



**LUND UNIVERSITY**  
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## **A Royally Good Idea?**

A Study of the Relationship Between Swedish State Visits  
and Aggregate Swedish Merchandise Exports

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## **Abstract**

Most countries engage in a wide variety of export promotion activities that provide domestic firms with significant support in the hopes of increasing trade volumes. The aim of this thesis is to examine one type of official Swedish export promotion, namely state visits. I investigate the potential effect of state visits, performed by Sweden's head of state King Carl XVI Gustaf, on Swedish aggregate merchandise exports. This is done by estimating a gravity model fixed effects panel data specification of Swedish exports for the period 1973 to 2006. I find no evidence, in my analysis, of state visits having any effect on Swedish aggregate exports, suggesting that state visits may not be a particularly useful export promotion activity.

*Keywords:* Export Promotion, Swedish Exports, International Trade, State Visits, Gravity Model

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## 1. Introduction

Most countries engage in a variety of official export promotion activities that aim to assist domestic firms in navigating the international arena and through doing so increase trade volumes, increase the number of firms that export, increase the number of bilateral trade partners and diversify exports in terms of products and markets (Segura-Caylen *et al.*, 2008, p. 9). The underlying theoretical motivation behind engaging in various forms of official export promotion is the existence of market failures; official export promotion activities would be redundant in a world without frictions as, in such a world, there would be nothing stopping firms from exporting whenever and to wherever it would be profitable. The notion that imperfect information about opportunities and profitability (a market failure) limits the export activities domestic firms engage in is thus the most common justification for why countries should engage in official export promotion activities. (*ibid.*).

The objective of this paper is to investigate one facet of Swedish export promotion – state visits. State visits are the highest form of diplomatic contact between two countries and involve a formal visit by a head of state to foreign country, at the invitation of that country's own head of state. Generally speaking, state visits are meant to build good relations between the countries in question. They may also occur for a variety of more specific reasons: to improve and increase the cultural exchange between countries or to help build personal relationships between heads of state (Swedish Royal Court, 2013). An explicitly stated aim of the state visit tradition is the promotion of bilateral trade (*ibid.*).

The question I ask in this paper is: *do state visits performed by King Carl XVI Gustaf help promote Swedish exports?*

I will be investigating the effect of state visits performed by King Carl XVI Gustaf on Swedish exports by estimating a gravity model fixed effects panel data specification of Swedish exports between the years 1973 (when King Carl XVI Gustaf became Sweden's head of state) and 2006.

As increased trade in general and exports in particular is normally linked to economic growth and higher levels of income, it is no surprise that a significant amount of

research has been dedicated to how increased levels of trade can be achieved. This thesis fits into a body of research that aims to investigate the effect of various export promotion measures and policies on international trade. However, while other areas of Swedish export promotion have been studied before, and while the effect of official and/or state visits on exports has been investigated for a handful of countries; no study looking at the effect on trade of state visits performed by Sweden's head of state has, to my knowledge, been conducted. Neither is there, as far as I know, any studies that use the gravity model to investigate the effect of state visits on exports for any other monarchy.

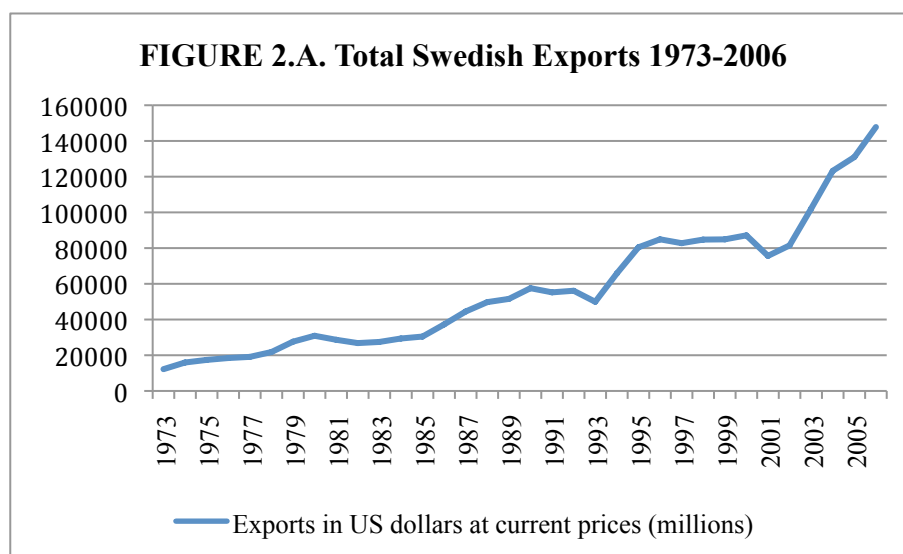
The rest of this paper will be structured as follows. The next chapter will give some background on the topics of Swedish exports, Swedish export promotion and state visits. Chapter 3 gives an overview of earlier research on the effect of various export promotion activities on actual exports. In chapter 4, the theoretical foundation, on which this thesis rests, will be discussed. Chapter 5 outlines the empirical specifications used in this paper and in chapter 6 the data is presented and discussed. The results from my estimations will be presented and analysed in chapter 7. The thesis is then concluded with some final thoughts in chapter 8.

## 2. Background

This chapter will provide the reader with some background information regarding Swedish exports, Swedish export promotion and state visits. While exports (and thus also the promotion of exports through a variety of means) are regarded as important for a country's prosperity and economic development for a number of different reasons, a high level of exporting is first and foremost regarded as vital as it allows for the possibility of importing goods from other countries – whether because these goods cannot be produced in the importing country or because they cannot be produced as efficiently there as they can be elsewhere. When production is focused on goods that the country has a comparative advantage in producing this will, according to theory, enable high levels of exports; through international trade a country can thus achieve a higher standard of living compared to if all consumed goods are produced in the country in question.

### 2.1. Swedish Exports

During the period 1973-2006 aggregate Swedish exports increased significantly as can be seen in figure 2.A. below. While Swedish exports during the period grew overall, figure 2.A. also show a couple of significant dips in exports: 1) in the early 1990s following the Swedish banking crisis, and 2) in 2001 coinciding with the 'dot-com bubble'.



Graph by the author, data from WTO's "Time Series on International Trade" statistical database.

It is also important to note that while total Swedish exports grew significantly during the period the Swedish share of world exports decreased steadily. From a peak position in the early 1970s when Sweden's share of global export of goods was at 2.1 per cent it fell to 1.6 per cent in 1995 and 1.3 per cent in 2006 (though it should be noted that this decline in the share of global goods exports was to *some* extent compensated by an increase in Sweden's share of exports of services) (SOU 2008:90, p. 21). This downward trend in Sweden's share of global exports reflects, primarily, the rapid growth and integration into the world economy of a number of developing/transitional economies (including China, India, Russia and Brazil) during the period of interest. While Sweden's export market share decline was smaller than the EU15 average for the period it was still larger than, for instance, Germany's and Austria's (*ibid.*, European Commission, 2012, p. 9).

## **2.2 Swedish Export Promotion Activities**

As noted in the introduction, market failure due to uncertainty and imperfect information is commonly used to justify official export promotion activities – Sweden is no exception. An analysis of how these types of market failures may be limiting Swedish exports points to three areas of particular concern: 1) The internationalisation of small and medium sized enterprises (SMEs), 2) Growth in remote and otherwise challenging markets, and 3) Growth in countries where open market competition is limited (SOU 2008:90, p. 230-231). Official export promotion activities in Sweden have during the time period at hand been aimed at improving export opportunities in response to a number of specific issues that firms face within these areas of concern.

When it comes to SMEs, official export promotion efforts have targeted two specific issues. First of all, SMEs often lack *knowledge about export markets* regarding, for instance, customer preferences and demand levels, trade restrictions such as quotas and tariffs, as well as other types of regulations such as taxes and environmental regulation. Second of all, SMEs also tend to have low *general export competency levels*; when firms first begin to export they often lack knowledge, not only about the foreign market, but also about domestic Swedish rules and regulations for exporting as well as knowledge about marketing, organisation, distribution systems etc. (*ibid.*, p.



231). Official export promotion targeted at SMEs work specifically with these two issues.

