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The Danish Foreign Service Does Export Promotion Lead to Higher Exports?

Sune Lehmann Nielsen
University of Copenhagen, *E-mail: sune_lehmann@hotmail.com*

SUMMARY: *In this paper, I analyse the effect of export promotion on Danish bilateral exports. This is done by using the variation in embassies and royal state visits in the period 1970-2009 in a gravity equation framework. I argue that export promotion works to reduce externalities and information barriers (which can come in the form of dissimilar customer preferences, missing information about suppliers or general inadequate information about the market) on distant markets, and thereby work as a reduction in the fixed costs of exporting. My empirical results indicate that export promotion through embassies increase exports over 26 per cent. and the effect is largest in Asia, Africa and the Middle East. Moreover, I find that the largest effect of embassies is in lower income countries, which is in line with earlier findings. Consulate generals and trade offices also have a contributing effect. Outbound state visits seem to have affected Danish exports in recent years, but does not show any positive results in the full time period. Conversely, inbound state visits seem to have affected Danish exports in the period, but only in the years after the state visits have been conducted. I conclude by suggesting and emphasising that the causal effect of export promotion should preferably be investigated by using firm level data, since this allows more disaggregated analysis, and the issue of causality can better be addressed.*

1. Introduction

The objectives of the Danish Foreign Service are manifold. Representations abroad manage and coordinate the Danish foreign policy, take care of Danish citizens in need and conduct the official development policy through Danida. Besides these tasks, the Danish Foreign Service is also responsible for taking care of the national export promo-

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ting strategy through the section within the Ministry of Foreign Affairs (MFA) known as the Trade Council. Through their work at embassies, consulate generals and trade offices, locally hired commercial officers, Danish trade officers and ambassadors are promoting Danish businesses and their activities abroad through lobbying, partner searches and market analysis, just to name a few. These tasks are becoming an increasingly more important part of the Danish Foreign Service, especially as a number of developing countries are shifting away from being aid receivers to becoming demanders and importers of goods from developed countries, including Denmark.

Despite the noble objectives of the Trade Council of promoting Danish exports nobody has questioned whether there is any positive link between the Danish Foreign Service and Danish bilateral exports.[1] This paper therefore seeks to investigate whether the Danish export promotion strategy affects Danish bilateral exports or not. By using a panel data set consisting of over 6,800 observations for the case of Denmark, I will examine by using a standard gravity equation whether there is a measureable link between exports and export promotion through embassies. This is done by using the variation in embassy openings and closings in the period 1970-2009, and furthermore I will take a look at other representations impact on bilateral exports. Many embassies often have commercial sections that have the objective of increasing Danish business activities, either through export promotion, through servicing Danish companies in their endeavours of outsourcing parts of their production or further developing the opportunities for Danish companies by affecting policy makers. Embassies that do not have commercial sections are often in countries where the focal area is on development assistance, however, the Danish official aid policy is also to increase cooperation between local and Danish firms (e.g. B2B-programme, the mixed credits programme or the innovative partnership programme) so this is indirectly a form of export promotion.

Rose (2007) was the first to use representations as an entity for export promotion in a gravity equation framework, and he did this using data from 22 major exporters with an average of exports in 2002 and 2003. Later Gil et al. (2008) used regional data to investigate the case for Spain in a panel data setting. Recently, Kayakawa, Lee and Park (2011) investigated for Japan and Korea how governmental export promotion agencies affect exports and also Yakop and van Bergeijk (2011) investigated the effect of export promotion at different income levels. All of these articles obtain significant and positive estimates of export promotion through embassies, representations or export promotion institutions on bilateral exports. In this paper, I will do the same for the

1. Only a few consultancy reports have investigated the effect of Danish export promotion, c.f. Damvad (2010) and Rambøll (2008). None of these use an econometric approach with a gravity equation.

case of Denmark, in order to see whether the Foreign Service affects Danish exports by conducting export promotion.

An additional part of this paper investigates whether royal state visits affect Danish bilateral exports. The Danish monarchy has for many years conducted official visits in foreign countries, where Danish companies have been travelling along to benefit from the additional publicity and connections to companies and governments that the royals attract. Nitsch (2007) was one of the first to investigate whether state visits affect bilateral exports. He found that an outbound state visit for German, French and American heads of state generate a positive effect on exports, especially in the years following a state visit. Head and Ries (2010) investigated whether Canadian exports are affected by trade missions abroad, but they did not find any positive effect. This paper therefore tries to contribute to the literature by investigating whether trade missions, in this case state visits, had any impact on Danish bilateral exports in the period 1973-2009.[2]

The remainder of this paper is organized in the following way: In the next section, I introduce export promotion in Denmark, including the tasks of the Trade Council and a description of state visits. Section 3 introduces the methodology and data used before I in section 4 introduce the results of this paper. In section 5, I focus on state visits and lastly, I conclude in section 6.

2. Export promotion in Denmark

Export promotion is often considered to be a tool to overcome information barriers and externalities when exporting to new markets, Johanson and Vahlne (1977). Asymmetric information between local and foreign firms on the export market is moreover a barrier that decreases the incentive to export and supports the idea of export promotion as a way to overcome barriers to trade by reducing the information gap between the two. High fixed costs of exporting through firms not knowing the formal process of exporting, the demand abroad, possible business partners or other channels that can increase sales (e.g. marketing), Volpe Martincus and Carballo (2008), further supports the rationale of export promotion.

But there are also other barriers, such as not knowing the business environment or the formal or informal business culture. These can often be frictions that reduce the probability of success on the new market and often generate huge costs if the export 'adventure' turns into a nightmare. The Foreign Services around the world are means of increasing the probability of export success, decreasing information barriers and thereby reduce some of the high fixed costs that are associated with exporting.

The Danish Foreign Service through the Trade Council is no exception. The Trade Council is responsible for Denmark's official export promotion strategy which is both

2. I will moreover investigate the effect of inbound state visits on exports.

effectuated in Copenhagen at the Ministry of Foreign Affairs, but especially abroad at Danish representations. The Trade Council describes its objective and outcome of its work in the following way:

»The Trade Council contributes so Danish exporters get the best possible conditions to survive in the international market (…) The Trade Council creates value-added, growth and knowledge for Denmark through global counselling and partnership«[3]

The services that are provided by the Foreign Service are both demanded when Danish companies are located on the market, but also before entering the market. They are provided on a semi-commercial basis, which means that the price that Danish companies pay for export enhancing services are below the market price and therefore is effectively subsidized. Some services are even supplied on a free-of-charge basis. This subsidize is the part in which the Danish government promote exports. The services Danish companies demand, are mainly:

– *Market analysis*
– *Export missions*
– *Export start and preparation*
– *Partner searches*
– *Global public affairs (lobbying)*
– *Strategic counselling*

These are just some of the most popular services demanded by Danish firms, but a wide range of services are provided, especially for small – and medium sized enterprises (SME's). This group is the main target of the Trade Council, since these companies often do not have substantial funds to overcome barriers as a large or multinational company does. But also large companies demand exporting promotion, although mainly through lobby services, to gain further markets shares or to affect decision makers about legal matters that affect their businesses, revenues and costs.[4]

Moreover, the Trade Council lists seven sectors that are important to Danish exports, and label them as industries were Denmark has a competitive advantage, hence companies in such sectors has ceteris paribus a higher possibility of becoming an exporter.[5] However, this does not preclude companies in other sectors of becoming an exporting company and obtaining market shares in distant markets.

3. *www.um.dk/da/eksportraadet/om/eksportraadets-arbejde*. Original quote is in Danish.
4. For more information about the services the Trade Council provides, please c.f. the website of the Trade Council: *www.um.dk/da/eksportraadet/tilbyder/*
5. These are: Architecture and construction, ICT and electronics, healthcare and welfare technology, energy and environment, food, agriculture and agro-business, machines industry and subcontractors and furniture, design and fashion/textile.

State visits conducted by the royal family are also means of promoting Danish exports abroad.[6] State visits essentially work as a trade mission, where a high ranking minister travels along to promote exports. With state visits it is the head of the royal family, in this case Queen Margrethe II who travels abroad, and most often she brings along ministers and other members of the royal family including a large number of Danish companies. However, state visits are also the highest form of diplomatic contact between two countries, with the objective of further developing ties between the two countries.

