The Economics and Political Economy of Going beyond the GATS*

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November 22, 2012

Abstract

This paper addresses the economic and political economy factors explaining why countries agree upon services commitments in regional trade agreements (RTAs) going beyond the General Agreement on Trade in Services (GATS), what we call the 'commitments gap'. Using a unique dataset comprising of detailed schedules of services commitments disaggregated by sub-sectors and covering almost all countries that are members of a services RTA, we are able to quantify the extent to which geographical, systemic as well as economic and institutional forces drive countries to commit further in RTAs than in a multilateral setting. Strong explanatory factors are asymmetries between negotiating partners and market size, together with endowments in mid-skilled labour and institutional governance. Whereas some of these forces explain why countries commit beyond GATS, others are significant determinants that lead countries to withhold commitments in their RTAs. We also find strong differences between services industries providing evidence that not all economic and political economy factors are of equal importance for all services. For instance, financial and construction services often diverge significantly from our general pattern of explanations.

JEL-Classification: F13; F5; L8
Keywords: GATS; WTO; services trade; RTA; trade negotiations

1 Introduction

Why do countries make greater services commitments under an RTA than under the General Agreements on Trade in Services (GATS) at the WTO? This question is puzzling since economic theory predicts that multilateral trade liberalization provides greater welfare gains to countries based on WTO's principles of non-discrimination and reciprocity. In the context of GATS, this means that each member will enjoy greater benefits when offering market access and national treatment to all partner countries. However, ever since the GATS was created in 1995 little progress has been made. Member countries are reluctant to extend or increase their commitments in services. Instead, a multitude of countries have taken the bilateral route as part of their negotiation strategy to expand services comittments beyond GATS.

Generally, RTAs are driven by a host of economic and non-economic factors. RTAs can be politically motivated by governments because of their discriminatory nature which generates substantial trade diversion between members and non-members (Grossman and Helpman, 1995; Krishna, 1998).[1] Other international political economy forces also play a role. For example, geography is likely to be a strong determinant for the formation of RTAs between countries because of their economic proximity (Baier and Bergstrand, 2004). RTAs also provide governments a commitment device to tie their hands to a tariff reform (Maggi and Rodriguez-Clare 1998; Mitra 2002). However, we know relatively little about the incentives of countries to commit in a services RTA and why their commitments go beyond GATS. Similarly, we do not know what are the driving forces that determine the scope of these two different levels of commitment, which we call here the 'commitments gap'. This paper therefore addresses the question of the economic and political economy forces that make countries to commit *more* in a services RTA than under the multilateral framework, i.e. GATS. We focus on 'commitments' that are legal bindings negotiated in trade agreements. Commitments can be regarded as the bound level of restrictiveness and may differ from the actual trade regime. As a consequence, the commitments gap does not always correspond to a higher level of trade liberalisation or to the measurement of a preferential trade regime. Hence the importance of political and institutional factors to explain bilateral bindings that are not always in line with the reality of trade barriers faced by services providers.

Prior literature on the economics or political economy of services commitments has mainly focused on GATS. Roy (2011a) finds that both relative economic size as well as a higher level of skilled factor endowments explain country variation in services commitments. In addition, he shows that political factors such as democracy and regulatory capacity also help explain this commitment pattern.[2] This echos a result found in Egger and Lanz (2008) in that larger and more capital-abundant countries tend to have higher

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[1]Note, however, that these works presume that a country's external tariff is exogenously determined. A different strand of the FTA literature analyzes the role of endogenously determined external tariffs due to RTA formation in which the government's incentive of substantial trade diversion does not hold because of a rent destruction effect, see e.g. Ornelas (2005a) and (2005b).

[2]Roy (2011a) states that the impact of factor endowments or development on the commitments in GATS is dependent on the level of democracy, as often argued in the international political economy literature. However, he finds that factor endowments originating from domestic interest groups also have a direct significance on the level of GATS commitments.

coverage commitments. In contrast, the authors do not find any of their political variables to be significant determinants of GATS commitments.[3] Harms *et al.* (2003) is also close to our line of research. They investigate the role of domestic political economy forces, complementary policy and international bargaining considerations on GATS commitments in financial services based on a theoretical model. VanGrasstek (2011) develops an analysis of the systemic and domestic political economy motivations why countries commit in a services RTA and how these agreements, moreover, could be multilateralized. He provides support for the fact that OECD countries are more likely to include services in their RTAs than non-OECD countries. None of these papers, however, quantify any of these or more broader economic or political economy determinants that could in addition explain why countries make commitments in RTAs which go deeper than GATS. In other words, what are the drivers for this commitments gap and how economically large are the factors that drive this pattern?

Our paper contributes to the above-mentioned literature in the following ways. First, we use data that quantifies the extent to which the so-called commitments gap is real. We have a unique dataset that codifies both commitment schedules and the level of restrictiveness countries have made for all sectors in both RTAs and GATS. With these data we are able to construct an index that measures how far countries have committed beyond GATS. According to our calculations, Figure 1 shows that this gap is substantial and furthermore raises some interesting points. First, the average level of commitments in a typical RTA is higher than under the multilateral setting for all countries independent of their level of development. Both rich and poor countries are more likely to further liberalize services by creating an RTA although not all such as Thailand, China or Nicaragua.[4] Second, for both types of commitment mechanisms there is a positive relionship between the level of per capita GDP and the level of services commitments. Yet, this finding appears to hold relatively stronger for countries situated at the lower and middle-end of economic development. Richer countries such as the EU or the US appear to be much less inclined toward going further than GATS. This result tends to alter previous conclusions insofar other political economy explanations may also play a role in explaining commitment patterns of countries. For example, we only find limited support for standard variables such as economic size and relative high-skilled labour supply that could explain why countries commit under an RTA. Instead, we provide strong evidence that the level of mid-skilled labour and negotiation asymmetries between countries have a significant influence.

A second contribution of the paper is that our dependent variable is dyadic in nature. This feature allows us to exploit additional information between partner countries of a services RTA. It permits us to analyze whether their relative differences regarding our

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[3]The authors also find that countries having already negotiated an RTA in an earlier stage do liberalize more under GATS and are more likely to do so when their 'natural' trading partner are involved.

[4]Of note, for various reasons countries can also have put in place RTAs that entail commitments in services 'below' GATS, i.e. GATS-minus agreements. From a WTO perspective these agreements go against what has already been legally established in terms of market access and national treatment. Although these agreements are relativey present in our dataset they form a minority compared to GATS-plus commitments in our data. They are left out in our paper because a GATS-minus agreement is *de facto* ineffective. See for further analysis on this issue Adlung and Miroudot (2012)

economic and political economy variables play a role in explaining countries' commitments behavior. Finally, we include a rich set of political economy variables distinguishing between geographic, systemic as well as economic and domestic institutional determinants over time. The political economy literature of international trade is rather large. We will therefore describe a general theoretical framework in this paper regarding factors that influence commitments in GATS and services RTAs. From there, the most imortant economic and political economy variables are derived and taken to data. By doing so we tend to keep our appraoch rather comprehensive. The reason is that to our knowledge this is the first paper that makes an attempt to quantify and explain why and under which circumstances countries have a higher propability to commit in RTAs. The significance of a number of non-economic variables in the empirical analysis gives robust evidence that pure economic factors cannot alone explain the extent and shape of commitments as shown in Figure 1.

This paper proceeds as follows. In the next section we describe a political economy framework for GATS and RTA commitments in services. Section 3 specifies the equations we estimate to quantify the economic and political economy determinants that explain the commitments gap. This section will also present our selected variables and give a data description. Results of our econometrical estimations are presented in Section 4. The concluding section provides a summary and puts our results into a wider trade context.

2   A Political Economy Framework for Services Commitments

Services are not different than goods when it comes to the impact of trade liberalisation. Removing policy barriers allows for trade, which brings in foreign competition. Studies have suggested that the benefits arising from reducing trade barriers in services are multiple compared to goods (Konan and Maskus, 2006; Jensen *et al.*, 2007). Services liberalisation through FDI also brings in new knowledge that enables countries to produce and export more advanced products. Standard economic theory predicts that this would increase overall welfare through positive externalities for firms, which increases the overall productivity level of the economy (see Markusen *et al.*, 2005). An increasing body of empirical research confirms these predictions of gains from policy reform in services. Early studies such as Mattoo *et al.* (2006) and Eschenbach and Hoekman (2006) establish the link between reducing policy barriers or liberalisation and economic performance. To a large extent services are also inputs for manufacturing. Arnold *et al.* (2011) find a positive relationship between increased foreign services FDI participation and the productivity of domestic manufacturing firms.[5] Van der Marel (2012) shows that policy reforms also directly affect services performance itself in terms of higher total factor productivity.[6]

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[5]Similarly, Arnold *et al.* (2012) show that increased FDI in services through policy reform in India has a positive effect on the productivity of firms in manufacturing, especially for foreign firms.

[6]Other studies that show the economic importance between policy reform and welfare benefits are Fernandes and Paunov (2008) which also show a positive association between FDI in services and the performance of domestic firms in manufacturing. Furthermore, Francois and Woerz (2008) show a positive and significant link between greater openness in producer services (imports) and the export performance of domestic industries in terms of skills and technology. See also e.g. Arnold *et al.* (2008), Limão and Venables (2001), Francois and Manchin (2007) and Francois and Wooton (2010) for further studies on the link between services trade reform and economic performance.

However, the economic importance accruing from services reforms is not reflected in the level of commitments in GATS. The establishment of GATS at the end of the Uruguay Round in 1995 was in no small part supported by the US and in a later stage by various other OECD countries. A major force helping to push forward an ambitious agreement on services were lobbying efforts by the private sector, mostly American services companies. The outcome of the negotiations was an agreement based on the general obligation of MFN treatment, but where commitments are provided on a sector-specific approach according to the principles of national treatment and market access.[7] These commitments were limited in scope for developed but more so for developing countries, as shown in sectoral coverage indicators by Hoekman (1996). Moreover, Adlung and Roy (2005) show that over time little progress had been made for extending the coverage after the creation of the GATS. Borchert *et al.* (2010) provide evidence that commitments made under GATS are on average more than twice as more restrictive than actual applied policy with large variations among developed and developing countries. This gap between commitments and domestic policy continues to hold for countries that have made offers as part of the Doha Round. In effect this means that countries are also unwilling to use GATS as a 'lock-in' device for existing level of openness.

Why are countries so reluctant to commit? Most trade agreements are based on the principle of reciprocity. Standard political economy theory predicts that such agreements provide the optimal mix of bundling domestic tariffs reduction in combination with obtaining foreign market access. In this way interest groups that would benefit from better export markets, and hence reform, are induced to overturn domestic opposition of politically powerful vested interests.[8] An additional function of trade agreements is that countries can demonstrate their credible commitment to policy reform. If a government decides to implement tariff reforms it can choose to do so through international agreements. Foreign partners are then reassured that governments abide by their policies. However, the literature on this point suggests that one key element in this mechanism of reciprocity, namely export interest, is largely absent in services. (Hoekman and Messerlin, 2000; Hoekman, Mattoo and Sapir, 2007; and Hoekman, 2008). Several reasons for this lack of domestic export interest are pointed out. First, unilateral services reform before and after the Uruguay Round in most countries have lowered the incentive to lobby for further commitments. Service exporters preceive the current climate as already open.[9] Second, contrary to reforms in goods it is difficult to reform services on a discriminatory basis. The nature of a services barrier makes it harder to distinguish between partner countries. Third, increased mutual interdependance marked by two-way trade over the last several decades has made business interest to think that a reversal of the current

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[7]National treatment (Article XVII GATS) is defined as treatment of companies no less favourable than that accorded to like domestic services and services providers. Market access (Article XVI GATS) is comprised of access restrictions in the form of (1) number of services suppliers allowed, (2) value of transactions or assets, (3) total quantity of service output, (4) number of natural personal that may employed, (5) type of legal entity for foreign provider, and (6) limitation on particpation foreign capital. See Hoekman and Kostecki (2009) for further detailed analysis on the rules and workings of the GATS, including its provisions and sectoral agreements.