Efforts aimed at promoting Swedish exports are, however, not limited to supporting SMEs. A number of official export promotion activities aim to help Swedish firms more broadly by, for instance, *coordinating information* about foreign markets through trade associations and forums, as well as through providing Swedish firms with *financing* including export credits and export credit guarantees aimed at mitigating the risk associated with investing in or exporting to certain markets (*ibid.*, p. 231-232). Additionally, official export promotion activities include *diplomatic activities/efforts* to help open the door for Swedish firms and to introduce and facilitate contact between Swedish firms and contacts in the country in question.

Official efforts to promote Swedish exports are thus diverse and, hence, naturally engage a large number of different actors. These actors' roles are summarised in table 2.A. below.

**TABLE 2.A. Official Swedish Trade and Investment Promotion Organisations/Agencies**

<b>Organisation/Agency</b>	<b>Organisational purpose</b>
Office for Project Exports	Promote Project Exports.
The Foreign Service	Promote Sweden and Swedish export and investment opportunities.
The Swedish Royal Court	Promote Sweden and facilitate trade and investment opportunities.
The Swedish Trade and Invest Council	Export promotion.
Invest Sweden	Investment promotion.
National Board of Trade	Central authority for foreign trade and trade policy.
The Swedish Export Credits Guarantee Board	Financing and country risk analysis.
Swedish Export Credit Corporation	Financing.
Almi	Financing for SMEs.
Municipalities and County Councils	Business promotion.
Scientific and Technical Attachés	Advice and report on scientific and technological matters.
County Administrative Boards	Coordinate long-term business development work.
Swedish Institute	Promote interest and confidence in Sweden.
Visit Sweden	Promote tourism.
Council for the Promotion of Sweden	Facilitate dialogue and coordination promotion of Sweden's image abroad.
Swedish International Development Cooperation Agency	Development cooperation and poverty reduction.
Swedfund	Provides risk capital for investment in emerging markets.
Swentec	Promote Swedish environmental technology.

(Adapted from SOU 2008:90, p. 254). Note that not all official trade/investment promotion activities are included here.

As table 2.A. clearly shows, the Swedish Royal Court is only one organisation/entity among many that all purport to promote Sweden and Swedish trade and investment. The role and effectiveness of official export promotion is thus a broad topic and the role of most of these actors will not be discussed any further in this paper. The topic of interest here is official efforts aimed at opening doors for Swedish firms on foreign markets through diplomatic activities. Such trade promotion activities may include visits and delegations by politicians, the Royal Family and other public figures, as well as diplomatic efforts at the embassy and consulate level (*ibid.*, p. 231). These diplomatic activities aim to promote exports by introducing and paving the way for Swedish firms and help them get access to persons and opportunities of interest; these efforts are generally regarded as particularly important when state actors have a large influence over the market in question, either because of the political situation in the country or because the nature of the good means that the state is either a buyer or in some other way directly involved (for instance, military and defence materials and infrastructure related goods and services) (*ibid.*).

### **2.3. State Visits**

State visits are the highest type of diplomatic contact between countries. Heads of state tend to travel extensively – a custom that seems to have increased in frequency over time. (Nitsch, 2007, p. 1797). While the blanket explanation for international travel by heads of state is to advance and improve bilateral relations, the actual aim of individual visits to foreign countries vary greatly (*ibid.*). Political relations, environmental and human rights issues as well as matters of cultural exchange are all frequent topics of discussion, however, one of the most discussed topics and the primary aim of most state visits is likely the furthering of economic relations, including matters concerning multilateral and bilateral trade (*ibid.*). It is common practice for heads of state to be travelling alongside a large ‘trade mission’ which tends to include both business managers, representatives from various export promotion agencies and commonly the minister/secretary of trade.

The role of heads of state on these visits also varies depending on the political power and position that he/she holds. As will be discussed in the next chapter of this paper, prior research on the topic of the potential effect of state visits on bilateral trade has all been concerned with the effect of visits by heads of states in republics. This thesis is however a case study of Sweden. As a constitutional monarchy Sweden's head of state King Carl XVI Gustaf's role is purely ceremonial<sup>1</sup> and state visits performed by him will thus likely be of a somewhat different character compared to state visits performed by, for instance, the president of a republic who may hold a significant amount of political power. I will discuss what this might mean for Sweden, in some more detail, in section 4.2. of this paper.

King Carl XVI Gustaf has since he ascended the Swedish throne in 1973 performed, on average, two state visits a year (since their marriage in 1976 he has normally been joined by Queen Silvia on these visits). During the period 1973-2006, the King performed 71 state visits to 58 countries (see table A.1. in the Appendix). (Swedish Royal Court, 2013). The Ministry for Foreign Affairs is responsible for choosing the destination as well as for arranging the visit. The King is always accompanied by a delegation of 25 to 30 business representatives, selected and organised by the Swedish Trade and Invest Council, and normally by at least one member of the Swedish Government (*ibid.*, Lindwall, 2013). As table A.1. reveals state visits seem to have been particularly focused on neighbouring countries and large trade partners, during this period.

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<sup>1</sup> Prior to January 1, 1975 the Swedish king still held some direct political power. However, as the king did not, in practice, act on this political power and as only two state visits in my sample occurred prior to the implementation of the constitutional reform, I have not taken this into account in this study.

### **3. Earlier Research**

The so-called ‘gravity model of international trade’ has become a widely used model among trade economists in the study of international trade flows and volumes. The model has been used frequently to study the effect of both formal and informal barriers to trade and to investigate the vehicles behind high bilateral trade. Common areas of inquiry are, for instance, the effect of regional and/or free trade agreements on trade, of introducing particular tariffs and quotas, or of historical and cultural ties. Another topic that has been investigated using the gravity model of international trade is the effect, and thus also the effectiveness, of export promotion activities and agencies. As that is the focus of this thesis I will here, briefly discuss some previous studies concerned with this topic. In section 3.1. I will discuss a number of studies that have used the gravity model to investigate the effect of export promotional agencies and the foreign services on trade, while in the subsequent section I will discuss those studies that have investigated the area of export promotion that this paper concerns: the effect of state visits and trade missions on bilateral trade.

#### **3.1. Export Promotion Agencies and Foreign Services**

Export promotion agencies have been considered essential trade policy instruments since the beginning of the last century and over time most countries have established a plethora of different organisations and agencies concerned with export promotion (the diverse Swedish efforts outlined in section 2.2. being in no way unique). Studies that aimed to investigate these organisations’ effectiveness were, nevertheless, for a long time unable to find evidence of such agencies actually being responsible for boosting trade (see for example Hogan *et al.* 1991, Gencturk and Kotabe, 2001). During the last decade a couple of studies have however been able to establish a link. A study by Lederman *et al.* surveys export promotional agencies in 88 countries and finds that these vary greatly along a number of dimensions such as institutional structure, responsibilities, strategies, resources and expenditures, as well as activities and functions (2010, p. 258). Using a cross-country regression they estimate that a 10 per cent increase in export promotional agency budgets at the mean will lead to a 0.6-1 per cent increase in exports. However, their findings suggest that agencies that have significant private sector representation on their executive boards *but* that also have

significant public sector funding are associated with significantly higher levels of exports compared to countries with fully privatised national export promotion agencies. Furthermore, they find that a large number of small agencies within a country (as the case is in Sweden) is a less effective way of promoting exports compared to having a single strong agency. (*ibid.*, p. 264). Gil *et al.* also find an export promotion agency effect. The paper, which is a case study of Spain, finds that export promotion agency spending has a generally positive effect on Spanish exports, however, the authors also find that efforts by regional trade agencies seem to have a larger effect on trade compared to efforts at the national level (2008, p. 144).

A few studies have also used the gravity model to study the effect of foreign services, such as embassies and consulates, on export levels and patterns. While a country's foreign services have a number of responsibilities, various types of trade promotion activities certainly constitute a significant part of what they do. The previously mentioned case study of Spain's export promotion activities by Gil *et al.* finds that Spain's foreign services (i.e. the existence of a Spanish embassy or consulate in a country) have a significantly positive effect on bilateral trade (2008; p. 142). Additionally, the effect of foreign services on aggregate trade has been investigated in a cross-section study by Rose. In the study, which covers 22 exporters, the author estimates that embassies and consulates have a significantly positive effect on aggregate trade; the first foreign service mission in a country having a particularly large effect. (2007, p. 35). Another very interesting addition to the body of work on the trade promotion effect of foreign services is a cross-section study of 21 exporters by Segura-Cayuela and Vilarrubia (2008). The authors' focus is not (as previous studies) on the effect of foreign service missions on *aggregate* exports, instead they choose to investigate the potential effect on the extensive and intensive margin of trade, respectively. Segura-Cayuela and Vilarrubia's findings suggest that while the foreign services have a significantly positive effect on the extensive margin of trade at country level, no such effect is found for the intensive margin of trade (2008, p. 24). In other words, embassies and consulates seem to be useful in the creation of new trade links but their export promotion activities seem to have no effect on increasing trade for already established trade partners.