State visits come in handy because many foreign companies are attracted by the royals, since they attract high ranking government officials and Danish companies that are looking for cooperation in a new market. State visits therefore work to establish connections between Danish and local firms, and therefore reduces the barrier of obtaining information in new markets.[7]

The Foreign Service, either through representations or missions therefore seems to be promoting exports, but whether their work abroad can be traced in the aggregate data is yet to be investigated. I will now turn to this issue.

3. Methodology and data

The standard way of investigating economic relationships in international trade is by using a gravity equation. The gravity equation has a long background in the discipline of international economics and it was first introduced by Jan Tinbergen (1962). Anderson and van Wincoop (2003) later established a theoretical connection between exports and the exogenous variables in the gravity equation. The equation that I wish to estimate is:

$$ln\, x_{jt} = \alpha Embassy_{jt} + \beta_j + \gamma t + \delta Z_{jt} + \varepsilon_{jt} \qquad (i)$$

Where x_{jt} is bilateral exports from Denmark to country j in period t, the embassy variable[8] is a dummy that takes the value 1 if there is a Danish embassy in country j in period t. β is a set of country fixed effects, which captures distance (or e.g. multilateral resistance, political or social similarities or idiosyncratic relationships), γ is a set of

6. The Trade Council and the Foreign Service together with the embassy of relevance is playing an active and important role when planning state visits.

7. Often Danish companies are matched, given their preferences, with a local company. So if company *X* is looking for suppliers in the agricultural sector, commercial officers will be looking for companies which are in line with the preferences of company *X*.

8. I could of course have defined the variable more specifically by restricting it to embassies with commercial sections solely, but since there has been a change in the format in the calendar of the Ministry of Foreign Affairs, I have not been able to further disaggregate the data.

time fixed effects (capturing e.g. GDP growth) and the last part, Z, is a set of year and country varying control variables (e.g. GDP per capita or GDP).[9] The coefficient of interest in this paper is α, which represents the marginal effect of an embassy (or a state visit).

The estimation method used in this paper will consist of two different estimation specifications. The workhorse specification is one where I take both time and country fixed effects into account as suggested by Màtyàs (1997) and Egger and Pfaffermayr (2003).[10] The specifications are:

– Year fixed effects. This is the simple regression, where a constant term is assumed common across countries, but time fixed effects are allowed to take events that happened in the period into account which might be correlated with an embassy's presence or a state visit. The reason for including the year fixed effect regression is to observe and show e.g. the effect of distance, i.e. trade costs, on Danish exports.
– Year and country fixed effects. This is the year and country fixed effects combined. I include dummies for each country, to incorporate idiosyncratic characteristics, for instance that Denmark share social, cultural, political or historical similarities with a trading partner that might affect the estimate of an embassy or a state visit. Fixed effect is also able to capture the multilateral resistance term that is derived from the theoretical model of the gravity equation, c.f. Anderson and van Wincoop (2003). The estimator allows for correlation between unobserved factors (country and year) and the variables of interest (embassy and state visit), which simple OLS does not, c.f. Wooldridge (2010, p. 286).

My data used in the regression comes from different sources. The data concerning embassies, consulates, consulate generals and trade offices has been collected by observing whether there has been an embassy present in a given year and how many other representations there have been in a given year in a given country.[11] I have done this by referring to the calendar of the Ministry of Foreign Affairs for the period 1970-2009.[12] However, since the calendar has changed in recent years, now covering two

9. See the appendix for a list of variables used and how they are constructed.
10. As Egger and Pfaffermayr (2003) suggest, one should use a three way fixed effects and possible pairwise fixed effects, where one takes country-year specific effects into account. Since my data does not permit this, I will only make use of country and year fixed effects.
11. This of course leaves room for typos and mistakes, and should be considered as a measurement error if there are problems with the data. Moreover, I have only included consulates if there is an address or if there is a person working in the consulate.
12. Udenrigsministeriets Kalender 1970-2009.

years per publication, I have assumed 2004 to be the same as the year 2005.[13] Similarly, the years 2008-2009 have been assumed the same. The same goes for the years 2006-2007, but I have typed in changes in embassies in the year 2007.[14] Data regarding state visits is collected from the official website of the royal court, *http://kongehuset.dk/english/the-monarchy-in-denmark/state-visits*.

The data concerning exports has been collected from UN COMTRADE. The data concerning distance, landlocked, continent and area have all been collected from *www.cepii.com* (missing area data is filled in with data from UN and World Bank Development Indicators). GDP measures have been collected from the United Nations Statistics Division. Population data has been collected using the same source but holes have been filled in with data from World Bank Development Indicators. GDP pr. capita has been created by dividing the two. Data concerning legal origin has been collected from Andrei Shleifer's website at Harvard.

FTA and WTO membership have been created with information from the website of the WTO (*www.wto.org*). EU membership has been collected with information from the website of the European Union (*www.europa.eu/about-eu/countries/index_en.htm*). Data concerning aid flows has been collected from World Bank Development Indicators. Flows of Danish emigrants and foreigners living in Denmark have been collected from Statistics Denmark. The variable, *Island*, has been created by using information about island status from CIA's World Factbook. The variables border, colony, BRIC and N-11, I have all created myself.

Besides the importance of specifying the regression correctly and using the proper data, it is also a central issue when estimating a gravity equation with fixed effect, that there is substantial variation in the variable of interest. Otherwise it is impossible to get plausible estimates.

In figure 1, one sees that the development in the number of embassies has been changing in the period 1970-2009, indicating that there has indeed been variation in the embassy dummy, making it possible to estimate (*i*). Especially, Africa, Asia and Europe have experienced an increase in the number of Danish embassies during the period. The number of embassies in Europe has increased from 21 to 34, with the breakdown of the Soviet Union and Yugoslavia being the main reasons behind this increase, but embassies have also opened due to the enlargement of the European Union, which has resulted in a steady increase. Oceania and America has not experienced any substantial changes in the number of embassies.[15]

13. I have not assumed 2004 to be the same as the former year 2003, since in 2004 new embassies were opened.

14. I will exclude the years 2007-2009 to see if this data break has any influence on the results.

15. America both consist of North – and South America.

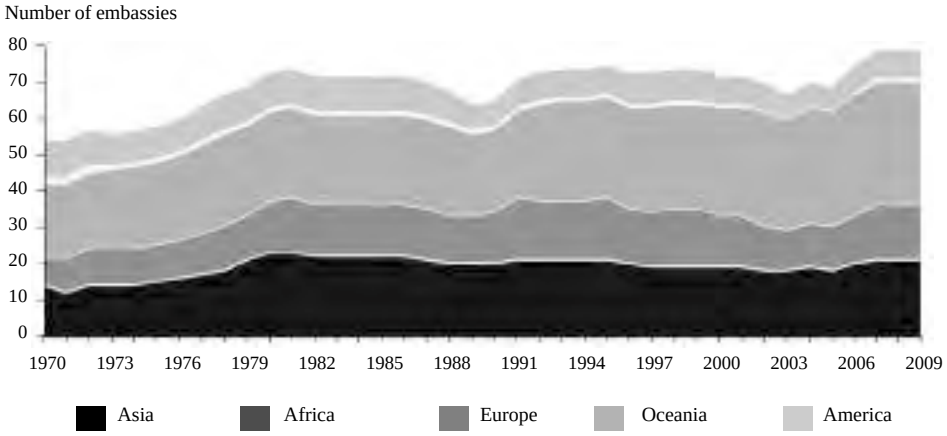

Figure 1. The development in the number of embassies by continents.[16]

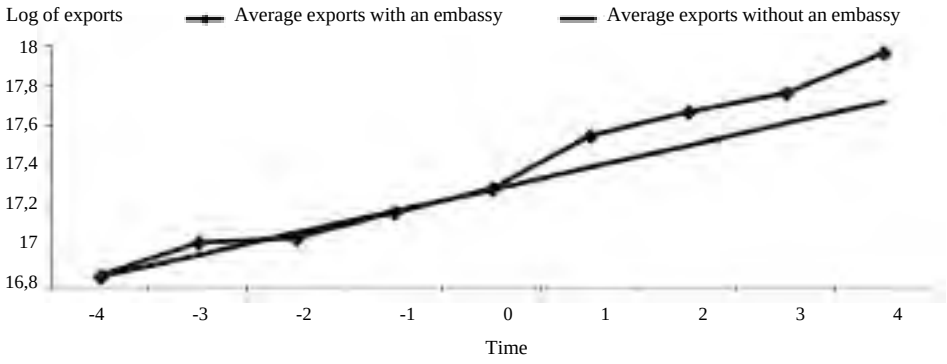

Figure 2. The effect of an embassy opening.

