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Demand-Based Determinants of Trade

- The Role of Country Preferences

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ABSTRACT

A vast amount of research has throughout the years been conducted on the topic of international trade. So far, the main focus has been on the supply-side of the economy, whereas much less attention has been paid to the demand-side. The research that has been done from a demand-side point of view is quite narrow. This thesis aims to examine the role of preferences more explicitly. This is achieved by creating a unique preference variable derived from the Eurovision Song Contest. The preference variable is then, together with a number of other variables, included in an augmented gravity model of trade where its effect on trade is examined using ordinary regression techniques. The results show that preferences indeed affect bilateral trade flows.

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1. Introduction

1.1 Background

“The trade of any country is a complex outcome of many causes all operating at the same time” (Markusen et al., 1995)

This is not a controversial statement and most economists would probably agree. At the same time, it is an interesting statement because it says that if you want to understand trade you have to look at it from many different perspectives. So far, nobody has been able to formulate a universal theory that explains all trade flows. Besides, if developed, such a theory, including all factors in play, would undoubtedly be very complex and cumbersome and probably not add that much to our understating of trade. Therefore, in order to be manageable, a model of trade must, like most models, be a simplification of the real world built on a number of assumptions.

This is also how models aiming to explain trade have developed throughout the years. A specific model has been developed to explain certain aspects of trade, while (at the same time) ignoring other aspects. Usually this has been done by holding all the factors not set out to be explained as fixed, while allowing the variable of interest to change. Such a method thereby isolates the factors of interest and makes it possible to draw conclusions that would have been hard or impossible to reach with a model that tries to explain all factors at the same time. This also explains why there are so many different trade theories.

The problem is, of course, that when the specific assumptions do not hold in the real world, the validity of the model is reduced. On the demand side for example, most classical trade models assumes that tastes are identical and homogeneous and that foreign and domestic goods are completely homogenous, i.e. perfect substitutes in consumption. These are very strong assumptions that clearly do not hold in the real world. Many commodities, especially manufactured goods, are differentiated in a number of respects (style, quality etc) which make them imperfect substitutes. That tastes are neither identical nor perfectly homogenous seems fairly obvious.

When you make the assumption that tastes are identical and homogenous you essentially exclude them from being a part of the explanation for trade. Since this is neither realistic nor desirable, this thesis aims to examine how preferences affect trade.

1.2 Purpose and Contribution

The purpose of this thesis is to examine bilateral trade flows from a demand side point of view, i.e. to explicitly investigate the effect of preferences on the patterns of trade. There are many different explanations behind the patterns of trade - preferences are certainly one of them. Much work has been done from the production (supply) side point of view whereas considerably less research has been carried out from the consumption (demand) side. According to Markusen et al. (1995), trade theory in general has “devoted an overwhelming share of its attention to production while neglecting consumption almost entirely”. For example, the famous and very

elegant Heckscher-Ohlin model assumes identical and homogeneous preferences in both countries (the model is a two country model). You could therefore argue that although trade theory has come a long way it is still, in some respect at least, incomplete. This is also why it is an interesting topic.

Theories/models explicitly taking the demand-side into account are very rare; one of the few exceptions is the Linder hypothesis. Staffan Burenstam Linder (1961) argued that trade in manufactured goods will be more intense among countries with similar demand structures. Burenstam Linder himself, and basically all of the subsequent studies testing the hypothesis, have used per capita income as the proxy for demand structures. The basic assumption is that the more equal per capita incomes between countries, the more similar are also their demand structures, i.e. preferences are assumed to be non-homogenous.

This thesis is therefore, in a way, a Linder inspired one. But instead of only using per capita incomes as a proxy for demand structures, this thesis will examine how the demand-side affect trade by utilizing an additional, and more explicit, preference variable. This additional preference variable is derived from the historical voting records in the Eurovision Song Contest. Income per capita is only one measure for demand structures, a measure that certainly is not perfect. For although it is likely that two countries (or persons) with similar incomes have more in common (in terms of what they are demanding) than two countries (persons) with very different incomes this certainly does not tell the whole story. The aim and hope with this thesis is, therefore, that by using an additional and more explicit preference variable this will add further knowledge and understanding of how preferences affect trade. The thesis, thus, set out to answer the question stated below.

Do country preferences matter for international trade, i.e. are bilateral trade flows sensitive to proxies for country preferences?

The aim of the thesis is, hence, not to find out why country preferences exist or what they depend on, rather it seek to investigate what effect they have, if any, in determining trade flows.

1.3 Disposition

The remainder of the thesis is structured as follows. In section two the theoretical framework relevant for this thesis is presented. Section three provides a brief explanation of the Eurovision Song Contest, and reviews some of the earlier empirical studies that have been conducted to explain the voting behaviour in the contest. In section four the methodology, data and variables used in the thesis are described. The empirical findings are then explained in section five. In section six the empirical findings presented in section five are discussed. Section six also discusses the thesis in more broad terms. Finally, section seven concludes and provides some thoughts regarding future research.

2. Theory and Previous Research

2.1 Comparative Advantage and the Heckscher-Ohlin Model

International trade has interested economists (and others) for a long time and thus a lot of work has been undertaken in the subject. When talking about international trade it seems natural to start by reviewing the classical and influential model of comparative advantage. The theory of comparative advantage (derived by David Ricardo) showed that as long as some pattern of comparative advantage exists, there will be gains from trade. Comparative advantage means the ability of a country to produce a certain good at a lower opportunity cost compared to some other country. This means that Ricardo took Adam Smith's theory of absolute advantage one step further. Smith had used the principle of absolute advantage (i.e. the ability of a country to produce more output per unit of input than any other country) to derive how a country could benefit from trade if a country has the lowest absolute cost of production in a good.

The best known neoclassical trade model is the Heckscher-Ohlin model (henceforth H-O model), named after the two Swedish economists Eli Heckscher and Bertil Ohlin. The H-O model to a large extent builds on the classical theories, but differs from them regarding the underlying reasons why countries have different production costs and, hence, comparative advantages. The H-O model assumes the existence of a second factor of production¹, and it rests on the notion of identical production functions. In the H-O model comparative advantage is obtained through difference in factor endowments, not technological differences.

The main conclusion of the model is that a country will export commodities that intensively use its relatively abundant factor in the production, i.e. countries well endowed with labour export goods that are labour-intensive in its production, while capital abundant countries export capital-intensive goods. As McPherson et al. (2001) points out, the H-O model hence suggests that the pattern of trade is largely a supply-side phenomenon.

Although the H-O model is one of the most influential theoretical trade models, the empirical evidence for the theory is somewhat mixed. Several researchers have, for example, encountered difficulties when attempting to verify the hypothesis². Despite this, the H-O model still remains to be one of the most influential and well-known trade models. Maybe this is, as Linder (1961) argued, much because of its common-sense appeal.

One definitive shortcoming with the H-O model is its inability to explain the fact that the majority of actual trade is two-way trade in similar products (i.e. intra-industry trade), between countries with similar factor endowments and therefore similar factor prices. In this type of situation, the H-O model only predicts limited gains from trade. Instead, the H-O model suggests that the largest gains from trade should exist between the developed and the developing countries, where factor prices differ.

¹ The classical trade theories assume one factor of production (labour) whereas the H-O model assumes two factor of production (labour and capital)

² See, for example, Leontief, W.W. (1953).

As a response to the inability of the original H-O model to explain intra-industry trade, several alternative theories/models have been proposed in the literature. Although it is difficult to identify a single model that surpasses all the others, most of the alternative models are characterised by increasing returns to scale and product differentiation.

One of the first researchers that theoretically modelled increasing returns to scale, and its effect on trade, was Melvin (1969). Melvin took the H-O model as a starting point for his analysis but in contrast to the original model he relaxed the assumption of constant returns to scale. Besides that modification he kept the original H-O model intact. The reasoning for this was that he wanted to make sure that whatever results that were obtained were due to increasing returns to scale and not some other factor(s). Melvin modelled economies of scale by assuming that these are external to the individual firm, i.e. they are utilized at the industry level instead of at the company level. Melvin then showed that, although the exact pattern of trade cannot be determined from the model, increasing returns to scale will indeed create incentives for international trade even if there are no differences in factor endowments.

Since Melvin, extensive research has been conducted on the topic of increasing returns to scale. Krugman (1981), for example, offered an explanation for, what he calls, "trade puzzles". Trade puzzles are facts known about actual trade patterns (for example the high degree of intra-industry trade) that are not well explained by conventional theories. When introducing increasing returns to scale, Krugman concludes that these are not really any "puzzles", but instead facts that can be very well explained by the model. Krugman concludes that trade can still be a result of international differences in technology and factor endowments, but these are not the only explanations for trade.

The assumption that domestic and imported goods are perfect substitutes does not, of course, hold in the real world (except for some homogeneous goods). If this assumption and the assumption of homogenous and identical preferences are relaxed, product differentiation obviously has a role to play in determining international trade flows. In this case, international trade in differentiated goods will basically be an extension of domestic trade in goods and services³.

Like all theoretical models, the H-O model rests on a number of assumptions, the most interesting for this thesis being those of homogenous and identical preferences. Much will be said on that later, but first let's look at an alternative trade model.

³ As an answer to the question what will be the forces giving rise to comparative advantages if countries have identical per capita incomes and similar production functions Linder (1961) argued that the same forces that give rise to trade within each of the countries will create trade between them, i.e. product differentiation.

2.2 The Linder Hypothesis

2.2.1 The Hypothesis

Linder (1961) noticed the weaknesses of the H-O and other trade models and argued that an alternative trade theory was necessary, a theory where intra-industry trade could better be explained. Linder's solution was to focus primarily on the demand-side. This was, at the time, a unique feature for a theory on trade.