### 3.2. State Visits

To my knowledge there are three studies that have used the gravity model of trade to investigate the effect that state or official visits have on trade flows/exports. The first study to do so was a study by Nitsch (2007), which examines the empirical connection between foreign visits by politicians (Heads of States for the United States and France, and Head of Government for Germany), and international trade flows. Considering the risk of reverse causality (as it is possible that any correlation is due to politicians choosing to visit countries that there has been an increase in exports to, rather than the other way around), Nitsch also runs a difference-in-difference specification on the data to ensure robust results. The second study at hand is a paper by Lee and Yeo (2009) that utilises the gravity model and a 27-year long panel data set to estimate the effect of official presidential visits on bilateral trade in the case of South Korea. A third and last study that uses the gravity model to investigate the effect of official visits on trade is a 2010 paper by Head and Ries that looks at the effect of Canadian trade missions (some of which were led by the country's Prime Minister) on actual trade flows. The authors use a similar methodology to that used by Nitsch (2007) and Lee and Yeo (2009), but they include only trade missions, i.e. official visits specifically aimed at stimulating trade, in their data set.

The findings from these three case studies, that use the gravity model of international trade to investigate the potential effect of state and/or official visits on trade flows, are not conclusive but seem to indicate that there might be an effect in some countries or for some heads of state/government. Nitsch finds that state/official visits are positively associated with exports; using a gravity equation to control for other known determinants of trade, Nitsch discovers that a visit from a head of state/government is correlated with 8-10 percent higher exports to the visited country. Furthermore, the results from the difference-in-difference specification indicate that state visits also have an effect on the *growth* of bilateral exports; however, it reveals that this effect is short-lived. (2007, p. 1815-1816) Lee and Yeo also find evidence supporting the theory that state visits positively affect bilateral trade relations. Their results indicate that official and state visits by Korean presidents are associated with increased bilateral trade between Korea and the visited country. The authors find some evidence indicating simultaneous causality, however, the positive effect of presidential visits on

bilateral trade is still present, at least in regards to Korean exports. (2009, p. 18). The results from the last study by Head and Ries do not, however, lend support to the common claim that state/official visits have a significantly positive effect on bilateral trade. The authors did find the Canadian trade missions were correlated with high levels of bilateral trade with the visited country when they used a gravity equation specification that did not control for unobserved bilateral effects (2010, p. 772). However, when they added lagged dependent variables to their specification this led to a much smaller estimated effect of trade missions. More importantly still, when including country-pair fixed effects in the regression (the specification preferred by the authors) no estimated effect of trade missions on trade flows were found. (*ibid.*) What these results indicate is that while bilateral trade between Canada and the visited country were indeed higher than trade with non-targeted countries, trade with the visited countries were also higher prior to the trade mission.

A summary of the research papers discussed in this chapter can be found in table 3.A. below.

**TABLE 3.A. Earlier Research on the Effect of Export Promotional Activities on Bilateral Trade**

	<b>Study</b>	<b>Type of Export Promotion</b>	<b>Method</b>	<b>Data</b>	<b>Findings</b>
<b>Section 3.1 Export Promotion Agencies and Foreign Services</b>	Lederman <i>et al.</i> (2010)	Export promotion agencies on the national level.	Cross-section estimation	88 exporting countries/ agencies for 2000-2004 average	National export promotion agencies found to have positive effect on aggregate exports.
	Gil <i>et al.</i> (2008)	Export promotion agencies on the regional level / The foreign services (Spain)	Panel-data gravity estimation	17 exporting regions/ agencies and 188 trading partners for 1995-2003	Regional export promotion agencies and foreign services found to have positive effect on aggregate regional exports.
	Rose (2007)	The foreign services	Cross-section gravity estimation	22 exporting countries and 200 trading partners for 2002-2003	The foreign services found to have positive effect on aggregate exports.
	Segura-Cayuela & Vilarrubia (2008)	The foreign services	Cross-section two stage estimation	22 exporting countries and 163 trading partners for 2002-2003	The foreign services are found to have a positive effect at the extensive margin of trade at the country level. No effect found on intensive margin.
<b>Section 3.2. State Visits</b>	Nitsch (2007)	State and official visits by Head of State/Government (France, Germany and USA)	Panel-data gravity estimation	Three exporting countries 1948-2003	State and official visits found to have a positive effect on aggregate exports.
	Lee & Yeo (2009)	State and official visits by Head of State (South Korea)	Panel-data gravity estimation	One exporting country 1981-2007	State and official visits found to have a positive effect on aggregate exports.
	Head & Ries (2010)	Official visits of trade mission character (Canada)	Panel-data gravity estimation	One exporting country 1993-2003	Official visits of trade mission character not found to have any effect on aggregate exports.



## 4. Theory

The following chapter will examine the theoretical foundation on which this thesis' empirical case study rests. In the first section I will discuss the development of the gravity model of trade and its theoretical underpinnings. In section 4.2. I then turn to an examination of the theory behind why and how state visits may reduce trade cost and influence trade patterns.

### 4.1. The Gravity Model

Empirically speaking, in the absence of various policy related barriers to trade, bilateral trade flows have been found to be remarkably well explained by what has become known as the 'gravity equation'. The concept was first introduced by Tinbergen (1962) and Pöyhönen (1963). The name is a play at Newton's law of gravity – the greater the mass (economic size) and the smaller the distance between two countries, the greater the attraction (the more trade there will be) (Baier et al, 2008, p. 466). The gravity model was found to be an excellent empirical fit and has for this reason been used extensively in the last few decades to evaluate the bilateral value of trade between countries. The model has, for instance, been used to infer the effect of economic unions and various trade and border barriers as well as for evaluating the effect of cultural and linguistic ties on trade flows (Anderson and van Wincoop, 2003, p. 170).

However, while it has been known that GDP and distance is related to trade flows empirically, originally the gravity model did not rest on any theoretical foundation. The lack of a solid theoretical foundation made the gravity model susceptible to two potential issues: (i) the estimated results could potentially be suffering from omitted variable bias, and (ii) without a theoretical foundation it was impossible to estimate a general-equilibrium gravity model which made comparative statistics exercises unfounded (*ibid.*).

Anderson (1979) was the first to attempt to build a theoretical foundation for the gravity model. To do this, he utilised the Armington assumption, which differentiates

all goods by place of origin, and assumed that each country specialises in the production of one good. Furthermore, he assumed that preferences were identical across regions, homothetic and described well by the constant elasticity of substitution function. Under these assumptions it can be shown that when all products are traded national income is going to be equal to the value of the traded goods; since larger economies produce more goods these countries are also going to trade more. Furthermore, Anderson also started to solidify the theory surrounding costs of trade in the gravity model as he linked distance to transportation costs associated with international trade. Anderson's paper thus contained the first gravity model that had some form of theoretical foundation (Greenway & Milner, 2002, p. 579). Other early work that aimed to give the model a more solid theoretical base was, for instance, a paper by Helpman and Krugman (1985) that discussed how the gravity model could be applied to a monopolistic competition situation with differentiated goods and increasing returns to scale. During this time period, the monopolistic competition case was also discussed by Bergstrand in a couple of papers (1985, 1989).

Anderson and van Wincoop continued to develop the theoretical basis of the model in a more recent paper where they introduced and discussed the importance of equipping the equation with a 'multilateral resistance' variable (Anderson & van Wincoop, 2003, p. 170). The primary idea introduced in the paper is that a central implication of a theoretically derived gravity equation is that trade between two countries does not merely depend on the absolute cost of bilateral trade between the two, it is also dependent on how the bilateral trade resistance (owing to any number of barriers to trade between the countries in question) compares to the average trade resistance between the countries at hand and all their prospective trading partners (*ibid.*, p. 176-179). Multilateral trade resistance could potentially be controlled for and introduced into the equation in a number of different ways – a common approach has been to add a so-called 'remoteness variable' to the model which takes into account the *distance* between the country in question and all other hypothetical trading partners. The problem with using remoteness as a multilateral resistance term is that it only takes into account multilateral resistance associated with distance, not trade costs incurred for other reasons (*ibid.*, p.170). The approach that Anderson and van Wincoop instead suggest in their paper is that researchers should use price indices (functions of all bilateral trade barriers and income distributions) to capture 'multilateral resistance'.