Before turning to the results, it is useful to see if a correlation between embassy openings and exports can be detected in the raw data. Figure 2 has been constructed by taking Denmark's exports to all countries (where an embassy has opened) four years before and after the embassy was opened. The same slope is then imposed as before the embassy opened for the four following years after the opening (the black line is the hypothetical case, where there was no embassy), thus suggesting that embassy openings have positively affected exports.

The motivation for doing regression analysis is that one cannot conclude anything on the above effect, without controlling for factors that are correlated with an embassy and influences exports, for instance a trend or special relationship between Denmark

16. A similar figure is shown for consulates and consulates generals in the appendix.

and a trading partner. In the appendix a table of correlation between the variables is shown.[17] It is nonetheless reassuring that the effect of an embassy opening can be visualized in figure 2.

4. Main results

My benchmark results when estimating (*i*) are shown in table 1 below. The variable of interest, embassy, is estimated significantly at the 1 per cent level and is between 0.234 and 0.337 depending on the estimation procedure used. The simple year fixed effects regression indicates that if Denmark had an embassy in a country during 1970-2009 it had 40 per cent higher exports (exp(0.337)-1) to the countries where embassies were located. The R^2, which is the variation in exports explained by the explanatory variables lies between 0.78 and 0.83 all depending on the estimation considered. The variation in exports is mainly explained by the variables for economic development, economic size and distance, and these accounts for 0.8 of the 0.83 of the R^2 in the year fixed effect estimation.

Country specific effects are incorporated to allow for different intercepts, because the OLS assumption of a common intercepts is harsh and that Denmark's exporting partners are far from similar in their level of exports. This inclusion of dummies is often attributed to potential cultural or political similarities or idiosyncratic differences in Denmark's export partners that might affect the estimate of the embassy. The above factors might encourage people to trade more and since these factors might be correlated with the embassy dummy, they should be controlled for; otherwise the model suffers from omitted variable bias.

When I combine the effect of special events during the period and country specific effects, the estimate of embassy is still significant at the 1 per cent level and shows that having a Danish embassy abroad leads to over 26 per cent (exp(0.234)-1) more exports on average with that country. When country fixed effects are included, the results are driven by the variation in embassy status, i.e. if there is an opening or closing in the period. It seems, that export promotion via embassies generate a positive influence on Danish exports.

The latter is also seen from the estimate of distance when going from the regression without embassy to the one with the embassy dummy included, c.f. table 1. A 1 per cent increase in the distance between Denmark and a trading partner means that Denmark export up to 0.6 per cent less to these economies, but more importantly, when including the embassy dummy, the distance coefficient decreases by over 4 percentage points. This change is a sign that trade costs decreases when including the embassy

17. This could be an indication of reverse causality between exports and export promotion, i.e. embassies are opened where there is room for increases in exports.

dummy in the equation, indicating that export promotion works to reduce the fixed costs of exporting which again is seen from the positively estimate of an embassy.

The estimates of importer GDP lies in the interval 0.784-0.876 all depending on the specification, which is in line with what other authors have found.[18] This means that if Denmark's trading partners increase their GDP level by 1 per cent this could lead to 0.8 per cent higher exports to that country. Denmark export 44 per cent less to land-locked countries, i.e. countries which does not have access to sea, which obviously is an indication that transport costs to these countries are higher, since goods have to be transported by plane, truck or train. Exports to the EU members are over 100 per cent more compared to non-EU members. This is an indication that the European Union, which is both a political and economic cooperation, generates huge export benefits for Denmark. Since we cannot measure the counterfactual this is not an impact evaluation outcome, but merely an indication that the EU has an effect on Danish exports even after controlling for distance and country and year fixed effects. WTO membership does not seem to generate increased exports and a free trade agreement (FTA) seems to decrease exports, which seems odd. However, one could argue that since a lot of FTA's are with former European colonies with no natural relationship to Denmark, they do not have any influence in a Danish context. Aid is in the country and year fixed effect case estimated to be 0.221, which means that Denmark export 24 per cent more to countries that Denmark gives ODA to, which indicates that for Denmark aid flows gives birth to increased trade flows.

One notices that when focusing on BRIC countries and N-11 countries the estimates are negative. The results from the gravity equation indicates that Denmark export less to the world's new emerging economies and BRIC economies compared to the rest of the world. This could be a motivation for changing the focus of the Danish export promotion strategy. This is why the Trade Council and the Ministry of Business and Growth have created new strategies for the BRIC countries and the N-11 countries, so Danish companies can capture some of the increasing demand in the new growth areas.

Denmark export above a normal level (40 per cent in the year fixed effect case) to countries with Danish embassies and if an embassy is opened this generates a 26 per cent increase in exports, which is a sign indicating that export promotion through embassies work to promote Danish exports by reducing information barriers and barriers to trade in foreign markets.[20]

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18. Head (2003) states the estimate for economic mass variable to be between 0.7 and 1.1.

19. I have also tried to use random effects estimation but the results were not different from the fixed effects estimation, and since the assumption of fixed effects is more realistic I exclude them.

20. If I exclude the years 2007-2009, to see whether the data concern affects the estimate and limit the time period to 1970-2006, the estimate of embassy in the country and year fixed effects case is 0.250 and significant at the 1 per cent level, so the effect still exists.

Table 1. Benchmark results.[19]

	Year Fixed effects	Year Fixed effects	Country and Year Fixed effects
$Embassy_{jt}$		0.337**	0.234**
		(0.032)	(0.090)
Log $distance_j$	-0.625**	-0.583**	
	(0.033)	(0.032)	
Log importer GDP p/c_{jt}	0.027	0.036#	0.217
	(0.019)	(0.019)	(0.285)
Log importer GDP_{jt}	0.916**	0.876**	0.784*
	(0.010)	(0.010)	(0.338)
Log importer area	-0.109**	-0.109**	
	(0.009)	(0.009)	
$Landlocked_j$	-0.607**	-0.588**	
	(0.037)	(0.037)	
$Island_j$	-0.153**	-0.150**	
	(0.036)	(0.036)	
FTA_{jt}	0.197**	0.176*	-0.305#
	(0.076)	(0.077)	(0.183)
EU_{jt}	0.845**	0.789**	0.740**
	(0.075)	(0.075)	(0.123)
WTO_{jt}	-0.060**	-0.061*	-0.084
	(0.029)	(0.030)	(0.086)
$Colony_j$	0.253**	0.188**	
	(0.064)	(0.062)	
$Border_j$	0.068	0.151**	
	(0.041)	(0.043)	
Aid_{jt}	0.416**	0.397**	0.221**
	(0.046)	(0.046)	(0.065)
$BRIC_j$	-0.724**	-0.756**	
	(0.068)	(0.068)	
Next-11_j	-0.204**	-0.285**	
	(0.042)	(0.041)	
R^2	0.83	0.83	0.78
Observations	6,875	6,875	6,875
Sample period	1970-2009	1970-2009	1970-2009

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. All regressions have time effects included and world GDP growth. Intercepts, dummies for legal origin and continents are included but not reported.

As we saw in figure 2, a lot of embassies were opened in the 1970s, so this makes one wonder whether this is a sign of a golden period of export promotion. From table 2, one sees that limiting the time period to 1980-2009 does not indicate this, conversely it is quite the opposite. The period 1980-2009 shows sign of being a larger contributor of the positive effect of export promotion that we saw in the benchmark regression.

Table 2. Embassy effect by time period.

1970-1979	1980-2009
[1,516]	[5,359]
0.029	0.141#
(0.085)	(0.084)

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. Intercepts and dummies for legal origin are included but not reported. The same independent variables are used as in the benchmark regression, but are not reported. Number of observations are shown in brackets. Both time and country fixed effects are included.