[8]See Bailey, Goldstein Weingast (1997) for theory and empirical analysis on this point.

[9]This argument can only be true to the extent that services barriers are still higher for a number of countries across sectors (transport services) and and modes (temporary movement of labour), both for developing and developed economies. See Gootiiz and Mattoo (2008) and Borchert *et al.* (2010).

opennes is unlikely. Last, services liberalisation will only be dealt with in the current round of multilateral trade negatiations once agriculture and non-agricultural modalities are resolved. This may motivate the business community to wait and see what happens before starting an active lobby.[10]

Yet, other economic and political economy factors may also play an important role in explaining patterns of commitments. As part of the economic explanations, most developed countries share a comparative advantage in services. These economies have large markets and a great amount of two-way trade in intermediate goods and services. This trade makes up almost 75% of total trade in services (Miroudot, 2009). The deregulation of infrastructure, communication and logistic services over the last two decades have meant that they form a real determinant in lowering trade costs. This has therefore greatly advanced the fragmentation of local production stages between high-income countries.[11] Developing countries' commitments, on the other hand, may not be as extensive since most of these countries share small markets. They are therefore not of great interest to high-income countries which lowers the incentive for developing countries to negotiate greater market access in GATS.

Nonetheless, developing economies have increased their participation in services trade. They have a particular interest in exporting services through mode 1 and 4. Although policy barriers in mode 1 are difficult to put in place there is growing opposition in high-income countries against this type of trade, which is mostly comprised of business process outsourcing and IT-related services. Depending on the level of labour, factor owners may favour or disapprove increased trade in these services. Since most of these services are made up of less skilled labour, high-skilled labour groups in developed countries may therefore endorse greater commitments since they would be unaffected. However, greater unwillingness to open these services markets may come from factor owners of mid-skilled labour. Especially in high-income countries these factor owners perceive themselves in competition with labour from low-income countries, i.e. import competing. This is particularly true for trade in mode 4 where barriers in most countries remain high and politically sensitive. Opening markets for temporary movement of low-skilled labour from other countries is met with great resistance. This implies that less skilled factor owners would oppose any further commitments in GATS.[12]

Institutions matter too. Domestic institutions structure the way domestic preferences

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[10]A more specific theoretical argument why governments may not be interested in international trade agreeemnts is from Blanchard (2007). Governments have less incentives to reduce tarrifs or any other policy change because doing so would benefit the foreign firms located in the host market (through FDI) as well as domestic firms. Hence higher two-way FDI investment reduces in effect the need for the reciprocity principle that would improve a country's terms of trade position. Services commitments within the GATS are furthest in Mode 3, i.e. FDI, which could then be seen as a way for governments to lock-in domestic reforms rather than extend liberalisation

[11]See Jones and Kierzkowski (1990). Other determinants of this offshoring and foreign outsourcing phenomenon that has helped to create global supply chains are decreased time of transport (Jacks *et al.*, 2008), improvement and reliability timeliness of delivery (Hummels *et al.*, 2001), and innovation in and increased use of technology (Jones and Kierzkowski, 1990).

[12]One assumption implicit in such hypothesis is that factor owners of mid- and low-skilled labour are relatively scarce in such an environment which according to standard trade theory reveals their standard preference for trade policy, i.e. services commitments. The political economy literature also distinguishes between whether factor owners are mobile or not. If factors owners are mobile (Stolper-Samuelson) trade policy will be proportionate to specific factor of production. If, on the other hand, factors are immobile and hence specific (Ricardo-Viner) trade policy will likely be formed along industry lines. Since services require large up-front (fixed) investment costs in skills for specialisation (see Mattoo *et al.*, 2007) it is likely to assume that to a great extent the specific factor model applies to such setting.

are aggregated and therefore influence government's decisions to reform or commit. Although in theory consumers should favor reforms since they benefit from liberalisation, consumers may oppose regulatory reform in services. Consumers can fear that relaxing barriers will lower their welfare through increased prices and lower quality of the service. Many services were previously provided by governments against artifial lower prices as a result of cross-subsidies. Increased participation of foreign firms may thus worry consumers about adjustments costs.

Moreover, especially in developing countries consumers are afraid that post-liberalisation outcomes could harm social-equity measures and universal access to services.[13] One channel through which consumers may voice their concerns is through democratic institutions if in place.[14] Furthermore, as countries develop and become more democratic, the political economy clout of factor owners changes from capital to labour (Milner and Kubota, 2005; Tavares, 2008). Since services are rather labour intensive, factor owners may support the *status quo* and hence prefer commitments to be low.[15]

A second institutional group that may oppose reforms are national regulators of services. Trade reforms could imply that regulators will be restricted in setting and enforcing rules and regulatory standards in services sectors. This erosion of regulatory power is particularly likely for cross-border trade (mode 1) and temporary movement of service providers (mode 4). Trade through these modes is only subject to standards that apply in their home markets and could therefore introduce regulatory competition. Moreover, regulators may also experience erosion of standard rents once liberalisation takes place which motivate them to oppose further commitments. On the other hand, however, regulators may favor higher commitments if they are able to put in place good mechanisms of domestic regulation so as to ensure better access after reform. In that case the regulator needs to achieve a difficult balance of distinghuising between policies that increase efficiency (i.e. reduce discrimination) and safeguard social equity and universal access (Francois and Hoekman, 2010). As said, not all regulators may be motivated to put in place sound policies during reforms. The willingness to commit in GATS could therefore depend on the so-called quality of the regulatory institution.

Do these factors specific to services also inhibit the standard reciprocity-driven political economy in RTAs? In our dataset the level of commitments in RTAs is on average more than one-third higher compared to GATS. Figure 2 shows that the average level

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[13] The fact that services are highly regulated in general makes it that the standard political economy of services liberalisation is different than for goods. Market failures such as asymmetric information, imperfect compeition in network services and negative externalities are all present in services. In practise this means that governments need to strike a fine balance between removing policy barriers that discriminate between foreign and domestic service providers and barriers that are legitimate in terms of objectives such as social equity and universal service supply.

[14] A clear case in point of regulatory concerns from the side of consumers happened in the EU with the introduction of the so-called Services Directive. Opposition against this Directive was mainly targeted toward cross-border trade as opposed to cross-border establishment as the latter does not bring along competition between national regulators. Eventually the Directive was watered-down in terms of its provisions. See Messerlin (2005).

[15] Note, however, that these works analyze the direct link between democracy and liberalization. As mentioned, our analysis focuses on commitments which are legal bindings and as such can deviate somewhat from the true level of trade liberalization. Nonetheless, we think the two concepts are highly correlated. Egger and Lanz (2008) claim that greater welfare gains will connect trade liberalization with higher commitments since both democratic and non-democratic governments are willing to pursue these gains. Roy (2011a) argues instead that states are motivated by greater political support. Democracies are more inclined to commit as part of their trade policy agenda to demonstrate good economic policy making domestically whereas commitments would limit the use of trade policy for non-democracies so as to secure their current situation.

of commitments are greater both for larger and smaller economies. This means that countries are at least willing to lock-in some policy reform and extend their level of commitments. Both Roy *et al.* (2007), Marchetti and Roy (2008) and Roy (2011) also state that commitments in RTAs go well beyond GATS although no predictions can be made on the level of trade restrictiveness of these commitments and mode 2 and 4 are not considered.[16] Why do countries commit beyond GATS in a regional setting and under which economic and political economy circumstances are countries more likely to do so? The forgoing analysis explaining commitment levels in GATS should in principle equally hold for commitments in RTAs. In the next section we therefore take our framework to data and try to give answers to these questions in an attempt to explain the commitments gap.

3   Methodology and Data

In this section we present our baseline model specification in addition to our empirical strategy. Our approach includes the economic and political economy forces as explained in the previous section. We also present the variables used in our model and provide a description of the data.

3.1   Model Specification using "Gravity"

Based on the previous section, our model takes a gravity-like form which controls for the geographical factors that shape international trade in services. The recent literature, in particular Anderson *et al.* (2011), has confirmed the fit of gravity with services trade data. In our view this link between gravity and services trade affects directly the level of commitment countries are prepared to undertake. Early work on the formation of RTAs and their overall welfare effects in terms of trade creation and diversion, depending on transport costs, include Krugman (1991) and Frankel (1997), and Frankel *et al.* (1995, 1996, 1998).[17] The results of these models show that welfare effects by creating an RTA are positive when (a) trading partners are more remote from the rest of the world, and (b) trading partners are geographically closer to each other. Baier and Bergstrand (2004) allow for both intra- as well as inter-continental transport costs. They show that economic geography plays a significant role in reaching these trade effects by creating an RTA.

The implicit relation between transport costs and beneficial welfare effects arising from creating an RTA should in principle also hold for the 'depth' of any agreement. As with RTAs in goods where deeper tariff cuts will generate higher welfare gains, higher

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[16]See Roy (2011b) for an updated dataset providing data for a larger set of countries and RTAs. In essence these papers follow the methodology introduced by Hoekman (1996) and apply only a rough proxy for partial commitments although Roy (2011a) extends this proxy by a further sophistication to account for the relative restrictivenss across countries, sectors and modes. The data we use take full stock of the trade restrictiveness of all non-tariff barriers and includes all modes of supply. See below for further explanation of our methodology. Note, however, that these commitments do not state anything about the accompanying rules and provisions in services RTAs. Frequently these provisions also deal with rules of origin. See Fink and Jansen (2009) for an analysis on this point.

[17]As stated in Baier and Bergstrand (2004) these models are restrictive and symetric in nature since they are generated in a framework of monopolistic or perfect competition. Essentially, these models assume countries to be identical, to have one industry and zero intracontinental transport costs from where welfare results can be predicted.

commitments in services RTAs are more likely to lead to any welfare improvement since they create rather than distort trade based on the models presented above.[18] For our analysis we therefore include geography as one of the economic determinants for explaining the difference in level of commitments between an RTA and GATS.

As a result, we have the so-called commitments gap in logs, $\ln(\mathrm{C}_{odt})$, of country o that varies by country d with which it shares a services RTA in year t. We will regress a vector of geographical variables along with three other vectors on this commitments gap. Each of these vectors stand for a different group of economic and political economy explanations which together result in the following estimating equation:

$$\ln(\mathrm{C}_{odt}^s) = \nu_1{'}\mathrm{GEO}_{odt}^s + \nu_2{'}\mathrm{SYS}_{odt}^s + \nu_3{'}\mathrm{ECO}_{ot}^s + \nu_4{'}\mathrm{INS}_{ot}^s + \delta_o + \gamma_d + \varsigma_t + \varepsilon_{odt}^s \qquad (1)$$

In this equation $\ln(\mathrm{C}_{odt}^s)$ is the log-difference between commitments country o has made with country d as part of a services RTA and its commitment under GATS. This sub-straction gives a variable that varies by country, partner, and year. The four vectors stand, respectively, for the geographical, systemic, economic, and institutional variables included in the regressions. The first vector GEO_{odt}^s represents, as explained, the distance mark-up. It measures the transport costs as described in the models discussed above or stand more generally for the 'natural' bilateral trade costs as described in Anderson and van Wincoop (2003; 2004).[19] These costs directly affects the bilateral trade structure between any country pair. Specifically, standard proxies for these trade costs include distance weighted by population and kilometers between countries o and d, plus sharing similar borders and language as used in the extensive gravity literature.