In Linder's model the home (or domestic) market has a decisive role. Entrepreneurs seeking new business opportunities must develop products demanded by the market. Since entrepreneurs know their home market best, the natural starting point is to seek to develop products demanded by the domestic consumers. If the domestic demand for the product is viewed as strong enough production will begin. When the product is out on the market, the entrepreneur will seek to maximize profits. Although there are other ways to increase profits (e.g. increase margins, cut costs etc), in the end, the entrepreneur need to increase sales. Increasing sales can be done within country borders, but only to a certain extent, thereafter entering new markets becomes necessary and exports follow as a natural part of the business expansion strategy. Where will the business find export opportunities? Exports can, of course, only be made to countries where the company's products are demanded, i.e. to countries with demand patterns similar to the home country.

This is also the main conclusion of the Linder hypothesis; the more similar are the demand structures, the more countries will trade with one another. Since countries with similar demand structures produce similar but differentiated goods trade will, to a large extent, be intra-industry trade⁴.

It is important to emphasize that Linder still believed that differences in relative factor endowments explain most of the trade in undifferentiated goods (e.g. natural-resource-intensive products), i.e. regarding these goods he agreed with the findings laid out in the Heckscher-Ohlin theory.

Linder himself, and most (or all) of the subsequent empirical studies testing the hypothesis, have used per capita income as a proxy for demand structures⁵. This means that trade is expected to be more intensive between countries the more equal their per capita incomes are. Note that this is a shift in focus compared to the H-O model where price differences between countries, due to differences in relative factor proportions, are assumed to provide the main incentive to trade. In the H-O model, where homogenous and identical preferences are assumed, only supply-side factors affect incentives to trade. You could therefore say that Linder relaxed the assumption of homogenous preferences and allowed not only the supply-side, but also the demand-side to be part of the explanation for the pattern of trade.

⁴ Note that increasing returns to scale reinforce the likelihood that a nation will export goods for which it has strong domestic demand, i.e. the incidence of increasing returns further promote trade between countries with similar demand structures. (Markusen et al., 2005)

⁵ That is, similarity of preferences is assumed to be associated with a common income level. (Kennedy and McHugh, 1980)

2.2.2 Previous Research

There exists a large amount of empirical research examining the Linder hypothesis. As can be seen by the review down below, the results are somewhat mixed.

An example of an early study that did find support for the Linder hypothesis is the one conducted by Sailors et al (1973). In their study Sailors et al created a “Linder variable” by taking the absolute difference in per capita income between two countries. After doing this for all 32 included countries (i.e. 31 measures of preference similarity for a specific country) they tested the hypothesis that trade is more intense the more similar per capita incomes are. Their results, in general, did support the Linder hypothesis i.e. trade in manufactures is more intense when incomes are similar. A few remarks are, however, in place. First, in their study Sailors et al do not control for geographical distance. This is problematic since the possibility, then, exist that trade in fact is due to proximity and not really due to similar demand structures. In this specific case the problem could be fairly large since most of the countries where the Linder effect was found to be significant are countries in Europe i.e. countries with short distances between each other. Secondly, although Sailors et al excluded some countries because a large part of their trade is in non-manufactured goods, the data they used was total trade data, not only data covering manufactured goods.

Kennedy and McHugh (1980) tested the Linder hypothesis in terms of changes in propensities to trade against changes in income differences between 1960 and 1975. Using this intertemporal method, they argue, will yield more robust results since the impact of distance is taken into account (i.e. they neutralize distance as a factor in affecting trade). The problem with earlier research, they argue, is that because many countries with similar incomes also tend to be geographically clustered, the effect of distance and incomes can be hard to separate. In their study Kennedy and McHugh found no significant evidence of a Linder type effect in explaining trade patterns. On the basis of these results, they argue, the Linder hypothesis must be rejected. It should be mentioned, as the authors themselves also points out, that their study used total trade rather than trade in manufactures. Again, this is somewhat problematic since Linder only claimed that his theory is valid for trade in manufactured goods (differentiated goods).

By using a gravity-type trade model derived from an underlying demand and supply model Thursby and Thursby (1987) found overwhelming support for the Linder hypothesis when examining trade flows between 17 countries during 1974-1982⁶. What Thursby and Thursby did, instead of pooling the data across countries, was to run separate regressions for each of the included countries (i.e. they ran 17 regressions). Using a Wald test for structural shift supported this method of estimating separate equations for each country's trade instead of pooling the data into one equation. Just like Kennedy and McHugh, Thursby and Thursby used a data set containing all merchandise trade and not only trade in manufactures. The effect of this can be seen rather clearly since the only two countries where they did not find any support for the Linder hypothesis were South Africa and Canada, two countries

⁶ Thursby and Thursby (1987) in the same model also tested for the hypothesis that exchange rate variability affects the pattern of trade. Their results did also support this hypothesis.

that export a relatively low share of manufactures. Thursby and Thursby find their results interesting “since previous empirical tests using the gravity model have tended to reject the Linder hypothesis”.

On the topic of two-way trade and the role of preferences, Francois and Kaplan (1996) claims that while a great deal of attention has been on per capita income levels, the distribution of national income has received little attention. Given non-homothetic preferences and the assumption that a larger share of incomes are spent on differentiated manufactured goods as incomes rises (i.e. the income elasticity of demand is higher for these products), it can be shown that also the income distribution should affect the total trade outcome. More specifically, Francois and Kaplan show that the more unequal the income distribution is, the larger is the share spent on differentiated goods and, consequently, the smaller is the share spent on “homogenous necessity goods”. In other words, it is not only the level of incomes but also their distribution that determine aggregate expenditure patterns and trade flows.

According to McPherson et al (2001), since the introduction of more advanced regression techniques in recent decades, most (but not all) studies have found support for the Linder hypothesis. Among those studies is their 2001 study where they investigate the Linder hypothesis for a number of developing countries by using a fixed-effects panel data model, and find strong evidence in support of the hypothesis. The results from earlier studies testing the hypothesis are somewhat more mixed, but also less valid (especially the earliest tests), McPherson et al argue, since many of them used analysis methods which later have been heavily criticized. McPherson et al., moreover, claim that much of the previous research examining the Linder hypothesis could be flawed because of their exclusion of data from countries that trade zero amounts of goods and services with the country under investigation, which might lead to biased results. More specifically, if the omitted countries have per capita incomes similar to the country under investigation, there will be a bias towards accepting the Linder hypothesis, and vice versa.

Although not a test of the Linder hypothesis per se, Markusen (1986) modelled trade flows by combining differences in factor endowments and scale economies with the assumption of non-homothetic demand. Markusen approached the issue by dividing the world into two regions, North and South. North was assumed to be relatively capital abundant while South was assumed to be relatively labour abundant. Furthermore, North was divided into two identical sub-regions, East and West. Although existing theory, Markusen argues, predicts that N-S trade will be trade based on differences in relative factor endowments (inter-industry trade) and E-W trade will consist of trade in differentiated manufactured goods (i.e. intra-industry trade) it offers no explicit explanation regarding the (unequal) volume of E-W vs. N-S trade. Markusen acknowledged Linder’s view that per capita income has a role to play in determining trade flows and included this in his model by assuming that preferences are non-homothetic. This was done by assuming that income elasticities of demand are different for different goods. More specifically, the income elasticity of demand for manufactured goods (produced in capital-intensive North) is assumed to be higher than the elasticity of demand for the homogenous good (produced in the South)⁷. The result of the analysis is that the capital-rich North not only specializes in

⁷ Non-homogeneity is according to Markusen (1986, p. 1003-1004) strongly supported by extensive empirical evidence on demand.

the production of manufactured goods, but also spends a larger fraction of its income on those goods due to its higher per capita income. South, on the other hand, spends most of its income on the homogenous goods, i.e. its export good. The implication of this is that the larger the non-homogeneity is, the more the E-W trade increases compared to the N-S trade, i.e. the inclusion of demand factors into the model helps to explain the unequal trade volumes between E-W compared to N-S.

2.3 The Gravity Model of Trade

In its most basic form the gravity model of trade⁸ is a model that predicts that trade between two countries is an increasing function of their combined economic size and a decreasing function of the geographic distance between them, i.e. two countries trade more with each other the larger they are, economically speaking, and the closer they are located to each other. (Frankel and Rose, 2002)

The rationale for the distance variable seems rather straightforward. The further apart countries are, the greater the transportation (and information) costs, and hence, *ceteris paribus*, the smaller the bilateral trade should be. The logic behind the economic size argument also seems pretty intuitive. The larger an economy is, the greater its production (i.e. supply) and absorption (i.e. demand) capacity. Often also other variables that relate to either of the two participating countries (e.g. GDP per capita, language, tariffs, trade union membership, colonial history etc) are included into the equation, which then is called an “augmented gravity model” (Groot et al., 2003). These additional trade-variables are often included as dummy variables with the purpose to control for trade effects not captured by the basic model variables, i.e. income and distance. (Ceglowski, 2000)

Although originally an entirely empirical model, the gravity model can nowadays claim to also have theoretical foundations. In fact, numerous theoretical aspirants have claimed the singular empirical success of the gravity model. The theoretical aspects of the model are, however, not something specifically addressed in this thesis. Instead, I agree with Rose (2000) when he claims that:

Which particular theoretical model best describes the empirical findings of the gravity model is a matter of some dispute. But that is irrelevant here. All one needs to know is that the gravity model stands proudly on both theoretical and empirical legs. Indeed, the fact that my results are not tied to a specific model of international trade makes my results more general and thus more powerful (though they are necessarily less illuminating about any specific trade theory).

Since I am not aiming to provide support for any specific trade theory I, in line with Rose, believe that the gravity model of trade is an appropriate empirical tool to use vis-à-vis the purpose of this study.

⁸ Which, by the way, draws its name from Newton’s equation of gravity in physics (Chionis & Liargovas, 2002).