Table 3. Embassy effect with lagged explanatory variables.

	Country and Year Fixed Effects	Country and Year Fixed Effects
$Embassy_{jt}$	0.245**	
	(0.079)	
Lag $Embassy_{jt}$	-0.024	0.182*
	(0.073)	(0.087)
R^2	0.78	0.78
Observations	6,664	6,664
Sample period	1971-2009	1971-2009

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. Intercepts and dummies for legal origin are included but not reported. The same independent variables are used as in the benchmark regression, but are not reported.

Since it takes time to open embassies and start assisting Danish companies I include a lagged dummy of the embassy variable. From table 3, one notices that when only including a lagged variable of the embassy dummy that export promotion yesterday has an export lasting effect today. When I both include the embassy dummy with lags and the base year, one sees, that it is actually in year zero, when the embassy is opened, that shows an immediate effect of export promotion, which shows that the services of the embassy only works in the year they are bought.[21]

In table 4 one sees the effect of different Danish representations in a combined regression. This is considered since some countries both have embassies and consulate generals (e.g. the embassy in the capital and a general consulate in one of the other

21. In my thesis I include a lagged export variable. Even with this significant variable included in the regression, which indicates that the special historic relationship that is established with a partner due to the services from the embassy is important, the embassy dummy per se is significant.

Table 4. Results by type of mission (combined regression).

	Without trade offices		Trade offices included	
	(1)	(2)	(3)	(4)
Embassy$_{jt}$	0.257**	0.349**	0.277**	0.344**
	(0.090)	(0.111)	(0.089)	(0.111)
Consulate generals	0.073	0.180#	0.126**	0.203*
(and trade offices)$_{jt}$	(0.047)	(0.102)	(0.044)	(0.103)
Consulates$_{jt}$	0.016	0.015	0.019	0.019
	(0.019)	(0.020)	(0.019)	(0.019)
Interaction		-0.189#		-0.127
(Emb. and consul. gen. & trade off.)		(0.109)		(0.101)
R^2	0.78	0.78	0.78	0.78
Observations	6,875	6,875	6,875	6,875
Sample period	1970-2009	1970-2009	1970-2009	1970-2009

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level, Intercepts, dummies for legal origin and continents are included but not reported. The same independent variables are used as in the benchmark regression, but are not reported. Both time and country fixed effects are included.

economic powerhouses in the country), and because there might be cooperation in terms of export promotion between the two representations. Similarly, I need to control for other type of missions, since there is a possible correlation between the two. From (1) the results indicate that it is still embassies that drive the effect of export promotion on exports. Embassies increase exports over 29 per cent, but consulate generals do not show any effect. When considering trade offices and consulate generals to be similar, the results show that places where these are located attract more goods from Denmark, c.f. (3) and (4) in of table 4. Embassies are still superior to trade offices and consulate generals, which is seen by the larger estimate (embassies increase exports by 31 per cent and consulate generals and trade office increase exports by over 12 per cent). Both estimates are significantly estimated at the 1 per cent level. Moreover, it seems that trade offices increase the estimate from 0.073 to 0.126, when taking trade offices and consulate generals to be the same. This is an indication that trade offices work as intended as an export promoting body. The larger estimate of an embassy could be explained by the fact that embassies have a larger lobby-effect, since the ambassador is placed in the embassy and not in consulate generals. Again, it does not seem that consulates affect bilateral exports, which seems intuitively, since they do not conduct any export promotion, but most often work as a contact point for Danes living abroad or locals that need visas to Denmark. Furthermore, one notices from table 4 that embassies and consulate generals are positively correlated. When interacting embassies and consulate generals one sees that places with both embassies and consulate

Table 5. Embassy effect by continents.

America	Asia[23]	Europe	Oceania[24]	Africa
[1,563]	[1,615]	[1,254]	[539]	[1,909]
-0.181	0.534**	0.022	-0.627**	0.260#
(0.136)	(0.156)	(0.142)	(0.216)	(0.145)

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. Intercepts and dummies for legal origin are included but not reported. The same independent variables are used as in the benchmark regression, but are not reported. Number of observations are shown in brackets. Both time and country fixed effects are included.

generals and trade offices increase exports more, than if there were only one representation (the three coefficients taken together are larger than the two coefficients, when no interaction is incorporated). This might be an indication that export promotion works better at places where more export promoting institutions are located, implying a synergy effect.[22]

In table 5, my results are listed when they are decomposed to continents. It is only Asia (which also includes the Middle East) and Africa which have significant positive estimates of an embassy's presence. An embassy generates an increase in exports of 30 per cent to African countries (it is only estimated significantly at the 10 per cent level) and Denmark exports 70 per cent more to Asian countries with Danish embassies. The results are appealing since this is an indication that embassies are not the driving force in Danish exports to developed countries in Europe and North America. Embassies are instead important in explaining Danish export patterns to Africa and especially Asia, where the information barriers of exporting are larger, which could be the driving force behind the results.

Despite their intuitive appealing nature, the results should not be stated without some notice. As figure 1 shows, a lot of the variation in openings and closings has happened in Africa and Asia. During the period 1970-2009, seven new embassies have opened in Asia and more have opened and closed during the period, which cannot be seen from figure 1. Similarly, there has been hectic activity in Africa. From 1970 to 2009, the number has increased from 7 to 15, and during the same period there has been a maximum of 17 embassies in the region, while others have opened and closed, which is not to be detected from figure 1. Europe has also experienced an increase in Danish embassies, from 21 in 1970 to 34 in 2009, which indicates that it is not lack of variation in

22. This could also be a sign of the causality issue, since export promoting institutions are located in countries with increasing demand after export goods.
23. When excluding Singapore, the estimates get even higher (0.538 for year and country fixed effect).
24. When excluding Australia, the estimates get insignificant.

Table 6. Embassy effect by economic development (in 1970).

Per cent					
0-50	51-100	0-25	26-50	51-75	76-100
0.237	0.309**	0.410*	0.111	0.261**	0.272#
(0.151)	(0.099)	(0.178)	(0.256)	(0.099)	(0.143)

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. Intercepts, dummies for legal origin and continents are included but not reported. The same independent variables are used as in the benchmark regression, but are not reported. Both time and country effects are included.

the embassy dummy that generates the insignificant result. America and the Oceanic region, however, have not had any substantial development in the number of embassies. The conclusion remains the same. Embassies in Africa and Asia have been of greater importance to bilateral export than embassies in Europe. Rose (2007) gets results that indicate a smaller benefit of export promotion in African countries and Latin American/Caribbean countries than in the overall case. This is not in line with my results, since Africa has the second highest estimate of an embassy as seen from table 5. The reason for this is probably that Rose (2007) use 20 different major exporters, and I only use Danish exports, supporting the idea that export promotion's effectiveness also depends on which countries that conducts export promotion.[25]

Similarly one can decompose the results by economic development, proxied by the level of GDP per capita, which essentially is the same as income, c.f. table 6. Again there is a positive association between embassies and exports but only in the top 50 per cent of the world income distribution. This is also indicated by the quartiles, however, exports to the bottom 25 per cent of the world income distribution is more positively affected by export promotion. Rose (2007) gets results that indicate that the effects of embassies are higher in industrialized countries (0.74) than that of developing countries (0.04). Conversely, I get results that indicate that the effect of export promotion is highest in the lowest 25 per cent income per capita distribution and not in the highest. Yakop and van Bergeijk (2011) and Kayakawa, Lee and Park (2011) get similar results. They find that export promotion works better from high-income countries to low-income countries, than from two high-income countries to one another, which is

25. In my thesis I also investigated whether historical patterns affect the estimate of embassies and found that the effect of an embassy was reduced however still significant and positive. Moreover I investigated how business networks affect the embassy estimate and found that it did not have any influence to the estimate. I also used IMF data to analyze whether there were any substantial differences between using COMTRADE data and IMF data, and found only limited differences. Finally I used the specification suggested by Rose (2007) and got a larger effect of an embassy indicating that Rose's model specification is not appropriate in the case of Denmark since Rose (2007) e.g. did not include aid.

in line with my results. Export promotion is shown to have the largest impact in countries in the lowest 25 per cent of the income distribution. In Europe, the European Union, social similarities and the single market are more important factors than embassies and the information barriers are not present in the same magnitude as in Asia, Africa or lower income countries.

