Formation of North-South Agreements and
Institutional Distance

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Abstract

The number of signed trade agreements has increased tremendously in the 1990s. Also North-South agreements have increasingly been signed in this period. What explains the formation of those trade agreements? There is evidence that trade-creating and trade-diverting factors play an important role in explaining the formation of free trade agreements (FTAs). For example, similar economic size and a small distance between two trading partners increase the probability that those two countries form an FTA. However, this does not explain the formation of North-South agreements, where signatory states are characterized by differences in economic size and not necessarily by spatial proximity. Furthermore, in North-South agreements different motives might play a role for its formation, such as policy cooperation and non-pecuniary motives like fostering development in developing countries. Thus, also different factors should play a role for its formation. One important difference between developing and developed countries is their quality of institutions. This paper examines whether differences in institutional quality and the share of contract intensive goods traded between developed (North) and developing (South) countries play a role in the formation of bilateral trade agreements. This also relates to the motive of forming an agreement to foster development in countries where institutions still need to develop. The empirical analysis builds on existing empirical work on the formation of bilateral trade agreements in a panel. The results contribute in two ways. First, it provides further insights to the problem of endogenous trade agreements in other settings like the gravity approach. Second, it presents new rationales for the formation of North-South agreements and for developed and developing countries in detecting potential trading partners.


1 Introduction

Since the increase in signed trade agreements at the beginning of the 1990s the academic literature has shown respective interest in trade agreements. Most of the literature on free trade agreements (FTAs) studies its effects on welfare and trade flows. The spread of regionalism and the concerns that have been raised on its effects on non-member countries and its disadvantage relative to multilateral trade liberalization leads to increased interest in the factors which lead to the formation of regional trade agreements. Furthermore when estimation trade flows one needs to address the reverse causality of trade flows and trade agreements. Thus it is necessary to find factors which explain trade agreements. Baier and Bergstrand (2004) are the first to address the problem of FTAs being an endogenous variable empirically. They investigate empirically the economic factors of the formation of FTAs between pairs of countries.

They find that overall trade-creating and trade-diverting are important factors in explaining the probability of an FTA. Their results further show that the probability of two country pairs to form an FTA increases (1) the closer the distance between the two countries, (2) the larger the distance of two continental trading partners is to the rest of the world (ROW), (3) the larger or more similar in economic size the countries are, (4) the more different capital-labor ratios are between the potential members and (5) higher the similarity of their capital-labor ratios with respect to the ROW.

Egger and Larch (2008) extent the approach of Baier and Bergstrand (2004) and correct for the interdependence of PTAs. They highlight the importance of existing PTAs for joining existing PTAs and build on the "domino theory of regionalism" introduced by Baldwin (1997). Furthermore they allow for the case that two countries form a new agreement if joining an existing agreement is no opportunity due to political reasons. They provide empirical evidence using a cross-section in the year 2005 and panel data of five-year intervals in the period between 1955 and 2005. They find that existing PTAs increase the probability that new PTAs are formed by nonmembers and that there is a domino effect as suggested by Baldwin (1995, 1997), which is even larger.

Both papers include all types of trade agreements. But countries can form trade agreements with different types of partner countries. These can be agreements between two developed countries (North-North), between two developing countries (South-South) and between developing and developed countries (North-South).

How do North-South trade agreements differ from South-South and North-North countries? In North-South agreements the member countries do not only differ in economic size and level of trade integration but also in the quality of institutions, which play an important role for trade. Empirical evidence shows that there is a positive correlation between good institutions and trade.\(^1\)

Furthermore, as Krugman (1995) has initially proposed, especially manufactured goods have become highly differentiated and these include a great variety of intermediate goods, which are produced in different countries \(^2\). Those international production networks, that have arisen, lead to a high interdependence between countries.

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\(^1\)See Nunn (2007), Levchenko (2007)
and their domestic firms. The more differentiated goods are and the more production phases are used for specialization and trade, the higher is the risk of hold up and unfulfilled contracts or imitation. Trade agreements can serve as a legal instrument to reduce these risks. Especially developed countries have an incentive to create an agreement, which includes rules to protect domestic firms. This is also reflected in the fact that trade agreements have become deeper. This means they do not only include trade liberalizing rules but also beyond-the-border-rules. These rules include commitments in several areas like competition policy, investment, property rights and the rule of law.