Expanding on the standard gravity model, Anderson and van Wincoop's gravity equation becomes (*ibid.*, p. 175):

$$X_{ij} = \frac{Y_i Y_j}{Y_w} \left( \frac{t_{ij}}{P_i P_j} \right)^{1-\sigma} \quad (1)$$

where,

$X_{ij}$  = exports from country  $j$  to country  $i$

$Y_i$  and  $Y_j$  = GDP of  $i$  and  $j$ , respectively

$Y_w$  = world GDP

$t_{ij}$  = bilateral trade costs between  $i$  and  $j$

$\sigma$  = the elasticity of substitution between all goods

$P_i$  and  $P_j$  = price indices i.e. the multilateral resistance terms

They argue that introducing their type of multilateral resistance variable makes it possible to consistently and efficiently estimate a gravity equation (*ibid.*). Variations of this approach have been widely employed since the publication of their paper and the introduction of the multilateral resistance term is regarded to have given the gravity model some of the theoretical rigor that it used to lack.

#### 4.2. State Visits as Export Promotion

An explicitly stated aim of state visits is, as already mentioned, to stimulate bilateral trade as well as to promote economic relations in general. Theoretically, state visits may function as export promoting activities in a number of ways. First of all, if a head of state holds political power he or she may use state visits *directly* to, for example, negotiate (free) trade agreements and treaties; this should theoretically allow for a significant positive effect of state visits on bilateral trade. This does not, however, mean that state visits performed by a head of state that lacks official political power (such as a king in a constitutional monarchy) will have no effect on trade. On the contrary, as mentioned earlier, it is commonly argued (though empirical support for this theory seems to be primarily anecdotal) that the presence of royalty on a trade mission is particularly beneficial for companies as it allows them to enter certain exclusive circles and make advantageous contacts. Theory points to two reasons why

a state visit performed by a royal head of state may have a particularly favourable effect on bilateral trade. Firstly, a royal visit generally tends to generate more public and media attention than a visit performed by a non-royal head of state. This, it is argued, allows small open economies with a royal head of state (such as Sweden) to ‘punch above their weight’. (Ansink, 2013). Secondly, in countries where government plays a large direct role in the economy (largely countries with an autocratic or anocratic regime) a royal head of state may be more successful as a door opener compared to a democratically elected head of state. While the difference in political system between countries may be enormous, a visit by a royal head of state to another monarchy and/or non-democratic country will give an air of diplomatic equality between the countries. (*ibid.*). There is thus a theoretical foundation behind the common claim that state visits are export-promoting activities as they may reduce trade costs caused by information failures and other frictions.

## 5. Empirical Specification

In this paper I estimate a panel data specification of the gravity model of trade, which analyses the relationship between aggregate Swedish merchandise exports and one type of official Swedish export promotion. More specifically, this paper investigates the potential effect of state visits, performed by King Carl XVI Gustaf, on Swedish exports between the years 1973 (when King Carl XVI Gustaf became Sweden's Head of State) and 2006. This chapter describes the method used and includes a description of the variables included in the gravity equation as well as a discussion of the regression specification as a whole.

### 5.1. The Baseline Regression Specification

My baseline econometric specification is a variation of a gravity model specification used to investigate state visits and international trade by Nitsch (2007, p. 1802). The dependent variable in the specification used here is an export variable that captures bilateral trade flows from Sweden to its various trade partners. The variable will be denoted  $Exp_{ijt}$ , where  $i$  is bilateral exports from Sweden to the importing country  $j$  at a time period (year)  $t$ . (*ibid.*).

As the aim of this paper is to investigate the relationship between Swedish exports and state visits (as a form of export promoting activity), the independent variable of primary interest here is a variable called  $StateVisit_{ijt}$ .  $StateVisit_{ijt}$  is a binary variable; if King Carl XVI Gustaf has made a state visit to country  $j$  at the time  $t$ , the variable will take on the value 1 while it will otherwise take on the value 0.

The right hand side of an empirical specification of the gravity model should naturally, as discussed in chapter four of this thesis, also include the standard gravity model variables that capture the economic mass of the trading partners as well as the physical distance between them. Economic mass is estimated here by taking the product of the gross domestic product (GDP) of the exporter  $i$  (Sweden) and the importer  $j$  at a time  $t$  (in current US dollars) and is denoted by  $Mass_{ijt} = GDP_{it}GDP_{jt}$ . The variable that captures physical distance is denoted  $Dist_{ij}$ , and is simply the geographical distance between the two countries' capitals. (*ibid.*).

Furthermore, following Nitsch, the specification used here includes a number of control variables that are often found to affect bilateral trade patterns and have become standard additions to the gravity model. The included control variables are dummies meant to capture: (i) whether Sweden shares a common border with the importer ( $Adjacency_{ij}$ ), (ii) whether the importer is a landlocked country ( $Landlocked_j$ ), (iii) whether Sweden and the importer share a legal system ( $Legal_{ij}$ ), (iv) whether the importer is a member of the World Trade Organisation or its predecessor GATT at a time  $t$  ( $WTO_{jt}$ ), and (v) whether Sweden and the importer have a free trade agreement in place at a time  $t$  ( $FTA_{ijt}$ ). (*ibid.*). Nitsch's specification (which looks at the effect of state visits for France, Germany and the United States) also includes three control variables that I have excluded from this study, as they do not apply to a study concerned with exports from Sweden. The variables in question are: a variable that captures current and former colonial linkages (excluded as Sweden has no colonial history), a variable that captures common language (excluded as only one other country, Finland, has Swedish as an official language), and a variable that captures shared currency (excluded as Sweden is not a member of any currency union).

As discussed in chapter four, one of the perceived benefits of state visits is that royalty and (perhaps to a lesser degree) high ranking politicians and other official actors are thought to be able to help booster exports by introducing and paving the way for exporting firms and by helping them gain access to persons and opportunities of interest. As mentioned, this could theoretically be of particular importance in economies where state actors have a large influence over import decisions – that is, for the most part, autocratic countries and countries with considerable corruption. To try to capture this potential effect I include, in my specification, a dummy variable denoted  $Polity_{jt}$  that takes on the value 1 if the importer  $j$  is an anocracy/autocracy at a time  $t$ , and takes on the value 0 otherwise (democracy), and an interaction variable of the form  $StateVisit_{ijt} * Polity_{jt}$ . This interaction variable aims to capture whether or not the export promotion effect of a state visit is associated with the quality of an importing country's governing institutions. The hypothesis is that state visits have a significantly larger effect on countries with governing institutions that are anocratic or autocratic, compared to countries that are regarded as democratic (as exporting firms

are presumed to be able to enter democratic markets more easily without the help of a state visit).

The baseline regression specification, which I will also refer to as the ‘intuitive’ gravity model, is thus presented in equation (2) below. Since the gravity model discussed in chapter four is log-linear, the specification presented below has the natural logarithms of all continuous variables.

$$\begin{aligned} \ln Exp_{ijt} = & \alpha + \beta_1 \ln Dist_{ij} + \beta_2 \ln Mass_{ijt} + \beta_3 Adjacency_{ij} + \beta_4 Landlocked_j + \beta_5 Legal_{ij} \\ & + \beta_6 WTO_{jt} + \beta_7 FTA_{ijt} + \beta_8 Polity_{jt} + \gamma_1 StateVisit_{ijt} + \gamma_2 StateVisit_{ijt} * Polity_{jt} + \varepsilon_{ijt} \end{aligned} \quad (2)$$

where,  $\alpha$  is a constant and  $\varepsilon_{ijt}$  is a stochastic error.

The coefficient  $\gamma_1$  for the binary  $StateVisit_{ijt}$  variable, is the parameter of primary interest;  $\gamma_1$  captures the extent to which exports from Sweden to countries, which have recently been visited by King Carl XVI Gustaf, diverges from the average sample value, holding other determinants of trade constant. (Nitsch, 2007, p. 1802).