So far I have established, after controlling for country and year fixed effects that countries where embassies have opened have larger exports compared to the rest. It seems as though export promotion through embassies increase exports for Denmark, even substantially. However, one could ask whether I am identifying embassies and their effect on exports or if I am capturing two effects? Since embassies are often opened with the objective of boosting exports in either countries where Danish exports could be higher or countries with a high level of exports, the causality would run in both directions: Embassies affect bilateral exports by doing export promotion and lobbying, but embassies are also opened places where an increasing demand is taking place, naturally increasing the demand. Earlier studies by Rose (2007), Gil et al. (2008) and Yakop and van Bergeijk (2011) have used geo-political variables, e.g. proven oil reserves, as instruments in an IV-regression. Since these for obvious reasons are correlated with exports, I cannot use such data as instruments. Instead I use, either Danish tourist flows to country j or the fraction of foreign citizens from country j of the total Danish population as instruments in an IV-regression, as these seem as possible instruments. My results, however, are of modest success, c.f. the appendix. For that reason, I will not dig into a deeper investigation of a relevant instrument, especially when one keeps in mind that it has to show variation over time due to using fixed effects, Gil et al. (2007). I argue, as Head and Ries (2010), that no valid instrument exists that affect the possibility of an embassies presence (in their case a trade mission), but do not affect exports directly. Moreover I argue, as Rose (2007), that some of the effect of embassies on exports is due to reverse causality, and that embassies are opened the places where they are most relevant. Despite its problem, one could ask whether increasing the demand for Danish goods is the only motivation for opening embassies. This is of course not the case. Embassies are opened where they are most relevant to serve Danish interests, i.e. they are often opened with the motivation to e.g. increase diplomatic ties, secure Danish security issues, develop EU cooperation, increase Danish development policy, increase Danish exports and increase investment activities in Denmark. Often these points of motivation are disentangled, so one cannot isolate the reason behind opening an embassy. The MFA argue that no single part work as a reason for opening embassies.[26] Therefore one can question, especially given the historic

26. MFA moreover argues that there is no such thing as a golden rule for opening embassies, but every single time an embassy is opened it is a thorough and concrete analysis that lies behind the decision.

pattern of embassy openings in the period 1970-2009, the severity of reverse causality. In Europe, after the break down of the Soviet Union, a lot of embassies were opened mainly due to political reasons and with the enlargement of the EU, Denmark have implicitly been forced to open embassies, places where the commercial interest has been questionable, to secure political interests. The openings of embassies in Africa have mainly been due to development political reasons. But there have of course been openings of embassies with the mind set of affecting exports, since an increase in the demand for export promoting services increases the demand for an embassy. This is, however, essentially driven by the market, and therefore it is indirectly this that determines if an embassy is opened or closed. This is not to say that there is no causality issues, just that one can question its magnitude in the period 1970-2009.

5. Results with royal state visits

I now turn to the other part of this paper, namely the effect of state visits. Earlier on, state visits were often held due to etiquette and informal rules in the royal family. Objectives of outbound state visits have in recent years been changing from being motivated by improving diplomatic ties and securing Danish political interest to being focused on serving the interest of Danish companies by increasing their business activities abroad. For that reason one should not expect to see any effects of state visits in the full time period.[27] I therefore chose to focus on state visits that have been held after the creation of the Trade Council in 2001 and limit the time period to 2003-2009.

In table 7 the benchmark results are listed for the period 2003-2009. The estimate of a state visit is 0.154, indicating that a state visit increase exports by over 16 per cent. It is, however, only estimated significantly at a 10 per cent level, which does not seem convincing. Similarly, if one includes lags and leads of an outbound state visit, one sees that the results change a bit, c.f. table 7. A state visit affects exports in the year that it is held, and not in the following years. It is, however, not strong results, since the effect is only significant at the 10 per cent level when including three lags. Moreover, it seems that outbound state visits has taken place in countries where the level of exports is higher even before the state visit is conducted, which might be a sign that, there could be causality issues. State visits are organised places where demand after Danish goods is increasing.

27. The results indicate that state visits have no immediate effect, i.e. there is no sign that outbound state visits in the year it was conducted affect Danish bilateral exports in the period 1973-2009 c.f. table 11 in the appendix. This does not change if I, as Head and Ries (2010), take into account historic patterns by including lagged exports. Head and Ries (2010) and Nitsch (2007) both indicate in their analysis, that the effect of a state visit/trade mission might come the following years after the visit has been conducted, since the increasing production and sale from deals and orders come after the visit and not immediately. However, when incorporating this, the results do not change.

Table 7. Effects before and after the outbound state visit.

	Benchmark	1 lead and lag	2 leads and lags	3 leads and lags
Outbound visit$_{jt}$	0.154#	0.180#	0.201*	0.180#
	(0.086)	(0.092)	(0.098)	(0.105)
+ 1 year		0.060	0.079	0.057
		(0.069)	(0.080)	(0.104)
+ 2 years			0.036	0.011
			(0.053)	(0.067)
+ 3 years				-0.111
				(0.062)
- 1 years		0.103#	0.124#	0.103#
		(0.054)	(0.072)	(0.106)
- 2 years			0.080	0.061
			(0.098)	(0.140)
- 3 years				-0.022
				(0.147)
R^2	0.77	0.77	0.77	0.78
Observations	1,345	1,345	1,345	1,345
Sample period	2003-2009	2003-2009	2003-2009	2003-2009

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. All regressions have time effects included and world GDP growth. Intercepts, dummies for legal origin and continents are included but not reported. The same independent variables are used as in the benchmark regression with embassy including the embassy dummy, but are not reported. Both time and country fixed effects are included.

To sum up, during the period 1973-2009 outbound state visits have not had any significant impact on exports, even after controlling for lagged effects of a state visits. Nevertheless, when considering the smaller period, 2003-2009, outbound state visits might have been of a positive influence to Danish bilateral exports.

If one takes a look at inbound state visits and in the same way incorporate leads and lags, the results are remarkably different from the results of outbound visits during the period 1973-2009. In table 8, the effect of an inbound state visit is shown. The results indicate that the effect of inbound state visits on exports come 2-5 years after the visit is conducted (when one looks at the estimations with 3-5 lags and leads). The reason is likely to be that commercial and business ties take time to bloom and have an effect on the revenue of the exporting company. Similarly business-deals, which are either signed before or during the visit, are often effectuated after the visit has been conducted. In figure 3, one sees graphically how the effect of inbound state visits affects exports. Two years after the inbound visit from a foreign head of state, there is an effect of the visit. This effect increases to the fifth year after the visit, and then vanishes. The results indicate that business ties and orders between local Danish companies and foreign companies are affected in the years after a head of state has visited Denmark.

Table 8. Effects before and after the inbound state visit.

	Benchmark	1 lead and lag	3 leads and lags	5 leads and lags
Inbound visit$_{jt}$	0.075	0.084	0.104	0.127#
	(0.061)	(0.066)	(0.075)	(0.086)
+ 1 year		0.071	0.093	0.118
		(0.059)	(0.066)	(0.075)
+ 2 years			0.133*	0.157*
			(0.056)	(0.065)
+ 3 years			0.140*	0.163*
			(0.061)	(0.070)
+ 4 years				0.192*
				(0.078)
+ 5 years				0.178*
				(0.071)
- 1 years		0.108	0.129	0.148
		(0.073)	(0.084)	(0.094)
- 2 years			0.062	0.075
			(0.100)	(0.108)
- 3 years			0.048	0.064
			(0.080)	(0.090)
- 4 years				0.039
				(0.085)
- 5 years				-0.075
				(0.070)
R^2	0.76	0.76	0.76	0.76
Observations	6,448	6,448	6,448	6,448
Sample period	1973-2009	1973-2009	1973-2009	1973-2009

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. All regressions have time effects included and world GDP growth. Intercepts, dummies for legal origin and continents are included but not reported. The same independent variables are used as in the benchmark regression with embassy including the embassy dummy, but are not reported. Both time and country fixed effects are included.

