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Heterogeneous effects of free trade agreements on services and goods trade, depending on institutional differences of countries

Master`s Thesis

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We have written this master's thesis independently. All viewpoints of other authors, literary sources, and data from elsewhere used for the writing of this paper have been referenced.

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Abstract

This article examines the effect of Trade Liberalization Agreements on the service and good trade. The role of institutional governance measures - rule of law and political stability on both trades is evaluated by considering the levels of institutional quality and the difference between institutional efficiencies of country pairs. The empirical gravity analysis among 43 countries including OECD and some non-OECD nations with the transitional economy during 2004 and 2015 years show that participating in the same trade agreements enables countries to boost their trade in goods more than in service. TLA effect is driven by developed countries that have a high level of rule of law for both service and good trade. Moreover, institutional distance indicators obtain a larger impact on goods trade flow than service trade. The analysis also reveals that the Rule of law plays a more significant role in trade compared to political stability.

Keywords: International trade, gravity equation, trade agreements, good and service trade, institutional quality

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Introduction

Trade Liberalization agreements (TLAs) played a significant position in the increase of bilateral trade levels. Since 1986, more than 350 new trade agreements have been reported to the WTO of varying goals, breadth, and depth. Trade Liberalization agreements, in other words, free trade agreements (FTAs) do more than simply lowering and removing tariffs; they contribute to overcoming behind-the-border obstacles that may hinder the movement of goods and services; promote investment; strengthen laws governing topics such as intellectual property, and government procurement. To demonstrate the importance of taking into account the heterogeneity across trade agreements, empirical specifications of the structural gravity model have been used in the extensive literature, which has become a recognised tool for ex-post trade analysis (e.g. Baier et al., 2014, 2019; Zylkin, 2016) and it has been found that FTAs have a more significant effect where different types of trade agreements are considered. By applying the gravity model of trade, most similar ex-post studies such as (Baier & Bergstrand, 2007; Caporale et al., 2009; Baier et al., 2014; Kohl, 2014; Head and Mayer, 2014) depicted the noticeable positive effect of FTAs on trade.

This study aims to examine how TLAs affect trade volume in the service and good trade. We are investigating how the effect of TLAs on goods and services trade varies by the institutional differences between countries that trade with each other and by the institutional development at the importing country.

The trade literature has primarily concentrated on the effect of entering a trade deal on the volume of good traded between countries and, as a response, on the well-being of these countries (Baier et al., 2014). Nevertheless, less focus has been devoted to analysing the effect of signing agreements between countries on the service trade flow. Baier and Bergstrand (2004) were the ones to present an empirical analysis showing which the probability of a pair of countries getting a free trade agreement in goods (FTA) is related to geographical and economic characteristics. Mainly in the literature, effects of FTAs in agricultural sectors have been depicted (Sun & Reed, 2010; Vollrath et al., 2009; Jean & Bureau, 2016). Although international trade in services plays an even more critical role in the global economy, the influence of FTAs has received relatively little attention. The first analyses to use the OECD data collection on bilateral trade in services to determine the indicators of bilateral trade in services were Deardorff (2001); Grünfeld (2003); Kimura and Lee, (2006); Francois and Hoekman, (2010); Mirza & Nicoletti, (2011). In the end, there were mixed results. At the same time, Grünfeld (2003) and Mirza and Nicoletti (2011) has observed a significant difference

between good and service trade, where trade in good is facilitated by FTA much more than service. Deardoff (2001) and Kimura and Lee (2006) have observed that the effect of trade agreements on exports of service is more significant than for the exports of goods, which suggests that the gravity equation deals well for services trade than it does with a good trade A limited number of empirical analyses related to this comparison made us contribute to the literature by analyzing the effect of trade agreements on the service trade versus trade in good with more recent data. Moreover, the uniqueness of our research focus lies in examining the interaction effect of TLAs and institutional differences between countries on a general service trade compared to good trades.

A noticeable influence of institutional quality on development directions in the world has been generally acknowledged by extensive studies, and it has been claimed that better institutional environments foster bilateral trade (Acemoglu et al., 2005; Álvarez et al., 2018; Rodríguez-Pose & Storper, 2006). It is an undeniable fact that countries with higher levels of economic growth have considerably higher levels of the rule of law, low levels of bribery; persuasive bureaucracy, and strong private property protections, on the other hand, weak institutions lead to a negative effect on economic growth resulted in a decrease in international trade. Indeed, according to Álvarez et al. (2018); Levchenko (2007); Nunn and Trefler (2014); Freeman (2002); De Groot et al. (2004) analysis smaller gap in institutional quality of partner countries drive trade flow, while the huge difference in institutions leads to restraining trade. Compared to those studies, in addition to finding the institutional distance between the importing and exporting nations, we looked at the interaction effect of TLAs, institutional distance, and the level of institutional quality of importers where higher than 0 refers to developed countries, lower than 0 specifies countries with transitional economies, to evaluate the effect of institutional efficiency.

The empirical part of this study applies the gravity equation of trade firstly with OLS estimation without fixed effect, then OLS importer-time, exporter-time effect, after that the Poisson pseudo maximum likelihood (PPML) method to tackle issue arose by heteroscedasticity and MRT (Santos Silva and Tenreyro, 2006; Baier, Yotov, and Zylkin, 2019). Firstly, we have compared the effects of Trade Liberalization Agreements, which include all kinds of free trade agreements on good and service trade. Trade agreements themselves can have different effects due to heterogeneity, and from one aspect of heterogeneity, we addressed the institutional quality: the rule of law and political stability. In the article, not only the influence of TLAs between countries with different level of institutional efficiency on bilateral

trade analysed but also the effects of institutional differences between country pairs and the effect of their interaction with the TLA variable evaluated. The data originate from the databases of the OECD (Organisation for Economic Co-operation and Development), CEPII (Centre d'Etudes Prospectives et d'Informations Internationales), Mario Larch's Regional Trade Agreements Database and World Bank.

The main results show that being part of the same trade liberalization agreements enhanced good trade rather than service trade. The TLA effect is driven by developed countries with a high level of the rule of law for both service and good trade. Moreover, in countries with high institutional distance –the difference in the rule of law and political stability showed a negative effect on both service and good trade. In addition, because of the interaction term of TLA and institutional distance, the difference in institutional quality reduced the effect of TLA on trade.

The following sections proceed as follows. Section 1 reviews previous studies conducted for similar topics. Section 2 describes the sources of the dataset that used for analyses. In Section 3, we discuss the methodological aspect of the gravity model of trade. Section 4 represents the results of empirical analysis. Finally, in the conclusion section, we finalise with the summary of the analysis.

1. Literature review

The literature includes a variety of previous studies that have been investigating the effects of Free Trade Agreements (FTA) on bilateral trade; heterogeneous effects of FTA's and also how institutional gaps among countries are affecting their bilateral trade volumes as well as the role of service trade in overall global trade in comparison with good trade. FTAs facilitate international economic cooperation and help trading partners develop common approaches to trade and investment. As depicted in the Baier et al. (2019) paper, many of these deals have expressed the intention of pursuing "deep" integration, that is, economic integration that extends above tariff reduction and reaches into policies.

There already exists an extensive literature analysis related to how FTA affects trade flows. In a study by Baier and Bergstrand (2007), as a result of the gravity equation using differenced panel data in 1996-2000, it is found that an FTA will increase the bilateral trade between two participants after ten years. At the same time, Baier and Bergstrand (2007) and Baier et al. (2014) detect that membership in FTA raises the bilateral trade flow by 60%. Baier

et al.(2019) find that the average effect of FTAs is 49.3%. Kohl (2014) states that while only 44 out of 166 agreements (26.5%) tend to be trade-boosting, 16 out of 166 trade deals had adverse effects. However, in the Baier et al. (2019) study, it is found that using Poisson PML instead of using OLS compare to Kohl (2014) and taking into consideration heteroscedasticity of trade data and other factors, 57% of trade agreements had an indisputable positive effect. Specifically, Caporale et al. (2009) shed light on the impact of FTAs on trade flows between Central and Eastern European Countries-4(i.e. Bulgaria, Hungary, Poland and Romania) and European Union-15 countries by estimating gravity equation. To gain unbiased coefficients and identify the effect of time-invariant variables, they addressed using fixed-effect vector decomposition (FEVD) technique. The findings show that FTAs have a significantly positive effect on trade flows. To check the robustness of the effect of FTAs on trade, they included three transition countries (Russian Federation, Belarus and Ukraine) in the sample as a control group, which did not sign a trade agreement with the EU. As a result of the analysis, 14% more trade is observed between EU-15 and CEEC-4 countries, which have signed FTAs compared to three transitional countries that did not sign with EU-15.

Moreover, Cipollina & Salvatici(2010) show that ex-post empiric assessments of the FTA impact on bilateral trade flows are precise, which is based on meta-analysis, an increment in trade is confirmed to be around 40%. Another meta-analysis by Head and Mayer (2014) finds that FTAs, on average, are correlated with a rise in trade flow of 80%, outperforming the influence of factors such as common language and contiguity.

In some studies, it is concluded that the impacts of "deep" integrated trade agreements on aggregate trade flow are more notable than "shallow" agreements (Cipollina & Salvatici, 2010; Baier, Bergstrand and Feng 2014; Kohl,2014; Baier, Yotov and Zylkin 2019). Moreover, Baier et al. (2014) state that there is a larger impact of FTAs while taking into consideration distinctive types of trade agreements with deeper integration. In the studies of Carrère (2006); Kohl (2014), it is documented that individual FTAs, including those that seem to be alike, may have vastly distinct effects on trade. In general, heterogeneity between FTAs is analysed in some research papers and while comparing trade effects. Baier et al. (2019) describe 908 specific estimates of the impact of FTAs on various trading pairs for the 1986–2006 period using ex-post analysis, and they identify that approximately ⅔ part of heterogeneity exists within FTA rather than across due to asymmetric influences between pairs which often have a significant role to play. Baier et al. (2019) conclude that having an asymmetry effect of FTAs among partners within given sectors. Zylkin (2016) focuses on NAFTA and empirically states

that "The magnitude heterogeneity in FTA effects can vary significantly from what we would predict based solely on tariffs because disparities in partner countries' levels of growth have played a significant role".

Baier et al. (2014, 2018) state that the trade elasticities correlated with trade liberalisations are heterogeneous in terms of variable cost and fixed-cost trade elasticities. They show that a 10% decrease in per capita income of a bilateral country is correlated with a 60% increase in the partial trade agreement effect. Because of this evidence, compared to developed countries, less developed countries are expected to profit more from FTA, owing to a significant decrease in policy export fixed costs. At the same time, they prove that the heterogeneity of economic integration agreements (EIA) is explaining 99% of the EIA effect between 1,358 North-North, North-South, and South-South bilateral countries. Furthermore, a study by Kohl et al. (2016) is depicted that trade agreement heterogeneity does matter in understanding the effect of FTAs on foreign trade using a gravity model. Using 296 agreements and 17 policy domains, including WTO and WTOX provision, they state that governments sign substantive trade agreements are favourably linked to their level of economic growth, and the number of WTO participants in a trade agreement and its robustness are related. Compared to other studies, the heterogeneity of trade agreement elasticities and their correlations with distance are investigated through product categories (Freeman & Pienknagura, 2019). They explore that the impact of TA on intermediates goods is more than non-intermediates (total goods), and there is a negative effect on the correlation between EIA and distance for non-intermediates.