An increased distance between countries, an importing country being landlocked and an importing country being an anocracy/autocracy are expected to have a negative effect on exports from Sweden to the trading partner (the coefficients  $\beta_1$ ,  $\beta_4$  and  $\beta_8$  are expected to take on negative values). An increase in any of the other variables in the model is, however, expected to have a positive effect on Swedish exports to the country; all other coefficients in the model are thus expected to take on positive values.

## 5.2. Fixed Effects Regression Specification

As discussed in chapter four of this paper, the addition of some type of multilateral resistance variable to a gravity equation specification is necessary in order to achieve efficiency and consistency. However, the multilateral price indices ( $P_i$  and  $P_j$ ) that act as the multilateral resistance term in the theoretical gravity model are not observed in reality; a few different estimation techniques have been discussed and used to capture multilateral resistance instead. While it might seem that the most exact option would

be to use national price index data directly, this has never been done as such data is both lacking for many countries and, when available, is calculated using different methods in different countries. (Gómez Herrera and Baleix, 2013, p. 6). Anderson and van Wincoop (2003) do manage to obtain estimations of  $P_i$  and  $P_j$  for their data sample. Their method, which entails assuming symmetric trade costs, using a large number of goods market-equilibrium conditions and using a trade cost function defined in terms of observables, is, however, regarded as cumbersome and has therefore rarely been used by other authors (Gómez Herrera and Baleix, 2013, p. 6). Another more commonly used method for including multilateral resistance is to use a so-called ‘remoteness variable’ as a proxy. However, as mentioned in the previous chapter, a common critique of this method is that it only takes into account multilateral resistance associated with distance, not trade costs incurred for other reasons (*ibid.*).

In this study I will instead use what has become the most commonly employed method: including fixed effects in the gravity equation as a way of controlling for the specific country multilateral resistance term rather than trying to estimate it (*ibid.*). The choice of fixed, rather than random, effects for my specification is based on intuitive reasoning but is also supported by econometrical evidence. While the random effects estimator is more efficient when it is consistent, it is unlikely to be appropriate for the model at hand as it implicitly assumes that any unobserved heterogeneous components are strictly exogenous. The fixed effect estimator on the other hand allows for heterogeneous components that are constant over time and affects each individual importer in a different way (Gómez Herrera, 2012, p. 4-5). Intuitively the existence of such heterogeneities seems like a possibility in my sample. A Hausman specification test confirms that the random effects model is inconsistent.

A full set of year-specific fixed effects and a set of importing country-specific fixed effects are thus added to the specification and denoted by  $\delta_i$  and  $\delta_j$ , respectively. As the fixed effects regression specification includes an importing country fixed effect, this means that all time-invariant country specific variables included in equation (2) needs to be dropped in order to avoid multicollinearity (the dropped variables are  $Dist_{ij}$ ,  $Adjacency_{ij}$ ,  $Landlocked_j$ ,  $Legal_{ij}$ ):



$$\begin{aligned}
LnExp_{ijt} = & \alpha + \beta_2 LnMass_{ijt} + \beta_6 WTO_{jt} + \beta_7 FTA_{ijt} + \beta_8 Polity_{jt} + \gamma_1 StateVisit_{ijt} \\
& + \gamma_2 StateVisit_{ijt} * Polity_{jt} + \delta_t + \delta_j + \varepsilon_{ijt}
\end{aligned} \tag{3}$$

### 5.3. Reverse Causality and Delayed Effects

It is of course a real possibility that any potential effect of state visits on country exports, that is found using specification (2) and (3), may actually be the result of reverse, or at least simultaneous, causality. It seems possible, maybe even likely, that more state visits are performed in countries to which Swedish exports are already disproportionately large prior to the visit. If this is indeed the case, then the estimate of  $\gamma$  may be upwardly biased. An effective way of establishing causality in this case would be to use an instrumental variable approach. However, to do so it is necessary to find an appropriate instrument that is highly correlated with  $StateVisit_{ijt}$  yet exogenous. In addition, a good instrument must take into account the panel structure of the dataset. I have been unable to identify such an instrument. To explore whether reverse/simultaneous causality might be an issue I will instead follow Nitsch (2007, p. 1804-1805) and re-run the regression specification while including a set of dummy variables for the five years prior to when a state visit takes place. In other words, I will estimate separate  $\gamma$ 's for each of the variables  $StateVisit_{ijt-5}$ ,  $StateVisit_{ijt-4}$ ,  $StateVisit_{ijt-3}$ ,  $StateVisit_{ijt-2}$  and  $StateVisit_{ijt-1}$ . Additionally, I will for robustness purposes also re-run the regression and, instead of including separate binary lead variables for each individual year leading up to the visit, include a binary variable called  $Pre-StateVisitPeriod_{ijt}$  that estimates a coefficient for the entire five-year pre-visit period. The decision to include separate and joint lead dummies for *five* years, specifically, is arbitrary but in line with previous research.

It is also an obvious possibility that the effect of a state visit on exports may not always be apparent in that very year; i.e. if a contact is struck or a trade agreement entered into as a result of King Carl XVI Gustaf's visit to a country, the resulting increase in trade may not occur that very year but rather in the years following the visit. I will therefore also estimate the coefficients for the lag variables  $StateVisit_{ijt+1}$ ,  $StateVisit_{ijt+2}$ ,  $StateVisit_{ijt+3}$ ,  $StateVisit_{ijt+4}$  and  $StateVisit_{ijt+5}$ . In addition to this I will also re-run the regression with a joint lag variable called  $Post-StateVisitPeriod_{ijt}$  that

includes the entire five-year post-visit period. Hence, when I re-run the regression specification as a robustness check, the included lead variables will capture if state visits are taking place where export levels are already high and increasing while the lag variables will capture if the effects of a state visit is delayed.

I will also perform a second robustness check in regards to possible reverse or simultaneous causality. Following Nitsch (2007, p. 1807-1808), I will do this by specifying a long run difference-in-difference equation where annual growth rate of exports from Sweden to the importing country  $j$  ( $ExpGrowth_{ijt}$ ) is regressed on a dummy variable ( $EverStateVisit_{ij}$ ) that takes on the value 1 if the importing country  $j$  has received a state visit from Sweden at any point during the sample time period, and a dummy  $StateVisit_{ijt}$  that takes on the value 1 when an actual visit has occurred:

$$ExpGrowth_{ijt} = \alpha + \beta EverStateVisit_{ij} + \gamma StateVisit_{ijt} + \delta_t + \delta_j + \varepsilon_{ijt}. \quad (4)$$

where, like before,  $\alpha$  is a constant,  $\delta_t$  is a comprehensive set of time dummies,  $\delta_j$  a set of importer dummies and  $\varepsilon_{ijt}$  is a stochastic error.

This difference-in-difference regression is a valuable robustness check for a number of reasons. Firstly, by looking at export *growth rates* rather than the export level any time-invariant factors that have an effect on export levels will be cancelled out. Secondly, systematic differences in growth in exports from Sweden to importing countries, which did receive a visit, and countries that did not receive a visit are controlled for by the  $EverStateVisit_{ij}$  dummy; in other words if the King tends to visit countries to which Swedish export growth is exceptionally strong, the variable should capture this. Lastly, by including a comprehensive set of time dummies in the regression it is possible to control for any common trends and/or period-specific shocks. (Nitsch, 2007, p. 1809).

## **6. Data**

In this section I will shortly discuss the data and data sources used for the empirical analysis in this paper. I will also comment on any data limitations. Summary statistics for the variables used in the paper can be found in table A.2. in the Appendix.

### **6.1. State Visits**

Information about state visits performed by Sweden's head of state King Carl XVI Gustaf are available on the Swedish Royal Court's webpage for the entire period of his reign. Information regarding the advertised and/or unadvertised purpose of the visits performed during the period is unfortunately unavailable. It is obviously the case that state visits may occur for a variety of official and unofficial reasons. While some visit may have been for the specific purpose of boosting exports to a country, other visits might have had small ambitions in that regard. It would certainly have been interesting to distinguish between different types of visits in order to investigate whether state visits where matters concerning trade relations are emphasised have a larger effect on bilateral exports compared to visits where these aspects are not highlighted. However, this paper is still relevant without such a differentiation between the visits as it does answer whether there is an overall or inherent effect of state visits, performed by the current King, on Swedish exports.

