Nast destinations in a country; b) the number of Economist city-guides; c) proven oil reserves; d) military spending; and e) the presence of a monsoonal climate.

²² This is especially appropriate since my equation is over-identified but does not pass a standard Sargan test of the over-identifying restrictions.

exporter- and importer-specific intercepts. The effect of foreign missions on trade seems to vary considerably across exporters.

In Table 5 I investigate whether the first foreign mission in a country – almost always the embassy – has a different effect on exports from additional missions.²³ I test for a non-linear effect of foreign missions on exports in two different ways. First, I include in the equation a binary dummy variable for the first foreign mission in a country (denoted “Embassy”), as well as a separate variable for the number of missions after the first, if any (denoted “Consulates”). I estimate this equation with pooled OLS, and then successively add exporter-fixed effects, importer intercepts, and both together. Then I re-estimate the equations in the same four ways, adding the square of the number of foreign missions after the first (“Square of Consulates”).

The results show strong evidence of a non-linear effect of the number of foreign missions on exports. The establishment of a first foreign mission is associated with a substantial effect on trade. While the exact estimate of γ varies somewhat depending on which econometric specification is preferred, the creation of an embassy is associated with at least an increase in exports of $[\exp(.79)-1 \approx] 120$ per cent. Some of this is undoubtedly the result of reverse causality, but the size of the effect is striking.²⁴ Additional consulates, by way of comparison, have a much smaller export effect, on the order of five to eleven per cent. Even this effect seems to fall as consulates are added, as shown by the fact that the square of the number of consulates is significantly negative. Succinctly, the effect of the first foreign mission on exports is large, but the effect from additional consulates seems to diminish rapidly.

²³ While some countries (e.g., Indonesia) have consulates (e.g., in Ecuador) where there is no embassy, this is rare.

5. Conclusion

In this short paper, I ask a simple question: is the presence of foreign missions systematically linked to a country's exports? Using a bilateral gravity model of trade, the answer is positive; holding other factors constant, exports seems to rise between six and ten per cent for each additional consulate.

I find evidence that the creation of the embassy has a substantially larger impact on exports than additional consulates. This non-linearity, along with the cross-country heterogeneity, and reverse causality I have found are all technical issues that merit further research. There is also an interesting economic issue that I have not attempted to address. Embassies, consulates and the like purport to do a host of functions; this paper has considered only one. Are the benefits of any trade creation sufficient to justify any reasonable fraction of the costs of the Foreign Service? I leave such question for others to address in future research.

²⁴ Accounting for reverse causality in the location of embassies (as opposed to the number of foreign missions) would be a worthwhile exercise.

Table 1: Benchmark Results

	OLS	Exporter Fixed Effects	Importer Fixed Effects	Exporter, Importer FE	IV
Number of Foreign Missions	.10 (.02)	.08 (.02)	.11 (.02)	.10 (.02)	.06 (.02)
Log Distance	-.69 (.04)	-.83 (.05)	-.72 (.04)	-.88 (.04)	-.70 (.04)
Log Importer GDP p/c	.83 (.02)	.85 (.02)			.84 (.02)
Log Importer Population	1.01 (.02)	.99 (.02)			1.02 (.02)
Log Exporter GDP p/c	.86 (.03)		.87 (.02)		.87 (.03)
Log Exporter Population	.96 (.03)		1.00 (.02)		.96 (.03)
# Landlocked	-.75 (.05)	-.86 (.06)	-.54 (.10)		-.75 (.05)
# Islands	-.27 (.05)	-.24 (.07)	-.24 (.06)		-.26 (.05)
Log Product Area	-.15 (.01)	-.11 (.01)	-.20 (.01)		-.15 (.01)
RTA	.86 (.08)	.58 (.08)	.59 (.10)	.19 (.11)	.87 (.08)
Currency Union	-.27 (.18)	-.33 (.18)	-.22 (.18)	-.32 (.17)	-.23 (.17)
Common Language	.57 (.07)	.70 (.07)	.61 (.06)	.73 (.07)	.58 (.07)
Land Border	1.06 (.16)	.95 (.16)	1.26 (.15)	1.12 (.14)	1.13 (.16)
Colony	3.25 (.38)	3.00 (.46)	3.19 (.43)	2.97 (.43)	3.24 (.38)
R²	.77	.68	.14	.26	.77
Root MSE	1.464			1.221	1.465

Regressand is log of average real exports, 2002-03. 4,123 observations. Robust standard errors in parentheses. Intercepts included but not recorded.