3. The Eurovision Song Contest

3.1 The Competition

Initiated in the mid-1950s, the Eurovision Song Contest (henceforth ESC) was an attempt by the sitting committee of the European Broadcasting Union (henceforth EBU) to bring together the countries of Europe. There is, however, no strict requirement for only European countries to participate in the competition. In principle, any country can participate just as long as the network broadcasting the contest is a member of the EBU. The EBU is an association of national broadcasters in the world who today has 75 active members, from 56 countries in and around Europe, and 45 associate members around the world. (<http://www.ebu.ch/>).

Without interruption, the Eurovision Song Contest has been broadcasted every year since 1956, which makes it one of the longest-running television programmes in the world. An estimated 100 million people across the world watch the Eurovision Song Contest every year. In 2007 the total number of votes (both through calls and SMS) was almost 9 million. (<http://www.eurovision.tv>)

After the competition was established a set of rules needed to be decided upon. Although initially each country was allowed to participate with two songs, the rules changed after only a couple of years and since 1957 each participating country can only perform one song in the competition. The order of performance was from the start of the competition decided to be determined by a draw, and that rule still holds. Furthermore, it was decided that the songs could be performed in any language, i.e. artists were freely allowed to perform their song in a language other than the official language of the country they represented. This “freedom of language” rule has, however, changed during the years but since 1999 freedom of language is again the rule. Countries are free to select their song in whatever way they wish, although they are encouraged by the EBU to select them in a way that promotes participation by the public.

The voting procedure in the competition has changed throughout the years, in two respects: first, in terms of the voting system used, and secondly, in terms of who casts the votes. The voting system used in the competition has changed several times during the history of the competition. The system used today, which was put in place 1975, is a voting system in the form of a Borda count⁹. Once all songs have been performed, each country award points to ten other countries: 12 points is given to the favourite song, 10 to the second favourite, 8 down to 1 is given to the other songs preferred by the voting country. After all countries have awarded their points, the points are summed up and the winner is the song with the highest total score. (<http://www.eurovision.tv/page/>)

⁹ “The Borda Count is a form of preferential voting where the rankings are converted into points, and the candidate who receives the most points is declared the winner” (<http://www.electoral-reform.org.uk/article.php?id=75>). The Borda count assigns an alternative X points whenever it is highest in some agent’s preference list, X-1 whenever it is second and so on. The alternative with the highest count becomes the social choice (Weiss, 2000). Since the voters in the ESC don’t give points to every song participating in the competition, only the top ten, it is not a “true” Borda count, but a procedure very close to that.

Regarding the question of who casts the votes, this has also changed. From the start of the competition in 1956 up to 1997, a country's votes were determined by a national jury. In 1998, a new system was introduced. This year "televoting" (i.e. the public was allowed to vote directly) was introduced in the ESC, after being tested by five countries in 1997. (wikipedia.org)

Televoting is, however, not a totally new phenomenon in the competition since some nations already had used this system in their national finals, but 1998 was the first year televoting was used in the ESC on a full scale.

One rule that was established from the beginning, and which still holds, is that a country cannot award points to the artist/song representing their home country, i.e. you can only vote for songs from other, foreign, countries.

Because the number of countries wishing to participate in the contest in later years has grown rapidly some qualification mechanisms had to be installed to prevent the competition from running too long. Like many of the other rules, the rules that limit the number of contestants have changed several times. The system in place today is one where the competition has been split up into a semi-final and a final. The semi-final includes those countries whose ranking on the scoreboard the previous year was not high enough to ensure direct qualification for the final¹⁰.

In 2007, the EBU reference group decided that from the 2008 Contest and onwards two semi-finals will be held. Only the host country and the Big Four will automatically qualify for the grand final, and they will be joined by ten countries from each semi-final, making a total of 25 entries in the final.
(<http://www.esctoday.com/news/read/9327>)

3.2 Previous Research

According to Spierdijk and Vellekoop (2006) suspicions and accusations that countries award votes based on other criteria than merit are as old as the Eurovision song contest itself. During basically all the Eurovision Song Contests, they claim, there have been accusations of 'tactical' and/or 'political' voting.

Spierdijk and Vellekoop (2006), however, argue that one should not forget that before making a claim about tactical/political voting patterns, there are some factors that must be considered. Similarities and differences between countries, in different respects, may result in a common musical taste leading to a strong preference for particular countries' songs. Therefore, awarding a relatively high number of points to a certain country does not necessarily have to be purely 'political' behaviour. Moreover, and this is important, also general attitudes towards other countries could affect the voting in the ESC. Much more will be said on this topic, but let us first look at earlier research examining the ESC.

¹⁰ There is one exception to this rule saying that four countries always qualify for the final. These countries have been called the "Big Four" and include Germany, France, Spain and the United Kingdom. The reason for this "special treatment" is that these are the largest financial contributors to the EBU budget and therefore, the EBU argue, should be guaranteed a spot in the final.

Spierdijk and Vellekoop (2006)¹¹ examined the issue of tactical and political voting by taking into account a number of variables (culture, language, ethnicity, and religion) to distinguish political voting from actual country preferences. Although they found significant geographical voting patterns (i.e. countries close to each other vote for each other) their main conclusion was, in short, that much of what may seem as political voting actually can be explained by other factors. The accusations against the Nordic countries, for example, “cannot be upheld when other influences are taken into account”, Spierdijk and Vellekoop argue. The same goes for many other regions accused to vote politically. In fact, the only region where voting patterns cannot be explained by other factors is the Baltic states, i.e. evidence for political voting among these states is found. Another conclusion was that the factors affecting the voting bias are extremely individual. For some countries a certain factor seem very important, for another country the same effect essentially explains nothing of the voting bias, i.e. it is insignificant. What Spierdijk and Vellekoop also showed was that many of the factors affecting the voting patterns have become more significant since the public was allowed to vote.

Clerides and Stengos (2006) used several explanatory variables and a number of methods in an attempt to determine how countries vote in the ESC. What distinguish their paper from others examining the voting pattern in the ESC is that they included trade volumes as an explanatory variable. The reason for this is that trade volumes are assumed to capture the closeness of economic relations between countries. Except for trade volumes, a number of other explanatory variables are included, e.g. geographical proximity, language, and several other variables related to the performance in the competition (language, gender, order of appearance etc). Their basic assumption is that the decision of how to vote depends on two factors: affinity to the other country, and perceived quality of that country's song¹². Clerides and Stengos main conclusion was that the awarding of points in the ESC goes beyond just rewarding a certain song. The results obtained in their analysis showed that affinity variables explain a lot of the variation. Based on these results they argue that the systematic bias in the voting reveals some deeper sociological likes and dislikes. They also showed that these biases are even more pronounced when the public is allowed to vote. Furthermore, they also found support that a number of factors linked to the presentation of the songs (language, gender etc) are important determinants behind the observed voting pattern.

In an attempt to measure how compatible the European countries are, Fenn et al. (2005) investigated the relationship between countries in the ESC by utilizing historical voting records from the ESC (1992-2003) and modelled the relationships by

¹¹ Spierdijk and Vellekoop define the voting bias in the same manner as in this thesis, i.e. they compare the vote given from one country to another with the average score in the competition for the receiving country. The dependent variable in their model is the voting bias, whereas the other different variables assumed to affect the bias are used as independent variables.

¹² Perceived quality is further divided into objective quality and subjective quality. Subjective quality relates to a certain countries preferences for a certain type of song. Because this is hard, likely impossible, to measure only objective quality is used in the model. Like most other studies, the average score is used as a proxy for (objective) quality.

treating the competition as a Complex System¹³. Based on this model setup they argued that any systematic biases in preferences that can be found in the data (i.e. voting records) “are completely related to the question of taste”¹⁴. By both studying individual countries and country cliques (groups of countries) they came to the conclusion that voting patterns do indeed exist. More explicitly, the observed probabilities of connections between certain countries (and groups of countries) “were found to be significantly greater than the equivalent values for a random contest”. Furthermore, the authors’ came to the conclusion that although geographical proximity seems to explain some of the voting patterns there are probably also other, more subtle, explanations to why countries vote the way they do.

Haan et al. (2003/2005) studied the efficiency of the jury’s and the public votes in the ESC. Since (song) quality is impossible to measure and quantify in an objective manner, the authors instead tests if “their (the jury and the public) choices are based on the perceived merits of the song itself, and not on any exogenous factors that have nothing to do with the quality of the songs”. One such exogenous factor is the order of performance in the competition. The order of appearance is drawn by lot and should not affect the final ranking. Haan et al., however, showed that the order indeed had an effect on the final outcome in the ESC. Generally, there is a negative relationship between appearance and final ranking i.e. the later in the competition a song is performed, the greater the chance of winning. There is, however, one exception to this “rule” and that is that there also seems to be a “first-mover advantage” meaning that the first song in the competition usually (on average) scores better than other songs. This effect is seen both when (expert-) juries and the public vote, but it is more pronounced when the public is allowed to vote, i.e. the voting conducted by the public is even more inefficient.

In their 2006 paper Ginsburgh & Noury concluded that what in the end determines the voting patterns are quality¹⁵, and linguistic and cultural factors. Ginsburgh & Noury also claim that “there is no vote trading (cliques or voting blocs) beyond the one that can be explained by linguistic or cultural traits or proximities”. Once these variables are taken into account they eliminate the effect of vote exchanges based on political issues. One can still argue, they claim, that the voting procedure takes into account factors that are not purely artistic. Ginsburgh & Noury also tested for other factors, and come to some interesting conclusions. By dividing the total period (1975-2003) in to two sub-periods (1975-97 and 1998-2003), and examining them separately, they tested if the coefficients are equal in the two sub-periods (i.e. if the collusion also holds after 1997). From this they concluded that there is no significant difference between the results of ranking by judges and ranking by televoters.

¹³ Although recognizing that there is no precise definition of a complex system, Boccara (2004) claims that there is a consensus regarding the essential properties a system has to possess to be called complex. In short, Boccara describes a complex system as:

A system which consists of large populations of connected agents (that is, collections of interacting elements), is said to be complex if there exists an emergent global dynamics resulting from the actions of its parts rather than being imposed by a central controller.