The second vector of variables, SYS_{odt}^s, includes several systemic forces that may explain the commitments gap. We first create a simple dummy variable which takes the value of 1 every time a services agreement involves the US or EU as a trading partner. Based on our previous discussion, these two trading powers cover a very large share of world services trade relative to other services exporters. Any agreement involving these countries creates an asymmetry between parties which is likely to influence negotiations on the extent of commitments. Moreover, the US holds a specific place in the world trading system since it is often referred as a "hegemon" which in turn could shape policy outcomes as demonstrated during the creation of the GATS. To account for this factor in services we create a dyadic variable that takes the share value of US GDP against any other country that has an RTA in the dataset. We expect that the relative decline of the US's economic position vis-à-vis other countries will induce the US to search for PTAs with

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[18]As previously emphasised, higher commitments do not always translate into a more liberal regime since commitments are legal binding and similar to bound tariffs in the case of goods. There might be "water" in commitments and no change in the regulatory regime when further commitments are made in the RTA. Note, furthermore, that trade diversion of services RTAs appear to be rather modest as a result of the non-discriminatory nature of deregulation in services. Services reforms driven by bilateral negotiations are likely to benefit all trading partners as opposed to the discriminatory effect of a preferential tarrif applied only to parties of RTAs. See Miroudot *et al.* (2010) and Shepherd and van der Marel (2011) for a quantification of this positive trade diversion effect.

[19]Other theoretical foundations for international trade but each with different modelling assumptions based on gravity are e.g. Eaton and Kortum (2002) and Chaney (2008)

higher commitments on both sides as a way to secure its export markets. This is because the US will be less able to provide the public good of advancing the multilateral trading system due to an increase in the relative costs of free-riding by other smaller countries. Finally, we also include the log of the level of GATS commitments country o has made under the WTO since this level varies among countries as shown in Figure 2 and thus may influence countries to commit more or less in an RTA.

Our third vector, ECO_{ot}^s, comprises variables that denote economic determinants. They cover market size and relative factor endowments of country o. These factors should have a separate economic impact on the extent to which countries are willing to increase (or decrease) commitments in RTAs. First, we take $\ln(\text{GDP})_{ot}$ as the log of GDP of country o over time as a proxy for economic activity and market size. Second, the production function is represented by $\ln(\text{H/L})_{ot}$ and $\ln(\text{M/L})_{ot}$ as the share of both high and mid-skilled labour, plus $\ln(\text{K/L})_{ot}$ which proxies capital per worker in country o. The reason we include mid-skilled labour is that it has shown to be an important source of a country's comparative advantage in services relative to goods (Van der Marel, 2011). Descriptive statistics confirm the fact that many services such as transport services and telecommunications are largely mid-skilled intense, next to their high-skilled labour input use. We also include the share value of capital per worker of country o. This variable is only a very rough proxy for a higher level of productivity due to ICT investments, which has greatly expanded the scope of services trade over the last two decades. A more precise variable for ICT capital is not available for a larger set of countries in our dataset.[20]

Last, we also incorporate a vector representing some institutional sources, INS_{ot}^s, that may shape the gap in commitments. Most common variable used in the political economy literature is the level of democracy which signifies the channel through which factor owners or consumers are represented. Through this mechanism they can influence the level of commitments country o is willing to make. Other institutional factors that could have a direct impact on our depandant variable are more common in the trade literature. A country's rule of law is particularly important for countries with a comparative advantage in differentiated goods (Nunn, 2007; Levchenko, 2007). Since services are highly differentatiated we think that this factor could also encourage a country to undertake higher commitments in an RTA. However, a reversed effect is expected when countries with stronger rule of law are more likely to abide by GATS as the main focal point for services negotiations since these are the actual rules WTO members have created. Accordinly, it would reduce the size of the commitment gap. Last, we take a variable called regulatory quality which captures the ability of county o's government to formulate and implement sound policies and regulations that permit and promote private sector development. This variable stands as a rough proxy for the political economy calculus of regulators. A better regulatory environment that is supportive of the regulatory concerns described in the previous section would therefore create more competitive services sectors and may in turn induce a government to agree on higher commitments in services.

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[20]The EUKlems database has calculated ICT-related capital next to physical capital for a substantial amount of services sectors, but unfortunately only covers a small subset of our country sample.

Finally, in equation (1) we include the terms δ_o, γ_d and ς_t, which indicate the fixed effects by, respectively, country, partner and year. The country and partner fixed effects captures the fact that both parties can accord an RTA with a level of commitments that deviates from their general pattern of commitment made in all other agreements due to an external shock or other unobserved factors. We also include year fixed effects since we are dealing with a panel dataset. This should control for a systemic shift in the intercept over time during our selected period of analysis as a result of trends that we are not able to observe in the data. A more appropriate way to capture these fixed effects by country and partner over time would be to include time-varying fixed effects by country and partner. However, due to the limited variation of our data over time it would mean that many of our explanatory variables would be collinear and hence would be dropped from the regression. Note that no sector fixed effects are applied in equation (1) since we run separate regressions for different services sectors as a way to deal with heterogeneity in commitments between services (see Table A-2 for the level of disaggregation). Finally, in equation (1) ε_{odt}^s is a standard error term clustered by country-partner since our dependent variable is dyadic.

3.2 Measuring Commitments Negotiations between Countries

Equation (1) gives explanation to a so-called uni-directional negotiation process since both the commitments gap index and the independant variables are separated and thus monadic to country o.[21] In our dataset we have information on all these variables for both partner countries encompassing all services RTAs. We are therefore able to examine the determinants of services commitments as the result of a bilateral negotiation process. One way to understand the outcome of such process is that the agreement reflects some sort of 'average' of commitment preferences of both country o and d. To give meaningful interpretation to this negotiation process we transform our economic and institutional vectors in equation (1) into a dyadic component. More concretely we would like to know under which economic and political economy conditions both partner countries have a higher probability to commit beyond GATS. By doing so we estimate the specification:

$$\ln G(\mathrm{C}_{odt}^s) = \nu_1{}'\mathrm{GEO}_{odt}^s + \nu_2{}'\mathrm{SYS}_{odt}^s + \phi_3{}'\mathrm{DECO}_{odt}^s + \phi_4{}'\mathrm{DINS}_{odt}^s + \delta_o + \gamma_d + \varsigma_t + \varepsilon_{odt}^s \quad (2)$$

Here $\ln G(\mathrm{C}_{odt}^s)$ now stands for the average commitment preferences of both country o and d in year t, which is measured as the log of the geometric average of the difference between services commitments in an RTA and under GATS. The geographical and systemic vectors of variables are similar in equation (1). The coefficients ϕ_3 and ϕ_4 now denote the economic and institutional vectors respectively that are converted into a dyadic setting.

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[21]Note that in principle our dependant variable in equation (1), $\ln(\mathrm{C}_{odt}^s)$, is technically dyadic since country o's commitments in its RTAs varies by partner country—even when multiple countries are a member of an RTA (e.g. CAFTS-DR). However, one can still interpret this variable as monadic since it only takes into account the commitment scheme of one country and not of the partner country. Most likely the outcome of a negotiation reflects a dyadic process.

For vector DECO we first take S.ln(GDP)$_{odt}$ which stands for the absolute value of the sum of the logs of GDP of country o and d, also expressed as $\ln(\text{GDP}_{ot}) + \ln(\text{GDP}_{dt})$. Second, we include D.ln(GDP)$_{odt}$ representing the absolute value of the difference between the logs of GDP of country o and d, i.e. $\ln(\text{GDP}_{ot}) - \ln(\text{GDP}_{dt})$. To explain these two factors in economic terms the first variable can be understood as the joint economic sizes of the two countries. A greater combined marked share creates greater trade gains from creating an RTA and for that reason higher commitments are expected. The second variable states that services commitments are greater the more similar are two countries' economic sizes. In terms of trade theory these two variables can be seen as intra-industry trade determinants (see Baier and Bergstrand, 2004). In addition we construct in similar way the variables representing the factor endowments so that D.ln(H/L)$_{odt}$, D.ln(M/L)$_{odt}$ and D.ln(K/L)$_{odt}$ are the absolute value of the difference between the logs of the share of, respectively, high-skilled labour, mid-skilled labour and capital as part of the total labour force. A positive coefficient on these variables indicates that the commitments gap is greater, and consequently trade gains are higher, the wider are relative factor endowments between country o and d. On the other hand, a negative coefficent means that the commitments between an RTA and GATS are becoming smaller the wider are relative factor endowments between these countries. Economically, these factors correspond to inter-industry trade determinants.

The institutional variables in equation (2) are set up in the same way as the factor variables. These are D.Democracy$_{odt}$, D.Reg quality$_{odt}$ and D.Rule of law$_{odt}$, which indicate the absolute value of the difference between the indexes of, respectively, the level of democracy, the level of regulatory quality and the level of rule of law between country o and d. In political language the first variable captures the extent to which voters, i.e. factor owners or consumer, are capable of influencing their economic interest. As such it represents the demand side of a country's political system. In our specification a positive coefficient on this variable means that the commitments gap is greater, and hence trade creation effects are higher, the more different are democratic institutions between country o and d. Conversely, a negative coefficient indicates that the commitments gap is smaller the more dissimilar are democratic institutions between the two countries. By the same token, if the coefficents on the latter two variables are positive it means that trade gains are higher as commitments are greater due to differences in regulatory quality and rule of law between country o and d. A negative coefficient states the contrary. These two variables can be seen as political supply-side factors that drive governments to make higher commitments in their RTAs as opposed to GATS.

3.3 Dependant Variable Description and Data Sources

The dependant variable is an index that captures the extent to which services RTAs are preferential as compared to GATS. It is based on a detailed analysis of services schedules of commitments in both RTAs and GATS for each party to an agreement, subsector and mode of supply. It is a unique and rich dataset developed by the OECD (see Miroudot *et*

al., 2010) which allows us to analyse the difference between these two levels of commitment schedules as shown in Figure 1. This difference varies by both partner countries in each RTA covered in our dataset. The index is equal to zero when there are no preferential commitments in an RTA relative to GATS commitments that represent MFN treatment of services trade. It takes the value of 100 when full market access and national treatment are granted on a preferential basis for services trade. The analysis is made for 155 sub-sectors of the W/120 GATS Sectoral Classification List.

To build up this index, we distinghuish between fully committed subsectors, partially committed subsectors, and subsectors for which no commitment has been undertaken. In addition, restrictions for subsectors partially committed are classified according to whether they pertain to the principle of Market Access or National Treatement. In doing so the nature of the restriction itself is also considered, i.e. whether these restrictions are licencsing requirements, residency requirements, discriminatory measures regarding taxes and subsidies, restrictions on foreign ownership, measures related to comnpetition, etc. Horizontal restrictions in both GATS and RTAs are also taken into account and classified for all subsector since they apply collectively to all services.

Once this analysis has been done, an initial score of 100 is assigned to each services RTA, country, subsector and mode of suply regardless of its degree of commitments (including the GATS). As a next step, depending on whether the subsector is fully, partially or not committed at all an amount of points are deducted from the initial score of 100 according to type of restriction and mode, which can be found in Table A-6. In notation this means

$$\text{RTA}^s_{odt} = 100 - X^s_{odt} \tag{3}$$

for each sector s and mode, by partner countries od over year t. Here, X^s_{odt} indicates the minus scores assigned to an RTA commitments according to type of restriction. Note that we assume that market access matters relatively more than national treatment. This is because entry-barriers and other quantitative restrictions in services are more trade-restrictive than discrimination between foreign and domestic firms. Also, our initial weighting scheme for the index assigns an equal weight of 41.2% to Mode 1 and 3 and only 15.5% and 2.1% to Mode 2 and 4 respectively. This weighting scheme is based on the share value of trade in services by mode of supply following estimates in Hoekman and Kostecki (2009).[22] For robustness checks, we have tested different weights for each mode of supply and this does not alter our results.

Now that we are left with a score that measures the level of RTA commitment for each agreement, country and sub-sector one needs to take the difference between this score and

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[22]This 'guesstimate' by the authors is based on WTO (2007) and is calculated using FATS for Mode 3. They estimate that FATS is 50% higher than cross-border trade (Mode 1) based on OECD data. Applying a factor of 1.5 to other commercial services as part of Mode 1 gives a total value of FATS of around 2000 billion USD whereas Mode 1 is also reported to have 2000 billion USD (including transport). Mode 2 (travel) and Mode 3 (compensation of employees estimated to have a value of 750 and 100 billion USD respectively. Maurer and Magdeleine (2008) provide weights that give a greater importance to Mode 3, i.e. 55-60%.

the level of commitment for GATS which gives the so-called commitments gap. Using equation (3) this takes the following form:

$$C_{odt}^s = RTA_{odt}^s - GATS_{o \geq '95}^s \qquad (4)$$

where C_{odt}^s is calculated for each mode. The difference in this equation takes a value between -100 and 100, but we replace all negative values by zeros because an agreement that is worse than GATS (i.e. 'below' GATS) is de facto ineffective.[23] Hence, our final index score takes an increasing value the more preferential a particular RTA is for a given country and subsector.