Table 2: Sensitivity Analysis

	Export Effect of # Foreign Missions
Benchmark	.10 (.02)
Separate RTAs	.11 (.02)
No industrial countries	.74 (.09)
No developing countries	.04 (.01)
Only countries with population > 1,000,000	.11 (.02)
Only countries with GDP p/c > \$1,000	.07 (.02)
No African countries	.08 (.02)
No Latin American/Caribbean countries	.10 (.02)
Random Exporter Effects	.08 (.02)
Random Importer Effects	.10 (.02)
Random Importer Effects, Importer Effects	.10 (.02)

Coefficient tabulated is effect of number of embassies/consulates on log of average real exports. Robust standard errors in parentheses. OLS; included but unrecorded controls include: log distance, log importer GDP p/c and population; RTA dummy; currency union dummy; log product land area; common language dummy; land border dummy; number islands; colony dummy; constant.

Table 3: Instrumental Variable Results

	Export Effect of # Foreign Missions
Default IV	.06 (.02)
Exporter Fixed Effects	.04 (.03)
Importer Fixed Effects	.93 (.12)
Exporter and Importer Fixed Effects	.86 (.12)
Larger IV Set	.06 (.02)
Larger IV Set, Exporter Fixed Effects	.04 (.03)
Larger IV Set, Importer Fixed Effects	.93 (.12)
Larger IV Set, Exporter and Importer Fixed Effects	.86 (.12)

Coefficient tabulated is effect of number of embassies/consulates on log of average real exports.

Robust standard errors in parentheses.

Included but unrecorded controls include: log distance, log importer GDP p/c and population; RTA dummy; currency union dummy; log product land area; common language dummy; land border dummy; number islands; colony dummy; constant.

Default instrumental variables for number of embassies/consulates include: a) number of Zagat's guides/importer; b) number of Condé-Nast Top 100 destinations/importer; c) number of Lonely Planet guides/importer; d) number of Economist city guides/importer; and e) proven oil reserves/importer. Larger IV set also includes: a) number of Baedeker guides/destination; b) number of Michelin guides/destination; c) Military spending of the destination country; d) proven gas reserves/importer; and e) Monsoonal dummy.

Table 4: Results by Exporter

	Country-Specific Regression	Pooled Gravity Regressors, Country-Specific Slope	Pooled Regressors, Country Slope,s Exporter, Importer Fixed Effects
Australia	.31 (.25)	.66 (.21)	.69 (.19)
Belgium	.20 (.14)	.44 (.08)	.40 (.09)
Brazil	.42 (.22)	.40 (.08)	.79 (.15)
Canada	.26 (.20)	.07 (.03)	.28 (.05)
China	.16 (.12)	.86 (.10)	.33 (.07)
France	.09 (.08)	.19 (.05)	.12 (.06)
Germany	.14 (.07)	.19 (.04)	.23 (.05)
India	.38 (.11)	.26 (.07)	.36 (.09)
Indonesia	.26 (.12)	.46 (.12)	.28 (.07)
Italy	.03 (.04)	.11 (.04)	.09 (.04)
Japan	.14 (.08)	.07 (.03)	.22 (.04)
Korea	-.22 (.13)	.30 (.12)	.33 (.13)
Mexico	.04 (.05)	.04 (.01)	.11 (.02)
Netherlands	.01 (.02)	.05 (.01)	.04 (.02)