Cheong et al. (2015) emphasise in their study how the benefit from a PTA is determined by heterogeneity in size, revenue, and location. They find evidence that similar countries in terms of size, location, and income while joining into a PTA have a more significant relative impact on trade flows.

There are fewer studies on the effect of FTAs on specific industries. Mainly in the literature, effects of FTAs in agricultural sectors have been depicted (Sun & Reed, 2010; Vollrath et al., 2009). Few researchers have looked at the situation of the service trade market in greater depth. Kox & Lejour (2005) focus on how service trade is hampered by regulatory heterogeneity. Through taking into consideration 2001 bilateral service trades between EU members, they show evidence that because of the fixed-cost boundary impacts that regulatory

heterogeneity between two countries causes, it has no positive effect on bilateral service exchange.

According to Chen et al. (2006) study, services and goods are considered as one-way complements. While good trade is required for consumer consumption, services are not compulsory. Some older authors, such as Hill (1977), argue that since services cannot be retained, a service exchange requires both participants to be present simultaneously and preferably in the same place. While according to Melvin (1989), this approach is invalidated or at the very least necessitates a redefinition of, the rule of comparative advantage for service trade. As depicted, this perspective becomes inadequate for many contemporary services (e.g. digital services) that do not need the supplies and client to be physically at the same place. On the other hand, some older scholars emphasise the resemblances between goods and services trade. For instance, according to Hindley & Smith (1984), none of the distinctions between services and goods trading alters the conceptual ramifications of current theoretical concepts.

In the last ten years of empirical work on services trade, to evaluate the determinants of bilateral services trade, all of the researchers use the gravity model. The first analyses to use the latest OECD data collection on bilateral trade in services to determine the indicators of bilateral trade in services were (Grünfeld, 2003; Kimura & Lee, 2006; Mirza & Nicoletti, 2011). Grünfeld (2003) observed a significant home market impact in the service trade. He stated that increased service trading is not facilitated by free trade agreements much more than trade in good. Mirza and Nicoletti (2011) proposed that trade in services differs from trade in commodities significantly. They suggested that in the trade services, inputs from the exporting and importing countries are required. Moreover, they observed that bilateral good trade is stronger than the service trade. The explanation was that as the production results from a series of integrated activities carried out in both the exporting and importing countries if one of the latter is not performed flawlessly, the quality of the whole chain suffers. They emphasised that bilateral trade service is influenced by labour and infrastructure costs in partner countries. Afterwards, an empirical study by Lennon et al.(2009) demonstrates that some of these factors also have a common impact on bilateral good trade.

In addition to the literature, Kimura and Lee (2006), Francois and Hoekman (2010) demonstrated the comparison between service and good trade while studying the gravity equation in the international service. By using 10 OECD member countries as "home countries" and 47 OECD member and nonmembers countries as a "partner" for the years 1999

and 2000, (Kimura & Lee, 2006) found that the effect of trade agreements on exports of service is more significant than for the exports of goods, which suggests that the gravity equation deals well for services trade than it does with good trade. At the same time, in terms of elasticity of explanatory variables, geographical distance turned to be more significantly positive for service trade than good trade, while the common borderland dummy is highly significant for bilateral good trade compared to service trade. On the other hand, Head et al. (2009) predicted similar estimations for products and services exchange and identified comparable elasticity figures. By doing model estimation for various service categories, they depicted that distance results for offshore able service groups are statistically and economically significant in a sample period. Head, Mayer, and Ries also demonstrated that common language, colonial link variables that can be found in the trade gravity equation leads to a rise of both service and good trade. Contractor and Mudambi (2008) discovered that human capital variables match marginally better for goods exports than for service exports as a result of the survey of 25 trade services countries. However, it is expected that human capital output will be more relevant for service exports.

The impact of trade liberalisation on the service trade is studied by some researchers (Deardorff, 2001; Francois & Hoekman, 2010; Kimura & Lee, 2006). The result of Francois and Hoekman, 2010 study is similar to the contributions on goods trade. They found considerable evidence that service liberalisation is a potentially significant source of economic performance gains, including gains in industrial competitiveness and the coordination of operations both between and within companies. The application by Kimura and Lee (2006) shows that economic freedom has a favourable impact on all goods and services trading, but the effect on services trade is much greater.

Besides other studies, Deardorff (2001) emphasised that service trade liberalisation has a role to play in fostering not only trade in services and yet also in a good trade. According to Deardorff, to complete and enhance global agreements, international trade in goods necessitates inputs from a variety of service sectors such as transport, finance, insurance. However, there is a restriction for service providers to supply these services to other countries across borders, including foreign countries imposes extra costs and obstacles to international trade. Therefore, by encouraging good trade, trade liberalisation in services will produce more significant gains than one would anticipate from a study of just the services trade. Ariu et al. (2019) also supported this conception that he suggested that the liberalisation in the service trade would lead to having a significant impact on goods trade in general.

Furthermore, another factor that plays a notable role on trade volume is the institutional qualities of trade partners. 'Institutions are the humanly devised constraints that structure political, economic, and social interaction' (North,1996). This term is as general as to include informal and formal constraints for which customs, traditions, and codes of conduct, laws, and property rights might be good examples. At the same time, the quality of economic policies and institutions is not the same in all countries, whether they are ruled by different or similar regimes. There can be different reasons for the difference in the quality of institutions (Clague et al., 1996). Ali (2002) revealed that nations with higher degrees of economic development have significantly higher degrees of the rule of law, low levels of corruption, compelling bureaucracy, and effective security provision over private property.

Large effects of local institutional conditions on development directions in various parts of the world have widely been accepted (Acemoglu et al., 2005; Álvarez et al., 2018; Rodríguez-Pose & Storper, 2006). It is an undeniable fact that poor governance may result in higher transaction costs in most cases, which will negatively affect the economic growth of the country as well as its integration into international trade. According to Hall and Jones (1997), weak institutions may lead to redirection of trade and overproduction of goods and, in this manner, lower the degree of economic activities.

Institutions are one of the sources of comparative advantage in trade, while the outcomes of institutional comparative advantage are regularly uncertain (Álvarez et al., 2018; Levchenko, 2007; Nunn & Trefler, 2014) checked the effects of national institutional quality over bilateral sectoral trade flows. They used bilateral trade data of tangible goods from the UN Comtrade database as well as the GeoDist database for variables like distances between countries, common official language, and colonial ties in the past. In conclusion, they found out confirmation for the theory saying institutional quality impacts trade, whether or not we are thinking of the institutional nature of the importing country or the institutional distance between the importing and exporting nations. Better institutional quality in the importing country facilitates two-sided exchange, and this outcome is built up when the institutional distance with the exporter expands for the importing country. Therefore, their outcomes affirm the theory on the ease of trading with countries having higher quality institutions. Freeman (2002) has also analysed institutional differences among different OECD member countries and their effects on economic performances using data from 1970 until 2000. The main findings of this paper were as follows: Firstly, countries with a higher quality of institutions became more market-friendly in the period from when all the institutional contrasts were minimalised.

Secondly, differences between institutions of labour markets, product markets, and capital markets are almost similar to those in economic freedom. The final finding is the best institutional structure has resulted from advanced capitalism. The outcome for the developed OECD nations varies enormously from similar investigations of the connection among quality of institutions and results for developing countries.

Groot and Linders (2004), in their paper, has also checked the effect of quality of institutions over trade volumes using gravity modelling. They have added and primarily focused on some variables such as the relevance of quality of governance and the extent of similarity of institutions of countries. In particular, it has been checked whether homogeneity and quality of institutions autonomously affect the trade level among country pairs. One of the main findings was countries having similar institutional systems result in 13% more bilateral trade volume on average. The authors also concluded that an increase of one standard deviation in the overall quality of institutions from the mean would prompt an expected increase between 30-44% in two-sided trade. Furthermore, in Méon and Sekkat (2008) paper, it is examined to what degree various components of institutional systems can influence the total amount of exports as well as exports of manufactured and non-manufactured goods. For this analysis, they have used panel countries from 1990 until 2000. As a result, it is found out that in the case of manufactured goods, there is a positive correlation with the institutional quality while the exports of non-manufactured goods were showing a negative correlation and total exports did not seem to be affected by the quality of the institutional framework.

The other authors - Jansen and Nordås (2011), analysed the influence of domestic institutions on the trade levels. Two modern methods were used in their paper, which included concentrating mainly on total trade volumes and focusing on the bilateral trades using gravity equations. The result was a positive relationship between the quality of domestic institutions and the extent of openness of the country. It was also clear from their analyses that domestic tariffs alone do not have a significant effect on trade volume, but when it is combined with high institutional quality, then it can have some undeniable effects. Additionally, some positive effects by domestic institutions were observed on bilateral trades. However, parameters of institutional factors are decreased nearly by half, and it can turn to be irrelevant when the quality of domestic institutions is also included in the analyses.

In today's world, a positive indicator of the Rule of Law is a sign of a better way of governance in any country, and it is considered as a crucial condition for economic and social

growth, as well as for democracy (Valcke, 2012). The concept of the rule of law refers to the supremacy of the law over political activity and human behaviour. That is equivalent to a case in which both the government and people are constrained by the legislation to follow it. Quality of legal institutions in importer country plays undoubtedly large effect in international trade too. The majority of recent studies have concentrated on this, which Yu et al. (2015) identified that in case there is a less mature legal system in the importer country than that of the exporter, there will be some confusions over the risk of future expropriation and default, and the exporters bear the main risk. Furthermore, Yu et al. (2015) investigated the idea of a connection between formal and informal institutions-trust and legal framework are classified as informal and formal, respectively – and show that trust and the rule of law are substitutes as the effect of the rule of law increases in importer country relative to exporter country the impact of trust on bilateral trade decreases. Similarly, According to Anderson and Marcouiller (2002), low quality of institutions can create a barrier for bilateral trades as much as tariffs can do. They discovered that trade could dramatically increase when there is a solid regulatory mechanism capable of upholding business transactions by formulating and executing the economic policy of government consistently and transparently. In support of this idea, countries with stronger contract compliance may effectively specialise in manufacturing products that require relationship-specific investments (Antras et al., 2007).

There is very few literature focusing on the relationship between international trade volumes and political stability. As an example for the old scholar, Srivastava et al. (1986) examined the effects of political stability on foreign trade that discovered countries with higher political stability measures export more, while countries with lower political stability consume more. Domestic political instability in a country, according to Sambanis (2002), decreases the trust of foreign investors and trade partners. Anderson and Marcouiller (2002), after analysing the effects of different violence types, conclude that terrorism, internal and external war may result in necessary macroeconomic consequences in terms of bilateral trade. They state that insecurity inside countries plays a secret tax role in trade, increasing the price of imports and putting these countries at a competitive disadvantage. Davies (2008) demonstrates that the economic costs of war remain even after it finishes because the war causes high inflation, and high inflation triggers capital movement from the unstable areas. On the other hand, Rotunno (2016) found in his study that countries tend to sign FTAs, when there is high political instability after their leader's withdrawal for unanticipated reasons, such as natural death or ill health. His estimations suggest that the probability of entering the same trade agreement is

twice as high as the average after these types of unpredictable incidents. "The effect is more pronounced for FTAs signed with big trading partners, which are more likely to destroy protectionist rents" (Rotunno, 2016, p.147).