Finally, we convert the initial W/120 subsectors into ISIC Rev.3 sectors using the UN's Provisional Central Product Classification as intermediate correspondence. Since these two classification schemes do not match by sub-sectors we average (unweighted) our final index score each time a sector aggregation is involved. Table A-2 shows the level of sector aggregation we use in our estimating regressions.

The sources for our independant variables span a wide range of databases. The geographical variables for the distance mark-up are taken from CEPII whereas GDP figures are from the World Bank's World Development Indicators. The level of GATS is calculated in similar way as the index of commitments gap based on our data on commitment schemes explained above. High- and mid-skilled labour supply are found in Barro and Lee's (2011) updated version of Education Attainment and are intrapolated for missing years. Capital stock per capita is retrieved from the Penn World Tables. Last, the variable level of democracy is developed by the Polity IV project (Marshall *et al.*, 2011). We choose this variable since it is widely used in the political economy literature. Finally, our last two institutional variables, rule of law and regulatory quality, are taken from Kaufmann *et al.* (2009). For our analysis data is take from 1995 till 2010.

4   Results

The results of equation (1) are presented in the first column of Table 1. In this specification the geographical vector shows coeffcents for the weighted distance (in logs) and sharing a common border that is negative and significant and of equal size. Although the result for distance is in line with our expectations the negative outcome for contiguity is somewhat counterintuitive as compared with the services trade literature. It means that countries are more inclined to form RTAs and commit beyond GATS with countries laying further away. One explanation could be that the tranditional modes of transport in goods do not matter as much as in services. However, this marginal effect of taking advantage of costs differences could diminish after a certain distance-threshold since proximity in terms of time, space and culture is required for services. Sharing a common language is positive but not significant.

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[23]See footnote 5. Although these GATS-minus commitments are relatively frequent they generally do not go so far as to nullify any GATS commitments, i.e. that equation (4) would obtain a score of -100.

The variables in our systemic vector show that having either the EU or the US as a partner country has the probability of concluding in a negotiation outcome that reduces the commitments gap by more than 2.5 times, i.e. $e^{0.972}$. This effect appears important since the coefficients on this variabe is rather large compared to other variables. It means that both trading powers have on average commitment preferences that are closer to GATS. This could reflect the extra responsibility these countries carry along in holding up the multilateral trading system since they are the largest services traders. On the other hand, greater economic power of the US relative to each of the other countries has the likely effect of extending commitments beyond GATS with these countries. This significance could be seen as an extraction of concessions by the US because of its hegemonic position (Krasner, 1991) and is in line with its recent trend as shown in Figure 2.

A striking result as part of the economic variables is that in our study only $\ln(M/L)_{ot}$ appears to be a significant factor in explaining commitment patterns. This means that countries that have a greater amount of mid-skilled labour supply are more likely of withholding commitments under an RTA. Putting in the economic variables separately also reveals that mid-skilled labour is the only factor that remains robustly significant. The fact that mid-skilled labour comes out as a strong explanatory source is consistent with Van der Marel (2012): Mid-skilled labor as percentage of the sectoral share of GDP is substantial in most OECD countries. Therefore, factor owners of this type of labour are more likely to see themselves as main competitor of services providers from abroad. Note that GDP and also GDP per capita (output omitted) are insignificant in our specification. Moreover, $\ln(K/L)_{ot}$ which is often seen as an indicator for higher productivity levels does neither give significant results. The coefficient on $\ln(H/L)_{ot}$ is positive, but remain also insignificant.

Last, the institutional vector shows Democracy$_{ot}$ to be a strong vehicle for not going any further than GATS in bilateral agreements. A potential explanation for this is that factor owners of labour can voice their concerns through this democratic channel since many services labour intense. Hence, based on the significance of our mid-skilled labour variable in the model these two factors are likely to be connected.[24] By the same token, based on our framework discussion consumers uneasy with services liberalization could also use this institution to withhold any further commitments beyond GATS. It's worth mentioning that the level of democracy is only significant when we select our prefered time period since 1995 when GATS was created. The other institutional variables Reg quality$_{ot}$ and Rule of law$_{ot}$ have, respectively, a positive and negative coefficient but stay insignificant.

The results for all our variables are repeated for different services sectors in subsequent columns of Table 1. Transport costs seems to make little difference between services

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[24]Of note, a separate political economy literature exists on the links between the level of democracy and trade agreements, see respectively Milner *et al.* (2003) and Mansfield *et al.* (2002). Here it is argued that international trade agreements can help politicians to show to voters their active policy concerning trade which can help them to overcome being outvoted during adverse economic shocks. Likewise, voters may have a perception of politicians' behavior that is biased in favor of special interest groups. Trade agreements may then also help politicians to bridge this inconsistency of information. Without these voters, i.e. non-democracies, no incentive exists to engage in trade agreements for these reasons. Roy (2011) applies this setting to commitments in services and confirms a positive (direct) association between the level of democracy and coverage of services commitments, contrary to our results. See below for further discussion on this point.

sectors as part of our geographical variables. The systemic forces reveal that both construction (column 2) and financial services (column 5) do not follow the pattern for total services in column 1. Financial services are insensitive to having either the EU or the US as an unequal trading partner when concluding an RTA. On a related note, construction and financial services remain unaffected by the role of the US in the world economy. On the other hand, countries having already in place higher commitments in construction services are unlikely to commit further in this sector in their RTAs.

Both construction and financial services also show different results with respect to the economic variables. Economic size does matter in these two sectors whereas $\ln(M/L)_{ot}$ matters less for financial services. Instead, $\ln(K/L)_o$ gives a stonger negative explanation for the commitments gap as shown in column 5. For construction services $\ln(H/L)_{ot}$ is an additional factor why countries are unwilling to commit any further than GATS. One interpretation of this result is that to some extent this sector also covers architectural and engineering services which use a greater amount of high-skilled labour. Another notable outcome for financial services is that mid-skilled labour cannot explain commitments, but that relative capital abundancy is rather a negative and highly significant force increasing the propability of commitments in RTA that lay closer to the level of GATS.

Finally, the institutional variables again show that finance and construction are outliers. For both sectors the role of rule of law has a negative and significant impact on the commitments gap which is independent from the level of democracy. This result could indicate that both types of services are contract-dependent since their supply chains are highly fragmented. Staying closer to GATS commitments therefore provokes less trade distortion since it entails liberalization of the multilateral level.

4.1 'Average' Negotiations between Partner Countries

So far we have considered variations in a so-called uni-directional system of commitments of country o as outlined in equation (1). However, commitments patterns are mostly likely to be outcomes of a negotiation strategy between partners. The results for this average commitments structure of partner countries within each RTA as in equation (2) are provided in Table 2. The outcomes for the geographical and systemic vector remain largely unchanged except that now the geometric aveage of GATS commitments is positive and significant in column 5. It means that previous higher levels of commitments in GATS between trading partners are very likely to induce partner countries to extend these levels for financial services in an RTA.

The economic variables in Table 2 show that $S.\ln(GDP)_{odt}$ is highly significant for financial services and somewhat significant for distribution services. It indicates that partner counties with larger average real GDP have a higher probability of greater commitments in RTAs rather than GATS. This larger economic size of both countries should in theory increase the net welfare gain from higher commitments. The coefficients on $D.\ln(GDP)_{odt}$ are in all specifications significant, except in column 2 for construction services. It measures that partner countries with smaller differences in GDP are also more

likely to go beyond GATS commitments in their RTAs. In similar way, D.ln(H/L)$_{odt}$ shows in some occasions also a negative and significant coefficient indicating that larger relative high-skilled factor differences between countries reduces the likelihood of extending the commitments gap. The coefficient on D.ln(K/L)$_{odt}$ is, on the other hand, positive but insignificant. Together the results show that intra-industry trade determinants better explain countries willingness to extend commitments beyond GATS than inter-industry trade effects. Another way of describing these results is that North-South agreements share a higher probability of showing levels of commitments in services that reflect those in GATS. This marginal effect holds regardless whether trading partners are the US or EU since our separate asymmetry dummy continues to be statistically significant.

A noteworthy result for the institutional variables is that D.Reg quality$_{odt}$ is significant for total, transport and business services albeit weakly. It predicts that greater relative quality differences of independant regulators between countries have an apparent effect of reducing commitments in RTAs. Based on our previous discussion, it confirms that partner countries sharing regulators with similar levels of capacity and expertise are more willing to liberalize further. Possibly this is because regulators are capable of implementing good domestic regulatory templates when liberalisating or are simply better able of dealing with regulatory competition during the liberalization process. Remember that this finding is likely to be biased downwards since it services only as a rough proxy for the quality of regulators. Last, a more robust finding is D.Rule of law$_{odt}$ for both transport and business services. Partner countries with greater differences in the level of rule of law have a higher probability of extending their commitment levels together. One possibility for this result is that firms take advantage of cost differences between countries through outsourcing and foreign offshoring in low-wage countries where rule of law is weaker.

4.2 Robustness Check 1: Commitments by Modes

A first robustness check is to verify whether any changes occur in the variable coefficients when regressing for each mode separately. We will be doing this by first putting the weights entirely on one mode for each of the four modes individually. The results for these regressions using equation (1) are shown in Tables 3 through 6.

The coefficients for mode 1 (Table 3) are largely similar compared to Table 1. There are, however, several noteworthly differences. The level of GATS in mode 1, ln(GATS M1)$_{odt}$, is now negative and significant for financial services meaning that higher commitments in GATS for mode 1 reduces the commitments gap in subsequent RTAs. Also, the quality of regulators in finantical services becomes somewhat significant with a positive sign. For construction services, rule of law does not become significant anymore although negative, but a stronger result is found for ln(H/L)$_{ot}$. For mode 2, Table 4 reveals that regulatory quality matters more for financial and construction services whereas ln(H/L)$_{ot}$ becomes somewhat significant with a negative coefficient for financial services in column 5. This result for high-skilled labour share is even stronger for financial services when regressing our model for mode 3 (Table 5). Furthermore, regulatory quality holds signif-

icant outcomes for again construction services but also transport services. Rule of law becomes negative and significant for distribution services. Last, outcomes for mode 4 in Table 6 show that slight differences in $\ln(\text{H/L})_{ot}$ take place for construction services and regulatory quality for financial services.

We also checked for complementarities between different modes of supply, particularly between mode 1 and 3 (see e.g. Fillat *et al.*, 2008). To do this we have put a weight of 0.7 on these two modes separately when regressing equation (1). Whilst doing so, each time we set a weight of 0.1 for the other three modes. The coefficient (output omitted) show that results remain similar. One difference we observe, however, is that in some instances the coefficient on the level of GATS commitments weakens for both construction and financial services, yet this factor largely serves as a control variable. When applying a dominant weight (0.70) for mode 3 it appears that relative capital endowments become insignificant for construction services. The variable rule of law also becomes insignificant for distribution services.

4.3   Robustness Check 2: Interactions

We also perform a robustness check to see whether our economic factors representing factor owners operate in similar way through domestic institutions. So far we have dealt with the hypothesis that our economic and institutional variables directly influence the level of commitments undertaken in an RTA. As for the factor owners in our framework, they could be seen as a so-called specific interest group support modelled on a more general level of trade policy by Grossman and Helpman (1994). However, the political economy literature also points out that interest group preferences work in an indirect manner through institutions. In a democratic environment these interest group preferences are then considered as voter's or public support for lower trade barriers (Milner and Kubota, 2005) or for creating trade agreements (Mansfield *et al.*, 2002). In our context we will consider this as equivalent to supporting higher commitments in services RTAs as done in Roy (2011).[25] By interacting the two vectors of factors of production and institutions we test which of the two channels are likely to dominate.