Poland	.54 (.17)	.06 (.08)	.52 (.08)
Russia	.74 (.19)	.63 (.09)	.85 (.12)
Spain	.02 (.08)	.06 (.03)	.17 (.05)
Sweden	.42 (.20)	.57 (.10)	.59 (.11)
Switzerland	.01 (.03)	.12 (.03)	.10 (.03)
Turkey	.33 (.18)	.29 (.09)	.39 (.11)
UK	.03 (.04)	.14 (.03)	.12 (.03)
USA	.24 (.12)	.09 (.04)	.17 (.05)

Coefficient tabulated is effect of number of embassies/consulates on log of average real exports. Robust standard errors in parentheses. OLS; included but unrecorded controls include: log distance, log importer GDP p/c and population; RTA dummy; currency union dummy; log product land area; common language dummy; land border dummy; number islands; colony dummy; constant.

Table 5: Separate Embassy and Consulate Effects

	Embassy	Consulates	Square of Consulates
Default	1.03 (.07)	.06 (.01)	
Exporter Fixed Effects	.98 (.06)	.05 (.02)	
Importer Fixed Effects	.78 (.06)	.05 (.02)	
Exporter and Importer Fixed Effects	.78 (.06)	.06 (.02)	
Default	1.03 (.07)	.11 (.02)	-.003 (.001)
Exporter Fixed Effects	.99 (.06)	.09 (.03)	-.002 (.001)
Importer Fixed Effects	.78 (.06)	.11 (.03)	-.003 (.001)
Exporter and Importer Fixed Effects	.78 (.06)	.10 (.03)	-.002 (.001)

Coefficient tabulated is effect of embassies/consulates on log of average real exports. Robust standard errors in parentheses. OLS; included but unrecorded controls include: log distance, log importer GDP p/c and population; RTA dummy; currency union dummy; log product land area; common language dummy; land border dummy; number islands; colony dummy; constant.

Table A1: Exporters

	Foreign Missions
Australia	97
Belgium	108
Brazil	117
Canada	147
China	216
France	233
Germany	209
India	186
Indonesia	132
Italy	229
Japan	204
Korea	127
Mexico	120
Netherlands	461
Poland	135
Russia	228
Spain	165
Sweden	92
Switzerland	301
Turkey	148
UK	259
USA	239

Netherlands figures includes all consulates and consulates-general (many honorary); note 13.

Table A2: Import Destinations

Afghanistan	Albania	Algeria	American Samoa
Angola	Argentina	Aruba	Australia
Azerbaijan	Antigua & Barbuda	Armenia	Austria
Bahamas	Bahrain	Bangladesh	Barbados
Belize	Benin	Bhutan	Bosnia & Herz.
Botswana	Brunei Darussalam	Bulgaria	Burkina Faso
Burundi	Belarus	Belgium	Bermuda
Bolivia	Brazil	Cambodia	Cameroon
Canada	Cape Verde	Central African Rep.	Chad
Chile	China	China, Hong Kong	China, Macao
Comoros	Congo, Dem. Rep.	Costa Rica	Cote D'Ivoire
Croatia	Cuba	Czech Rep.	Colombia
Congo, Rep	Cyprus	Denmark	Djibouti
Dominica	Dominican Republic	Ecuador	Egypt
El Salvador	Equatorial Guinea	Eritrea	Estonia
Ethiopia	Faeroe Islands	Falkland Islands	Fiji
Finland	France	French Polynesia	Gabon
Gambia	Georgia	Germany	Gibraltar
Greece	Greenland	Grenada	Guam
Guinea-Bissau	Guyana	Ghana	Guatemala
Guinea	Haiti	Honduras	Hungary
Iceland	India	Indonesia	Iran
Iraq	Ireland	Italy	Israel
Japan	Jordan	Jamaica	Kazakhstan
Kenya	Kiribati	Korea	Kuwait
Kyrgyz Rep.	Laos	Latvia	Lebanon
Lesotho	Liberia	Libya	Luxembourg
Lithuania	Macedonia	Madagascar	Malaysia
Maldives	Malta	Mauritania	Moldova