Another potentially interesting addition to the analysis would have been to, for comparative purposes, include official visits performed by Swedish Prime Ministers in the analysis. A theoretically interesting exercise would then have been to include an interaction variable of state visits and official visits, as it would in that case have been possible to explore how visits by both the Prime Minister and by King Carl XVI Gustaf to a country in the same year affect exports, i.e. whether there is an additional effect associated with joint export promotion efforts. However, unfortunately neither the Government Offices' Archive nor the National Archives keep complete records of official visits performed by Swedish Prime Ministers.

## 6.2. Trade Flows

Aggregate merchandise trade flow data for the time period is gathered from the UN COMTRADE database. I chose to use Swedish export data (rather than data reported by the importing countries) as it is more comprehensive and likely more reliable than the trade flow data reported by a majority of the importers in the sample. When trade is unrecorded or zero, I follow standard practice and ignore those entries (Nitsch, 2007, p. 1802). This is, however, a minor issue as for most entries in my sample positive export values are reported.

Another issue that has been discussed in the gravity literature is whether trade flow values ought to be in nominal or real terms in a time-series gravity model. The standard choice, which I have also chosen for this paper, is to use nominal trade flow data as exports are already deflated by the inclusion of a multilateral resistance terms (Sheperd, 2013, p.15).

## 6.3. Determinants of Trade

As discussed in chapter 5, a variety of known determinants of trade are included as control variables in the gravity model used in this paper. I use the Centre d'Etudes Prospectives et d'Informations International's (CEPII) gravity dataset for this purpose. It includes data on distance (bilateral geographical distances calculated using longitudinal/latitudinal locations of country capitals) and economic mass (GDP as reported by the World Bank Development Indicators). The dataset also includes data for the variables  $Adjacency_{ij}$ ,  $Landlocked_j$ ,  $Legal_{ij}$ ,  $WTO_{jt}$  and  $FTA_{ijt}$ . Data for the institutions variable  $Polity_{jt}$  comes from Center for Systemic Peace's Polity IV Project.

## 7. Results

I will in this chapter discuss the empirical results from my gravity model investigation into the potential effect of state visits, performed by King Carl XVI Gustaf during the period 1973-2006, on Swedish exports. The results from the various regression specifications and the robustness checks discussed in chapter five will be presented and considered.

Before turning to the presentation of the results of the gravity specifications, I will however start by briefly considering a correlation matrix for the variables included in this study's gravity equation. The correlation matrix can be found in table A.3. in the Appendix. Firstly, by examining the correlation between the various independent variables, I conclude that no multicollinearity can be detected in the data. Secondly, examining the correlation between variables is also useful for understanding the relationships of the gravity model from an intuitive point of view (Shepard, 2013, p. 10). Exports,  $LnExp_{ijt}$ , are here, as expected, positively correlated with economic mass and negatively correlated with distance. Furthermore, all standard control variables included in this gravity model have the expected signs in the correlation matrix and the included  $Polity_{jt}$  variable, which takes on the value 1 if importer  $j$  is an anocracy/autocracy at a time  $t$  is negatively correlated with Swedish exports. The variables of interest,  $StateVisit_{ijt}$  and  $StateVisit_{ijt} * Polity_{jt}$ , are both positively correlated with exports.

### 7.1 The Baseline Regression Specifications

I start by performing my baseline gravity regression specifications using the dataset. The pooled OLS regressions (1)-(3) presented in table 7.A. below are thus the estimates from an intuitive or conventional gravity model. For all regressions robust standard errors are used to avoid potential issues of heteroskedasticity in the data. The standard errors are also adjusted for clustering using the variable  $Dist_{ij}$ ; this is done to permit for clustering by country-pair as autocorrelation may otherwise be a problem when using the gravity model. (Shepard, 2013, p. 28-29).

As can be seen in the first column in table 7.A. the standard gravity framework seems to be able to explain Swedish exporting patterns well. In accordance with theory, export value tends to increase with economic mass ( $Mass_{ijt} = GDP_{it}GDP_{jt}$ ) and decrease with distance between Sweden and the importer. The control variables included in pooled OLS (1) are also mostly significant and have the expected signs: the importing country being land-locked has a negative effect on Swedish exports to the partner country while having a shared legal system or having a free trade agreement with Sweden in place leads to a rise in Swedish exports. Adjacency, importer membership in GATT/WTO and the country being an anocracy/autocracy all have a positive but statistically insignificant effect on Swedish exports. This standard intuitive gravity equation has a very high  $R^2$  (as is common with gravity equations that tend to have a very good empirical fit); it explains 80.6 per cent of variation in Swedish export flows. Furthermore pooled OLS (1) has a highly significant F-statistic, which also underlines that the specification fits the data well.

The next two columns of table 7.A. add the variables of interest to this study:  $StateVisit_{ijt}$  and the interaction variable  $StateVisit_{ijt} * Polity_{jt}$ . The question is whether state visits performed by King Carl XVI Gustaf helps promote Swedish exports. The intuitive/conventional pooled OLS specifications (2) and (3) give *some* weak support of this theory. The estimated coefficient  $\gamma_1$  is positive and statistically significant at the 10 per cent level in pooled OLS specification (3); the estimate of 0.170 indicates that Swedish state visits tend to increase exports to the partner country by, on average, 18.5 per cent ( $= \exp[0.170] - 1$ ), holding other variables constant. The coefficient for  $StateVisit_{ijt}$  is, however, statistically insignificant at the 10 per cent level in specification (2). The interaction variable  $StateVisit_{ijt} * Polity_{jt}$  in specification (3) (which aims to capture whether the export promotion effect of a state visit is associated with the quality of an importing country's governing institutions - that is whether state visits have a significantly larger effect on countries with governing institutions that are characterised as anocratic/autocratic governing institutions) is also statistically insignificant.

**TABLE 7.A. Pooled OLS Specifications**

<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
<i>LnDist<sub>ij</sub></i>	-0.772*** (0.125)	-0.771*** (0.125)	-0.771*** (0.125)
<i>LnMass<sub>ijt</sub></i>	0.894*** (0.025)	0.893*** (0.025)	0.893*** (0.025)
<i>Adjacency<sub>ij</sub></i>	0.244 (0.169)	0.241 (0.166)	0.240 (0.165)
<i>Landlocked<sub>j</sub></i>	-1.067*** (0.246)	-1.067*** (0.246)	-1.067*** (0.246)
<i>Legal<sub>ij</sub></i>	1.181*** (0.212)	1.177*** (0.210)	1.177*** (0.211)
<i>WTO<sub>jt</sub></i>	0.042 (0.148)	0.042 (0.148)	0.042 (0.148)
<i>FTA<sub>ijt</sub></i>	0.516** (0.220)	0.515** (0.212)	0.515** (0.219)
<i>Polity<sub>jt</sub></i>	0.090 (0.134)	0.091 (0.134)	0.092 (0.134)
<i>StateVisit<sub>ijt</sub></i>		0.148 (0.093)	0.170* (0.094)
<i>StateVisit<sub>ijt</sub></i> <i>*Polity<sub>jt</sub></i>			-0.102 (0.317)
<i>Constant</i>	4.134*** (1.309)	4.136*** (1.307)	4.133*** (1.308)
<i>R-squared</i>	0.806	0.806	0.806
<i>F-statistic</i> <i>(significance)</i>	0.000	0.000	0.000

Notes: Dependent variable is the log of exports  $LnExp_{ijt}$ . Robust standard errors are in parentheses. \*\*\*, \*\* and \* denote statistically robust at the 1 per cent, 5 per cent and 10 per cent level, respectively. Standard errors adjusted for 191 clusters in  $Dist_{ij}$ . Exporting nation is Sweden. Period 1973-2006. Number of observations = 5767.

## 7.2. Fixed Effects Regression Specification

For the next step I now extend the baseline regression specification to include a full set of year-specific fixed effects and a full set of importing country-specific fixed effects. As discussed earlier, this extension of the intuitive model makes it possible to consistently estimate the theoretical gravity model by controlling for the specific country multilateral resistance term rather than trying to estimate them (Gómez Herrera and Baleix, 2013, p. 6). If there are unobservable or other omitted variables affecting Swedish export patterns, the fixed effect method will deal with these. The method will provide a more consistent estimate of  $\gamma_1$  and  $\gamma_2$  as time-invariant

variables are accounted for by design (Nitsch, 2007, p. 1804). The fixed effect regressions (1)-(3) are presented in table 7.B.