¹⁴ Implicit in their analysis, even though probably not realistic in the real world, is the assumption that all songs are of equal musical quality.

¹⁵ The “quality variable” is created by taking the ex-post average rating of a song from a certain country j by the judges of the other countries.

Ginsburgh & Noury (2004) examined if there exist any logrolling (or strategic voting/vote trading) in the ESC. There is extensive discussion about logrolling in theory, but little empirical evidence, the authors argue when explaining their topic of study. In their paper, where they use the historical voting's from the ESC, they found no evidence for logrolling. Initially (i.e. in their basic model) their OLS estimations indeed showed a significant effect for vote trading. The effect (the coefficient) was however so small and, besides, disappeared when they introduced their linguistic and cultural variables into the equation. Based on this, they concluded that what at first glance might seem as logrolling actually is voting based on linguistic and cultural affinity.

4. Methodology and Data

This section describes the methodology and data used in the thesis. Initially, the methodology applied is explained. Also, potential limitations and the rationale for using the ESC to extract country preferences are discussed. The data section includes a description of the time period, the variables, why they are included, and what signs I am expecting when later running the regressions. Furthermore, the section includes a description of how certain variables have been created and where the data have been collected.

4.1 Methodology

In order to create a proxy for country preferences, 32-years data (1975-2006) from the historical voting records in the Eurovision Song Contest is used. To determine what effect country preferences have on trade, the ESC preference variable is thereafter included in an augmented gravity model of trade where its effect on trade flows are estimated using OLS techniques. In a regression format this means that the preference variable is evaluated based on its sign, significance, and explanatory power.

Since I find it likely that all countries are not equally good at producing “good songs”, it becomes necessary to control for quality in order to get a more accurate preference proxy. Some of the previous studies have done this, but far from all. Studies that do not control for quality, although not always explicitly stated, assume that all songs are of equal musical quality. With this assumption any deviation from a random draw voting is considered to be an expression of differences in preferences. **Clerides and Stengos (2006)** comment on this topic:

“...in reality, of course, song quality is not random. Some countries have stronger musical traditions or more mature entertainment industries and are able to consistently produce above average songs”.

I agree with this reasoning and therefore, especially since it is so easy to implement, also chose to control for quality in this thesis.

Because the data collected is two-dimensional in its form (in terms of both countries and time), it is a panel dataset. Furthermore, since the numbers of countries participating in the ESC vary over time, the dataset is unbalanced¹⁶.

The empirical framework that will be used when analyzing the effect of country preferences on trade will be the gravity model of trade. There are essentially two main reasons for this. To start with, the gravity model of trade is a well-known and widely used model, with a solid track record, when examining trade patterns. According to **Rose et al (2000)**, the gravity model of trade is an unusual economic model because of its “remarkably consistent history of success as an empirical tool”. Both income and distance, which are the variables included in the base model, consistently have the right sign and are statistically significant. Besides, the model

¹⁶ “Unbalanced” panels, or “incomplete” panels as it is also called, are panels where the units observed vary over time (Baltagi, 2001). In this particular study it means that the same countries are not participating in the contest every year.

seems to be able to explain a reasonable proportion of cross-country trade. Moreover, the gravity model of trade is an effective and relatively simple tool for measuring the effect of specific variables on international trade flows. This, in combination with its consistency, is probably also the reason why the model has been so widely used throughout the years.

In addition to the explicit preference variables, the author will adhere to the standard format of the basic gravity model and include economic size and distance. As a measure for economic size a country's Gross Domestic Product (GDP) will be used. In order to proxy for the geographical distance between pairs of countries a weighted distance measure will be used.

A potential limitation with the methodology applied is that there are no perfect measures for the underlying variable set out to be examined, i.e. preferences. One reason for this is that it is very difficult to measure preferences. Accurately measuring individual preferences is, to say the least, very difficult and time-consuming or maybe even impossible. Ideally, one would have access to the preferences of each individual consumer within the area that is being examined. Although still difficult to model directly, especially when examining large populations, the individual data could be categorized and used to model the effect of preferences on a more aggregated level. For example, individual data could be aggregated to a country-level basis and thereafter be used to determine how country preferences affect international trade flows.

Unfortunately, obtaining preferences data on an individual level is not possible, especially when one aims to examine an area consisting of hundreds of millions of people. Because of this, some kind of approximation method has to be used.

4.1.1 Rationale for using the ESC to create a proxy for Country Preferences

There are several reasons why the voting in the ESC may provide a good proxy for country preferences. As some authors have noted, the ESC is in many ways a unique event that contains many of the characteristics required for making a study like this worthwhile. Regarding the competition in general terms, Fenn et al (2005) claim that:

Irrespective of whether the ESC actually contributes to the creation of better music in the continent, the festival itself constitutes an example of a truly international forum where a country can express an opinion about another country, free of political or economic considerations.

On the topic of whether a country has preferences, Fenn et al (2005) argue that:

Underlying such 'national taste' is the idea that a country may collectively have some reasonably well-defined preferences – just like an individual socio-economic agent within the research literature. Indeed, we believe that the spatio-temporal complexity that we have observed in the interactions of our N countries, is not unlike that expected within a group of N interacting human beings – and in particular, a group of N heterogeneous agents.

Furthermore, Ginsburgh and Noury's (2004) conclusion that voting in the ESC takes into account factors that are not purely artistic, the Fenn et al. (2005) study showing that there seems to be more subtle explanations to why countries vote the way they

do (beyond merely geographical closeness), and Clerides and Stengos (2006) conclusion that the voting reveals some deeper sociological likes and dislikes, all highlight some of the inherent, and for this thesis interesting, characteristics of the ESC.

Finally, it is interesting to note Linder's discussion regarding the measure he used as a proxy for demand structures (per capita incomes):

Although it is clear that other factors, such as language, culture, religion, and climate, influence the demand structure, we shall work with the hypothesis that the scope for trade is potentially greatest between countries with the same per capita income levels.

Clearly, Linder realized the limitations with his measure and acknowledged that also other factors affect demand structures. What is particularly interesting is that all the variables Linder mentions (except for climate) are variables that have been shown to have a decisive effect on how countries vote in the ESC, i.e. the tool used in thesis to create a proxy for country preferences (demand structures).

By examining the structure of the competition and taking the results from previous research into consideration I think it is fair to conclude that, without knowing all the underlying mechanisms determining the voting behaviour of a country, the ESC is more than a pure music competition, i.e. the voting is not solely based on musical merits (voting for good songs). Embedded in the voting patterns are also some deeper underlying factors that reveal something more about general country preferences. And this is exactly why I believe the ESC is a good source to extract country preferences from.

And if this is true, i.e. that we from the voting procedure can extract more general preferences, it is not a far-fetched hypothesis that these preferences also affect other interactions between countries. One of those interactions, I argue, could be bilateral trade patterns.

4.2 The Data

4.2.1. Time Period

The time period chosen for the thesis is 1975-2006, and the analysis will be performed on an annual basis (i.e. by using annual data). The most important factor to consider when choosing time period was to make sure a sufficiently long time period was used. Generally, a longer time period, *ceteris paribus*, increases the validity of the analysis since the effect of temporary deviations can be discerned, i.e. it becomes easier to determine the long term trend. That is, however, not to say that a longer time period always is the best alternative. If the effect of certain variables changes between time periods, or different variables impact the result in different time periods, using a longer time period may actually distort the results, or at least make it difficult to draw firm conclusions (if you do not explicitly take these factors into account that is, e.g. by testing for structural breaks).

The reason why 1975 was chosen as the starting year of the analysis is due to the fact that the voting procedure in the ESC has been the same since then. Prior to

1975 the voting procedure in the competition changed several times. Although it would have been possible to include years prior to 1975, it would have caused some problems and additional work as different voting systems would have to be transformed to a unified system in order to perform the analysis. Since 32 years, after all, is a rather long time period I felt comfortable to limit the study to this period.

4.2.2 Dependent Variables

The dependent variable used in this thesis is the import of goods by one country from another. Imports has been measured in two different ways (i.e. there are two independent variables); total imports and imports in differentiated goods. Total imports are, just like the name indicates, the total import by one country from another. Imports in differentiated goods represent the import to one country from another in certain chosen goods (product categories).

Although there are two dependent variables, total trade will only be used initially. This is because when measuring the effect of preferences on trade it makes little sense to include goods where preferences do not matter (or matter very little). When trading in undifferentiated goods (raw materials for example) preferences likely play only a minor, if any, role. Instead, other factors (price, availability etc) are the ones of importance¹⁷. Based on this, an “import in differentiated goods” variable (henceforth IIDG) was created. The IIDG variable is a variable where certain types of goods have been excluded (e.g. raw materials). The selection procedure was done based on the four digit SITC categorizing system¹⁸.

4.2.3 Independent Variables

Based on economic theory and results obtained in other similar studies the following independent (explanatory) variables are included in the model:

- **Exporter GDP.** The variable measures the economic mass of the exporting country. Since a larger GDP means a larger total production in the exporting country I expect a positive sign for this variable. In other words, I expect countries to import more from larger economies than from smaller ones. There could, however, be an offsetting effect since a large domestic market means that domestic producers are not “forced” to the world market as early as compared to producers in a smaller economy where domestic demand is more limited.
- **Importer GDP.** This variable measures the economic mass of the importing country. Also here I expect a positive sign on this variable since a larger GDP in the importing country means a larger absorption ability, i.e. a larger potential to import goods from other countries. As in the case for exports, there could also here be an offsetting effect meaning that, in a larger economy there is less need to import goods from other countries since more goods are available within country borders. This could mean that a smaller fraction of the total

¹⁷ This is, however, not to say that also other factors might affect the demand for these types of goods. Due to environmental concerns, for example, people might be concerned where and how raw materials are produced, i.e. price, availability etc are perhaps not the only factors of importance.