Compared to outbound state visits, inbound state visits have increased Danish bilateral exports in the period 1973-2009. This could be an indication that heads of states and foreign companies participating in the state visit have more influence to Danish exports than Danish companies travelling on outbound state visits do. It could be that Danish companies participating in outbound state visits are more interested in investing in the country and not exporting, which could explain the missing link from outbound visits in the period considered. However, outbound and inbound state visits are often interlinked, i.e. a foreign country's head of state is implicitly required to visit Denmark after the Queen has visited his/hers country. Therefore on cannot solely contribute the effect of an inbound state visit to the foreign head of state, without holding in mind the outbound state visit.

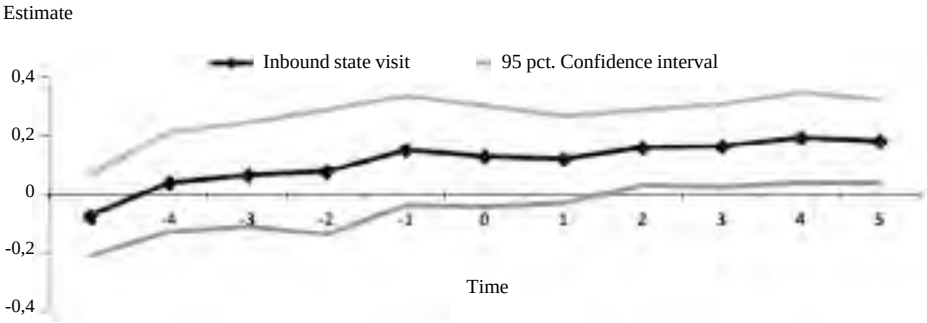

Figure 3. The effect of inbound state visits before and after the state visits (+ five leads/lags).

6. Conclusion

In this paper, I have investigated whether export promotion has significantly affected Danish bilateral exports in the period 1970-2009. By using the gravity model, the results indicated that export promotion through an embassy leads to higher exports, even after controlling for country and year specific effects. Moreover, export promotion increases Danish exports, especially in areas where Denmark does not have historical, political, cultural or social similarities and linkages (Asia, Africa and the Middle East). In Europe, export promotion does not seem to show any effect. Embassies have the largest effect on exports, but consulate generals and trade offices also affect positively. However, there are synergy effect of embassies and other representations in a country, implying that Denmark exports more to countries with both embassies and consulate generals/trade offices. The second part of this paper showed that outbound state visits does not seem to affect exports in the period 1973-2009, however, inbound state visits does in the years after a state visit is conducted. Moreover, there were signs indicating that outbound state visits are showing positive impacts on exports in recent years.

Finally, it should be emphasized that this paper serves as an introduction and initial research about export promotion in Denmark. I suggest that the effect of export promotion should be investigated by using better instruments to get the causal effect and whether the benefits of export promotion is different across sectors and company size. But more importantly the effect of export promotion should preferably be investigated using firm level data, as Volpe Martincus and Carballo (2010), since this allows one to evaluate specific export promoting services and further analysis on e.g. productivity and employment and most importantly allows one to address the causality issue better. I leave this latter interesting part open for further research.

Literature

Anderson, J. E. and E. van Wincoop. 2003. Gravity with Gravitas: A Solution to the Border Puzzle. *American Economic Review* 93 (1). 170-92.

DAMVAD. 2010. Eksportrådet: *Effekter af eksportfremme 2009. www.damvad.dk*

Egger, P. and M. Pfaffermayr. 2003. The proper panel econometric specification of the gravity equation. A three-way model with bilateral interaction effects. *Empirical Economics* 28, 571-80.

Gill, S., R. Llorca and J. A. Martínez-Serrano. 2008. Measuring the impact of regional export promotion: The Spanish case. *Regional Science* 87 (1), 139-46.

Gould, D. M. 1994. Immigration links to the home country: empirical implications for U.S. bilateral trade flows: *Review of Economics and Statistics* 76, 302-16.

Hayakawa, K., H.-H. Lee and D. Park. 2011. Do Export Promotion Agencies Increase Exports? *IDE Discussion Paper* No. 313.

Head, K. and J. Ries. 2010. Do trade missions increase trade? *Canadian Journal of Economics* 43 (3), 754-75.

Head, K. 2003. Gravity for Beginners. Policy Research Conference titled Rethinking the Line: The Canada-U.S. Border, 1-10.

Heckman, J. J. 1979. Sample Selection Bias as a Specification Error. *Econometrica* 47 (1), 153-61.

Kongehuset. 2008. *Årsrapport 2008*.

Johansen, J. and J.-E. Vahlne. 1977. The Internationalization Process of the Firm – A Model of Knowledge Development and Increasing Foreign Market Commitments, *Journal of International Business Studies* 8 (1), 23-32.

Mátyás, L. 1997. Proper Econometric Specification of the Gravity Model. *The World Economy* 20, 363-68.

Nitsch, V. 2007. State Visits and International Trade. The World Economy 30 (12), 1797-1817.

Rambøll Management. 2008. *Danmarks Eksportråd: Effektmåling af fælles eksportfremstød*.

Rose, A. K. 2007. The Foreign Service and Foreign Trade: Embassies as Export Promotion. *World Economy* 30 (1), 22-38.

Santos Silva, J. M. C. and S. Tenreyro. 2006. The Log of Gravity. *The Review of Economics and Statistics* 88 (4), 641-58.

Tinbergen, J. 1962. *Shaping the World Economy: Suggestions for an International Economic Policy*. Erasmus School of Economics.

Udenrigsministeriets Kalender. 1970-2004.

Udenrigsministeriets Kalender. 2005, 2006-2007, 2008-2009.

Udenrigsministeriet. 2010, *Årsrapport 2010*.

Volpe Martincus, C. and J. Carballo. 2008. Is export promotion effective in developing countries? Firm-level evidences on the intensive and the extensive margins of exports. *Journal of International Economics* 76, 89-106.

Volpe Martincus, C. and J. Carballo. 2010. Beyond the average effects: The distributional impacts of export promotion programs in developing countries. *Journal of Development Economics* 92, 201-14.

Westerlund, J. and F. Wilhelmsson. 2008. Estimating the gravity model without gravity using panel data. *Applied Economics* 43, 641-49.

Wooldridge, J. M. 2010. *Econometric analysis of cross section and panel data*. The MIT Press, Second Edition.

Wooldridge, J. M. 2006. *Introductory econometrics – A modern approach*. Thomson South-Western, Third Edition.

Yakop, M. and P. A. G. van Bergeijk. 2011. Economic diplomacy, trade and developing countries. *Cambridge Journal of Regions, Economic and Society* 4, 253-67.

8. Appendices

Appendix 1

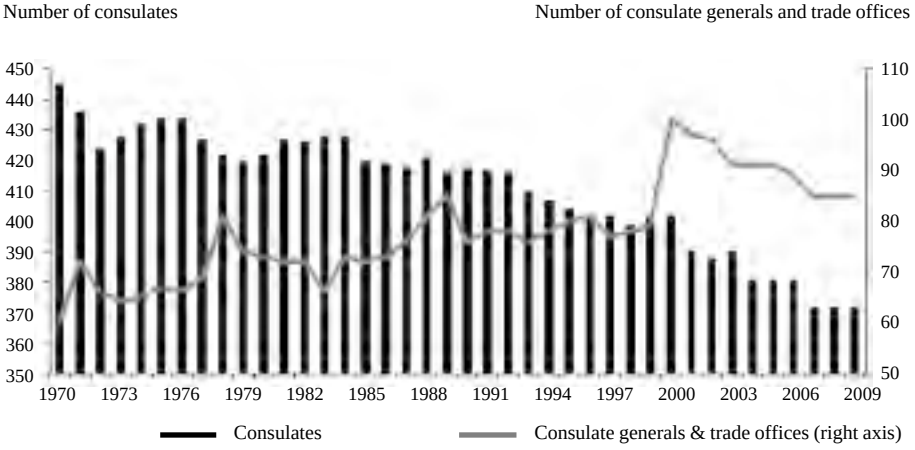

Figure 4. Number of consulates and consulate generals/trade offices.