In summary, according to the extensive literature, there is a positive influence of trade agreements on trade. In contrast, the more recent gravity literature on services trade shows some similarities and differences in services and goods trade, but conclusions are mixed. From institutional quality aspects, most scholars agree in the idea of having similar institutional systems increase bilateral trade volume on average. Our contribution to the vast literature is primarily the following. Firstly, we examine how FTAs affect trade volume in the service and good trade. Besides this, we shed light on how trade agreements between countries with different institutional quality affect bilateral service and good trade.

2. Data

For our empirical analysis, data is used from various sources. Our final dataset covers bilateral trade flow for 43 countries[1] between 2004-2015 years. There was not enough data for selected countries' service trade in particular for the years before 2004. Overall, the list of countries covered in our analysis consists of both OECD and non-OECD countries. Previous empirical findings indicate that the factors influencing trade flows can vary greatly between developed and transitional countries (Eicher and Henn 2011; Martinez-Zarzoso, Felicitas, and Horsewood 2009). However, analysis for developed and transitional countries is not widespread in the literature. Therefore, by choosing eight non-OECD countries from transitional nations, we addressed this gap.

We use bilateral service imports trade from the newly released OECD statistics on foreign trade services as the dependent variable. The OECD data on service imports compromised all 43 countries as "home countries" and "partners countries". As it is analysed in Kimura and Lee (2006) study, we have also compared service trade and good trade imports. Service trade is defined as all total of all types of service within considering years. A total good trade is defined as the sum of all unidirectional flows of goods.

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[1] See Appendix A for a list of countries used in the analysis

Most of the dependent variable data - GDP of import and export countries, bilateral distance, and dummy variables originated from CEPII database (CEPII, 2019) and recognised crucial source data for gravity analysis, which is publicly available. The bilateral distance measure we use distij is the distance in between each countries` most populous cities. It is measured using the great circle method, as defined by (Mayer and Zignago, 2012), based on the latitudes and longitudes of a country's most significant agglomerations.

In gravity analysis as for the dummy variables consist of "Colony" indicates all country-pairs with a colonial history, "Contiguity" indicates contiguous borders between home and partner countries, "Language" indicates the existence of a common language between import and export countries, additionally, "Island", "Landlocked" and "Common Currency". In comparison to other studies, the population of import and export countries data also are considered in our analysis, which is taken from the CEPII database. The variable "TLA" includes all trade-liberalising agreements such as Customs Union, Free Trade Agreement, Partial Scope Agreement, Economic Integration Agreement, Customs Union & Economic Integration Agreement, Free Trade Agreement & Economic Integration Agreement, and Partial Scope & Economic Integration Agreement. In more specifically, Customs Union and Economic Integration Agreement dummy variable was also added in our analysis separately in a more deep analysis. TLA dummy variable data originate from Mario Larch's Regional Trade Agreements Database[2]. All dummy variables are considered within each pair of countries because they can constitute related enablers/barriers to bilateral trade. The name of TLAs covers the 2004-2015 period is demonstrated in Appendix G.

In our research, we also investigate the role of institutions in facilitating or impeding trade, and we test whether better institutions facilitate bilateral trade. From a data usage perspective, in the literature, to analyse the institutional role on the trade trust indicators by Eurobarometer, alternative datasets about institutional quality have been addressed (De Groot et al., 2004; Linders et al., 2005). However, we prefer to utilise the World Bank data set, which is the most comprehensive and representative one that has been addressed by (Álvarez et al., 2018) paper. The World Bank's World Governance Indicators (WGI) assess institutional quality at the country level developed by (Kaufmann et al., 2011). However, not without

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[2] https://www.ewf.uni-bayreuth.de/en/research/RTA-data/index.html

dispute, the World Governance Index (WGI) is probably the most accurate and globally extensive collection of institutional indices available. The World Governance Index (WGI) offers six governance indices for 215 economies from 1996 to 2019, covering various facets of institutional quality at the state level. It has a spectrum of -2.5 to +2.5, with higher scores indicating improved governance. In our analysis, we addressed to following two indicators out of six:

1. The rule of law (RL) – this concept encompasses public trust in the justice system. Contract protection, private property rights, and law enforcement towards violence and criminal activities, and national sovereignty are also examples of the rule of law

2. Political Stability and Absence of Violence/Terrorism (PV) - measures public expectations of the risk that the regime will be destabilised or overthrown by illegitimate means and aggressive actions, such as politically motivated violence and terrorism, are also included in this concept. In general, higher political stability and lower violence are expected to increase trade.

In our sample data, while there are 21672 observations (=42x43x12), 1008 observations (4, 65%) are missing. Therefore, in this article, the solution to the missing data problem is to consider all missing values as zero trade. In our sample, we did not face that many missing trade volumes between pairs may cause severe biases in the analyses, which we considered all missing values as zero trade. In comparison to good trade, which has 108 zero observations, there are no zeros in service import trade data. In Table 1, descriptive statistics of all dependent and independent variables can be seen.

Figure 1: Relationship between differences in the rule of law and trade depending on TLA
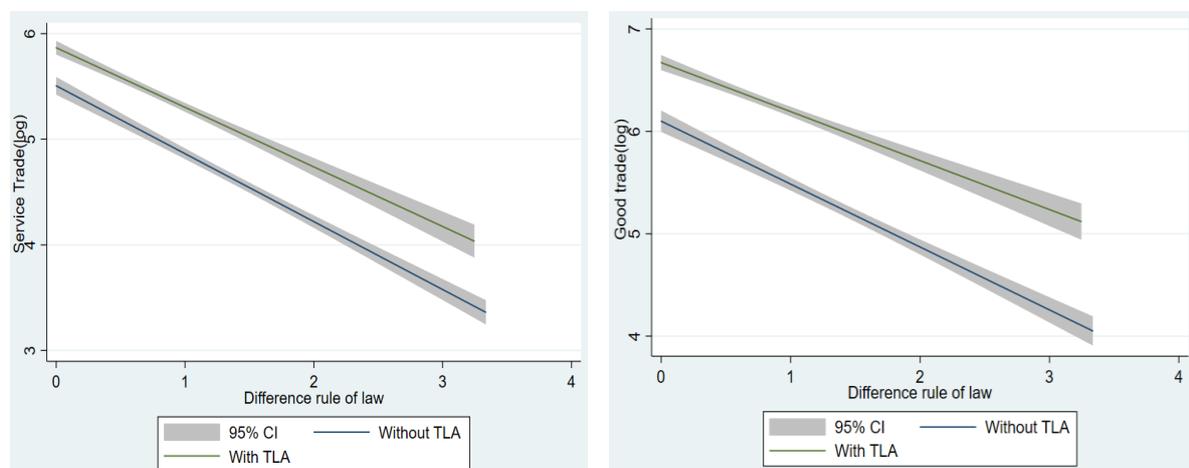

Source: Compiled by authors

To understand the relationship between institutional indicators and trade, we plotted the following Figures. By addressing twoway lfitci command[3], we are showing a calculation of simple linear regression of service and good trade on the level of difference in the rule of law and plots of resulting line, along with a confidence interval. Figure 1 demonstrates the relationship between differences in the rule of law and volume of trade in service and good for two scenarios:

- countries participating in the same TLA;
- country pairs not having any trade agreements

As seen from graphs, participating in the same trade liberalisation agreements stabilises the negative relationship between the gap in country pairs' Rule of Law system and their bilateral trade volumes for both service and good.

The same plotting has been done to observe the relationship between the difference in political stability indicators and trade-in service and good. Graphs in Figure 2 for service and good trade separately shows how the relation of difference in political stability and trade volume is varying based on TLA. By plotting these graphs, we can display that as the difference increases in the political stability indicator of country pairs, the volume of service and good trade decreases noticeably, and we can observe this effect much for countries having TLA.

Figure 2: Relationship between differences in political stability and trade depending on TLA
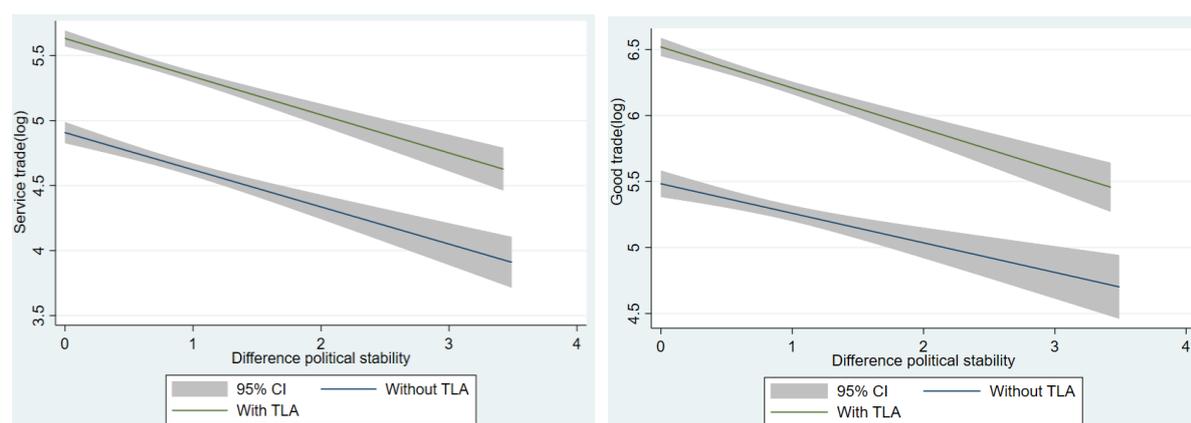
Source: Compiled by authors

Table 1

Descriptive statistics of variables

Variable	Obs.	Mean	Std.Dev.	Min	Max
Dependent Variables					
Log_Service IM	21,672	5.05	2.35	-2.89	24.57
Log_Good EX	21,672	5.82	2.79	-8.76	22.52
Independent Variables					
Log GDP IM	21,668	19,55	1,78	14,77	23.61
Log GDP EX	21,588	19.56	1,77	14,79	23,73
Log Distance	21,590	7,99	1,10	4,09	9,88
Log Population IM	21,668	9,59	1,62	5,67	14,13
Log Population EX	21,588	9,60	1,63	5,67	14,13
Language	21,508	0,05	0,21	0	1
Colony	21,508	0,02	0,13	0	1
Contiguity	20,664	0,06	0,25	0	1
TLA	21,672	0,54	0,50	0	1
CU	21,672	0,03	0,16	0	1
EIA	21,672	0,31	0,47	0	1
Landlocked	21,672	0,28	0,45	0	1
Institutional indicators					
Rule of Law Importer	21,672	0,94	0,93	-1,33	2,1
Rule of Law Exporter	21,672	0,92	0,92	-1,33	2,1
Political stability Importer	21,672	0,50	0,74	-2,02	1,62
Political stability Exporter	21,672	0,50	0,74	-2,02	1,62
Difference in Rule of law(log)	21,672	1,05	0,81	-9	1,42
Difference in Political stability(log)	21,672	0,82	0,66	-9	1.35

Source: Compiled by authors

In Appendix B and C, the relation between the importer rule of law, political stability and trade is plotted in the same way with Figure 2 and 3. As the quality of the rule of law and political stability in importer country increase, a rise in the service and good trade can be observed. The relationship between service trade and importer country's institutional indicators is stronger than good and institutional indicators relationship**.**

3. Methodology: The gravity model of trade

3.1 Brief description about gravity equation

The methodological research is based on the trade gravity model that has become a well-known method for ex-post trade analysis. An economist Jan Tinbergen firstly introduced the gravity equation model in 1962. Being influenced by Newtonian gravitation theory, the equation is mainly used for calculating predictions on bilateral trade flows between countries considering their economic sizes, which can be shown as GDP or GDP per capita of countries and geographical distances between them:

$$F_{ij} = G \cdot \frac{M_i M_j}{D_{ij}}$$

The gravity model also has a multiplicative form as described in its standard version as followed:

$$X_{ij} = G S_i M_j \phi_{ij}$$

In this equation,

X_{ij} denotes the monetary value of exports from country i to country j, while

M_j is all importer-specific factors making up the total importer's demand, and

S_i all exporter-specific factors make up the total exporter's supply (such as the exporter's GDP). ϕ_{ij} G is standing for a vector independent of country pairs, such as the degree of global trade liberalization.