In doing so remember that in our framework discussion we made a separation between the level of democracy on the one hand, and regulatory quality and rule of law on the other. The former can be seen as demand-side institutions through which factors owners have easy access to make their preferences known. Based on the authors above this would imply that voters act either in their interest as factor-owners-as-consumers or as factor-owners-as-producers in which situation they are inclined to defend their specific interest.[26] The latter two variables are related to the governance structure a government supplies

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[25] Kono (2006) also shows that there is a linear combination between a government's preference for voter's support and the level of democracy. This correlation has an impact on trade policy barriers in terms of lower tariffs, but not for non-tariff barriers (NTB) due to the fact that the latter generates less information on its effects in a competitive political system. Manfield *et al.* (2002) argue that an alternative way of making trade policy transparent is through international trade agreements, see footnote 23.

[26] Note, however, that in contrast to common notion of liberal trade policy support by voters (Baker, 2003; Herrmann *et al.*, 2002) according to our framework factor-owners-as-consumers may oppose further support for services liberalisation for the reasons mentioned above, i.e. higher prices and lower quality of the services post-reform.

on which factor-owners-as-producers can capitalize. Hence we interact all our economic variables with these three institutional indicators.

The results in Table 7 show that the factor variables do not bear any significant results in proportion to the level of democracy although a strong negative significant result is found when interacting with GDP. This latter result merely shows that the effect of having a democracy in place on lowering the commitments gap is stronger for countries which are economically bigger. For the factor variables, however, we do not find very significant results. Neither do the factor variables interacted with regulatory quality or rule of law give a clear pattern of significance either apart from financial services in column 5. In financial services our findings show that countries which are more mid-skilled abundant have a higher probability to reduce the commitments gap when their regulatory institutions are better. This stands in contrast with business services in column 6: countries with better regulatory institutions and a higher level of mid-skilled labour supply are more likely to extend their commitment patterns in RTAs. In addition, countries with a stronger system of rule of law and higher levels of mid-skilled labour appear to increase the commitments gap in construction, financial and transport services. This outcome also holds for high-skilled labour in financial services. On the other hand, we find strong negative coefficients when interacting the level of physical capital per worker with rule of law.

Together these results give two main findings. First, democracies have an independent impact on commitments in RTAs that does not seem to be linked to factor proportions. In other words, the effect of the state of a democracy on commitments is not contingent on the preferences of factor owners. Second, if factor owners' preferences are transmitted through any domestic institution our results show that this would go through other governance institutions such as regulatory quality or rule of law. Since we find more significance for these supply-side institutions interacted with our factor variables we tend to conclude that the interests of factor-owners-as-producers are more likely to dominate. Both findings are in line with theories of specific interest group preferences.

4.4   Robustness Check 3: North-South & South-South Agreements

A third robustness check is whether our results hold true for North-South and South-South agreements separately. By doing so we verify whether the previous results are not biased from including North-North agreements which are often considered as 'deep' RTAs in terms of liberalising policies. Moreover, most trade in services take place between countries who signed North-North agreements. We hence consider three types of services agreements, i.e. North-North, North-South and South-South agreements. The selection of agreements in these categories follows Behar and Cirera i Crivillé (2011) which can be found in Table A-7.

The results for the North-South agreements using equation (1) are provided in column 1 of Table 8. A first outcome is that many of the geographic and systemic variable coefficients are not significant. This is of course due to the fact that we only select a

sub-group of agreements which do not internalize global transport costs. Distance is only significant for distribution and financial services. Interestingly, having the EU or US in one of these agreements as a trading partner would increase the level of commitments beyond GATS for business services particularly. A second result that stands out is the fact the coefficient on $\ln(M/L)_{ot}$ is negative and significant. This is also true when we regress on different services sectors (output omitted) for all types of services, even financial services, and confirms our findings in Table 1 through 6. Regressing these same North-South agreements for all modes reveals the same outcome (output omitted). On similar note, Democracy$_{ot}$ and Rule of law$_{ot}$ both determine the commitments gap in a negative and significant way. This is something that also came out in our previous regression results for equation (1). It also holds true for all different modes.

As for the South-South agreements, mid-skilled labour also remains negative and significant for equation (1) although institutions do not seem to show any significant coefficients. Regressing equation (1) by mode for these type of agreements this pattern of mid-skilled labour remains although not for mode 3 (output omitted). Instead, stronger rule of law seem to replace the importance of mid-skilled labour for mode 3 in South-South since this variable becomes positive and significant.

4.5   Additional Robustness Checks: Remoteness, PPML and Endogneity

Finally, we provide some additional robustness checks. First, we add a remoteness variable in equation (1) which should capture fact that the commitments gap could be higher with countries laying further away, as a consequence of higher barriers to overcome. Such proposition would be consistent with trade theory: there are higher trade costs with countries further away and a country simply needs to commit more if it wants to liberalise trade to overcome these costs. Our remoteness variables is based on Martin *et al.* (2008) and which is developed in a dyadic setting. Based on the fact that we chose the weighted distance as part of the geographical vector, we take this variable to compute our remoteness measure:

$$\text{Remoteness}_{odt} = -\ln\left(\sum_{k \neq d,o}^{R} \frac{\text{GDP}_{kt}}{distw_{ok}} + \sum_{k \neq d,o}^{R} \frac{\text{GDP}_{kt}}{distw_{dk}}\right) \qquad (5)$$

The result of this variable is shown in columns 3 of Table 8. It gives a positive but insignificant coefficient. Interestingly, however, the remoteness variable appears to correct for a couple of other variables in equation (1). Both the level of GATS and $\ln(\text{GDP})_{ot}$ become positive and significant. Mid-skilled labour remains robustly negative.

We also use a different estimation technique to estimate equation (1), namely the Poisson Pseudo Maximum Likelihood estimator. This technique is often used in the trade literature to correct for heteroskedasticity in the error term that normally could arise using OLS and can easily be used in cases where the data shows a large amount of zeros. The non-log-linearization of the dependant variable when using PPML should not lead to

inconsistent estimates. It offers consistent estimates as long as the error term in equation (1) has an expectation of one conditional on the covariates. Column 3 of Table 8 shows that coefficients are largely in line with the results in Table 1 although $\ln(\text{GDP})_{ot}$ becomes again positive and significant.

Last, we deal with some endogeneity issues that could arise from including the economic variables. It could be that there is a reversed causality with our economic terms since trade liberalization is likely to influence income and factor endowments through economic growth. Hence, higher level of commitments as part of the creation of a services RTA could potentially also have an effect on these economic terms. We therefore take the lag of 5 and 10 years on all our economic variables, which are shown in columns 4 and 5 of Table 8 respectively. Note that we do not create lags on the institutional variables since the endogeneity issue here is less strong according to the political economy literature and because generally institutions are known to be 'sticky'. The results show that our previous findings do not alter in any significant way. It is worth pointing out, however, that the level of high-skilled labour stock become more significant when we apply more lags. Also, our regulatory quality variable becomes stronger when correcting for endogeneity.

5 Conclusion

In this paper, we have tested different explanations for the 'commitments gap', i.e. the reason why countries take more services commitments in regional trade agreements than at the multilateral level. We find that both economic and non-economic factors play a role and determine the magnitude of the commitments gap. First, geography and market size affect the negotiations and the level of GATS-plus commitments. Another economic factor which was not identified in earlier literature is the role of mid-skilled labour endowments. Mid-skilled workers are the ones that may be the more affected by services trade liberalisation and active as an interest group in negotiations. Among political economy factors, asymmetries between countries and the quality of governance are two strong determinants of the commitments gap.

These conclusions hold on average for all services sectors but we find quickly nuances or differences when looking at more disaggregated services industries. More analysis (and more disaggregated data) would be needed to better characterize and understand these sectoral differences. We find that construction and financial services are characterised by different patterns of explanations as compared to other services sectors.

What are the implications of our results for future negotiations in trade in services? Since the commitments gap is higher for North-North agreements, countries that are engaged in intra-industry trade and have a high GDP, one can think that a plurilateral negotiation such as the current one on an International Services Agreement (ISA) is more likely to succeed than the Doha round at WTO.[27] If both developed countries (because of concerns for mid-skilled workers) and developing countries (because of lack of inter-

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[27]See Hufbauer *et al.* (2012) for a discussion of the International Services Agreement.

est groups supporting services) are opposed to further North-South commitments, one should identify how to address these specific concerns and change the views of governments and negotiators before realistically considering a deepening of multilateral services commitments.

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Figures and Tables

Figure 1: The Commitments Gap – GATS and RTA-level of Services Commitment.
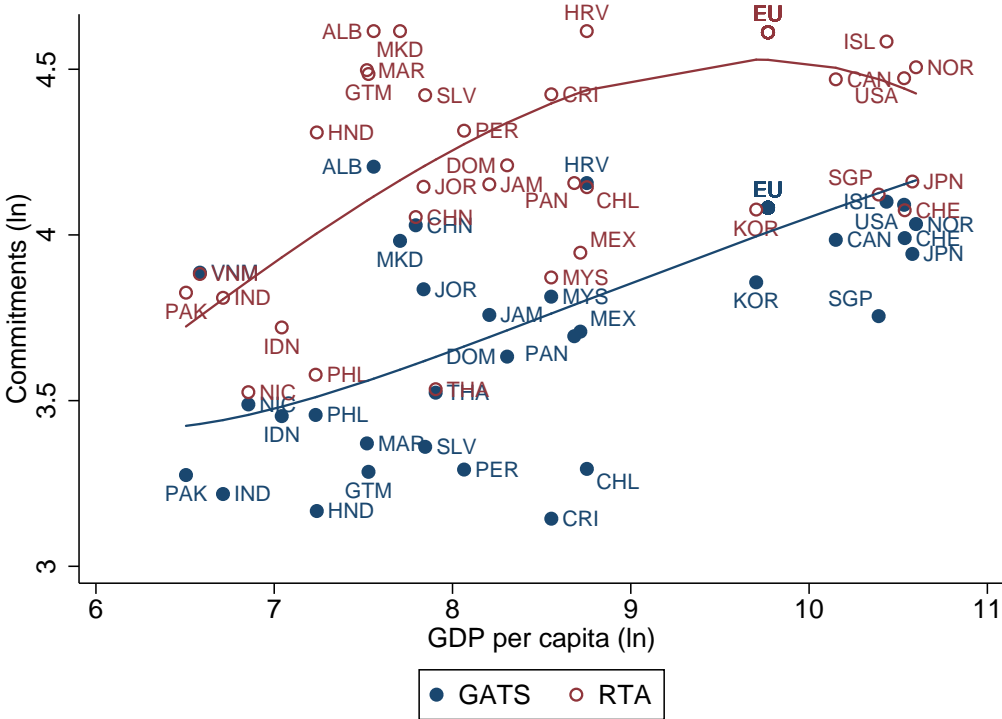
Figure 2: GATS and RTA-level of Services Commitment for EU, US, NZL and CRI.
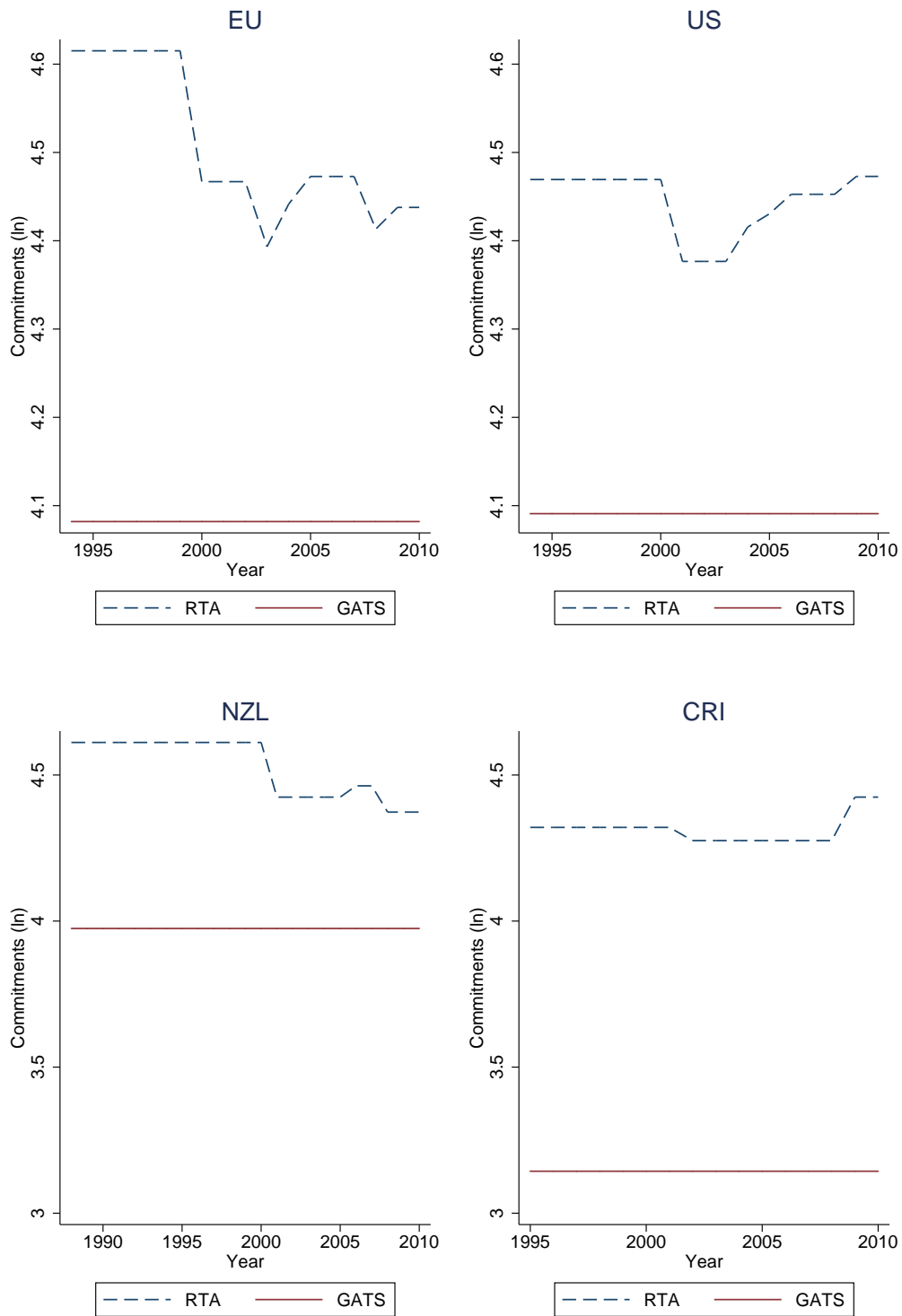
Table 1: Political Economy Determinants for Services