A first significant difference from the baseline regression specification results is that the gravity model's explanatory power has increased even further with the inclusion of year and importer fixed effects – the  $R^2$  now indicates that all three fixed effect specifications presented in table 7.B. explain over 92 per cent of variation in Swedish exports. This increase is obviously due to the large number of dummy variables that have been added to the regressions. A second noteworthy change from the earlier specifications is that the only variable (besides the majority of importer and year dummies) that is still statistically significant is economic mass. The variables of interest for this study,  $StateVisit_{ijt}$  and  $StateVisit_{ijt} * Polity_{jt}$ , are presented in fixed effect specifications (2) and (3). The  $StateVisit_{ijt}$  variable, which was found to be positive and statistically significant at the 10 per cent level in one of the pooled OLS specifications, is negative and insignificant when fixed effects are added to the gravity model. This indicates that there is no support for the theory that state visits, performed by King Carl XVI Gustaf, lead to increased Swedish exports to visited countries. The interaction variable  $StateVisit_{ijt} * Polity_{jt}$  is also negative and statistically insignificant meaning that there seems to be no support for the theory that state visits by the King has an important door-opener function in countries characterised by anocratic or autocratic governing institutions.



**TABLE 7.B. Fixed Effect Specifications**

<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>
<i>LnMass<sub>ijt</sub></i>	0.761*** (0.133)	0.761*** (0.133)	0.763*** (0.134)
<i>FTA<sub>ijt</sub></i>	0.135 (0.108)	0.135 (0.108)	0.135 (0.108)
<i>Polity<sub>jt</sub></i>	-0.028 (0.114)	-0.029 (0.115)	-0.029 (0.114)
<i>StateVisit<sub>ijt</sub></i>		-0.067 (0.051)	-0.015 (0.055)
<i>StateVisit<sub>ijt</sub></i> <i>*Polity<sub>jt</sub></i>			-0.235 (0.168)
<i>Constant</i>	-0.781 (2.016)	-0.781 (2.017)	-0.793 (2.016)
<i>R-squared</i>	0.924	0.924	0.924

Notes: Dependent variable is the log of exports  $LnExp_{ijt}$ . Importer and year fixed effects included in all regressions but unreported. Robust standard errors are in parentheses. \*\*\*, \*\* and \* denote statistically robust at the 1 per cent, 5 per cent and 10 per cent level, respectively. Standard errors adjusted for 191 clusters in  $Dist_{ij}$ . Exporting nation is Sweden. Period 1973-2006. Number of observations = 5767.

### 7.3 Reverse Causality and Delayed Effects

Next I explore potential time patterns in the data by including a set of lags and leads for five years prior to and five years following a state visit. This regression is, as before, run with a full set of year and importer fixed effects. As no statistically significant effect of state visits were found using the fixed effect gravity model, there is no reason to worry about or suspect reverse causality. Indeed the coefficients for the leads  $StateVisit_{ijt-5}$ ,  $StateVisit_{ijt-4}$ ,  $StateVisit_{ijt-3}$ ,  $StateVisit_{ijt-2}$  and  $StateVisit_{ijt-1}$  as well as for the joint lead variable  $Pre-StateVisitPeriod_{ijt}$  (presented in specification (1) and (2) in table 7.C., respectively) are all statistically insignificant.

Potentially more interesting, considering the results from the fixed effect specifications in section 7.2., is the possibility that there is a lagged effect of state visits on Swedish exports to the visited countries; in other words, that once a contact is struck or an export agreement is entered into (as a result of the visit), the resulting rise in exports does not occur immediately but rather in the years following the visit. However, as can be seen in fixed effects specification (1) and (2) in table 7.C. none of the coefficients from the lagged variables  $StateVisit_{ijt+1}$ ,  $StateVisit_{ijt+2}$ ,  $StateVisit_{ijt+3}$ ,  $StateVisit_{ijt+4}$  and  $StateVisit_{ijt+5}$ , or the coefficient for the joint lagged effect dummy

$Post\text{-}StateVisitPeriod_{ijt}$  are statistically significant. There is thus no indication of a delayed effect of state visits on exports.

**TABLE 7.C. Reverse Causality and Delayed Effects Specifications (Fixed Effects)**

<b>Variable</b>	<b>(1)</b>	<b>(2)</b>
$LnMass_{ijt}$	0.851*** (0.140)	0.762*** (0.133)
$FTA_{ijt}$	0.268** (0.125)	0.133 (0.107)
$Polity_{jt}$	-0.063 (0.088)	-0.026 (0.115)
$StateVisit_{ijt-5}$	-0.058 (0.080)	
$StateVisit_{ijt-4}$	-0.052 (0.073)	
$StateVisit_{ijt-3}$	0.010 (0.074)	
$StateVisit_{ijt-2}$	0.026 (0.073)	
$StateVisit_{ijt-1}$	-0.040 (0.081)	
$StateVisit_{ijt}$	-0.052 (0.088)	-0.052 (0.070)
$StateVisit_{ijt+1}$	-0.025 (0.106)	
$StateVisit_{ijt+2}$	-0.038 (0.093)	
$StateVisit_{ijt+3}$	-0.031 (0.092)	
$StateVisit_{ijt+4}$	0.036 (0.061)	
$StateVisit_{ijt+5}$	0.013 (0.055)	
$Pre\text{-}StateVisitPeriod_{ijt}$		0.040 (0.050)
$Post\text{-}StateVisitPeriod_{ijt}$		0.026 (0.072)
<i>Constant</i>	-0.061 (2.542)	-0.794 (2.017)
<i>R-squared</i>	0.947	0.924
<i>No. of obs.</i> <i>(std. errors adjusted for x</i> <i>no. of clusters in Dist<sub>ij</sub>)</i>	3831 (178)	5767 (191)

Notes: Dependent variable is the log of exports  $LnExp_{ijt}$ . Importer and year fixed effects included in the regression but unreported. Robust standard errors are in parentheses. \*\*\*, \*\* and \* denote statistically robust at the 1 per cent, 5 per cent and 10 per cent level, respectively. Exporting nation is Sweden. Period 1973-2006.

As an additional robustness check I now turn to the long run difference-in-difference equation (4) from section 5.3. where *annual growth rate* of exports from Sweden to the importing country is regressed on a dummy variable that is equal to 1 if the importer has had a state visit from Sweden at any point during the time period as well as on the ordinary state visit variable and the lagged state visit variables included in the earlier specifications. The results are presented in table 7.D. The first column shows the coefficient estimates when the treatment period is restricted to the year in which the visit took place while the remaining columns show results when the *StateVisit<sub>ijt</sub>* variable is lagged. As the coefficient of the *EverStateVisit<sub>ij</sub>* variable is statistically insignificant for all specifications, there is clearly no measurable difference in Swedish exports growth between countries which received a state visit at some point during the time period and importers that were never visited – indicating that reverse causality is not an issue. Furthermore, the coefficient for the *StateVisit<sub>ijt</sub>* variable and the lagged state visit variables are also all statistically insignificant, implying that there was no discernable additional increase in Swedish exports growth to the visited countries at the time the visits occurred or in the years following the visit.

**TABLE 7.D. Difference-in-Difference Specifications (Fixed Effects)**

<b>Variable</b>	<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>	<b>(7)</b>
<i>EverStateVisit<sub>ij</sub></i>	0.043 (0.573)	0.024 (0.574)	0.057 (0.573)	0.031 (0.508)	0.025 (0.431)	-0.044 (0.466)	0.029 (0.576)
<i>StateVisit<sub>ijt</sub></i>	-0.301 (0.190)						
<i>StateVisit<sub>ijt+1</sub></i>		0.223 (0.191)					
<i>StateVisit<sub>ijt+2</sub></i>			0.067 (0.219)				
<i>StateVisit<sub>ijt+3</sub></i>				0.199 (0.172)			
<i>StateVisit<sub>ijt+4</sub></i>					-0.043 (0.175)		
<i>StateVisit<sub>ijt+5</sub></i>						-0.011 (0.197)	
<i>Post- StateVisitPeriod<sub>ijt</sub></i>							0.012 (0.091)
<i>Constant</i>	-5.113*** (0.582)	-5.105*** (0.582)	1.138* (0.631)	-6.314*** (0.603)	-0.716 (0.568)	-0.199 (0.438)	-5.107*** (0.582)
<i>R-squared</i>	0.031	0.031	0.035	0.029	0.031	0.033	0.029
<i>No. of obs. (std. errors adjusted for x no. of clusters in Dist<sub>ij</sub>)</i>	5551 (189)	5551 (189)	5350 (188)	5159 (188)	4965 (188)	4774 (188)	5551 (188)

Notes: Dependent variable is annual growth rate of exports, *ExpGrowth<sub>ijt</sub>*. Year fixed effects included in all regressions but unreported. Robust standard errors are in parentheses. \*\*\*, \*\* and \* denote statistically robust at the 1 per cent, 5 per cent and 10 per cent level, respectively. Exporting nation is Sweden. Period 1973-2006.