In this regard, this paper argues, that it is crucial for North-South agreements how the institutional quality differs between the developed and developing country. In general a contract cannot specify rules for all possible contingencies. If there are good institutions this can reduce contract incompleteness. But if institutions in the developing country are bad, i.e. if there is no well-established legal system where property rights are insecure and bad courts are present, risks such as expropriation and holdup become more likely. In this case a contract or a trade agreement, which would accomplish for those risks would be very complex. This reduces its probability to be successfully signed, as it becomes harder to compromise on all commitments and to implement it. The resulting hypothesis is, that the larger the distance in institutional quality between two potential member countries, the less likely it is that those two countries sign a trade agreement.

Related to the above intuition and the role of institutions for the formation of North-South agreements is the composition of goods, which are traded. If the North country is only interested in importing raw material or natural resources the institutions in the partner country might play a minor role. But if highly differentiated goods or intermediate inputs are traded and multinational firms in the North country are interested in establishing a subsidiary in the South country, the North country has an incentive to form an FTA to protect domestic firms and to prevent capital flight. For the South country it is still interesting to form an agreement with a North country because it gets secure market access to a large market. Some developing countries also use deep trade agreements to promote domestic reform from outside. Also developed countries’ further intention is to promote development in those countries which also explains the depth of trade agreements.

Although most agreements are signed between countries of similar income, North-South agreements have increasingly been signed. Figure 1 presents the development of the number of trade agreements, which entered into force since 1948 until 2015, for North-North, North-South and South-South agreements. Since the beginning of the 1990s there is an increase in signature rates. The largest increase is attributed to South-South agreements and thus supports the argument that trade agreements are likely to be formed between countries of similar economic size. But still there is a substantial number of trade agreements with almost 200 between developed and developing countries. Here different factors might play a role besides the factors found by Baier and Bergstrand (2004).

There are recent studies, which also consider agreements between countries of different income levels. Manger (2012) examines the reasons why countries of different economic size and development status form a preferential trade agreement (PTA).
He builds a framework where he includes vertical production specialization. He argues that while developing countries specialize in relatively labor-intensive goods, developed countries do so in relatively capital-intensive goods. This increases the incentive of two countries to form a trade agreement. He finds significant results which indicate that higher vertical specialization increases the probability of PTA formation. He builds a panel data set of nine developed and 148 developing and transition countries for the period from 1995 until 2007. To measure the effects of vertical production specialization he includes his key explanatory variable, where he measures the share of vertical intra-industry trade in the bilateral trade between a North and South country in a given year.

Orefice and Rocha (2014) estimate the effect of the share of production networks on the integration level of trade agreements. They find that a higher share of production networks trade relative to overall trade increases the probability of signing a deeper trade agreement. For North-South agreements this effect is even larger. They use cross-sectional data and include the share of trade in parts and components over total trade as their main variable of interest.

Similar to the two studies by Manger (2012) and Orefice and Rocha (2014) this paper studies the determinants of North-South trade agreements, but different from the above studies it includes the quality of institutions, a major difference in characterizing North and South countries, which influences the probability to form a trade agreement. Furthermore it includes a different measure to classify trade flows, namely the share of contract-intensive goods relative to total goods traded. Different from Orefice and Rocha (2014) a panel dimension is used.

The remainder of this paper is as follows.
2 Empirical Analysis

2.1 Estimation Framework

This paper builds on the estimation framework by Egger and Larch (2008). According to Chamberlain (1989) and Wooldridge (2002) they include averages of all regressors over all periods for each country pair as additional variables. This way one can correct for the possibility that time-invariant explanatory variables correlate with time-invariant effects caught in the error term.

The following equation is used for the basic estimation with \( n_t \) country pair in period \( t \):

\[
RTA_t = \beta_0 + \beta_1 \text{InstitutionalDist}_t + \beta_2 \text{ShareManTrade}_t + \beta_3 X_t + \bar{\beta} \bar{X} + \varepsilon_t \quad (1)
\]