	(1) ln(C_{odt}) OLS TOTSRV	(2) ln(C_{odt}) OLS CNSTR	(3) ln(C_{odt}) OLS DISTR	(4) ln(C_{odt}) OLS TRNSP	(5) ln(C_{odt}) OLS FINAN	(6) ln(C_{odt}) OLS BUSNS
Geography:						
ln(W. Dist)	-0.263***	-0.260***	-0.291***	-0.268***	-0.257***	-0.248***
	(0.0761)	(0.0774)	(0.0785)	(0.0797)	(0.0593)	(0.0717)
Contiguity	-0.225**	-0.225**	-0.259***	-0.224**	-0.224***	-0.211**
	(0.0965)	(0.0979)	(0.0976)	(0.100)	(0.0733)	(0.0926)
Language	0.0198	-0.0657	0.0277	0.0318	-0.240*	0.0340
	(0.163)	(0.169)	(0.158)	(0.172)	(0.138)	(0.159)
Systemic:						
Asymmetry	-0.972***	-1.094***	-1.051***	-1.000***	-0.329	-0.896***
	(0.344)	(0.328)	(0.358)	(0.359)	(0.216)	(0.321)
Hegemon	0.137***	0.0408	0.0963*	0.161***	0.0649	0.119***
	(0.0473)	(0.0631)	(0.0501)	(0.0512)	(0.0516)	(0.0452)
ln(GATS)_{odt}	0.498	-1.463***	-0.0563	0.834	0.327	0.371
	(0.705)	(0.548)	(0.519)	(0.697)	(1.007)	(0.786)
Economic:						
ln(GDP)_{ot}	0.0578	0.141*	0.0796	0.0367	0.305***	0.0684
	(0.0666)	(0.0841)	(0.0696)	(0.0733)	(0.0762)	(0.0646)
ln(H/L)_{ot}	-0.0290	-0.119**	-0.0519	0.000503	-0.0824	-0.0355
	(0.0432)	(0.0562)	(0.0462)	(0.0465)	(0.0506)	(0.0414)
ln(M/L)_{ot}	-0.407***	-0.480***	-0.419***	-0.407***	-0.121	-0.401***
	(0.116)	(0.137)	(0.128)	(0.122)	(0.133)	(0.116)
ln(K/L)_{ot}	-0.00675	-0.0197	0.00585	-0.0147	-0.0630***	-0.00871
	(0.0225)	(0.0245)	(0.0237)	(0.0249)	(0.0211)	(0.0217)
Institutions:						
Democracy_{ot}	-0.0326***	-0.0426***	-0.0388***	-0.0306**	-0.0201*	-0.0350***
	(0.0112)	(0.0153)	(0.0119)	(0.0125)	(0.0115)	(0.0110)
Reg quality_{ot}	0.0341	0.0386	0.0334	0.0480	0.0436	0.0323
	(0.0284)	(0.0304)	(0.0301)	(0.0325)	(0.0270)	(0.0274)
Rule of Law_{ot}	-0.0329	-0.0985**	-0.0461	-0.0284	-0.157***	-0.0388
	(0.0330)	(0.0406)	(0.0366)	(0.0367)	(0.0405)	(0.0321)
FE δ_o	Yes	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,892	7,892	7,892	7,892	7,892	7,892
R^2	0.851	0.818	0.863	0.856	0.925	0.829
RMSE	0.302	0.407	0.342	0.333	0.292	0.294

Robust standard errors clustered by country-pair in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2: Political Economy of 'Average' Commitments Negotiations

	(1) $\ln G(\mathrm{C}_{odt})$ OLS TOTSRV	(2) $\ln G(\mathrm{C}_{odt})$ OLS CNSTR	(3) $\ln G(\mathrm{C}_{odt})$ OLS DISTR	(4) $\ln G(\mathrm{C}_{odt})$ OLS TRNSP	(5) $\ln G(\mathrm{C}_{odt})$ OLS FINAN	(6) $\ln G(\mathrm{C}_{odt})$ OLS BUSNS
Geography:						
ln(W. Dist)	-0.273***	-0.293***	-0.278***	-0.271***	-0.256***	-0.253***
	(0.0784)	(0.0897)	(0.0795)	(0.0817)	(0.0609)	(0.0763)
Contiguity	-0.236**	-0.308***	-0.287***	-0.229**	-0.240***	-0.222**
	(0.0997)	(0.111)	(0.0970)	(0.104)	(0.0772)	(0.0985)
Language	0.0305	-0.0422	0.100	0.0574	-0.163	0.0566
	(0.169)	(0.176)	(0.158)	(0.176)	(0.138)	(0.167)
Systemic:						
Asymmetry	-1.052**	-1.428***	-1.103***	-1.121***	-0.375	-0.964**
	(0.429)	(0.457)	(0.406)	(0.413)	(0.296)	(0.382)
Hegemon	0.263***	0.242***	0.299***	0.284***	0.356***	0.236***
	(0.0850)	(0.0905)	(0.0958)	(0.0907)	(0.127)	(0.0789)
$\ln G(\mathrm{GATS})_{odt}$	-101.3	17.40	29.46	-470.0	1,121***	-124.4
	(322.9)	(215.2)	(147.3)	(521.3)	(268.0)	(121.3)
Economic:						
S.ln(GDP)$_{odt}$	0.0941	0.128	0.173*	0.113	0.386***	0.0733
	(0.0844)	(0.100)	(0.0936)	(0.0954)	(0.111)	(0.0757)
D.ln(GDP)$_{odt}$	-0.132**	-0.102	-0.181**	-0.150**	-0.274***	-0.112*
	(0.0651)	(0.0689)	(0.0738)	(0.0706)	(0.0966)	(0.0591)
D.ln(H/L)$_{odt}$	-0.0374*	-0.0450**	-0.0237	-0.0366*	0.00544	-0.0365**
	(0.0194)	(0.0210)	(0.0199)	(0.0203)	(0.0143)	(0.0183)
D.ln(M/L)$_{odt}$	-0.0141	-0.0134	-0.0243	-0.0164	-0.0368**	-0.0125
	(0.0171)	(0.0187)	(0.0181)	(0.0180)	(0.0152)	(0.0159)
D.ln(K/L)$_{odt}$	0.00685	0.00255	0.00115	0.00754	-0.0126	0.00659
	(0.00872)	(0.00972)	(0.00891)	(0.00914)	(0.00827)	(0.00804)
Institutions:						
D.Democracy$_{odt}$	0.000854	0.00111	-0.000508	0.000742	-0.00356*	0.000796
	(0.00206)	(0.00225)	(0.00210)	(0.00213)	(0.00212)	(0.00192)
D.Reg quality$_{odt}$	-0.0123*	-0.00703	-0.0108	-0.0123*	-0.00482	-0.0113*
	(0.00697)	(0.00764)	(0.00689)	(0.00716)	(0.00625)	(0.00644)
D.Rule of Law$_{odt}$	0.0211**	0.0138	0.0179*	0.0218**	0.000768	0.0201**
	(0.00955)	(0.0105)	(0.00998)	(0.00968)	(0.00953)	(0.00901)
FE δ_o	Yes	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,891	7,891	7,891	7,891	7,891	7,891
R^2	0.852	0.868	0.877	0.865	0.951	0.826
RMSE	0.304	0.376	0.338	0.323	0.275	0.283

Robust standard errors clustered by country-pair in parentheses

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

Table 3: Mode 1 Commitments

	(1) ln(C$_{odt}$) OLS CNSTR	(2) ln(C$_{odt}$) OLS DISTR	(3) ln(C$_{odt}$) OLS TRNSP	(4) ln(C$_{odt}$) OLS FINAN	(5) ln(C$_{odt}$) OLS BUSNS
Geography:					
ln(W. Dist)	-0.230***	-0.289***	-0.267***	-0.279***	-0.247***
	(0.0741)	(0.0772)	(0.0814)	(0.0661)	(0.0744)
Contiguity	-0.193**	-0.255***	-0.227**	-0.235***	-0.206**
	(0.0881)	(0.0976)	(0.101)	(0.0814)	(0.0960)
Language	-0.136	0.0392	0.0444	-0.273*	0.0399
	(0.161)	(0.164)	(0.172)	(0.152)	(0.166)
Systemic:					
Asymmetry	-1.408***	-0.997***	-1.083***	-0.437*	-1.000***
	(0.283)	(0.341)	(0.369)	(0.241)	(0.336)
Hegemon	0.0131	0.109**	0.164***	0.0775	0.123**
	(0.0847)	(0.0530)	(0.0528)	(0.0565)	(0.0479)
ln(GATS M1)$_{odt}$	-2.606***	0.00498	1.050	-1.853***	-0.302
	(0.590)	(0.533)	(0.725)	(0.676)	(0.588)
Economic:					
ln(GDP)$_{ot}$	0.0884	0.0612	0.0412	0.328***	0.0595
	(0.0971)	(0.0731)	(0.0731)	(0.0806)	(0.0666)
ln(H/L)$_{ot}$	-0.209***	-0.0462	-0.00819	-0.0804	-0.0482
	(0.0751)	(0.0504)	(0.0474)	(0.0561)	(0.0434)
ln(M/L)$_{ot}$	-0.485***	-0.413***	-0.418***	-0.120	-0.417***
	(0.170)	(0.135)	(0.122)	(0.151)	(0.116)
ln(K/L)$_{ot}$	-0.00746	0.00887	-0.0106	-0.0694***	-0.000624
	(0.0281)	(0.0250)	(0.0243)	(0.0235)	(0.0219)
Institutions:					
Democracy$_{ot}$	-0.0572***	-0.0429***	-0.0309**	-0.0210*	-0.0390***
	(0.0183)	(0.0122)	(0.0127)	(0.0127)	(0.0114)
Reg quality$_{ot}$	-0.00733	0.0349	0.0437	0.0512*	0.0248
	(0.0355)	(0.0324)	(0.0311)	(0.0298)	(0.0271)
Rule of Law$_{ot}$	-0.0682	-0.0395	-0.0310	-0.163***	-0.0290
	(0.0493)	(0.0390)	(0.0370)	(0.0430)	(0.0334)
FE δ_o	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes
Observations	7,892	7,892	7,892	7,892	7,892
R^2	0.855	0.862	0.860	0.929	0.836
RMSE	0.501	0.356	0.341	0.325	0.304