Appendix 2

Below I introduce the variables used and how they are defined. The variables included are:[28]

- *Log exports*$_{jt}$; the log of goods exports, I have disregarded all zero observations and considered them to be randomly distributed.[29]
- *Embassy*$_{jt}$; a dummy that takes the value 1 if Denmark has an embassy in country *j* in year *t*, and 0 otherwise.
- *Consulates*$_{jt}$; the number of Danish consulates in country *j* in period *t*.
- *Consulate generals*$_{jt}$; the number of Danish consulate generals in country *j* in period *t*.
- *Trade office*$_{jt}$; the number of Danish trade offices in country *j* in period *t*.[30]
- *State visit*$_{jt}$; a dummy that takes the value 1 if the Queen visited/hosted a state visit in/for country *j* in period *t*, and 0 otherwise.
- *Log distance*$_{j}$; the log of distance between Copenhagen and country *j*'s capital.

28. All variables that have been exposed to the log-transformation are actually exposed to the natural logarithms transformation.

29. When using Heckmans procedure of correcting the bias, my initial results seem to be underestimated. This is also the case when using Pseudo-Poisson Maximum Likelihood (PPML).

30. Trade offices only appear after the creation of the Trade Council in 2000.

- *Log importer GDP per capita*$_{jt}$; the log of GDP per capita in country *j* in period *t*. The data is in 2005-prices USD.
- *Log importer GDP*$_{jt}$; the log of GDP in country *j* in period *t*. The data is in 2005-prices USD.
- *Log importer area*$_j$; the log of Area in country *j* in period *t*.
- *Landlocked*$_j$; a dummy that takes the value 1, if country *j* is a landlocked country and 0 otherwise.
- *Island*$_j$; a dummy that takes the value 1, if country *j* is an island nation and 0 otherwise.
- *FTA*$_{jt}$; a dummy that takes the value 1 if Denmark and country *j* have a free-trade-agreement in period *t*, and zero otherwise.
- *EU*$_{jt}$; a dummy that takes the value 1 if Denmark and country *j* are members of EU in period *t*, and 0 otherwise. Denmark became member in 1972.
- *WTO*$_{jt}$; a dummy that takes the value 1 if Denmark and country *j* are members of WTO[31] in period *t*, and zero otherwise. Denmark became member of GATT in 1950.
- *Colony*$_j$; a dummy that takes the value 1 if Denmark and country *j* have a colonial relationship, and 0 otherwise.[32]
- *Border*$_j$; a dummy that takes the value 1 if Denmark and country *j* have a common border, and 0 otherwise.[33]
- *Aid*$_{jt}$; a dummy that takes the value 1 if Denmark disburses (positive) aid to country *j* in period *t*, and 0 otherwise.
- *BRIC*$_j$; a dummy that takes the value 1, if it is one of the BRIC countries (Brazil, Russia, India or China) and 0 otherwise. The Soviet Union is assumed to be Russia before the breakdown of USSR.
- *N-11*$_j$; a dummy that takes the value 1 if it is one of the Next-11 countries and 0 otherwise. Next-11 is a common name for the eleven emerging economies identified by Goldman Sachs in 2005.[34]
- *Continent*$_j$; actually five dummies that take the value 1 if a country is located in either: Asia, Africa, America, Europe or Oceania. The variable is 0 otherwise.
- *Legal origin*$_j$; actually five dummies that take the value 1 if a country has its legal origin/influence from either: United Kingdom, Germany, France, Socialism or Scandinavia.

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31. WTO and GATT is considered to be the same.
32. Denmark has colonial relationships with Ghana, Iceland, India, Virgin Islands, Estonia and Norway.
33. Denmark shares a common border with Germany, but since there is a bridge between Denmark and Sweden this is also considered as a common border sharing country.
34. Next-11 countries consist of Bangladesh, Egypt, Indonesia, Iran, Korea, Mexico, Nigeria, Pakistan, Philippines, Turkey and Vietnam.

– *Emigrants*$_{jt}$; the number of emigrants from Denmark to country *j* in period *t*. The variable is divided by the population in country *j* in period *t*.
– *Foreigners in Denmark*$_{jt}$; the number of foreigners from country living in Denmark in period *t*. This is divided by the population in Denmark in period *t*.
– *Tourist*$_{jt}$; the number of Danish tourist travelling to country *j* in period *t*.

Besides these variables, I use in my country fixed effects estimation a dummy for each export destination, and in the year fixed effects a dummy for each year.

Appendix 3

In table 9 below, descriptive statistics for the most important variables are shown. One sees that there are differences in the averages and minimums all depending on which decade is considered. This is due to the introduction of new export destinations. In table 9 a table of correlations are shown.

Table 9. Descriptive statistics.

Year	Mean	Standard Deviation	Maximum	Minimum
Exports	264 million	1,050 million	17,300 million	13
1970-1979	178 million	665 million	6,670 million	3,123
1980-1989	209 million	758 million	7,640 million	993
1990-1999	278 million	1,090 million	13,100 million	1,657
2000-2009	365 million	1,410 million	17,300 million	13
GDP	174,000 million	769,000 million	13,200,000 million	6,261,834
1970-1979	120,000 million	475,000 million	5,810,000 million	10,400,000
1980-1989	152,000 million	618,000 million	7,820,000 million	6,261,834
1990-1999	181,000 million	789,000 million	10,700,000 million	13,100,000
2000-2009	233,000 million	1,020,000 million	13,200,000 million	18,700,000
GDP per capita	8,107	12,512	87,796	71
1970-1979	6,799	11,086	74,929	71
1980-1989	7,162	10,497	54,359	77
1990-1999	7,938	11,739	67,626	74
2000-2009	10,095	15,296	87,796	109
Distance	6,589	3,884	18,247	485
1970-1979	6,649	3,823	18,247	485
1980-1989	6,838	3,861	18,247	485
1990-1999	6,485	3,893	18,247	485
2000-2009	6,428	3,933	18,247	485
Emigrants	0,000037	0,000290	0,005100	0,000000
1980-1989	0,000036	0,000280	0,004700	0,000000
1990-1999	0,000033	0,000270	0,005100	0,000000
2000-2009	0,000041	0,000330	0,005000	0,000000
Foreigners in DK	1,589	4,735	58,191	0
1980-1989	1,030	3,218	27,348	0
1990-1999	1,457	4,346	46,994	0
2000-2009	2,186	5,943	58,191	0
Tourists (2003-2007)	50,588	152,399	1,556,000	0

Table 10. Correlation table.

	Embassy	Consulate	Consulate General + Trade office	Exports	State visit (out)	State visit (in)	Distance	GDP per capita
Embassy	1,00							
Consulate	0,37	1,00						
Consulate Generals & Trade offices	0,19	0,36	1,00					
Exports	0,67	0,52	0,44	1,00				
State visit (out)	0,10	0,09	0,04	0,10	1,00			
State visit (in)	0,10	0,11	0,04	0,11	0,00	1,00		
Distance	-0,45	-0,38	-0,15	-0,56	-0,10	-0,12	1,00	
GDP per capita	0,27	0,40	0,22	0,47	0,07	0,08	-0,34	1,00
GDP	0,69	0,51	0,48	0,87	0,10	0,09	-0,44	0,44
Area	0,43	0,24	0,27	0,44	0,05	0,03	0,14	-0,27
Landlocked	-0,10	-0,13	-0,12	-0,17	-0,02	-0,01	-0,06	-0,32
Island	-0,31	-0,15	-0,17	-0,37	-0,03	-0,03	0,35	0,21
FTA	0,03	0,06	-0,07	0,04	0,00	0,01	-0,09	0,29
EU	0,33	0,40	0,25	0,44	0,05	0,07	-0,51	0,37
WTO	0,29	0,25	0,26	0,36	0,05	0,05	-0,16	0,12
Colony	0,19	0,15	-0,01	0,16	0,03	0,06	-0,17	0,06
Border	0,14	0,34	0,41	0,25	0,04	0,06	-0,29	0,16
Aid	0,02	-0,20	-0,04	-0,06	-0,03	-0,02	0,12	-0,54
DK Emigrants	0,13	0,14	-0,03	0,14	0,00	0,07	-0,15	0,19
Foreigners in DK	0,33	0,32	0,33	0,36	0,02	0,05	-0,34	0,14
Europe	0,39	0,39	0,17	0,49	0,10	0,12	-0,84	0,46
Africa	-0,15	-0,17	-0,16	-0,23	-0,04	-0,04	0,09	-0,49
Asia	0,10	-0,14	-0,05	0,10	-0,01	-0,02	0,08	-0,13
America	-0,18	0,02	0,12	-0,09	-0,03	-0,03	0,35	0,19
Oceania	-0,19	-0,08	-0,08	-0,33	-0,01	-0,02	0,38	0,08

continued ...