¹⁸ The full list of the included (and excluded) product categories can be found in the appendix.

GDP is imported in a large country compared to a smaller country but, since the economy is larger (in absolute terms), the total value of imports should, on average, still be greater. Both GDP measures were collected from the UN Statistical Division.

- **Distance.** The distance variable included expresses the “Great Circle Weighted Distances” (measured in kilometres) between the importer and the exporter. Note that weighted distances are used instead of simple distances. The reason is that this distance variable gives a more fair picture, I believe, of the “economic relevant” distance¹⁹. The difference between the two is that weighted distances measures the geographical distance between two countries “based on bilateral distances between the largest cities of those two countries, those inter-city distances being weighted by the share of the city in the overall country’s population”. The simple distances, on the other hand, “are calculated following the great circle formula, which uses latitudes and longitudes of the most important city (in terms of population) or of its official capital” (www.cepii.fr). The expected sign is negative. Since distance is a proxy for transportation (and information) costs this is not surprising. A larger distance means higher transaction costs which should decrease bilateral trade, ceteris paribus. The distance variable was gathered from CEPII (www.cepii.fr).
- A variable measuring the **difference in per capita income** between the importing country and the exporting country (henceforth called “**Linder**”). By using per capita income data from both the importing and the exporting country several variants of the Linder variable have been created. Since the results for the different variants are similar, I have chosen to include only one of them in the analysis. This variable is calculated as the absolute difference between the importing and exporting countries’ GDP per capita. By using absolute values the difference in per capita incomes always comes out as a positive value. This is suitable since I am only interested in finding out the absolute difference in per capita income, i.e. it is irrelevant which of the two (importer or exporter) who have the higher per capita income. The variable was created by using per capita income figures gathered from the UN Statistical Division.
- **A preference variable created from the ESC (henceforth called ESCP).** The preference variable is used to measure what effect general country preferences have on trade. Although Linder relaxed the assumption of homogenous preferences, he still, implicitly at least, assumed identical preferences. This variable, on the other hand, assumes neither homogenous nor identical preferences and can thus measure the effect of preferences on trade in a more explicit manner²⁰. To control for quality this thesis uses the

¹⁹ Still, no distance measure is perfect. **Disdier and Head (2008)**, for example, claim that “great-circle routes often differ substantially from actual cargo routes”.

²⁰ At the country level that is to say, individual preferences within countries are also in this thesis assumed to be identical. In other words, it is countries that are assumed to have preferences. The individual preferences underlying these country preferences are, of course, neither perfectly homogeneous nor identical but, as I argued earlier, this assumption is necessary to make it practically feasible to conduct a study like this. What is important is that preferences are allowed to differ between countries, which are not the case in the classical trade theories.

average score a certain country receives a certain year as a measure for “objective quality” and, then, compares this score with individual scores given to that country from other countries²¹. More specifically, the (normalized) quality-adjusted preference variable is specified as follows:

$$(\text{score}_{xyt} - \text{average_score}_{yt}) / \text{stdv_score}_{yt}$$

Score_{xyt} is the score given from country x to country y in year t, average_score_{yt} is the average score for country y in the competition in year t, and stdv_score_{yt} is the standard deviation of the score for country y in year t. By comparing individual scores with average scores it is possible to sort out the song quality factor and get a more accurate value of country preferences. A “positive preference” (i.e. a score given from country i in excess of the average score for country j), are expected to result in higher imports by country i from country j, i.e. the preference variable is expected to have a positive coefficient. The preference variable has been created from the historical voting records of the ESC.

4.3 Discussion regarding the Data and Variables used

One thing that distinguishes this study from most of the previous studies examining the ESC is that this thesis includes fewer independent variables. A whole array of variables have been including in various studies over the years. Some of the most frequently included are variables measuring similarity in culture, history, language and religion²². Usually, support is also found for that these, and other, variables significantly affect the voting in the ESC. So, why are these variables not included then?

The answer to that question is that they are included, although in a more implicit manner. The underlying assumption is that the combined effect of all these and other variables (incl. perhaps omitted variables) are reflected in the preference variable that has been created from the ESC. All these variables likely influence country preferences, but instead of specifying and approximating all the individual variables separately, a single variable has been created in an attempt to extract country preferences from the ESC.

Part of the reason for this is that all these other variables also have to, in some way, be approximated. There are, for example, no perfect measures of cultural similarity; instead some kind of method to approximate it has to be used²³. Moreover, when you

²¹ One thing that you have to be aware of when calculating the average score for country B, if you are interested in finding out country A's preference for B, is that you must exclude country A's vote on B when calculating B's average score.

²² Notice that the inclusion of a variable accounting for religion, for example, should not be interpreted as an effort to explain musical tastes by religious preferences. The inclusion of religion is merely an attempt (or a method) to identify common characteristics between different countries that potentially can explain the preferences observed in the ESC (Spierdijk and Vellekoop. 2006).

²³ To approximate for cultural differences most of the previous studies uses Hofstede's four cultural dimensions. Geert Hofstede uses four cultural dimensions to capture the cultural differences between countries. The four

choose to use a specific number of variables measuring similarity you always run the risk of leaving some relevant variables out, i.e. you may have omitted variables. But it is also due to the fact that I am mainly interested in the end result, i.e. how country preferences affect trade, not the individual components. If one still were to include these other variables, together with the preference variable used in this thesis, the remaining impact of the preference variable would undoubtedly have been much weaker since these other variables would have “eaten up” much of the effect that now is picked up by the preference variable. Therefore, vis-à-vis the purpose of the study, the chosen approach was viewed as the most appropriate.

Furthermore, this study does not take into account other factors that may, and partly have been shown, to affect the outcome of the competition. These factors are, for example, order of appearance, gender of the artist, single vs. group performance, host country effect, the language in which the artist sings etc. This is partly because of the complexity it adds, but also because it is expected that this will not have any decisive effect on the results. This is mainly because the effect of these factors should tend to average out over the long run, and partly also because earlier studies examining these variables have shown some mixed results regarding which variables that actually have an effect²⁴.

As always, any study relying on data collected are not better than the quality of the data used. If the data used is inaccurate, the conclusions drawn are, of course, not of much value. In order to manage this risk, the data have been collected from a few well-known sources. GDP data have been gathered from the UN Comtrade data base (UN Statistical Division), and the distance data have been taken from the CEPII, both well-known sources. Data from the ESC have been collected from various sources on the internet, among them the Eurovision homepage (www.eurovision.tv).

Hofstede dimensions are; power distance, individualism, masculinity, and uncertainty avoidance (<http://www.geert-hofstede.com/>)

²⁴ Although it might be the case that certain factors, e.g. order of appearance, could have an impact on the voting in the competition a certain year this should, in the long-run, since the order of appearance in the competition is random, don't affect the result in a significant manner.

5. Empirical Findings

The framework for analyzing the data will, as I already mentioned, be the gravity equation of trade. The approach I am going to use is one where I start with the basic gravity equation and then, gradually, apply more variables and more sophisticated methods in an attempt to determine the possible effect that country preferences have on trade. The effect of demand characteristics on trade will be evaluated in two ways; by examining the empirical support for the Linder hypothesis, and by investigating the result for the explicit preference variable that has been created from the ESC. The latter of these is the main task and the unique contribution of this thesis. Even though I am mainly focusing on the preference variables I will, of course, also comment on and analyze other results obtained. The statistical analysis was performed in Stata.

5.1 Test of Data Quality

When examining the dataset it was found that White's and Breusch-Pagan test showed signs of heteroscedasticity in the data. Because of this the robust regression method will be applied throughout the thesis²⁵. Another thing that was found when the data was examined was that the residuals are not normally distributed. Normality of the residuals is an assumption underlying the OLS that ensures that the t-values obtained in the analysis are correctly estimated. This is, however, mainly a problem when the data sample is not that large. In this case, where the data set is reasonably large, this should not be a major problem, i.e. the estimated t-values should be accurately estimated. In order to further increase the robustness of the regression results, Bootstrap estimation will also be applied²⁶. Besides from the two mentioned, no other major anomalies were found in the data.

5.2 Summary of Data

To get an overview of the data, table one below shows a summarization of the dataset. As can be seen from the summation below we are dealing with a fairly large dataset; 32 years, 48 countries, and nearly 70 000 import trade observations (of which half is total trade data, and the other half is trade in differentiated goods). I have also collected GDP data, GDP per capita data, data from the ESC, distance data, created one variable quantifying the similarity in GDP per capita incomes (Linder), and one variable measuring country preferences (ESCP).

²⁵ Robust standard errors (or White's standard errors) are standard errors that are robust to the presence of heteroskedasticity. (www.stata.com)

²⁶ The traditional parametric approach depends upon strong distributional assumptions, i.e. it assumes that the data comes from a certain type of probability distribution. Bootstrapping is a nonparametric approach for evaluating the distribution of a statistic based on random resampling (Guan, 2003).

Variable	Obs.	Mean	Std. dev	Min	Max
Year	37147	1994.88	9.09	1975	2006
Importing countries	36967	24.83	13.75	1	48
Exporting countries	36969	24.87	13.67	1	48
Distance	36591	1710.69	921.24	8.45	5237.25
GDP importer	35053	2.60e+11	4.34e+11	9.22e+08	2.23e+12
GDP exporter	35098	2.60e+11	4.35e+11	9.22e+08	2.23e+12
Per capita income importer	35009	13491.54	10904.79	300	41082
Per capita income exporter	35056	13618.22	10921.26	300	41082
Score in the ESC	17603	2.29	3.53	0	12
Average score ESC	17603	2.59	2.22	0	10.06
Std. dev. Score ESC	17603	2.81	1.14	0	5.17
Total imports	34398	4.71e+08	3.18e+09	1	8.61e+10
Imports in differentiated	34357	3.26e+08	2.28e+09	0	6.71e+10
Linder variable	33449	1.38	1.07	0	4.73
ESCP	17264	-0.09	0.99	-3.43	7.51
residuals	31090	6.17e-10	3.62	-11.88	9.42

Table 1: Summary of the data

5.3 The basic Gravity Model of Trade

The basic gravity model (of trade) is one where two countries economic size (GDP) and the geographical distance between them are included to assess bilateral trade flows. In this model I expect economic size, both for the importer and the exporter, to be positively related to the bilateral trade volume while distance should be negatively related. As a starting point in the analysis I ran two regressions, one using total imports as the dependent variable while in the other the IIDG variable was used as the dependent variable.