Morocco	Myanmar	Malawi	Mali
Mauritius	Mexico	Mongolia	Mozambique
Nepal	Netherlands	Netherlands Antilles	New Caledonia
Niger	Nigeria	North Korea	Norway
Namibia	Nauru	New Zealand	Nicaragua
Oman	Pakistan	Palau	Panama
Papua New Guinea	Paraguay	Peru	Philippines
Poland	Portugal	Qatar	Romania
Russia	Rwanda	Samoa	Sao Tome & Principe
Saudi Arabia	Senegal	Serbia & Montenegro	Seychelles
Sierra Leone	Singapore	Slovakia	Solomon Islands
Somalia	South Africa	Spain	Sri Lanka
St. Helena	St. Kitts & Nevis	St. Pierre-Miquelon	Suriname
Sweden	Switzerland	Slovenia	St. Lucia
St. Vincent & Gren.	Sudan	Swaziland	Syria
Tajikistan	Tanzania	Togo	Trinidad & Tobago
Tunisia	Turkmenistan	Tuvalu	Thailand
Tonga	Turkey	Uganda	Ukraine
United Arab Emirates	UK	USA	Uruguay
Uzbekistan	Vanuatu	Vietnam	Venezuela
Wallis-Futuna	Yemen	Zimbabwe	Zambia

Table A3: Descriptive Statistics

	Mean	Std. Dev.	Min	Max	Correlation
Log Exports	3.48	3.06	-11.15	12.33	.50
# Embassies/Consulates	.96	1.73	0	43	
Log Distance	8.00	.70	4.61	9.16	-.22
Log Exporter GDP p/c	9.31	1.35	6.23	10.74	.04
Log Importer GDP p/c	7.78	1.59	4.51	10.99	.23
Log Exporter Pop.	18.02	1.34	15.81	20.97	.00
Log Importer Pop.	15.24	2.32	7.96	20.97	.39
RTA	.10	.30	0	1	.23
Currency Union	.02	.14	0	1	.19
Log Product Area	24.77	3.45	12.20	32.77	.22
Common Language	.14	.34	0	1	.00
Land Border	.02	.15	0	1	.25
# Landlocked	.24	.45	0	2	-.05
# Islands	.37	.55	0	2	-.12
Colony	.00	.05	0	1	-.03

Number of Observations = 4,320 except for log exports (4,123).

Correlations are simple, with respect to number of embassies/consulates. Each uses 4,123 observations, so that the standard error = .02.

Table A4: The First Stage

	Embassies/ Consulate Effect	Embassies/ Consulate Effect	Average
# Zagat's guides	.07 (.05)	-.04 (.06)	.35
# Condé-Nast Top 100 destinations	.24 (.06)	.21 (.06)	.26
# Lonely Planet guides	.10 (.11)	.04 (.11)	.18
# Economist city guides	.63 (.15)	.47 (.15)	.11
Proven Oil Reserves (bbl)	1.3 e-13 (5.7 e-14)	1.3 e-13 (5.7 e-14)	5.3 e10
# Baedeker guides		.11 (.09)	.24
# Michelin guides		.07 (.07)	.21
Military Spending (\$)		1.5 e-12 (4.7 e-13)	4.7 e10
Proven Natural Gas Reserves (cu m)		-7.3 e-16 (5.5 e-16)	8.1 e12
Monsoonal Climate		-.10 (.05)	.11
R ²	.47	.48	
Root MSE	1.278	1.271	

Regressand is number of embassies/consulates. 4,123 observations. Robust standard errors in parentheses. OLS; included but unrecorded controls include: log distance, log importer GDP p/c and population; RTA dummy; currency union dummy; log product land area; common language dummy; land border dummy; number islands; colony dummy; constant.

Average is mean per destination country from cross-section of 200 countries.

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