continued

	GDP	Area	Landlocked	Island	FTA	EU	WTO	Colony	Border
GDP	1,00								
Area	0,61	1,00							
Landlocked	-0,12	0,16	1,00						
Island	-0,43	-0,67	-0,24	1,00					
FTA	-0,01	-0,18	-0,06	0,13	1,00				
EU	0,38	0,04	-0,05	-0,13	-0,08	1,00			
WTO	0,40	0,24	0,01	-0,16	-0,08	0,22	1,00		
Colony	0,09	0,08	-0,07	0,00	0,21	-0,02	0,12	1,00	
Border	0,19	0,06	-0,05	-0,06	-0,03	0,25	0,09	-0,02	1,00
Aid	-0,05	0,30	0,23	-0,27	-0,14	-0,20	0,09	0,02	-0,09
DK Emigrants	0,04	0,01	-0,04	0,12	0,27	0,02	0,08	0,52	0,06
Foreigners in DK	0,35	0,19	-0,11	-0,14	0,14	0,19	0,09	0,12	0,41
Europe	0,39	-0,01	-0,02	-0,15	0,11	0,57	0,22	0,16	0,23
Africa	-0,27	0,18	0,18	-0,16	-0,12	-0,17	0,08	-0,02	-0,07
Asia	0,17	0,14	0,06	-0,14	-0,08	-0,15	-0,17	0,00	-0,06
America	-0,07	-0,16	-0,16	0,17	0,07	-0,15	0,02	-0,09	-0,06
Oceania	-0,28	-0,25	-0,13	0,43	0,07	-0,08	-0,22	-0,05	-0,03

	Aid	DK Emigrants	Foreigners in DK	Europe	Africa	Asia	America	Oceania
Aid	1,00							
DK Emigrants	-0,09	1,00						
Foreigners in DK	-0,02	0,12	1,00					
Europe	-0,20	0,23	0,33	1,00				
Africa	0,31	-0,07	-0,14	-0,29	1,00			
Asia	0,10	-0,06	0,06	-0,26	-0,34	1,00		
America	-0,12	-0,06	-0,15	-0,26	-0,34	-0,30	1,00	
Oceania	-0,19	-0,03	-0,10	-0,14	-0,18	-0,16	-0,16	1,00

Appendix 4

The table below shows the estimates of an outbound state visit in the period 1973-2009. One notices that there are no effects either if one focuses on the year the visit was conducted or the following years.

Table 11. Effects before and after the outbound state visit.

	Benchmark	1 lead and lag	3 leads and lags	5 leads and lags
Outbound visit$_{jt}$	-0.050	-0.051	-0.059	-0.064
	(0.075)	(0.080)	(0.089)	(0.097)
+ 1 year		0.006	-0.043	-0.048
		(0.087)	(0.080)	(0.088)
+ 2 years			-0.076	-0.080
			(0.067)	(0.075)
+ 3 years			-0.073	-0.077
			(0.062)	(0.070)
+ 4 years				-0.031
				(0.067)
+ 5 years				0.016
				(0.067)
- 1 years		-0.035	-0.001	-0.006
		(0.071)	(0.093)	(0.101)
- 2 years			0.019	0.014
			(0.100)	(0.109)
- 3 years			-0.058	-0.063
			(0.091)	(0.099)
- 4 years				-0.027
				(0.093)
- 5 years				-0.078
				(0.101)
R^2	0.76	0.76	0.76	0.76
Observations	6,448	6,448	6,448	6,448
Sample period	1973-2009	1973-2009	1973-2009	1973-2009

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. All regressions have time effects included and world GDP growth. Intercepts, dummies for legal origin and continents are included but not reported. The same independent variables are used as in the benchmark regression with embassy including the embassy dummy, but are not reported. Both time and country fixed effects are included.

Appendix 5

As indicated above, one solution to the problem of reverse causality is to do an instrumental variable estimation. However, it is not at all easy to find a time varying variable that serves as an intuitively convincing instrument for an embassy. Rose (2007) uses 15 instruments that capture the geo-political importance of the country and the

desirability of residence in a country. The problem with the geo-political dimension of the instruments is that he includes proven oil and gas reserves and military spending. The two first instruments are probably correlated with exports, since ceteris paribus Denmark exports more to countries with a large oil or gas reserve due to Denmark's production in the offshore business. S. Gil et al. (2008) also have time variation in their dummy variable, but they have to compromise when doing the IV-estimation since no valid variable serve as an instrument when time variation is taking into account. Therefore they limit their analysis to a cross section and similarly use desirability of residence in a country as instruments, as suggested by Rose (2007). Similar to S. Gil et al. (2008), I have time variation in the embassy dummy, and since I use fixed effects I need to use an instrument that exhibits the same characteristics, having time variation, c.f. Wooldridge (2010, p. 354). An intuitive appealing instrument is to use the number of a country *j*'s foreign citizens in Denmark during 1980-2009.[35] The instrument is relevant because embassies are opened in the countries that have a lot of citizens in Denmark. So the objective of opening embassies is therefore diplomatic and not commercial. The number of people from country *j* is not correlated with exports to country *j*. This seems like a reasonable assumption, which is why I also check for this. Gould (1994) find that immigration flows affect trade with the origin country. I argue that this is mainly through imports, but it could be that people with origin in country *j* affect relatives and family in the home country to buy Danish goods. However, I consider this effect to be of modest size.

My IV-results are listed in table 12. The first stage regression indicates that the instrument does not perform well, and therefore does not serve as good instrument for an embassy. The F-statistic is 0.84 and not lower than the value 10, which is de facto the threshold that indicates the relevance of the instrument. Although it seems nonsense, I do the second stage estimation, even though the instrument is not appropriate. The estimate turns out to be 8.472 and insignificantly estimated as expected, c.f. (3) in table 12. The instrument seems to be performing bad, which is both indicated in the relevancy test in (2) in table 12, but also by the estimate of the embassy dummy in the second stage, c.f. (3). Another instrument that could be used is the one of tourist flows. The rationale is that embassies are opened places Danish tourist visit. Tourism is not directly correlated to exports, so it seems as a good instrument. Again I check whether there is correlation between tourism outflows and exports. Surprisingly, tourist flows is negatively correlated with exports. The reason for this could be that it is not all countries that I have tourism data for, which is a selection bias. Despite this correlation I run the first state regression and get an insignificant estimate, which is an indication that despite the intuitive appealing argument of its relevance, it does not seem to be a

35. I limit the time period, since data for foreign citizens in Denmark is only available from 1980.

Table 12. 2SLS-estimation with year and country fixed effects.

Dependent variable: log exports$_{jt}$	Foreigners$_{jt}$	(1) Original regression	Tourist$_{jt}$
Instrument	78.00		-0.000*
	(130.60)		(0.000)
Dependent variable: embassy$_{jt}$		(2) First Stage	
	Foreigners$_{jt}$		Tourist$_{jt}$
Instrument	9.361		0.000
	(10.223)		(0.000)
LM- statistic	0.84		1.21
Dependent variable: log exports$_{jt}$		(3) Second Stage	
	Foreigners$_{jt}$		Tourist$_{jt}$
Embassy	8.472		-9.146
	(9.598)		(7.854)
Dependent variable: log exports$_{jt}$		(4) Original regression	
Embassy$_{jt}$	0.141#		0.036
	(0.084)		(0.109)
Observations	5,359		580
Sample period	1980-2009		2003-2007

Notes: Dependent variable is the log of bilateral exports. Robust standard errors are in parenthesis. **,* and # denote statistically significance at the 1, 5 and 10 per cent level. All regressions have time effects included and world GDP growth. Intercepts, dummies for legal origin and continents are included but not reported. The same independent variables are used as in the benchmark regression, but are not reported.

good instrument. As a matter of consistency, I do the second stage regression, and again the estimate turn up with a high and negative estimate, but this is insignificantly estimated indicating that the instrument is not relevant.