The following regression will thus be run:

$$\text{Total imports/IIDG} = \alpha + \beta_1 \ln_distance + \beta_2 \ln_importer_income + \beta_3 \ln_exporter_income + \mu$$

	Total imports		IIDG	
Variable	Coefficient	Sig.	Coefficient	Sig.
Distance	-1.35	0.00	-1.34	0.00
Importer income	0.80	0.00	0.78	0.00
Exporter income	0.94	0.00	0.95	0.00
Constant	-20.41	0.00	-20.66	0.00
<hr/>				
Number of obs.		31504		31090
R-square		0.29		0.29

Table 2: Total imports and imports in differentiated goods (IIDG). Variables, their coefficients, level of significance, number of observations and the R-square.

As can be seen in table two above, all the coefficients (in both specifications) have the expected sign and are significant. The positive coefficient for the countries economic size means that the larger countries are, economically speaking, the more they trade. The negative sign for the distance variable means that the further apart two countries are located from each other the less they, on average, trade. The R-square values (0.29) are rather low.

Although the results from the simple OLS regression just performed seem reasonable (despite the fact that the R-square is rather low) one must be somewhat careful when interpreting them. When estimating the standard OLS regression in this way the space and time dimensions of the pooled data are disregarded, i.e. OLS assumes that the intercept and the slope coefficients are constant and identical across time and space²⁷. When using a large panel dataset, this is probably not optimal. How to best estimate the model depends to a large extent on the assumptions you make about the intercept, the slope coefficients, and the error term.

5.4 Augmented Gravity Model of Trade – Test of Preference Variables

Since I am primarily interested in finding out the sign, size and significance of the coefficients for the different variables included, and the data is in a panel form, it make sense to allow the intercept to vary and take into account individual and/or time specific effects. In Stata, this can be done by including various categorical variables (i.e. dummy variables). In this particular case it could be appropriate to create dummy variables that take into account both the time effect (i.e. create time dummies), and dummy variables that take into account the possible underlying differences between countries (i.e. create dummies for the importing countries).

The rationale for including time dummies is that there could be some external effect(s) (e.g. technological changes, changes in regulation, conflicts etc) that makes the import function to change over time. By creating time dummies (i.e. a dummy for each year, except for the base year) these possible effects can be taken into account.

²⁷ In this specific case “space” refers to individual countries.

The rationale for introducing dummies for individual countries (i.e. the importer) is that individual features of different countries can make the import function to differ between them. By introducing a country-specific dummy this possible effect can be taken into account²⁸. Notice that, although you allow the intercept to vary between countries you still assume that the individual intercept does not vary over time, i.e. the intercept is time invariant.

A third option is to combine the two already mentioned approaches, i.e. you allow the intercept to vary both over individual countries and over time. This is done by including both sets of dummies in the analysis, i.e. both time dummies and country dummies.

Before taking the time and space effects into account it is time to introduce the two preference variables²⁹. The two preference variables that I am going to use are:

- (1) A variable that measures the differences in per capita income between the importer and the exporter (Linder), and
- (2) An explicit preference variable that I have created from the ESC (ESCP).

Both of these variables are used with the purpose to measure the effect preferences have on trade. The first one, i.e. the difference in per capita income variable, is the variable most often used to test for the Linder hypothesis. The second variable, i.e. the ESCP variable, is used with the purpose to test for the effect of preferences on trade in an alternative way.

	Linder		ESCP	
Variable	Coefficient	Sig.	Coefficient	Sig.
Distance	-1.42	0.00	-1.04	0.00
Importer income	0.78	0.00	0.63	0.00
Exporter income	0.96	0.00	0.84	0.00
Linder	0.02	0.25	-	-
ESCP	-	-	0.12	0.00
Constant	-20.46	0.00	-15.78	0.00
<hr/>				
Number of obs.		30955		14919
R-square		0.29		0.23

Table 3: Import of differentiated goods. Variables, their coefficients, level of significance, number of observations and the adjusted R-square.

²⁸ The method used to test for country specific effects is identical with one of the methods applied by Spierdijk and Vellekoop (2006). Unlike Spierdijk and Vellekoop this thesis does not, however, estimate the model with country-specific slopes, i.e. each variable has equal coefficients across countries (or, in other words, constant slopes).

²⁹ From now on, only the "import in differentiated goods" (IIDG) will be used as an independent variable. This is, as I argued earlier, because preferences are more likely to have an effect on differentiated goods.

As can be seen in the table above the Linder variable is positive and insignificant. The data, thus, does not support the Linder hypothesis. The ESCP variable has the expected sign (positive) and is significant. The R-square is, however, lower in this specification compared to the basic gravity model. One shall, however, remember that the number of observations is not equal; hence, a straight comparison can not be done. A positive preference variable means that a country imports more from a country which it gives a higher score in the ESC. What must be remembered though, is that the model specification is still rather simple.

5.5 Introduction of Time- and Importer Dummies

To better examine the data it is now time to move on to more sophisticated models where the effects, hopefully, better can be seen.

One thing you should be aware of is that it might be difficult to include both preference variables, i.e. the Linder and the ESCP variable, in the same model since they, in a way, measure the same thing. This means that it is a risk that they distort each other when they are trying to pick up the same effect. This is something that must be remembered throughout the thesis when both are included, and one should probably be somewhat cautious when interpreting the results from the combined model (at least before a comparison has been made with the results obtained from the individual regressions). To make the results as valid as possible I will always compare the results obtained in the combined model with the results obtained in the two separate models (i.e. where only one of them is included at a time). The rationale for still including them both could be that they measure the effect preferences have on trade in different ways, and thereby they could complement each other in picking up the aggregate effect of preferences. So, even if the individual coefficients could be hard to interpret they still serve a purpose in measuring the total effect preferences have on trade.

As I mentioned earlier, I will extend the basic gravity model by introducing time and importer dummies. Because of space limitations only the regression specification including both the preference variables is shown below. In addition, all the individual year- and importer dummies are excluded from the table since they consume a lot of space. Besides, they do not contribute that much to the analysis.

	Time dummies		Time & Importer dummies	
Variable	Coefficient	Sig.	Coefficient	Sig.
Distance	-1.10	0.00	-1.15	0.00
Importer income	0.85	0.00	0.99	0.00
Exporter income	1.04	0.00	1.04	0.00
Linder	-0.04	0.00	-0.02	0.02
ESCP	0.12	0.00	0.12	0.00
Constant	-28.55	0.00	-31.60	0.00

Number of obs.	14849	14849
R-square	0.91	0.92

Table 4: Imports of differentiated goods. Variables, their coefficients, level of significance, number of observations and R-square.

It is apparent that dramatic changes are taking place after including time dummies (see table four). In both the specifications used, the R-square increases from around 0.30 to around 0.90, suggesting that the independent variables explain around ninety percent of the variance in the dependent variable. It is also interesting to see that all the variables have the expected sign and are highly significant.

Another difference is that the regression specification including both the Linder variable and the preference variable now seem to behave in line with what I expected, despite the possible difficulties when including both of them in the same model. The Linder variable that in the simple regression was positive has now the expected, negative, sign.

The interpretation, I believe, is fairly obvious; there is a clear and pronounced time effect, and when this time effect is taken into account evidence is found that indicates that preferences is a determinant in explaining bilateral trade flows. The fact that the R-square increases so dramatically also shows, I believe, that this model specification is more appropriate to use. The simple regression model is, quite simply, not sophisticated enough to accurately pick up the effect different variables have on trade.

The results from the regression including both time and importer dummies are very similar to the ones obtained in the model where only time dummies was used. The distance and importer income coefficients are somewhat larger, and so is the R-square. Furthermore, the Linder variable coefficient is smaller and not as significant, although still being significant at the 5 percent level. When robust regression was applied the significance was 3.3 percent, and when bootstrap was used it was 4.4 percent.

Although not shown here, I also ran four separate regressions (two for each variable) in order to make it possible to analyse the preference variables (Linder and ESCP) on a “stand-alone basis”. Regarding the results for the regressions with time dummies; when the Linder variable was excluded the ESCP coefficient increased somewhat in size (from 0.12 to 0.15), when the ESCP variable was excluded the Linder coefficient increased quite much in strength (from -0.04 to -0.12). Besides from these changes, the results, in both models, were similar to the ones obtained above. In the model with both time and importer dummies the ESCP variable, when the Linder variable was excluded, again increased to 0.15 (from 0.12). When the ESCP variable was excluded, the Linder variable, also here, increased in size (from -0.02 to -0.10).

5.6 Test for Structural Break

The fact that the voting procedure in the ESC has changed during the history of the competition provides the foundation for another interesting test. Prior to 1997 the voting in the competition was conducted by a professional jury. In 1997 televoting was introduced, and in the 1998 most countries used this method when voting for their favorites. My expectation, and what partly is confirmed in earlier research, is that the effect of preferences could be more pronounced after 1997³⁰. The test that I am going to perform is therefore a test where I divide the total dataset in two subgroups; one group which contains data from the years 1975-1996, and another group containing data only from the years 1998-2006. Dividing the dataset in this way make it possible to analyze if there are any differences between the two periods (i.e. if there is a structural break in 1997).