The dependent variable \( RTA_t \) is a binary variable which takes the value 1 if a country pair signs a trade agreement and 0 otherwise. \( \text{InstitutionalDist}_t \) is the absolute difference between the index of institutional quality of both country pairs. The other main explanatory variable \( \text{ShareManTrade}_t \) is the share of bilateral exported manufactured goods of the pair relative to total bilateral exports. Exports of manufactured goods are calculated by aggregating over sections 5 to 8 of the Standard International Classification System (SITC), which comprise semi-finished and finished manufactured goods. In a next step this measure will be replaced by the share of contract-intensive goods as those goods will be even more important for the decision to implement a trade agreement to adjust for bad institutions. \( X_t \) includes all other control variables suggested by Baier and Bergstrand (2004). Variables with a bar indicate the averages of the control variables over all periods. As Egger and Larch (2008) a probit model will be used to estimate the effects of institutional distance and export characteristics on the probability to form an RTA. The problem of endogeneity may be a concern as the formation of RTAs may affect the quality of institutions as some RTAs demand preconditions, i.e. the implementation of certain rules in advance of the signature of the agreement. This will be addressed by instrumenting for institutional distance.

2.2 Data

The final data set includes 136 countries for the years 1995 until 2015. Each country pair appears only once and so there are 9180 unique country pairs for all periods. The data set only includes trade agreements between North and South countries in dyadic form. This means that if a country enters the European Community (EC) this is counted as several agreements with each country of the EC. Accessions are included. It is possible that there are multiple agreements between the same country pair, e.g. the ”Cotonou Agreement” and the ”CARIFORUM EC EPA” are two agreements, which have both been signed by the same country pairs. In 28 cases there are two agreements signed or accessions of agreements between the same two country pairs. In those cases the agreement is only counted once. This is due to the ”Cotonou Agreement” and the agreement between the EU and South Africa, the ”Trade, Development and Cooperation Agreement” which was originally concluded in 1999. In the years 2003 and 2005 several European countries entered both
agreements at the same time. The same is true for the "EC Turkey Association Agreement" and the "EC Syria Agreement", signed in 1963 and 1977 respectively. Furthermore Vietnam and Japan and New Zealand formed two different agreements, each pair one bilateral and a plurilateral or region-region agreement in the same year (i.e. 2008 for New Zealand and Malaysia and 2009 for Japan and Vietnam). Finally the data set includes 951 trade agreements.

The data on trade agreements between North and South countries is taken from the Design of Trade Agreements (DESTA) by Andreas Dür, Leonardo Baccini and Manfred Elsig. They have collected a very detailed data set on trade agreements including many characteristics on each agreement for the periods from 1948 until 2015.

The data to create institutional distance is taken from the International Country Risk Guide (ICRG) data set, as it covers highest number of countries for the longest period of time, i.e. from 1984 until 2015. Other measures such as the World Governance Indicators (WGI) will be used as a robustness check. At this stage only years from 1995 until 2015 are used. But in a next step the periods from 1984 and onwards will be covered, as in the period starting in the 1990s lots of RTAs were signed. So these years should be included.

Trade data is taken from the BACI (Base pour l’Analyse du Commerce International) data set from the French research center CEPII (Centre d’Etudes Prospectives d’Informations Internationales).

2.3 Empirical Results

As a first step simple pooled ordinary least squares (POLS) is used to get preliminary results. Here the sub-index government stability is used to measure institutional distance. The results in table 1 only provide a very preliminary insight of what the effects might be. Simple pooled OLS suggests that both variables have an effect and these effects have the expected sign, although the effects are very small. An increase in the institutional distance between a North and South country might reduce the probability of signing a trade agreement. Trading more manufactured goods may increase this probability. The R-squared is very small, which is due to the lack of a number of explanatory variables, which play a role in explaining formation of trade agreements as shown by Baier an Bergstrand (2004).
Table 1: Regression results

<table>
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<th>VARIABLES</th>
<th>POLS</th>
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<tr>
<td>spread_govstab</td>
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<tr>
<td></td>
<td>(0.000118)</td>
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<tr>
<td>bilateralmanovertotal</td>
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<tr>
<td></td>
<td>(0.000386)</td>
</tr>
<tr>
<td>Constant</td>
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<td>Observations</td>
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<tr>
<td>R-squared</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

3 Conclusion

The results are not sufficient to draw a strong conclusion of the effects of institutional distance and the characteristics of bilateral exports. The effects still vary depending on the measure that is used for institutional distance. Further the periods covered to not include important periods where trade agreements have been signed. The ICRG data set provides data on institutional quality for the years starting in 1984. Most importantly, further controls have to be included as suggested by Baier and Bergstrand (2004) and the main measure of contract-intensive goods has to be included in a next step, which will account for the importance of institutions in a better way. To estimate the model, a probit model will be applied.
4 Literature