Despite having very stable results in bilateral trade volumes calculation, the gravity model did not have any theoretical basis until the first attempt (Anderson et al., 1979). His work was mainly based on Armington's Assumption stating that all the goods of a country will be consumed by every other country participating in international trade processes at least in a minimal amount. This was believed to be the reason why larger countries are importing and exporting more goods than smaller ones. After not an extended period, Helpman (1987) and Bergstrand (1990) brought a new perspective to the model, claiming that goods can be distinguished between producers. Moreover, it has been depicted that firm heterogeneity is taking into account in the gravity model. In addition, a crucial contribution has been made by Anderson and Van Wincoop (2003) paper, where it is indicated that having control over trade costs is essential for a well-defined model.

3.2 Model specification

Developing an effective gravity model for scientific study necessitates taking into account a variety of econometric considerations. The econometric methods for estimating this model have advanced over time, like the theoretical side of the gravity model. Given the multiplicative structure of the gravity equation, the conventional method for calculating one is, by using ordinary least square estimations, taking natural logarithms of the variables, then generating a log-linear equation. In comparison with using a single cross-section, the use of panel data (over time bilateral trade data) is required for determining the effect of non-constant variables has advantageous. However, it can cause various econometrics issues. Estimates in panel data are biased and contradictory because there is a correlation between unmeasurable object-specific effects and exogenous variables.

Another problem is the causal link between trade policy and trade flows, as expanded bilateral trade could not be the outcome of a Free Trade Agreement (Kohl, 2014). At the same time, not taking called multilateral resistance terms (MRTs) into account can lead to some problems. MRT is the trade obstacle that each nation faces with its trading partners (Adam & Cobham, 2007). Historically, the very first method was to use remoteness terminology to represent multilateral resistance. There are some different ways to tackle issues related to MTRs. One approach is to use the iterative methodology to generate forecasts of the price-raising impact of bilateral trade barriers (Anderson & Van Wincoop, 2003). However, since it necessitates the use of non-linear least squares (NLS) to achieve an approximation, this technique is not often used. One commonly used approach is to use country-fixed effects for importers and exporters (Luhman, 2006; Feenstra, 2002). These importer and exporter dummies are binary (0,1) variables that absorb all country-specific features while still adjusting for a country's average amount of imports and exports.

Moreover, Baier and Bergstrand (2007) recognizes the difficulties involved with a lack of sufficient exogenous or instrumental variables. Unlike other studies, they utilize country-time-specific and country-pair fixed effects on the gravity equation to addressed MRTs and country-specific heterogeneity. In addition, panel data is used to reduce the bias caused by country heterogeneity in our analysis. The reason is that though observed country-pair characteristics (such as shared language and common currency) can only adjust for country-

pair tendency to trade in a standard cross-section, country-pair heterogeneity in panel data can be accounted for by using country-pair fixed results.

The gravity model used in this article takes the following basic form:

$$lnX_{ij,t}^{s} = \beta_1 lnGDPIM_{i,t} + \beta_2 lnGDPEX_{j,t} + \beta_3 lnDistance_{ij} +$$
$$\beta_4 Landlocked_{ij} + \beta_5 Contiguity_{ij} + \beta_6 Language_{ij} + \beta_7 Colony_{ij} +$$
$$\beta_8 lnPOPIM_{i,t} + \beta_9 lnPOPEX_{j,t} + \beta_{10} TLAi_{j,t} + \beta_{11} CU_{ij,t} + \beta_{12} EIA_{ij,t} + \beta_{13} lndiff.rlw_{ij,t} +$$
$$\beta_{14} TLA_{ij,t} * lndiff.rlw_{ij,t} + \beta_{15} lndiff.ps_{ij,t} + \beta_{16} TLA_{ij,t} * lndiff.ps_{ij}, t + \emptyset_{i,t} + \emptyset_{j,t} + u_{ij,t}$$
(1)

Equation (1) would be estimated separately for service import and good import three times, firstly without fixed effect, secondly with importer and exporter fixed effect, then with an importer, exporter dummy, year, and pair fixed effect. In the equation, $X^s ij,t$ is the value of unidirectional flow from country i to country j in a year t. $lnX^s ij,t$ is the dependent variable, a logarithmic form of service import, and good import between partner countries i j at the time t.

The literature on gravity models considers three factors being used as indicators of a country's size Gross Domestic Product (GDP), GDP per capita (GDP per capita), and population. In this paper, GDP and population are included which are represented by $lnGDPIMi,t$ $lnPOPIMi,t$ for home country, $lnGDPEXj,t$ $lnPOPEXj,t$ for partner country. Since the effect of GDP on overall services exchange is not straightforward, the GDP coefficient is supposed to take either a positive or a negative symbol. However, a rise in either partner countries` GDP would result in higher in the two countries' services trade flow since this country would consume more services and generate and export more services as it became wealthier. Second, the model includes time-invariant measurable variables that can influence trading costs frequently used in research of the gravity model of trade (Kohl, 2014). Since the greater geographical distance between trading partners implies higher trade costs, bilateral distance $Distance\ ij$ is assumed to not have a positive coefficient. It could be reasonable for good trade; however, the latest research does not suggest that this is the case with service.

As regards dummy variables, the $Landlocked\ ij$ set equal to 1 for landlocked countries, and it is expected to be negative for good trade but could not expect to indicated for service trade precisely. $Contiguity\ ij$ implies that if a trade flow that is taking place between two countries is contiguous, it equal to one. In addition to distance, a shared language and community are expected transaction costs, thus increasing bilateral trade. To account for such linguistic links, we introduce a dummy variable $Language\ ij$ for countries with the same

language. The dummy variable $Colony_{ij}$ refers to a relationship between two nations, regardless of their degree of growth, in which one has dominated the other for a long time or possesses historical colonial tie and set equal to 1. Both three dummy variables are supposed to be positive. $TLA_{ij,t}$ dummy variable represents all trade liberalization agreements and set equal to 1 if the trade flow among countries i and j which accrued in t year is the part of the same trade agreement and expected to be positive. In our paper, we also plan to analyze specifically with the dummy variables $CU_{ij,t}$, and $EIA_{ij,t}$ the trade flow among countries j and i, which accrued in year t, is the part of the same Customs Union and Economic integrated agreements. $diff.rlw_{ij,t}$, and $diff.ps_{ij,t}$ variables indicate the difference between the institutional indicators – the rule of law and political stability - of the home i and partner countries j, respectively. This indicator does not lead to symmetry issues between i and j countries, taking their absolute values. In addition to institutional difference indicators, we also include two interaction terms such $TLA_{ij,t} * diff.rlw_{ij,t}$ and $TLA_{ij,t} * diff.ps_{ij,t}$ to evaluate how institutional difference indicators (for the rule of law and political stability) influence on the effect of TLA on trade flow of service and reasonable.

Explicitly, to estimate the impact of TLA on both services and product trades, we use institutional distance as the distinction between importer and exporter country governance indicators and an interaction term between institutional distance and TLA parameter. Besides that, to see more valuable results, we examined the impact of institutional efficiency on trade based on importer levels of governance indicators: the rule of law and political stability. A baseline level of 0 is used to define the effect for developed and transitional countries separately. $Ø_{i,t}$ and $Ø_{j,t}$ Indicates the importer-year and exporter-year dummy variables. These two fixed effects include both observable and unobservable country-specific features, being island country variables typically used in the standard gravity model. Finally, $u_{ij,t}$ represents the error term. A description of all variables is demonstrated in Appendix D.

The basic OLS approach would have considerable limitations when estimating a gravity model. Firstly, a drawback of OLS estimation is that it cannot adjust the information for the zero trade flows, as the trade value is converted into a logarithmic form, these zero observations are removed from measurement samples. Substitute missing value with small arbitrary can cause inefficient estimation. One of the approaches for dealing with this issue is simply removing the country pairs with zero trades and doing calculations with the same model, while the others added +1 for all dependent variables with zero values. Although these approaches

can solve the issues from the technical side, in general, they will result in not negligible inconsistencies of the main parameters. Helpman et al. (2008) introduce Tobit, The Helpman, Melitz, and Rubinstein (HMR) model. However, in the end, it turned to be inefficient on the panel data. To account for the existence of zero trade flows, the gravity model is approximated in multiplicative rather than logarithmic form, as mentioned by Santos Silva and Tenreyro (2006), applying the Poisson Pseudo Maximum Likelihood (PPML) model. Luckily, in our sample, we did not face many zero trade volumes between pairs may cause severe biases in the analyses.

The second problem that arises from OLS is the Heteroscedasticity of trade data because it leads to the impact of trade cost and policy to become not only biased also unreliable while estimating the gravity model in log-linear form. A comprehensive approach to PPML is presented by Santos Silva and Tenreyro (2006) to tackle this issue. In the recently published studies, PPML has emerged as a preferred estimation methodology, and particularly in the sector focus data, it becomes a primary tool by Mujahid and Kalkuhl (2016), Sun and Reed (2010). Another most significant challenge we can face in the OLS is the endogeneity problem. While estimating trade policy effects in the gravity model, some variables could be endogeneous, and the reason could be the correlation of trade variables with unobservable trade costs. In the many kinds of literature, this problem is recognized by many researchers. For instance, (Baier & Bergstrand, 2007) addressed this issue with standard instrumental variable (IV) treatments; after that, they suggest applying the average treatment effect (ATE) method in panel data. In particular, they addressed using the country-pair fixed effect to eliminate this endogeneity issue. While applying the country-pair fixed effect will absorb bilateral time-invariant variables such as distance, it will not suppress the effect of time-varying variables. In addition, As shown by (Egger & Nigai, 2015), including a pair-fixed effect is the more optimal way of tackling the endogeneity problem in the gravity model. Therefore, in our analysis, in addition to OLS, we also imply PPML estimation.