	1975-1996		1998-2006	
Variable	Coefficient	Sig.	Coefficient	Sig.
Distance	-1.00	0.00	-1.27	0.00
Importer income	0.83	0.00	0.88	0.00
Exporter income	0.98	0.00	1.08	0.00
Linder	-0.04	0.00	-0.03	0.04
ESCP	0.04	0.00	0.22	0.00
Constant	-27.20	0.00	-28.32	0.00
Number of obs.		7903		6355
R-square		0.80		0.90

Table 5: Test for structural break in 1997. Variables, their coefficients, level of significance, number of observations and R-square.

The results are very interesting (see table five). First, and foremost, the ESCP variable is significantly different in the two samples. The preference variable is positive and significant in both samples but the coefficient is more than five times as large in the 1998-2006 sample (0.22) compared to the 1975-1996 sample (0.04).

The difference in the per capita income variable i.e. the Linder variable shows the opposite trend. The Linder variable coefficient decrease slightly, down to -0.03 from -0.04. Another significant difference is that the adjusted R-square is considerably higher in the latter period (0.90 compared to 0.80).

Since I argued before that it may be difficult to include both the Linder variable and the ESC-preference variable in the same model I will also test for a structural break with only one of them included at a time.

30 See, for example, Spierdijk and Vellekoop (2006) who showed that "many of the factors affecting the voting patterns have become more significant since the public was allowed to vote".

	1975-1996		1998-2006	
Variable	Coefficient	Sig.	Coefficient t	Sig.
Distance	-1.10	0.00	-1.49	0.00
Importer income	0.88	0.00	0.89	0.00
Exporter income	1.03	0.00	1.14	0.00
Linder	-0.13	0.00	-0.10	0.00
Constant	-28.35	0.00	-27.76	0.00
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Number of obs.		16598		13133
R-square		0.78		0.89

Table 6: Test for structural break in 1997 – the Linder variable. Variables, their coefficients, level of significance, number of observations and R-square.

	1975-1996		1998-2006	
Variable	Coefficient	Sig.	Coefficient	Sig.
Distance	-0.92	0.00	-1.25	0.00
Importer income	0.82	0.00	0.87	0.00
Exporter income	0.96	0.00	1.08	0.00
ESCP	0.08	0.00	0.23	0.00
Constant	-27.53	0.00	-28.55	0.00
<hr/>				
Number of obs.		7941		6384
R-square		0.77		0.90

Table 7: Test for structural break in 1997 – the ESCP variable. Variables, their coefficients, level of significance, number of observations and R-square.

As can be seen in table six and seven, both of the two model specifications show the same trend with respect to the R-square, where the R-square is significantly higher in the latter period (around 0.90) compared to the first period (around 0.77). Also the coefficients and standard errors for the other variables (distance, import income and exporter income) are rather similar in both specifications, all having the expected signs and being highly significant.

What the Linder variable and the ESCP variable have in common is that they both have the expected sign and are highly significant, in both periods. But, when it comes to the coefficients, the two variables show the opposite trend. The Linder variable decreases somewhat in strength in the second period whereas the ESCP variable increases significantly in strength in this period. The Linder variable coefficient decreases from -0.13 to -0.10 whereas the ESCP coefficient almost triple in size in the latter period compared to its value in the first (from 0.08 to 0.23). In this particular case it thus seems as if the results from the two separate specifications are in line with the results obtained in the combined model. Although not identical, the

coefficients exhibit the same trend (for both the Linder- and the ESCP variable) and the R-squares are very similar compared to the combined model.

There could, however, be one potential limitation with the test for structural break conducted above that may cause one to question its validity. This is due to the fact that it is not the same countries that participate in the contest every year and, hence, it might be the case that the participating countries differ between the two sub-periods. This may be particularly problematic in this case since the year dividing the total sample into two sub-periods is 1997. In the 1990s, many new sovereign states were created, mostly due to the downfall of former Yugoslavia and the Soviet Union, and also the split of Czechoslovakia. Many of these new states have subsequently also decided to participate in the ESC.

If the two samples differ widely, in terms of which countries that are participating in the competition, it evidently becomes harder to draw firm conclusions regarding a structural break. With that said, I think the test still present some interesting results. Even if the two periods contain different countries the fact still remains, the ESCP coefficient almost tripled in size in the second period compared to the first. Of course, this could partly be a consequence of different underlying samples and one could argue that it is the entrance of new countries that have caused the preference coefficient to increase so heavily, instead of being an effect of more accurate preferences in the second period (when the public was allowed to vote). After all, despite being an interesting development in itself, it becomes more difficult to prove that the increase in the coefficient is a consequence of more sincere voting (and hence preferences), and not due to the entrance of a number of new countries.

In order to strengthen the validity of the structural break test an additional test has been performed (called “modified test for structural break”). This test uses only the fifteen top participating countries in the competition. The selection criteria were decided to be that all the included countries must have participated at least seven times in both sub-periods³¹. More than fifteen countries fulfilled the criteria in the first period. In the second period, however, only fifteen did³².

³¹ Seven was, more or less, arbitrarily chosen. It was a balance between getting sufficient number of observations, and making sure that the included countries had participated reasonably many times in both time periods.

³² The complete list of the fifteen included countries in the modified test for structural break can be found in the appendix.

	1975-1996		1998-2006	
Variable	Coefficient	Sig.	Coefficient	Sig.
Distance	-0.94	0.00	-0.95	0.00
Importer income	0.77	0.00	0.92	0.00
Exporter income	1.00	0.00	1.12	0.00
Linder	-0.03	0.02	0.03	0.17
ESCP	0.06	0.00	0.19	0.00
Constant	-27.06	0.00	-33.40	0.00
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Number of obs.		5013		3020
R-square		0.80		0.92

Table 8: Modified Test for structural break in 1997. Variables, their coefficients, level of significance, number of observations and R-square.

As can be see in the table above, the preference coefficient exhibit the same pattern in this regression as in the one where all the countries were included, i.e. it becomes significantly larger. Hence, preferences seem to have an effect on trade also in this sample³³. One thing that, however, differs in this model is that the Linder variable in the latter period is positive and insignificant.³⁴.

³³ I also modelled a structural test using the nine-year period prior to 1997 (1988-1996) as the first period and compared it to the post 1997 period in order to get more equal sample sizes. The test results were almost identical to the ones obtained in this test.

³⁴ Furthermore, the Linder variable was even more insignificant when robust regression techniques were applied (0.23).

6. Discussion

The regression analysis conducted in the previous section showed some interesting results. To start with, it seems reasonable to conclude that the basic OLS setup seem all too simple in this particular case. This is, however, not surprising given that the data used is in the form of a panel dataset. When using a large panel dataset certain factors have to be controlled for, or otherwise the regression becomes all too rough. This is exactly what could be seen in the model since the R-square was so low in the basic model setup.

The real issue is, then, how to best specify the model. In this study categorical variables were used in an attempt to sort out time- and country-specific effects. The model with time dummies produced the expected results and seemed to be a robust model. All the coefficients had reasonable size, the expected signs, and were significant. The R-square was also very high. Although being negative and significant, the Linder coefficient was very small. According to the Linder hypothesis and given the definition of the Linder variable in this model, a negative coefficient indicates that the closer countries are in per capita incomes, the more they trade. In this specific case, with such a small coefficient, one can of course question how much this variable actually affects trade. The ESCP variable was positive and significant, showing that countries tend to import more from countries which they give higher scores in the ESC, i.e. countries for which they have a “positive” preference. The conclusion from this model specification is that preferences do seem to have an effect on trade.

When also the effect of importer individuality was taken into account, the Linder coefficient became even weaker. Apart from that, the results were very similar to those obtained in the previous model. The overall conclusion drawn from these two models is that preferences, at least to some extent, seem to have an affect on international trade flows.

The results that I personally find the most interesting are the ones obtained when dividing the total sample into two subgroups. The fact that the ESCP coefficient became five times as large (or tripled, depending on what model you look at) in size in the latter group (when televoting was the established voting procedure) indicates, I believe, that more honest (or accurate) country preferences are revealed when the public is allowed to vote. What do I mean when I say more honest preferences? Well, if you assume that country preferences did not changed suddenly in 1997, which seem unlikely, a significantly larger preference coefficient and a higher R-square value indicates that the preference variable was measured more accurately in the latter period.

The public vote without having to be accountable for their voting's in any way. As an individual you cast your vote in total anonymity, knowing that no one will ever question you, or analyse your voting. As a member of a professional jury the situation is somewhat different. For example, it is not unreasonable to imagine that the ongoing discussion about political voting in the ESC could have affected some jury's voting. Maybe, juries feel reluctant to vote for their neighbours or other nations which with they have close ties to (e.g. political, historical etc) because they may anticipate

criticisms, although this is what they had preferred to do. If this is the case, true country preferences could be distorted.

The results for the Linder variable are not equally convincing. Despite being negative and significant in most models, the coefficient has, throughout, been very small, and besides, sometimes also positive (which contradicts the hypothesis).

The empirical findings thus, at least when it comes to the explicit preference variable, seem to support the hypothesis that preferences indeed have a role to play in determining trade flows. Is this surprising? Historical events, shared/common values, cultural similarities, similar political systems, and other common denominators could all be factors aligning diverse countries together. But it could also be the other way around, I believe. The fact that other countries (and its inhabitant) are very different from the home country in some respects (cultural, linguistic, mentality etc) could trigger fascination, admiration and curiosity which, in the end, could cause a positive attitude (or preference) towards those countries

Indeed, large amount of empirical research investigating the role of demand-based trade have been implemented over the years. A potential shortcoming, as I see it, is that the existing research within the field of demand-based trade is quite narrow. To the best of my knowledge, as good as all the existing research examining demand-based trade has been carried out from a Linder perspective, i.e. using per capita incomes as a proxy for demand structures. This could be problematic because per capita income is not a perfect measure of demand-structures, and although it could be the case that per capita income to a large extent reflects the goods and services demanded, this measure certainly does not tell the whole story. Against this backdrop, this thesis aimed to broaden our understanding of the effect of preferences on trade by creating a new and unique proxy for country preferences.