Robust standard errors clustered by country-pair in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Mode 2 Commitments

	(1)	(2)	(3)	(4)	(5)
	$\ln(C_{odt})$	$\ln(C_{odt})$	$\ln(C_{odt})$	$\ln(C_{odt})$	$\ln(C_{odt})$
	OLS	OLS	OLS	OLS	OLS
	CNSTR	DISTR	TRNSP	FINAN	BUSNS
Geography:					
$\ln$(W. Dist)	-0.114***	-0.294***	-0.255***	-0.161***	-0.224***
	(0.0371)	(0.0854)	(0.0784)	(0.0454)	(0.0670)
Contiguity	-0.0495	-0.272***	-0.207**	-0.122**	-0.185**
	(0.0528)	(0.105)	(0.0996)	(0.0594)	(0.0870)
Language	-0.0836	0.0554	0.0406	-0.278**	0.0442
	(0.108)	(0.160)	(0.172)	(0.120)	(0.153)
Systemic:					
Asymmetry	0.402***	-1.313***	-0.957***	0.183	-0.814***
	(0.128)	(0.404)	(0.351)	(0.138)	(0.293)
Hegemon	-0.0412	0.0734	0.162***	0.0213	0.114***
	(0.0560)	(0.0524)	(0.0509)	(0.0438)	(0.0438)
$\ln$(GATS M2)$_{odt}$	-2.293***	-2.947***	0.964	-1.672***	0.256
	(0.516)	(0.497)	(0.676)	(0.509)	(0.760)
Economic:					
$\ln$(GDP)$_{ot}$	0.178***	0.115	0.0323	0.289***	0.0633
	(0.0669)	(0.0711)	(0.0737)	(0.0767)	(0.0621)
$\ln$(H/L)$_{ot}$	-0.0565	-0.0777	0.00379	-0.0805*	-0.0319
	(0.0389)	(0.0491)	(0.0474)	(0.0450)	(0.0408)
$\ln$(M/L)$_{ot}$	-0.179*	-0.468***	-0.399***	-0.00752	-0.382***
	(0.104)	(0.138)	(0.122)	(0.118)	(0.113)
$\ln$(K/L)$_{ot}$	-0.0314*	0.00770	-0.0110	-0.0689***	-0.00826
	(0.0188)	(0.0221)	(0.0248)	(0.0209)	(0.0202)
Institutions:					
Democracy$_{ot}$	-0.0360**	-0.0318**	-0.0311**	-0.0164	-0.0341***
	(0.0161)	(0.0129)	(0.0125)	(0.0101)	(0.0109)
Reg quality$_{ot}$	0.0640**	0.0121	0.0413	0.0453*	0.0272
	(0.0298)	(0.0276)	(0.0321)	(0.0271)	(0.0260)
Rule of Law$_{ot}$	-0.148***	-0.0559	-0.0216	-0.151***	-0.0352
	(0.0420)	(0.0369)	(0.0367)	(0.0402)	(0.0310)
FE δ_o	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes
Observations	7,892	7,892	7,892	7,892	7,892
R^2	0.855	0.865	0.848	0.860	0.835
RMSE	0.382	0.356	0.326	0.267	0.282

Robust standard errors clustered by country-pair in parentheses

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

Table 5: Mode 3 Commitments

	(1) $\ln(C_{odt})$ OLS CNSTR	(2) $\ln(C_{odt})$ OLS DISTR	(3) $\ln(C_{odt})$ OLS TRNSP	(4) $\ln(C_{odt})$ OLS FINAN	(5) $\ln(C_{odt})$ OLS BUSNS
Geography:					
$\ln$(W. Dist)	-0.240***	-0.325***	-0.291***	-0.263***	-0.281***
	(0.0616)	(0.0876)	(0.0816)	(0.0599)	(0.0739)
Contiguity	-0.206**	-0.303***	-0.249**	-0.234***	-0.248***
	(0.0817)	(0.107)	(0.104)	(0.0741)	(0.0953)
Language	-0.0544	-0.0333	-0.00951	-0.182	-0.0150
	(0.142)	(0.161)	(0.175)	(0.134)	(0.159)
Systemic:					
Asymmetry	-0.341	-1.185***	-0.912**	-0.335	-0.745**
	(0.281)	(0.400)	(0.357)	(0.235)	(0.313)
Hegemon	0.0262	0.0508	0.157***	0.0570	0.108**
	(0.0433)	(0.0554)	(0.0531)	(0.0527)	(0.0476)
$\ln$(GATS M3)$_{odt}$	-1.420***	-0.240	0.551	-0.321	0.131
	(0.414)	(0.469)	(0.641)	(0.594)	(0.730)
Economic:					
$\ln$(GDP)$_{ot}$	0.170**	0.137*	0.0372	0.266***	0.0920
	(0.0661)	(0.0805)	(0.0842)	(0.0708)	(0.0766)
$\ln$(H/L)$_{ot}$	-0.0242	-0.0685	0.0163	-0.0957**	-0.0168
	(0.0379)	(0.0445)	(0.0481)	(0.0479)	(0.0421)
$\ln$(M/L)$_{ot}$	-0.346***	-0.416***	-0.405***	-0.193	-0.381***
	(0.122)	(0.127)	(0.126)	(0.125)	(0.118)
$\ln$(K/L)$_{ot}$	-0.0509**	-0.00983	-0.0358	-0.0560***	-0.0334
	(0.0245)	(0.0287)	(0.0304)	(0.0201)	(0.0280)
Institutions:					
Democracy$_{ot}$	-0.0263**	-0.0329**	-0.0310**	-0.0255**	-0.0319***
	(0.0117)	(0.0137)	(0.0131)	(0.0116)	(0.0117)
Reg quality$_{ot}$	0.0966**	0.0586	0.0823*	0.0322	0.0688
	(0.0389)	(0.0412)	(0.0460)	(0.0257)	(0.0419)
Rule of Law$_{ot}$	-0.124***	-0.0852**	-0.0385	-0.140***	-0.0667*
	(0.0335)	(0.0432)	(0.0415)	(0.0385)	(0.0385)
FE δ_o	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes
Observations	7,892	7,892	7,892	7,892	7,892
R^2	0.777	0.813	0.815	0.917	0.738
RMSE	0.339	0.417	0.384	0.299	0.359

Robust standard errors clustered by country-pair in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Mode 4 Commitments

	(1) ln(C_{odt}) OLS CNSTR	(2) ln(C_{odt}) OLS DISTR	(3) ln(C_{odt}) OLS TRNSP	(4) ln(C_{odt}) OLS FINAN	(5) ln(C_{odt}) OLS BUSNS
Geography:					
ln(W. Dist)	-0.307***	-0.335***	-0.276***	-0.313***	-0.286***
	(0.0704)	(0.0912)	(0.0815)	(0.0716)	(0.0780)
Contiguity	-0.297***	-0.324***	-0.246**	-0.269***	-0.271***
	(0.0872)	(0.111)	(0.103)	(0.0878)	(0.100)
Language	-0.0184	0.0367	0.0305	-0.210	0.0396
	(0.152)	(0.165)	(0.175)	(0.161)	(0.164)
Systemic:					
Asymmetry	-0.749***	-1.406***	-1.092***	-0.554**	-1.139***
	(0.272)	(0.419)	(0.372)	(0.258)	(0.355)
Hegemon	0.0701	0.0926*	0.153***	0.0864	0.116**
	(0.0666)	(0.0540)	(0.0508)	(0.0565)	(0.0476)
ln(GATS M4)$_{odt}$	-1.389*	0.500		-2.031**	0.397
	(0.773)	(0.787)		(0.789)	(0.821)
Economic:					
ln(GDP)$_{ot}$	0.204**	0.138*	0.0591	0.323***	0.105
	(0.0816)	(0.0720)	(0.0710)	(0.0795)	(0.0638)
ln(H/L)$_{ot}$	-0.105*	-0.0751	-0.0165	-0.0884	-0.0606
	(0.0545)	(0.0508)	(0.0469)	(0.0584)	(0.0440)
ln(M/L)$_{ot}$	-0.408***	-0.432***	-0.423***	-0.200	-0.428***
	(0.137)	(0.141)	(0.126)	(0.156)	(0.125)
ln(K/L)$_{ot}$	-0.0269	-0.00860	-0.0212	-0.0637***	-0.0149
	(0.0249)	(0.0243)	(0.0251)	(0.0239)	(0.0232)
Institutions:					
Democracy$_{ot}$	-0.0477***	-0.0281**	-0.0322***	-0.0313**	-0.0351***
	(0.0159)	(0.0121)	(0.0119)	(0.0141)	(0.0105)
Reg quality$_{ot}$	-0.00284	0.00639	0.0381	0.0521*	0.0145
	(0.0282)	(0.0267)	(0.0288)	(0.0291)	(0.0246)
Rule of Law$_{ot}$	-0.0937**	-0.0564	-0.0227	-0.164***	-0.0386
	(0.0428)	(0.0367)	(0.0352)	(0.0443)	(0.0317)
FE δ_o	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes
Observations	7,892	7,892	7,892	7,892	7,892
R^2	0.862	0.897	0.891	0.924	0.894
RMSE	0.412	0.365	0.322	0.331	0.294

Robust standard errors clustered by country-pair in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Indirect Commitments Effects through Institutions