The following two equations are PPML estimations. We estimate PPML two times, firstly with an importer, exporter, and time fixed effect, secondly we add country pair fixed effect.

$$X^s_{ij,t} = exp(\beta_1 lnGDPIM_{i,t} + \beta_2 lnGDPEX_{j,t} + \beta_3 lnDistance_{ij} +$$
$$\beta_4 Landlocked_{ij} + \beta_5 Contiguity_{ij} + \beta_6 Language_{ij} + \beta_7 Colony_{ij} +$$
$$\beta_8 lnPOPIM_{i,t} + \beta_9 lnPOPEX_{j,t} + \beta_{10} TLA_{ij,t} + \beta_{11} CU_{ij,t} + \beta_{12} EIA_{ij,t} +$$
$$\beta_{13} lndiff.rlw_{ij,t} + \beta_{14} TLA_{ij,t} * lndiff.rlw_{ij,t} + \beta_{15} lndiff.ps_{ij,t} + \beta_{16} TLA_{ij,t} * lndiff.ps_{ij}, t + \emptyset_{i,t} + \emptyset_{j,t}) * u_{ij,t}$$

(2)

$$X^s_{ij,t} = exp(\beta_1 lnGDPIM_{i,t} + \beta_2 lnGDPEX_{j,t} + \beta_3 lnDistance_{ij} +$$
$$\beta_4 Landlocked_{ij} + \beta_5 Contiguity_{ij} + \beta_6 Language_{ij} + \beta_7 Colony_{ij} +$$
$$\beta_8 lnPOPIM_{i,t} + \beta_9 lnPOPEX_{j,t} + \beta_{10} TLA_{ij,t} + \beta_{11} CU_{ij,t} + \beta_{12} EIA_{ij,t} + \beta_{13} lndiff.rlw_{ij,t} +$$
$$\beta_{14} TLA_{ij,t} * lndiff.rlw_{ij,t} + \beta_{15} lndiff.ps_{ij,t} + \beta_{16} TLA_{ij,t} * lndiff.ps_{ij}, t + \emptyset_{i,t} + \emptyset_{j,t} + \emptyset_{ij,t}) * u_{ij,t}$$

(3)

The second equation is almost the same as the first one. Instead of taking logarithmic of dependant variable in that case service and good import, we find exponential of the equation. In the third equation, while we added the country-pair fixed effect, all the time-invariant variables such as distance, landlocked, contiguity, language, a colony will be absorbed.

In the empirical analysis, firstly, classic OLS estimation is analyzed separately for service and good import without any fixed effect within emphasizing the effect of institutional differences such as the rule of law and political stability and interaction of them with TLA on the trade flow. The latter we realized the same evaluation considering importer, exporter and year fixed effect with OLS and recently recognized PPML and including country pair effect PPML estimation to obtain more adequate results.

4. Results of empirical analysis.

This section discusses the result of the analysis that determines the effect of Trade Liberalization Agreements, which include all kinds of free trade agreements on the service and good trade separately. Moreover, we also interpret the influence of institutional governance indicators: the rule of law and political stability on the service and good trade from two aspects: first, how trade agreements between countries with different levels of the rule of law and political stability affects the bilateral service and good trade. Second, how institutional distance and the interaction term between institutional distance and TLA variable affect trade.

4.1 The effect of TLA on service and good trade in a comparative way within other control measures.

First, we perform a simple OLS regression analysis in the gravity model without a fixed effect, as shown in Table 2.

Table 2.

OLS analysis without fixed effect

	OLS			
	Service trade		Good trade	
GDP import (log)	0.901***	(0.00816)	0.625***	(0.0125)
GDP export (log)	0.928***	(0.00910)	0.852***	(0.0117)
Distance (log)	-0.836***	(0.01000)	-0.949***	(0.0132)
Landlocked	-0.010	(0.0157)	0.006	(0.0238)
Contiguity	0.370***	(0.0291)	0.419***	(0.0397)
Language	0.651***	(0.0342)	0.598***	(0.0412)
Colony	0.318***	(0.0599)	0.154*	(0.0654)
Population import (log)	-0.114***	(0.00973)	0.340***	(0.0140)
Population export (log)	-0.199***	(0.00927)	0.089***	(0.0120)
TLA	-0.0221	(0.0263)	0.275***	(0.0345)
CU	-0.151***	(0.0422)	0.187***	(0.0455)
EIA	-0.131***	(0.0245)	0.314***	(0.0342)
Constant	-21.04***	(0.166)	-19.93***	(0.238)
Observation	20495		20388	
adj. R-sq	0.803		0.729	

Notes:
(i) Parentheses show robust standard errors.
(ii) Statistical significance: * $p<0.05$, ** $p<0.01$, *** $p<0.001$
(iii) Model is without fixed effect
(iv) OLS: ordinary least squares
Source: authors` calculations

As can be seen from Table 2 first OLS analysis without fixed effects has shown quite expected results in most variables with adjusted R-Squares being equal to 0.803 and 0.729. It seems normal since we have minimal zero trade levels between sample countries. Looking at Table 2, we can see that the effect of TLA, which is one of our main variables. TLA has an even larger effect in a good trade with 31% than the effect on service trade, which we calculated in the following way: [exp(0.275)-1]. At the same time, the estimated TLA effects in OLS without fixed effect estimation for service are insignificant. Being in the same trade

liberalization agreements stimulated goods trade more rather than service trade. This may be the result of not all the services being included in all kinds of trade liberalization agreements.

Moreover, in free trade zones where service trade has been liberalized, there are obstacles to service trade (Grünfeld, 2003). It is concluded that TLAs are still not firmly effective in eliminating barriers against service imports. Understandably, service trade cannot be quickly and directly targeted by tariffs or taxes of governments (Francois & Hoekman, 2010). The other trade agreement dummies, such as Customs Union and Economic Integration Agreement gave us negative results for the same trade type, which can be explained by the deficiency in precision caused by not adding fixed effects.

The following text is mainly about the effect of control variables on trade. In both trade types, we got positive relation with the economic size of countries, which is represented by the GDP of importer and exporter countries. Trade on services is affected comparably more by economic well-being, which would mean that economically stronger nations will use more services offered by other countries. Results for another variable is a population of country pairs can also be considered as a representative for economic size did not meet the expectations showing negative correlations in case of service imports, and positive but considerably smaller scores in case of good trade. The results for geographical distance between countries is also quite rational with negative percentages: $[\exp(-0.836)-1] = -0.56\%$ and -0.61%. Geographical distance can act as a more serious barrier in a good trade, which is similar to previous analysis conducted by Kimura and Lee (2006), where they found out the same. According to our OLS estimates, historical colonial ties.[4] and official common language has a positive role in both trade types, the effect of the latter being more significant.

While taking a look at Table 3, we will compare our estimations based on OLS and PPML with an importer, exporter and year fixed effect, in addition, PPML model with a pair-fixed effect. In the case of without fixed effects, the OLS model, a correlation among treatment and unobservable variables ensues biased estimation of outcomes. In comparison, the FE model confines the source of bias to time-varying variables that correlate with outcome. In order to tackle the issue that arose by heteroscedasticity and serially correlated error and multilateral

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[4] Countries have been in the same colony: Post Soviet nations (Russian Federation, Belarus, Ukraine, Georgia, Moldova, Estonia, Latvia), The former British colonies (United Kingdom, New Zealand, Canada, United States, Australia), Spanish Colonies (Chile, Mexico)

trade resistance, we addressed the PPML FE model, and then the PPML pair fixed effect is evaluated to deal with the endogeneity problem.

Table 3:

Total Bilateral Effect of Trade Liberalization Agreements

	OLS		PPML		PPML(pair-fixed)	
	Service trade	Good trade	Service	Good	Service	Good
GDP import (log)	0.397***	0.894***				
	(0.0436)	(0.0539)				
GDP export (log)	0.218***	0.281***				
	(0.0418)	(0.0652)				
Distance (log)	-0.796***	-1.108***	-0.157**	-0.406***		
	(0.0147	(0.0185)	(0.0229)	(0.0256)		
TLA	0.263***	0.644***	0.752***	0.505***	0.044	0.130**
	(0.0294)	(0.0435)	(0.0736)	(0.0802)	(0.173)	(0.0477)
CU	0.154**	0.130*	0.215*	1.145***	0.237*	0.341***
	(0.0479)	(0.0629)	(0.0980)	(0.0980)	(0.107)	(0.0907)
EIA	0.209***	-0.078	0.585***	1.351***		
	(0.0339)	(0.0474)	(0.0817)	(0.114)		
Contiguity	0.549***	0.162***	0.664***	0.337***		
	(0.0294)	(0.0392)	(0.0424)	(0.0440)		
Language	0.254***	0.391***	0.257***	0.930***		
	(0.0321)	(0.0390)	(0.0504)	(0.0837)		
Colony	0.432***	0.182***	-0.096	-0.133		
	(0.0594)	(0.0551)	(0.0545)	(0.0894)		
Population import (log)	0.287	0.056				
	(0.247)	(0.380)				
Population export (log)	-0.502*	-0.560				
	(0.229)	(0.335)				
Constant	5.047	-9.053**				
	(4.932)	(3.435)				
Fixed effect	Yes	Yes	Yes	Yes		
Pair fixed-effect	No	No	No	No	Yes	Yes
Observation	20495	20388	20495	20495	21402	21378
adj. R-sq	0.869	0.844	1.0	1.0	1.0	1.0

Notes:
(i) Parentheses show robust standard errors.
(ii) Statistical significance: * $p<0.05$, ** $p<0.01$, *** $p<0.001$
(iii) All models include time-varying importer and exporter dummy variables.
(iv) OLS: ordinary least squares. PPML: Poisson pseudo maximum likelihood
Source: authors` calculations

The OLS FE model in this table is reliable with a contribution of fixed effects, which can be seen from adjusted R-squared numbers 0.869 and 0.844, respectively, for services and goods trade. According to the OLS estimation (the first 2 columns), TLA has increased average bilateral good trade by 90%[exp(0.644-1)], with 0.644 statistically significant coefficients. This result supports the estimation of OLS without a fixed effect, which we discussed in Table 2. Participating in the same trade agreements enables countries to boost their trade in goods more than in service. On the other hand, in service trade, only 30% increase is observed. These findings are similar to those from (Álvarez et al., 2018) analysis, in which 23% effect is found. The first PPML model shows that service trade flow has increased by 112%, while in a good trade, it is 65%. This is similar to Kimura and Lee, (2006) result.

The PPML model with a pair-fixed effect provides lower estimates compared to other models. There the TLA is associated with 13% increase in a good trade. As the PPML with pair-fixed effect focuses on changes within the same country-pair, it is natural that this estimate is smaller than those in other models. However, changes in service trade remain statistically insignificant. Although the tariffs on goods trade are applied on a country-by-country basis, services trade, instead of tariffs, is subject to technical barriers such as legislation, visa procedures, or physical barriers that limit the provision of telecommunication services that rarely differentiate between countries. Therefore, signing the TLA matters noticeably more for countries while trading goods. In general, different estimations techniques suggests positive result in all TLA estimations.

In the OLS FE model, it can be assumed that the GDP of the importer country has a more significant impact compared to the exporter country on both trades, and it is even larger in the case of good imports. The same result is observed in the study by Kimura and Lee (2006). This is analogous to the results of Grünfeld & Moxnes (2003), who say that there is a strong home market impact on service exports, but we cannot reach that interpretation until we analyze the implications of the service imports equation.

According to our OLS estimation with importer and exporter fixed effects, as the distance between countries increases, it leads to lower goods trade volume by 67% and services trade by 55 %, which is statistically significant. While these values remain slightly lower in models tested with PPML, estimates for distance coefficients still have the predicted negative signs, consistent with the findings of the article by Santos Silva and Tenreyro (2006). In our study, geographical distance is consistently more critical for good trade than for service trade. This result may indicate that the transport cost for goods trade is "in general" higher than that

for tradable services. Compared to other literature, that value equals -0.5 in the Álvarez et al. (2018), similar to our study and -0,91 in Head and Mayer (2014) study.

As expected, countries have the same official language trade services 25% more with each other compared to the rest countries, and this result is the same for OLS and PPML FE estimations. While in the good trade, this percentage is much more, which is associated with 153% according to the PPML FE model. These findings overlap with the prior empirical studies concluding that the impact of variables such as common language is significant with (72%) (Head & Mayer, 2014).