## 8. Conclusion and Final Thoughts

King Carl XVI Gustaf performs, on average, two state visits a year and has done so since he became Sweden's head of state in 1973. An often-stated objective of these state visits is the furthering of bilateral trade as well as the expansion of economic relations more generally. It is commonly claimed, by supporters of the monarchy, that a royal head of state is particularly effective when it comes to promoting exports. While there is some theoretical support for this idea, there are, as far as I am aware, no previous studies that investigate the effect of state visits on exports for Sweden or for any other monarchy.

In this thesis, I have investigated the effectiveness of this one facet of Swedish export promotion. The question I have aimed to answer is *whether state visits, performed by King Carl XVI Gustaf, help promote Swedish exports?* This was done by estimating a gravity model panel data specification of Swedish exports for the time period 1973 to 2006.

The analysis reveals that when an intuitive specification of the gravity model is applied to the data, there is some support for the claim that state visits are helpful in promoting Swedish exports. However, when a full set of importer-specific and year-specific fixed effects are included in the specification, in order to control for multilateral resistance, state visits are not found to have any effect on Swedish exports. I also included in my analysis an interaction variable that aimed to capture whether the export promotion effect of state visits is dependant on the quality of the importing country's governing institutions. There is, however, nothing in the results that would indicate this to be the case. In other words, state visits do not seem to have a significantly larger effect on exports when the visited country is considered anocratic or autocratic. I have also performed a number of robustness checks. More specifically, a difference-in-difference specification was performed to detect potential reverse causality issues, and a comprehensive set of leads and lags were added to the fixed effects specification in order to investigate potential time patterns in the data. The analysis revealed no evidence of either reverse causality or any delayed effects of state visits on Swedish aggregate merchandise exports.

My results are less favourable to state visits as a form of export promotion than those of Nitsch (2007) and Lee and Yeo (2009), who find that state and/or official visits, in the case of France, Germany, the US and South Korea, contribute to bilateral trade to some extent. The results from the 2010 study by Head and Ries are, however, in line with the zero effect results found in this thesis. There are a number of reasons why results may differ between studies. One explanation could be small differences in methodology between studies; but it is also possible that the different results are due to the varying skill and/or political power of different heads of state, or a consequence of different countries having different export promotion strategies associated with their state visits. It is unfortunately outside the scope of this thesis to draw any conclusions in this regard. What can be said is that my analysis, of the effect of state visits performed by King Carl XVI Gustaf on Swedish merchandise exports, does not provide any reliable evidence supporting the common claim that these visits are effective in promoting bilateral trade.

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## Appendix:

**TABLE A.1. Swedish State Visits**

<b>Year</b>	<b>Date</b>	<b>Visited Country</b>	<b>Year</b>	<b>Date</b>	<b>Visited Country</b>
1974	8-10 October	Norway	1992	7-9 April	Ireland
	19-21 November	Finland		22-24 April	Estonia
1975	10-12 April	Denmark		9-11 September	Latvia
	10-12 June	Iceland		15-16 October	Lithuania
	8-10 July	England	1993	27-29 April	West Germany
1976	25-28 October	The Netherlands		7-9 June	Norway
1977	15-18 mars	Belgium		22-24 September	Poland
1978	7-15 June	Soviet Union		11-16 October	India
	11-15 September	Yugoslavia	1994		
1979	20-27 March	West Germany	1995	16-18 May	Czech Republic
	6-9 November	Austria	1996	12-15 March	Malaysia
1980	14-18 April	Japan		28-30 August	Finland
	16-19 June	France		2-5 December	Chile
1981	9-14 February	Tanzania	1997	18-20 February	South Africa
	20-24 February	Saudi Arabia	1998	3-6 November	Mozambique
	14-23 September	China	1999	26-29 April	Greece
1982	17-23 January	Mexico	2000	9-11 November	Bulgaria
	26 March - 6 April	Australia	2001	8-11 May	Belgium
1983	22-25 March	Spain		8-11 November	Russia
	22-25 August	Finland	2002	3-5 April	Slovakia
	21-23 September	Luxemburg		5-7 November	Mexico
1984	2-7 April	Brazil	2003	25 February – 1 March	Thailand
1985				8-10 April	Romania
1986	29 September – 5 October	Portugal		26-28 August	Finland
1987	23-26 June	Iceland	2004	2-6 February	Vietnam
1988	14-19 March	Canada		7-9 February	Brunei
1989	13-16 February	New Zealand		15-17 June	Slovenia
	18-21 September	Jordan		7-9 September	Iceland
1990			2005	17-19 January	Thailand
1991	8-10 April	Italy		7-12 November	Australia
	2-4 May	The Vatican	2006	30 May – 1 June	Turkey
	27-30 May	Hungary		17-22 July	China
				24-27 October	Canada

**TABLE A.2. Summary Statistics**

<b>Variable</b>	<b>No of obs.</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min value</b>	<b>Max value</b>
<i>LnExp<sub>ijt</sub></i>	5767	16.231	3.081	4.575	23.409
<i>LnDist<sub>ij</sub></i>	5767	8.564	0.765	6.109	9.764
<i>LnMass<sub>ijt</sub></i>	5767	20.931	2.566	13.379	29.257
<i>Adjacency<sub>ij</sub></i>	5767	0.012	0.113	0	1
<i>Land-locked<sub>j</sub></i>	5767	0.165	0.371	0	1
<i>Legal<sub>ij</sub></i>	5767	0.026	0.158	0	1
<i>WTO<sub>jt</sub></i>	5767	0.631	0.483	0	1
<i>FTA<sub>ijt</sub></i>	5767	0.127	0.334	0	1
<i>Polity<sub>jt</sub></i>	5767	0.564	0.496	0	1
<i>StateVisit<sub>ijt</sub></i>	5767	0.010	0.101	0	1
<i>StateVisit<sub>ijt</sub></i> <i>*Polity<sub>jt</sub></i>	5767	0.002	0.047	0	1

**TABLE A.3. Correlation Matrix**

	<i>LnExp<sub>ijt</sub></i>	<i>LnDist<sub>ij</sub></i>	<i>LnMass<sub>ijt</sub></i>	<i>Adjacency<sub>ij</sub></i>	<i>Landlocked<sub>j</sub></i>	<i>Legal<sub>ij</sub></i>	<i>WTO<sub>jt</sub></i>	<i>FTA<sub>ijt</sub></i>	<i>Polity<sub>jt</sub></i>	<i>StateVisit<sub>ijt</sub></i>	<i>StateVisit<sub>ijt</sub></i> <i>*Polity<sub>jt</sub></i>
<i>LnExp<sub>ijt</sub></i>	1.000										
<i>LnDist<sub>ij</sub></i>	-0.512	1.000									
<i>LnMass<sub>ijt</sub></i>	0.856	-0.353	1.000								
<i>Adjacency<sub>ij</sub></i>	0.207	-0.335	0.098	1.000							
<i>Landlocked<sub>j</sub></i>	-0.211	-0.043	-0.118	-0.051	1.000						
<i>Legal<sub>ij</sub></i>	0.247	-0.419	0.097	0.703	-0.072	1.000					
<i>WTO<sub>jt</sub></i>	0.297	-0.109	0.335	0.087	-0.008	0.124	1.000				
<i>FTA<sub>ijt</sub></i>	0.511	-0.654	0.417	0.224	0.011	0.372	0.254	1.000			
<i>Polity<sub>jt</sub></i>	-0.272	0.164	-0.269	-0.130	0.154	-0.184	-0.256	-0.378	1.000		
<i>StateVisit<sub>ijt</sub></i>	0.113	-0.098	0.1011	0.079	-0.027	0.091	0.043	0.104	-0.072	1.000	
<i>StateVisit<sub>ijt</sub></i> <i>*Polity<sub>jt</sub></i>	0.031	0.0092	0.0405	-0.005	-0.021	-0.008	-0.009	-0.018	0.042	0.464	1.000