More specifically, using per capita income as a proxy for demand structures only relaxes one of the demand-based assumptions underlying traditional trade theories, i.e. that of homogenous preferences. The assumption of identical preferences is still, at least implicitly, assumed to hold, i.e. two persons in two different countries with equal per capita incomes are assumed to demand the same goods. When using the preference variable that I have created no such assumption needs to be made, i.e. preferences are allowed to be non-identical between countries. Homogenous and identical preferences are thus not synonymous, and if you want to measure the “true” effect of preferences both of these assumptions needs to be relaxed.

Based on the reasoning above I believe that the preference variable created from the ESC is a variable appropriate to use if you are aiming to determine the effect of preferences on trade. The fact that it has not been done before, at least what the author is aware of, also contributes to making the results interesting. It is, however, important to understand that my preferences variable, just like per capita income, is not perfect, far from maybe. Still, I think it serves a purpose. One thing that is important is precisely the fact that it is different. Because perfect measures of preferences are not available, and never will be, we have to stick with proxies. Since certain answers, hence, never will be obtained the best one can do to get an understanding of the underlying mechanisms of demand-based trade, I believe, is to investigate the issue from as many different perspectives as possible.

How valid are, then, the results obtained in the previous section? The preference variable that I have used is after all extracted from a music competition. Does it not seem a little far-fetched to draw conclusions about trade using a variable created from a music competition? As an initial reaction, it is understandable that it may seem strange to use the ESC in a study aimed at explaining trade flows. Looking into the issue somewhat deeper however, I believe that the ESC offers a unique opportunity to approximate country preferences.

The two main reasons why I used the Eurovision Song Contest to approximate country preferences are:

- (i) the fact that countries explicitly vote for other countries, and
- (ii) the competitions long history.

The first reason is good because it is hard to find this kind of direct expression directed towards other countries, i.e. you do not have to approximate preferences indirectly from other sources. The second point is important because it gives you the opportunity to examine the relationships over a long period of time, which increases the robustness of the results.

But what if the ESC is a “pure” music competition, where countries simply award points to songs they think are good songs (i.e. a positive voting-bias is merely a sign that two countries, for some reason, tends to like the same kind of music)? Perhaps countries simply vote for good songs without any other motives underlying their decision. If these votes do not say anything about general country preferences my preference variable obviously becomes artificial and superfluous. This is of course a risk, but a risk I do not consider to be that big since basically all the existing research examining the ESC comes to the conclusion that there seems to be something more, some other underlying factors, than just music taste that matter when countries award their points. Another answer to that question is that if a vote merely was an expression of music preference, no significant correlation should be expected to be seen when examining the voting data together with trade data, other by chance at least. The results obtained in the regression analysis did indeed indicate that the voting says something about country preferences since the preference variable (adjusted for song quality) was positive and significant in all model specifications.

And in a way, it is not that strange. Whatever decision you are making, more than one factor usually influence that decision. Although we may not always be aware what those factors are, or that they actually influence the decision, they still constitute the foundation of our collected mindset and influence much of what we do and think. I believe the same reasoning could be applied in this case. Whatever your attitude is towards other countries, this will affect your voting. More in some cases than in others perhaps, but it is always there, an underlying factor that, in interaction with other factors, will decide how you vote. Following the same reasoning, I also believe that country preferences (i.e. attitudes towards other countries) could affect how and with who countries trade. I am not saying that it is the most important factor, maybe not even among the most important. But what I am saying is that it is one of many factors that in the end determine how countries vote and trade.

Based on the results I think it's fair to conclude that, without knowing all the underlying mechanisms determining the voting of a country, the ESC is more than a pure musical competition. And this is exactly why I think it is a good idea to use the ESC. Votes from a country to another tell us something more about the giving country's "general preference" for the other country. And if this is true, i.e. that we from the voting procedure can extract more general preferences, it would only seem natural if these preferences also affect other interactions between different countries. One of those, I argue, could be bilateral trade patterns.

The fact that a large fraction of international trade goes through multinational enterprises (MNE's) was a thing that, a priori, caused some concern. If these MNE's have their own identity (or image)³⁵, which they often have, and if there is no clear connection between the "home country" and the company image it would be harder, in a model like this, to pick up the effect of country preferences. How disconnected MNE's are from their home countries is a question open for debate. Clearly, the integrated world economy with global supply chains and corporations outsourcing a substantial part of their activities makes it harder to determine wherefrom a company really "comes from". At the same time, many of the MNE's still have very close connections to their home countries. The fact that many of them also utilize on their origin (for example in their marketing campaigns) also contributes to making it easier to determine their home country.

In any case, this (possible) MNE-effect apparently was not strong enough to erase the "preference effect" obtained in the regression analysis. On the other hand, it is still possible that the effect of country preferences can be mitigated due to the existence of many large MNE's, where the actual home country is not so easy to discern.

The rapidly ongoing globalization is also something that makes this topic interesting. With so many international/global companies and brands, e.g. MTV, Coca Cola, Nike, McDonalds etc, do country preferences exist at all? Or, has/will the globalization trend lead to a cultural convergence eliminating country borders as a separator for differences in taste? These were questions I asked myself before getting started with this thesis. The results indicate that country preferences exist, and that they affect trade. Interesting would it be to know how the results would have looked like if this study was conducted in, say, 30 years time. What would have been the result then? Will country preferences still exist, or will it only be company and brand images that affect people. Of course, it could also be the case that because many companies utilize on their home-of-origin (or naturally are strongly connected with the home country), country images remain intact.

To sum up, I believe that this thesis has showed that preferences do indeed have an effect in determining international trade patterns. The conclusion may seem obvious; too obvious to be the theme in a thesis some may think. In a strictly academic way, it does not really matter how rational and logical an argument seems to be before you actually have some kind of evidence backing up that argument. The fact that almost all research in the field of international trade has been conducted with the underlying assumption of identical and homogenous preferences makes it even more important

³⁵ The same goes for brand and product images.

to illuminate the role of preferences as a determinant helping to explain trade patterns. The results obtained therefore fill a function as a complement to the existing research, a reminder that although many of the formal trade models are highly sophisticated and very elegant they are based on a number of assumptions, assumptions that do not hold in real world.

7. Conclusion

The aim of this paper was to investigate bilateral trade flows from a preference point of view. The choice of topic was motivated by the fact that demand-based trade still is a relatively unexplored field of research. Almost all trade research conducted so far has been from the supply side, assuming that preferences are identical and homogenous. In order to create a proxy for country preferences the historical voting records from the Eurovision Song Contest was used.

Although large amount of research have been conducted in the field of demand-based trade, it is still quite narrow. As good as all the research investigating the demand-side has been using per capita incomes to measure demand structures. Although being a relevant and interesting proxy for demand structures, it is incomplete. When you are using per capita income as a proxy for demand structures you relax one of the demand-based assumptions underlying traditional trade theory, i.e. the assumption of homogenous preferences.

Even though it is reasonable to assume that what type of goods you demand to a large extent depends on your income, it is still a rather rough simplification. To examine demand-based trade in a more complete way, you must also relax the assumption of identical preferences. This is exactly what this thesis has done. And, despite the limitations of the study the analysis showed some interesting results.

The hypothesis that preferences affect trade flows was tested for in a number of ways, using different model specifications. Although the results varied somewhat depending on which model specification that was used, the preference variable always stayed positive and significant. The results obtained in the regression analysis thus give support for the hypothesis that country preferences do indeed have an effect in determining trade flows since a positive country preference variable (expressed as a voting in excess of the average score) seems to be correlated with more intense imports.

A suggestion for future research within the field of demand-based trade could be to examine the relationship between trade and preferences using other proxies for country preferences. Although it is not easy to find good and reliable country preference proxies, there are probably some proxies that could be worthwhile examining. Furthermore, the analysis could perhaps be improved by using more advanced statistical methods. Or, perhaps, the innovative researcher could come up with a completely new method on how to examine the role of preferences in determining international trade flows.

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Appendix

Appendix A

Countries included in the thesis:

Albania
Andorra
Armenia
Austria
Belarus
Belgium
Bosnia & Herzegovina
Bulgaria
Croatia
Cyprus
Denmark
Estonia
Finland
France
FYR Macedonia
Germany
Greece
Hungary
Iceland
Ireland
Israel
Italy
Latvia
Lithuania
Malta
Moldova
Netherlands
Norway
Poland
Portugal
Romania
Russia
Serbia & Montenegro
Slovakia
Slovenia
Spain
Sweden
Switzerland
Turkey
Ukraine
United Kingdom
Yugoslavia

Appendix B

Countries included in the modified test for structural break:

Country	Nr of times participated	
	1975-1996	1998-2006
Cyprus	15	7
Denmark	17	7
France	20	9
Germany	22	9
Greece	18	7
Ireland	21	9
Israel	18	8
Malta	7	9
Netherlands	19	8
Norway	22	8
Portugal	22	7
Spain	22	9
Sweden	21	9
Turkey	18	9
United Kingdom	22	9
Average	19	8

Appendix C

SITC specification; included categories in the differentiated goods variable (IIDG):

SITC4-structure

Code	Main category - label	Description
0	Food and live animals	partly included
1	Beverages and tobacco	included
2	Crude materials, inedible, except fuels	excluded
3	Mineral fuels, lubricants and related materials	excluded
4	Animal and vegetable oils, fats and waxes	excluded
5	Chemicals and related products, n.e.s.	excluded
6	Manufactured goods classified chiefly by material	included
7	Machinery and transport equipment	included
8	Miscellaneous manufactured articles	included
9	Commodities and transactions not classified elsewhere in the SITC	excluded