These findings support research claiming that trade in services is not as reliant on distance as trade in goods. While the services trade necessitates cooperation and active involvement of importer and exporter (Hill, 1999), distance is not a significant issue as physical as may be seen. Physical distance in service trade can be alternated by an increased inclination to use technology that defines the modern era.

Regarding dummy variables, such as landlocked, PPML estimation gave us a significant result ($p<0.05$): trade between landlocked countries decreases more than 40% in both services and reasonable compared to the rest, as expected. In contrast, the estimation result with OLS fixed effect is statistically insignificant for both service and goods trade.

Countries sharing the borders are likely to have 73% more services traded compared to the other trade pairs, while this value is 17% for goods, according to OLS FE in Table 3. If we look at the PPML estimation, a rise could be observed in both service and goods trade, accounted for 94% and 40%, respectively. As the common border is correlated with communication costs and cultural differences, having a larger effect on service trade can be explained. These findings intersect with the prior empirical studies that contiguity is significant with 70% (Head & Mayer, 2014). However, the studies by Álvarez et al. (2018) values are vice versa, which is depicted 20% and 70% effect on service and goods trade, respectively. The colony coefficient is 1% statistically relevant and has a positive symbol. According to OLS estimation, the positive coefficient means that the colonial link between two countries greatly supports the trade between the home country and its partner country. In the case of importers for both service and good trades, having more population leads to more imports which is understandable; however, it is statistically insignificant. When it comes to exporting country, we can observe that a 1% increase in population leads to 40% decrease in the country's volume of exporting services, although the score for exporter good trade is not statistically significant.

To summarize these estimations, we can state that TLA plays a more significant role in good trade than service trades, according to the OLS and PPML pair-fixed effect models. When it comes to other control variables, all of them are statistically significant as expected. Evidence from earlier papers supports these results as well.

4.2 The effect of the selected governance indicators on service and good trade.

In the first subsection, we have studied the effect of TLA on the trade of goods and services. While trade agreements themselves can have different effects due to the heterogeneity and one aspect of heterogeneity is the institutional efficiency indicators. In this part, we will extend the analysis and focus on how trade agreements between countries affect the bilateral trade flow considering the role of institutional quality, specifically on service and good trade. Improved institutional framework consistency eliminates confusion about contract compliance and general economic governance. This decreases transaction costs directly by improving property protection and indirectly contributing to raising the trust in the economic transaction processes (Álvarez et al., 2018). Since traders in both countries have similar levels of institutional effectiveness, they would be better able to join the same trade agreements. The efficiency in which institutions secure and facilitate private transactions is determined by their quality.

On the other hand, bilateral familiarity with trading partners is also significant. This decides how effectively traders can utilize each other's institutional capacity. Anderson and Marcouiller (2002) discuss the roles, which language commonality and contiguity can be assumed in this case. They also supported the idea that while comparing traded goods and domestic goods, transaction costs are smaller than the traded goods since there are more informal procedures available to protect property rights. In most studies, it is depicted that rule of law, political stability, and regulatory quality show the most vital connection with bilateral trade volumes.

We have analyzed the institutional quality effect on trade from two points of view:

- Estimating the effect of TLA on both trade of services and goods based on importer levels of governance indicators: the rule of law and political stability. To identify impacts for developed and transitional countries separately, we selected the threshold level of 0.

- Estimating the effect of TLA on both trades of services and goods based on institutional distance as the difference between importer and exporter countries governance indicators and an interaction term between institutional distance and TLA variable.

Firstly, for analyzing the effect of TLA based on levels of the rule of law, which can be seen in Table 4, threshold level 0 is selected to differentiate better transition, and the developed the countries` rule of law level. Less than zero indicates transition countries having a low level of the rule of law, and vise versa is applied to developed countries. Results are precise, as seen from Table 4. There appears to be a clear distinction between countries with a higher level of the rule of law and those with a common rule of law. The TLA effect is driven by developed countries with a high level of the rule of law for both service and good trade, which accounted for 86% for service and 146% for a good trade. When we look deeply at Table 4, the contrast between the effect of TLA on developed and transitional economies is observed dramatically higher for service trade compared to good.

Table 4

OLS estimation: Effect of TLA based on levels of rule of law

	Service trade		Good trade		
	im_rlw[5]<0	im_rlw>0	im_rlw<0	im_rlw>0	
TLA	0.110	0.619***	0.723***	0.898***	
	(1.39)	(17.29)	(8.00)	(20.74)	
Constant	4.121***	4.917***	4.947***	5.451***	
	(103.25)	(175.58)	(108.39)	(160.75)	
Chi^2	86.74		3.25		
P value	0.0000		0.0713		
Fixed effect	No	No	No	No	
N	4494	17178	4487	17077	

Notes:
(i) t statistics in parentheses
(ii) Statistical significance: * p<0.05, ** p<0.01, *** p<0.001
Source: authors` calculations

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[5] Rule of law of importer country

To reinforce the results that we have discovered in Table 4, we run a test for examining whether a difference of the coefficients of TLA in these two groups is statistically significant or not. Suest test is used to compare the regression coefficients across groups.[6] According to Chi-square and P-value results in Table 4, the difference for service trade is statistically significant, while it is insignificant for a good trade.

We have conducted the same estimations for political stability indicators, which can be observed in Table 5. The outcomes are similar to the result of the rule of law: countries with higher political stability benefit more from TLA`s in both service and good trade. Correspondingly, the gap between the TLA effect on transitional and developed economies for a good trade is lower than service. In transitional countries with a low level of political stability, TLA shows a noticeably lower effect on service and good trade, respectively 28% and 103%, compared to developed nations with high political stability levels having 129% for service and 188% for a good trade.

Table 5:

OLS estimation: Effect of TLA based on levels of political stability

	Service trade		Good Trade	
	im_ps[7]<0	im_ps>0	im_ps<0	im_ps>0
TLA	0.280***	0.827***	0.709***	1.063***
	(4.35)	(22.70)	(9.31)	(24.48)
Constant	4.440***	4.741***	5.255***	5.293***
	(105.86)	(171.77)	(106.05)	(160.72)
Chi^2	55.84		16.78	
P value	0.0000		0.0000	
Fixed effect	No	No	No	No
N	5185	16487	5170	16394

Notes:
(i) t statistics in parentheses
(ii) Statistical significance: * p<0.05, ** p<0.01, *** p<0.001
Source: authors` calculations

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[6] https://stats.idre.ucla.edu/stata/code/comparing-regression-coefficients-across-groups-using-suest/
[7] Political stability of importer country

At the same time, we perform the same tests again to see if the discrepancy in TLA coefficients between these two categories is statically significant for political stability measures. The Chi-square and p-value from Table 5 show that the regression coefficients of TLA for countries with high levels and low levels of political stability do indeed significantly differ as a p-value less than 0.05 - we reject the Null hypothesis of being the same. Thus, trade liberalization agreements among politically stable countries significantly impact bilateral service and good trade. However, trade costs will rise between trade partners in politically unstable countries, restricting incentives for establishing and sustaining relations. Therefore, even signing Trade Liberalization Agreements will not be effective in this scenario.

Table 6.

Effect of Institutional difference on trade (without fixed effect*)

	OLS			
	Service trade		Good trade	
TLA	-0.022	(0.0263)	0.275***	(0.0345)
Difference Rule of Law (log)	-0.198***	(0.0106)	-0.199***	(0.0170)
TLA*Difference Rule of Law(log)	0.124***	(0.0133)	0.161***	(0.0200)
Difference of Political stability(log)	0.051***	(0.0111)	-0.035*	(0.0151)
TLA*Difference Political Stability	-0.098***	(0.0139)	-0.048**	(0.0185)
Constant	-21.04***	(0.166)	19.93***	(0.238)
Observation	20495		20388	
adj. R-sq	0.803		0.729	

Notes:
(i) Parentheses show robust standard errors.
(ii) Statistical significance: * $p<0.05$, ** $p<0.01$, *** $p<0.001$
(iii) All models include time-varying importer and exporter dummy variables.
(iv) OLS: ordinary least squares.
(v) The other variables are the same as in Table 2
Source: authors` calculations

In addition to the importer`s institutional quality level, the influence of institutional distance indicators is evaluated. The estimation results focusing on the institutional distance

between importer and exporter are presented in Table 6. Both distance governance indicators are statistically significant and negative, except for the difference in political stability for service trade. The negative sign of the coefficient of the rule of law implies that differences in the institutional quality suppress the trade in both service and good trade.

It shows that nations are willing to trade with countries with a more similar quality of contract enforcement, property rights, and court systems. The interaction term of Trade agreements with distance indicator of the rule of law shows a 16% effect on a good trade. Generally, compared to the effect of the rule of law distance indicator, the effects political stability difference is lower in both service and goods trade.

Table 7.

Effect of Institutional difference on trade

	OLS		PPML		PPML(pair-fixed)	
	Service trade	Good trade	Service	Good	Service	Good
TLA	0.263***	0.644***	0.752***	0.505***	0.044	0.130**
	(0.0294)	(0.0435)	(0.0736)	(0.0802)	(0.173)	(0.0477)
Difference in Rule Law (log)	-0.163***	-0.188***	-0.163***	0.096**	-0.001	-0.010
	(0.00952)	(0.0144)	(0.0144)	(0.0294)	(0.0289)	(0.0106)
TLA*Difference Rule of Law(log)	0.150***	0.165***	0.164***	0.016	0.037	0.012
	(0.0115)	(0.0164)	(0.0192)	(0.0303)	(0.0313)	(0.0113)
Difference in Political stability(log)	-0.024*	-0.055***	0.016	-0.087***	0.063	-0.026**
	(0.0104)	(0.0119)	(0.0131)	(0.0216)	(0.0323)	(0.00971)
TLA*Difference Political stability	0.008	0.023	0.0078	-0.029	-0.104**	0.008
	(0.0123)	(0.0148)	(0.0199)	(0.0245)	(0.0402)	(0.0096)
Constant	5.047	-9.053**				
	(4.932)	(3.435)				
Observation	20495	20388	20495	20495	21402	21378
adj. R-sq	0.869	0.844	1.0	1.0	1.0	1.0

Notes:
(i) Parentheses show robust standard errors.
(ii) Statistical significance: * $p<0.05$, ** $p<0.01$, *** $p<0.001$
(iii) All models include time-varying importer and exporter dummy variables.
(iv) OLS: ordinary least squares. PPML: Poisson pseudo maximum likelihood
(v) The other variables are the same as in Table 3
Source: authors` calculations

Through Table 7, we are comparing three different estimation methods for the effects of institutional difference on trade flow. According to the Fixed Effect (FE) estimation, as expected, the more difference in the rule of law level between countries, the less trade flow is observed in both service and goods trade, accounting for 16% and 19%, respectively. Again, generally, it is depicted that compared to the effect of the rule of law distance indicator, the effects of political stability difference are lower both on service and goods trade, which is confirmed by OLS FE and PPML estimations, account for around 2% and 6%, respectively. The reason arises from the difference between scopes of indicators. For instance, the rule of law estimation is addressed to almost the same for all regions of countries. However, it may have significant differences among several areas of one country when it comes to political stability, in reality. In some countries, most industrial sites are collected in one developed region where most trade flow happens. In general, these regions are considerably higher political stability and security measures. Therefore, politically unstable transition countries do not have a significant role in service and good trade flow, while it influences the country's political stability.

Regarding the sectoral difference between goods and service trade, it can be concluded that institutional distance indicators obtain a larger impact on goods trade flow than service, which is supported by OLS FE and PPML estimations. Institutional distance in service trade can be substituted for using information and telecommunication technology that define the modern era. In comparison with good trade, in terms of quality, service trade can be non-contractible and less visible for courts (Guiso et al., 2009). In addition, goods exported from a country with high institutional quality to a country with a low level can object to bribery and other illegal costs. This explanation is reinforced by interaction terms of trade agreements with distance indicators of the rule of law and political stability. The interaction term of TLA and institutional difference in the rule of law which coefficient equal to 16% (Table 7, OLS FE), show us that this interaction indeed diminishes the effect of TLA on trade. On the order hand, the interaction of TLA with political stability is statistically insignificant almost in all the models. In order to see the results clearly, we addressed to plot of the regression results of OLS. PPML with fixed effects for TLA, the difference in the rule of law, and their interaction term with TLA, which can be seen in Appendix E and F. To get these graphs, firstly, we found out minimal and maximal values for a log of differences in the rule of law indicator, which varied from -9 to 1, then we calculated the effect of TLA on trade. These figures indeed show that the effect of TLA on both trade decrease as the difference in institutional quality increase.

Although in Appendix F, compare to service trade, the effect of TLA on good trade displays an increase, it is too minor.

While analyzing with PPML pair fixed effect, most results are statistically insignificant. This could be why not covering a broad range of years in data due to the lack of service data availability.

Conclusion

The article examines the effect of Trade Liberalization Agreements, which covers all types of free trade agreements, on both the service and good trade, respectively. Furthermore, we evaluate the role of institutional governance measures such as the rule of law and political stability on service and good trade from two different perspectives: first, how trade agreements between countries with varying levels of institutional quality affect bilateral service and good trade. Second, consider how institutional distance and the interaction concept between institutional distance and the TLA variable influence trade.

Analysis of bilateral trade flow of 43 countries over 12 years shows us that participating in the same trade agreements enables countries to boost their trade in goods more than in service. There can be several reasons for this occurrence. Firstly, probably, not all the services are included in all kinds of trade liberalization agreements. Therefore, TLAs are still not strongly effective in eliminating barriers against service imports. Secondly, compared to a good trade, which is subjected to the tariffs on a country-by-country basis, service trade is subject to technical barriers such as legislation, visa procedures, or physical barriers that limit the provision of telecommunication services that rarely differentiate between countries. Francois and Hoekman (2010), who conclude that service trade cannot be quickly and directly targeted by tariffs or taxes of governments, support this idea. Both OLS confirms this result without fixed, OLS FE, and PPML pair fixed-effects models. According to OLS FE, TLA leads to increasing average bilateral good trade by 90%, while this estimation accounted for 30% for service. These findings are similar to those from (Álvarez et al., 2018) analysis, in which 23% effect is found.

As a result of analysis regarding the effect of TLAs with different institutional quality levels, TLA plays a significant role in both service and good trade in the countries having a high level of the rule of law and political stability. The contrast between the effect of TLA on developed countries with a high level of institutional quality and transitional economies with a

low level is observed dramatically higher for service trade compared to good. These results were supported by the comparison of TLA regression coefficients across country groups that were statistically significant.

We concluded that as the institutional distance-the difference in the rule of law and political stability increase in counties, the trade volume decrease in both service and sound. In contrast, institutional distance indicators obtain a larger impact on goods trade flow than service, which OLS FE and PPML analysis supported. The reason for this we assume to be a possibility of institutional distance in service trade being substituted using information and telecommunication technology that define the modern era. Compared with good trade, in terms of quality, service trade can be non-contractible and less visible for courts (Guiso et al., 2009). In the study, the interaction term of TLA and institutional distance also is analyzed, and it is found that due to interaction terms, differences in institutional quality of countries reduced the effect of TLA on trade in service and reasonable.

When it comes to other control variables such as landlocked, contiguity, everyday language, they are statistically significant as expected. In our study, geographical distance is consistently more critical for good trade than for service trade. As the distance between countries increases, it leads to lower goods trade volume by 67% and services trade by 55 %, which this value is similar to Álvarez et al. (2018) and Head and Mayer (2014).

The topics related to trade and heterogeneity effects are broad, resulting in not every aspect analyzed in detail by literature. Some topics related to analyzing the role of the specific FTA's on integration processes and the role of trade agreements on improving the institutional quality of countries were not profoundly studied in recent literature. Combined effects of institutions on trade or how joining FTA's effect the quality of institutions in transitional economies could also be interesting for further analysis.

The results, particularly from this paper, would advise the countries, especially developed ones, to enter trade agreements as much as possible since it would increase their trade volume in terms of both service and good trades. Another suggestion for policy would be improving and conducting new reforms in the legal system as it will also have a significant positive effect on countries' trade levels.

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Vabakaubanduslepete mõjud teenuste ja kaupade rahvusvahelisele vahetusele: kuidas antud seos sõltub riikide institutsionaalsetest erinevustest

Kokkuvõte

Käesolev magistritöö uurib riikidevaheliste vabakaubanduslepete mõju teenuste ja toodete rahvusvahelisele kaubandusele. Analüüsitakse riikide institutsioonide kvaliteedi alaste näitajate ja nende näitajate riikidevaheliste erinevuste rolli antud seoses: sh õigusriigi põhimõtete/seaduste järgimise (i.k. *rule of law*) ja poliitilise stabiilsuse rolli vabakaubanduslepete seoses kaubandusega. Empiirilises analüüsis hinnatakse kõigepealt gravitatsioonimudelid vähimruutude meetodil ilma fikseeritud efektideta, seejärel koos importija-perioodi ja eksportija-perioodi fikseeritud efektidega ning viimaks ka kaasajal gravitatsioonimudeli hindamisel tavapärase PPML (i.k. *Poisson pseudo maximum likelihood*) meetodiga, arvestamaks heteroskedastiivsusega andmetes ja riikide ja riigipaaride oluliste erinevustega (nn *multilateral resistance terms*).

Empiiriline gravitatsioonimudeli analüüs 43 riigi andmete põhjal, sh OECD riigid ja ka valim siirderiikidest, näitab, et vabakaubanduslepetes osalemine võimaldab riikidel tõsta rohkem just toodete kaubandust võrreldes teenuste kaubandusega. Kaubanduse liberaliseerimise panus toodete ja teenuste kaubanduse kasvu ilmneb käesolevas töös eelkõige arenenud riikide puhul, millel on tugev institutsionaalse arengu tase üldise õigusriigi põhimõtete/seaduste järgimise näitaja osas. Gravitatsioonimudeli hindamise tulemused näitavad, et õigusriigi põhimõtete/seaduste järgimine on uuritud valimis oluliselt tähtsam rahvusvahelise kaubanduse jaoks võrreldes näiteks poliitilise stabiilsuse indikaatoriga. Bilateraalse kaubanduse mudelitest, mis sisaldavad korraga kaubanduse liberaliseerimise näitaja ja riikide institutsionaalse erinevuse indikaatoreid järeldub, et erinevused kauplevate riikide institutsionaalse kvaliteedi tasemes piiravad väliskaubanduse liberaliseerimise positiivseid mõjusid.

Võtmesõnad: Väliskaubandus, gravitatsioonimudel, vabakaubanduslepped, kaupade ja teenuste väliskaubandus, institutsionaalne kvaliteet

Appendices

Appendix A

The list of countries

Australia	Hungary	Slovakia
Austria	Ireland	Slovenia
Belgium	Iceland	Sweden
Canada	Israel	Turkey
Chile	Italy	United State
Czech Republic	Japan	Georgia
China	Korea	Belarus
Germany	Luxemburg	Kazakhstan
Denmark	Latvia	Moldova
Spain	Mexico	Russian Federation
Estonia	Netherland	Ukraine
Finland	Norway	Serbia
France	New Zealand	
United Kingdom	Poland	
Greece	Portugal	

Source: Compiled by the author

Appendix B

Relationship between importer rule of law and trade
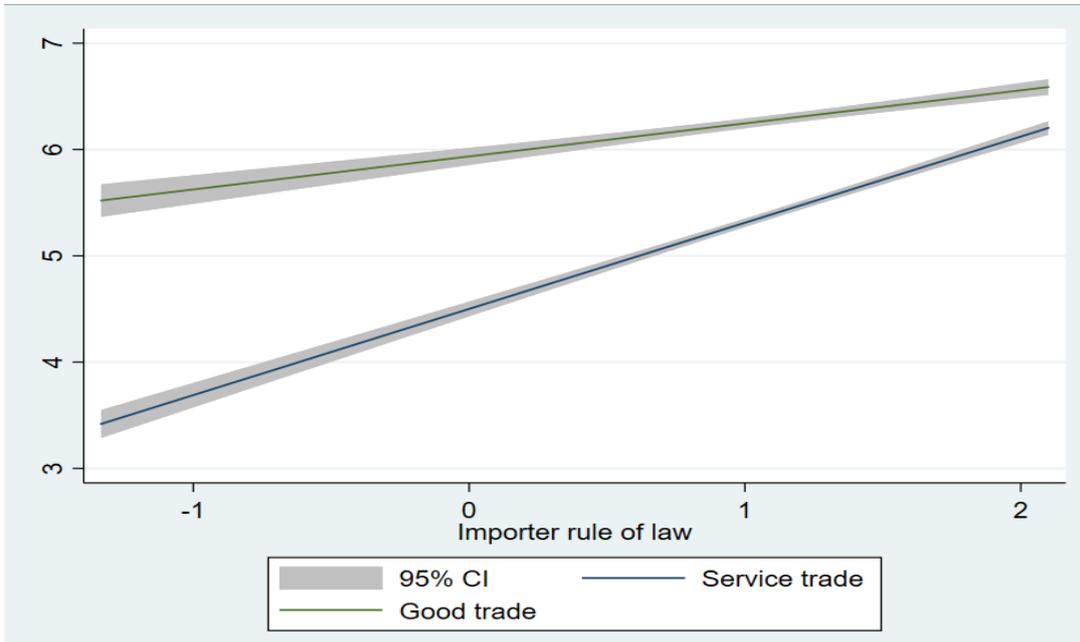
Source: authors` calculations

Appendix C

Relationship between importer political stability and trade
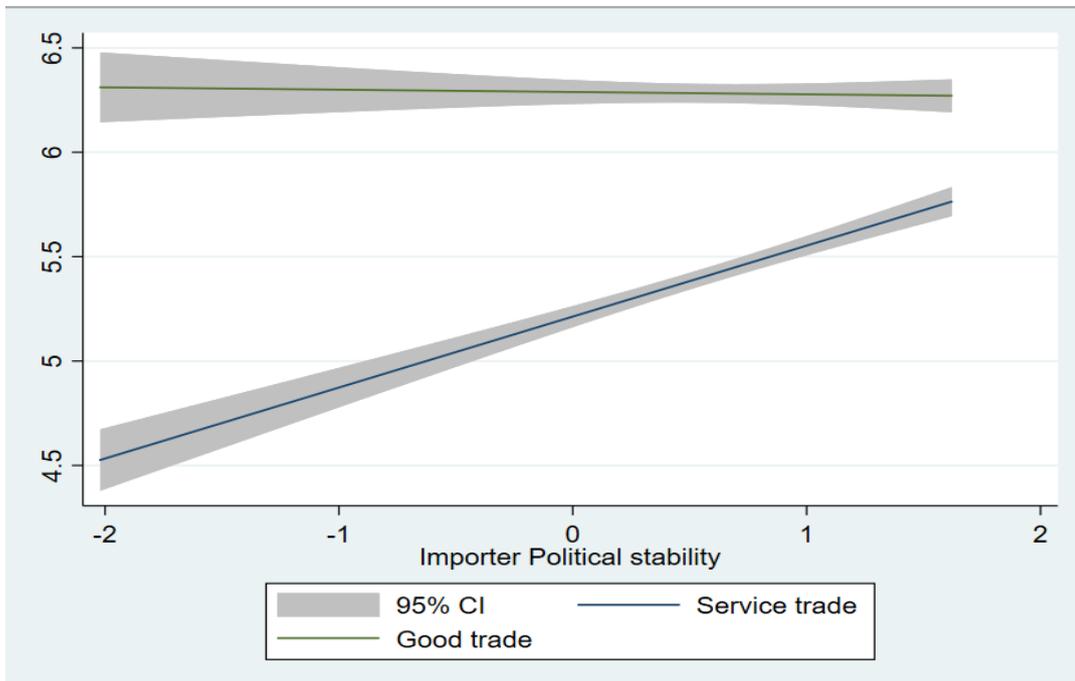
Source: authors` calculations

Description of Variables

| Description		Coverage	Source
Dependent Variables			
Service IM (log)	Total service trade of importer(home) country	2004-2015	OECD
Good IM (log)	Total good trade of importer(home) country	2004-2015	OECD
Independent Variables			
GDP IM (log)	Gross Domestic Product of importer (home) country	2004-2015	CEPII
GDP EX (log)	Gross Domestic Product of exporter (partner) country	2004-2015	CEPII
POP IM (log)	Population of importer (home) country	2004-2015	CEPII
POP EX (log)	Population of exporter (partner) country	2004-2015	CEPII
Distance (log)	Dummy variable equal to distance between importer and exporter country (km)	2004-2015	CEPII
Language	Dummy variable set equal to 1 if partner countries share the same language	2004-2015	CEPII
Colony	Dummy variable set equal to 1 if partners countries have historical colonial tie	2004-2015	CEPII
Contiguity	Dummy variable set equal to 1 if a trade flow that is taking place between two countries is contiguous	2004-2015	CEPII
TLA	Dummy variable represents all trade liberalization agreements and set equal to 1 if the partner countries are the part of the same trade agreement	2004-2015	Mario Larch's Regional Trade Agreements Database
CU	Dummy variable set equal to 1 if the partner countries are the part of the same Custom Unions	2004-2015	
EIA	Dummy variable set equal to 1 if the partner countries are the part of the same Economic integrated agreements.	2004-2015	
Landlocked dummy	Dummy variable equal to 1 for landlocked countries	2004-2015	CEPII
Institutional indicators			
Im_rlw	Importer country rule of law level	2004-2015	World Bank
Im_ps	Importer country political stability level	2004-2015	
Lndiff.rlw	Difference between the rule of law level of importer and exporter countries(log)	2004-2015	
Lndiff.ps	Difference between political stability level of importer and exporter countries(log)	2004-2015	
TLA*lndiff.rlw	Interaction term between TLA difference in rule of law		
TLA*lndiff.rlw	Interaction term between TLA and difference in political stability		

Change of TLA-trade relationship per log difference in rule of law (OLS)

Service trade
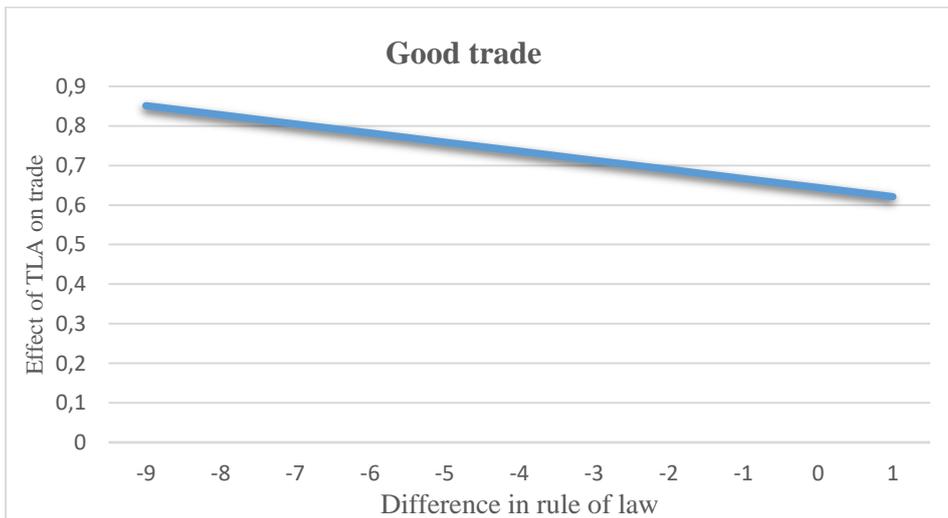
Good trade

Source: authors` calculations

Appendix F

Change of TLA-trade relationship per log difference in rule of law (PPML)
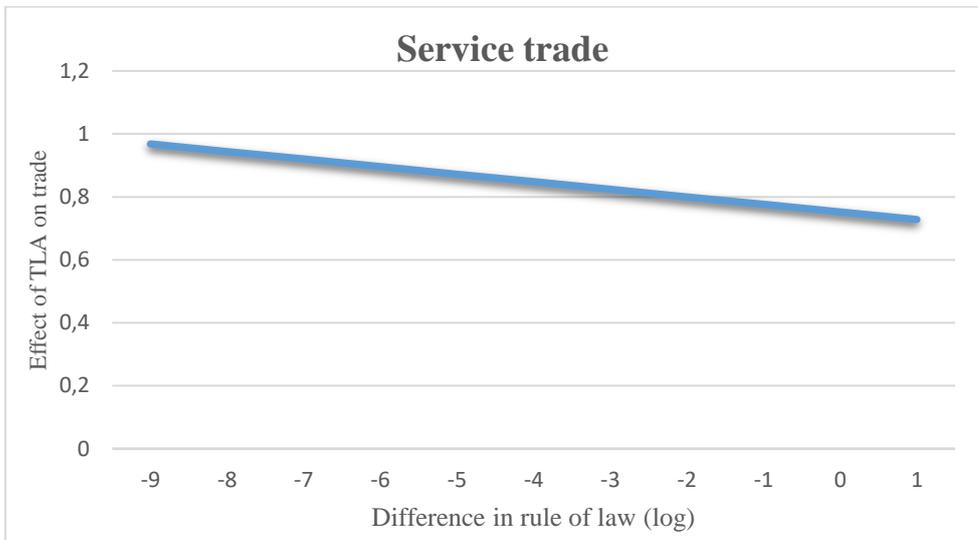
Source: authors` calculations

Appendix G

Trade Liberalization Agreements signed by countries in dataset for the period

Trade Liberalization Agreement Name	Coverage	Type	Signatories
Brazil - Mexico	Goods	PSA	Brazil, Mexico
Canada - Israel	Goods	FTA	Canada, Israel
EFTA - Canada	Goods	FTA	Canada; Iceland; Norway; Switzerland
EFTA - Serbia	Goods	FTA	Serbia; Iceland; Norway; Switzerland
EFTA - Turkey	Goods	FTA	Turkey; Iceland; Norway; Switzerland
EU - Iceland	Goods	FTA	Iceland; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Israel	Goods	FTA	Israel; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Turkey	Goods	CU	Turkey; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
Georgia-Kazakhstan	Goods	FTA	Georgia; Kazakhstan
Georgia - Russian Federation	Goods	FTA	Georgia; Russian Federation
Georgia - Ukraine	Goods	FTA	Georgia; Ukraine
Israel - Mexico	Goods	FTA	Israel; Mexico
Korea, Republic of - Turkey	Goods	FTA	Korea, Republic of; Turkey
Russian Federation - Serbia	Goods	FTA	Russian Federation; Serbia
Turkey - Chile	Goods	FTA	Chile; Turkey
Turkey - Georgia	Goods	FTA	Georgia; Turkey
Turkey - Israel	Goods	FTA	Israel; Turkey
Turkey - Serbia	Goods	FTA	Turkey; Serbia
Ukraine - Belarus	Goods	FTA	Belarus; Ukraine
Ukraine-Kazakhstan	Goods	FTA	Kazakhstan; Ukraine
Ukraine - Moldova	Goods	FTA	Moldova, Republic of; Ukraine
United States - Israel	Goods	FTA	Israel; United States of America
Australia - Chile	Goods & Services	FTA & EIA	Australia; Chile
Canada - Chile	Goods & Services	FTA & EIA	Canada; Chile
Canada - Korea, Republic of	Goods & Services	FTA & EIA	Canada; Korea, Republic of

Chile - China	Goods & Services	FTA & EIA	Chile; China
Chile - Japan	Goods & Services	FTA & EIA	Chile; Japan
Chile - Mexico	Goods & Services	FTA & EIA	Chile; Mexico
China - Korea, Republic of	Goods & Services	FTA & EIA	China; Korea, Republic of
China - New Zealand	Goods & Services	FTA & EIA	China; New Zealand
EFTA - Chile	Goods & Services	FTA & EIA	Chile; Iceland; Liechtenstein; Norway; Switzerland
EFTA - Korea, Republic of	Goods & Services	FTA & EIA	Korea, Republic of; Iceland; Liechtenstein; Norway; Switzerland
EFTA - Mexico	Goods & Services	FTA & EIA	Mexico; Iceland; Liechtenstein; Norway; Switzerland
EFTA - Ukraine	Goods & Services	FTA & EIA	Ukraine; Iceland; Liechtenstein; Norway; Switzerland
EU - Chile	Goods & Services	FTA & EIA	Chile; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Georgia	Goods & Services	FTA & EIA	Georgia; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Korea, Republic of	Goods & Services	FTA & EIA	Korea, Republic of; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Mexico	Goods & Services	FTA & EIA	Mexico; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Moldova, Republic of	Goods & Services	FTA & EIA	Moldova, Republic of; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden

EU - Serbia	Goods & Services	FTA & EIA	Serbia; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
EU - Ukraine	Goods & Services	FTA & EIA	Ukraine; Austria; Belgium; Bulgaria; Croatia; Cyprus; Czech Republic; Denmark; Estonia; Finland; France; Germany; Greece; Hungary; Ireland; Italy; Latvia; Lithuania; Luxembourg; Malta; Netherlands; Poland; Portugal; Romania; Slovak Republic; Slovenia; Spain; Sweden
Iceland - China	Goods & Services	FTA & EIA	China; Iceland
Japan - Australia	Goods & Services	FTA & EIA	Australia; Japan
Japan - Mexico	Goods & Services	FTA & EIA	Japan; Mexico
Japan - Switzerland	Goods & Services	FTA & EIA	Japan; Switzerland
Korea, Republic of - Australia	Goods & Services	FTA & EIA	Australia; Korea, Republic of
Korea, Republic of - Chile	Goods & Services	FTA & EIA	Chile; Korea, Republic of
Korea, Republic of - New Zealand	Goods & Services	FTA & EIA	Korea, Republic of; New Zealand
Korea, Republic of - United States	Goods & Services	FTA & EIA	Korea, Republic of; United States of America
Switzerland - China	Goods & Services	FTA & EIA	China; Switzerland
United States - Australia	Goods & Services	FTA & EIA	Australia; United States of America
United States - Chile	Goods & Services	FTA & EIA	Chile; United States of America

Source: WTO- Regional Trade Agreements database