	(1) ln(C$_{odt}$) OLS TOTSRV	(2) ln(C$_{odt}$) OLS CNSTR	(3) ln(C$_{odt}$) OLS DISTR	(4) ln(C$_{odt}$) OLS TRNSP	(5) ln(C$_{odt}$) OLS FINAN	(6) ln(C$_{odt}$) OLS BUSNS
Level of Democracy:						
Democracy$_{ot}$*ln(GDP)$_{ot}$	-0.0377***	-0.0523***	-0.0379***	-0.0409***	-0.0347***	-0.0386***
	(0.00658)	(0.00967)	(0.00711)	(0.00735)	(0.00883)	(0.00645)
Democracy$_{ot}$*ln(H/L)$_{ot}$	-0.0239	-0.00574	0.0154	-0.0506*	-0.0108	-0.0150
	(0.0237)	(0.0308)	(0.0258)	(0.0287)	(0.0255)	(0.0235)
Democracy$_{ot}$*ln(M/L)$_{ot}$	0.0341	0.0252	0.0507	0.0361	-0.0128	0.0260
	(0.0384)	(0.0485)	(0.0507)	(0.0378)	(0.0231)	(0.0388)
Democracy$_{ot}$*ln(K/L)$_{ot}$	0.0271	0.0231	-0.0308	0.0594*	0.0391	0.0291
	(0.0244)	(0.0278)	(0.0306)	(0.0348)	(0.0274)	(0.0220)
Level of Regulatory Quality:						
Reg quality$_{ot}$*ln(GDP)$_{ot}$	0.0298	-0.0533*	0.0227	0.0345	-0.0755***	0.0261
	(0.0257)	(0.0313)	(0.0273)	(0.0292)	(0.0249)	(0.0246)
Reg quality$_{ot}$*ln(H/L)$_{ot}$	0.0642	-0.187	0.0301	0.137	-0.0637	0.0205
	(0.115)	(0.150)	(0.123)	(0.134)	(0.121)	(0.109)
Reg quality$_{ot}$*ln(M/L)$_{ot}$	0.302*	-0.0790	0.253	0.260	-0.620***	0.312**
	(0.159)	(0.192)	(0.176)	(0.187)	(0.167)	(0.153)
Reg quality$_{ot}$*ln(K/L)$_{ot}$	0.125*	0.123	0.162**	0.129	0.0831	0.120
	(0.0757)	(0.0886)	(0.0789)	(0.0851)	(0.0791)	(0.0745)
Level of Rule of law:						
Rule of Law$_{ot}$*ln(GDP)$_{ot}$	-0.0161	0.0316	-0.000139	-0.0227	0.0350*	-0.0149
	(0.0194)	(0.0213)	(0.0201)	(0.0212)	(0.0208)	(0.0188)
Rule of Law$_{ot}$*ln(H/L)$_{ot}$	0.00696	0.201	0.0291	-0.0247	0.293***	0.0357
	(0.0960)	(0.135)	(0.106)	(0.108)	(0.0990)	(0.0930)
Rule of Law$_{ot}$*ln(M/L)$_{ot}$	0.155	0.425**	0.134	0.238*	0.346**	0.142
	(0.130)	(0.189)	(0.141)	(0.142)	(0.137)	(0.132)
Rule of Law$_{ot}$*ln(K/L)$_{ot}$	-0.264***	-0.184**	-0.218***	-0.309***	0.0596	-0.259***
	(0.0754)	(0.0885)	(0.0793)	(0.0864)	(0.0862)	(0.0754)
Control GEO$_{odt}$	Yes	Yes	Yes	Yes	Yes	Yes
Control SYS$_{odt}$	Yes	Yes	Yes	Yes	Yes	Yes
Control ECO$_{odt}$	Yes	Yes	Yes	Yes	Yes	Yes
Control INS$_{odt}$	Yes	Yes	Yes	Yes	Yes	Yes
FE δ_o	Yes	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes	Yes
Observations	7,892	7,892	7,892	7,892	7,892	7,892
R^2	0.853	0.821	0.865	0.858	0.926	0.831
RMSE	0.300	0.404	0.340	0.331	0.290	0.292

Robust standard errors clustered by country-pair in parentheses

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

Table 8: Additional Robustness Checks

	(1) $\ln(C_{odt})$ OLS	(2) $\ln(C_{odt})$ OLS	(3) C_{odt} PPML	(4) $\ln(C_{odt})$ OLS	(5) $\ln(C_{odt})$ OLS
			TOTAL SERVICES		
	N-S			(5)	(10)
Geography:					
$\ln$(W. Dist)	-0.122	-0.258***	-0.118***	-0.262***	-0.277***
	(0.228)	(0.0758)	(0.0296)	(0.0771)	(0.0801)
Contiguity	0.517	-0.230**	-0.113***	-0.233**	-0.248**
	(0.499)	(0.0962)	(0.0415)	(0.0970)	(0.101)
Language	-0.572**	-0.00261	-0.0102	-0.00351	-0.00386
	(0.265)	(0.163)	(0.0754)	(0.163)	(0.163)
Remoteness		0.0809	0.0361	0.0780	0.0703
		(0.0780)	(0.0468)	(0.0782)	(0.0788)
Systemic:					
Asymmetry	2.321**	-0.950***	-0.660***	-0.945***	-0.933***
	(0.935)	(0.344)	(0.176)	(0.345)	(0.342)
Hegemon	0.0375	0.142***	0.0680***	0.140***	0.128***
	(0.117)	(0.0490)	(0.0233)	(0.0482)	(0.0487)
$\ln$(GATS)$_{odt}$	-2.400	1.052*	0.0314	-0.152	-0.330
	(1.734)	(0.609)	(0.279)	(0.655)	(0.659)
Economic:					
$\ln$(GDP)$_{ot}$	0.153	0.159***	0.0770***	0.00267	-0.0915*
	(0.532)	(0.0539)	(0.0291)	(0.0342)	(0.0513)
$\ln$(H/L)$_{ot}$	-0.341	-0.0504	-0.0292	0.0615*	0.133***
	(0.341)	(0.0523)	(0.0260)	(0.0351)	(0.0437)
$\ln$(M/L)$_{ot}$	-1.109***	-0.396***	-0.184***	-0.141***	-0.161***
	(0.301)	(0.108)	(0.0510)	(0.0502)	(0.0554)
$\ln$(K/L)$_{ot}$	-0.0182	-0.0152	-0.00728	0.0223	-0.00687
	(0.111)	(0.0184)	(0.00923)	(0.0180)	(0.0174)
Institutions:					
Democracy$_{ot}$	-0.0661*	-0.0353***	-0.0176***	-0.0371***	-0.0726***
	(0.0388)	(0.0124)	(0.00615)	(0.0125)	(0.0201)
Reg quality$_{ot}$	0.167	0.0381	0.0158	0.0518**	0.0609**
	(0.119)	(0.0274)	(0.0140)	(0.0258)	(0.0293)
Rule of Law$_{ot}$	-0.281**	-0.0987***	-0.0441**	-0.0351	-0.0903***
	(0.133)	(0.0307)	(0.0181)	(0.0301)	(0.0321)
FE δ_o	Yes	Yes	Yes	Yes	Yes
FE γ_d	Yes	Yes	Yes	Yes	Yes
FE ς_t	Yes	Yes	Yes	Yes	Yes
Observations	1,294	7,797	7,779	7,713	7,265
R^2	0.932	0.850	0.751	0.850	0.851
RMSE	0.389	0.299	.	0.301	0.308

Robust standard errors clustered by country-pair in parentheses

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

Annex

Table A-1: RTA agreements covered

Type	Agreement	Type	Agreement
FTA	ASEN-Korea	EPA	Japan-Brunei Darussalam
FTA	Australia-Chile	EPA	Japan-Chile
CER	Australia-New Zealand	EPA	Japan-Indonesia
FTA	CAFTA-DR	EPA	Japan-Malaysia
FTA	Canada-Chile	EPA	Japan-Mexico
FTA	Canada-Peru	EPA	Japan-Philippines
FTA	Chile-Costa Rica	EPA	Japan-Singapore
FTA	Chile-El Salvador	EPA	Japan-Switzerland
FTA	Chile-Mexico	EPA	Japan-Thailand
FTA	China-Pakistan	EPA	Japan-Viet Nam
FTA	China-Peru	FTA	Korea-Chile
FTA	China-Singapore	FTA	Korea-Singapore
FTA	Costa Rica-Mexico	FTA	Mexico-Nicaragua
FTA	EEA	FTA	NAFTA
FTA	EFTA-Chile	FTA	New Zealand-China
FTA	EFTA-Korea	CEP	New Zealand-Singapore
FTA	EFTA-Mexico	FTA	Panama-Chile
FTA	EFTA-Singapore	FTA	Singapore-Australia
SAA	EU-Albania	FTA	Thailand-Australia
EPA	EU-CARIFORUM	SEP	Trans-Pacific
AA	EU-Chile	FTA	US-Australia
SAA	EU-Croatia	FTA	US-Bahrain
SAA	EU-FYROM	FTA	US-Chile
EPA	EU-Mexico	FTA	US-Jordan
FTA	El Salvador-Mexico	FTA	US-Morocco
CU	European Union	FTA	US-Oman
FTA	Guatemala-Mexico	TPA	US-Peru
FTA	Honduras-Mexico	FTA	US-Singapore
CECA	India-Singapore		

Table A-2: Sectors covered

ISIC Rev.3	Sector
F	Construction
G–H	Wholesale, retail trade, restaurants and hotels
I	Transport, storage and communication
J	Finance and insurance
K	Real estate and business services
L–P	Other Activities

Table A-3: 'Minus' scores assigned to RTA commitments according to type of restriction

Type of restriction	Mode 1	Mode 2	Mode 3	Mode 4
<u>Market Access</u>				
Unbound (not committed)	-50	-50	-50	-50
Restrictions on foreign ownership	0	0	-20	0
Quantitative restrictions	-20	0	-5	0
Scope of sub-sector limited	-15	-20	-15	-15
Restrictions to the movement of people	0	0	0	-20
Restrictions on the number of competitors	-5	0	-5	0
<u>National Treatment</u>				
Unbound (not committed)	-30	-30	-30	30
Nationality/ residency/ licensing requirements	-15	0	-15	0
Restrictions to the movement of people	0	0	0	-15
Measures related to taxes and subsidies	-2.5	-5	-2.5	0
Measures related to competition	-2.5	-5	-2.5	0
Restrictions on ownership of property/ land	-2.5	-5	-2.5	0
Other discriminatory measures	-2.5	-5	-2.5	0

Table A-4: Definition of variables and sources

Variable	Defnition	Source
C_{od}	Index of RTA commitments going beyond GATS of country o (Commitments gap)	Miroudot *et al.* (2011)
$G(C_{od})$	Geographical average of index of RTA commitments going beyond GATS between country o and d (Commitments gap)	Miroudot *et al.* (2011)
W. Dist	Weighted distance between capital cities of country o and d (population-wt, km)	CEPII
Contiguity	Dummy equal to 1 for contiguity between country o and d	CEPII
Language	Dummy equal to 1 for common official primary language between country o and d	CEPII
Asymmetry	Dummy equal to 1 if EU or US is involved in FTA (excl. European Union)	Self constructed
Hegemon	Share of US GDP relative to partner country (current USD)	WDI
$GATS_{od}$	Index of GATS commitment of country o	Miroudot *et al.* (2011)
$G(GATS_{od})$	Geographical average of index of GATS commitments between country o and d	Miroudot *et al.* (2011)
GDP_o	Gross Domestic Product of country o in constant USD (billions)	WDI
$(H/L)_o$	Share of high-skilled labour as part of total labour force (tertiary) of country o	Barro and Lee (2011)
$(M/L)_o$	Share of mid-skilled labour as part of total labour force (secondary) of country o	Barro and Lee (2011)
$(K/L)_o$	Share of investment of PPP converted GDP Per Capita at 2005 constant prices of country o	Penn World Tables
$Democracy_o$	Index score for for level of democracy of country o	Polity IV
$Reg\ Quality_o$	Index score for regulatory quality of country o	Kaufmann *et al.* (2009)
$Rule\ of\ law_o$	Index score for rule of law of country o	Kaufmann *et al.* (2009)
$S.GDP_{od}$	Absolute value of the sum of the logs of GDP of country o and d ($\ln(GDP_o) + \ln(GDP_d)$)	WDI
$D.GDP_{od}$	Absolute value of the difference between the logs of GDP of country o and d ($\ln(GDP_o) - \ln(GDP_d)$)	WDI
$D.(H/L)_{od}$	Absolute value of the difference between the logs of the share of high-skilled labour as part of total labour force (tertiary) of country o and d ($\ln(H/L_o) - \ln(H/L_d)$)	Barro and Lee (2011)
$D.(M/L)_{od}$	Absolute value of the difference between the logs of the share of high-skilled labour as part of total labour force (secondary) of country o and d ($\ln(H/L_o) - \ln(H/L_d)$)	Barro and Lee (2011)
$D.(K/L)_{od}$	Absolute value of the difference between the logs of share of investment of PPP converted GDP Per Capita at 2005 constant prices of country o and d ($\ln(K/L_o) - \ln(K/L_d)$)	Penn World Tables
$D.Democracy_{od}$	Absolute value of the difference between the index score for level of democracy of country o and d ($\ln(Democracy_o) - \ln(Democracy_d)$)	Polity IV
$D.Reg\ quality_{od}$	Absolute value of the difference between the index score for level of regulatory quality of country o and d ($Reg\ quality_o$) - $\ln(Reg\ quality_d)$)	Kaufmann *et al.* (2009)
$D.Rule\ of\ law_{od}$	Absolute value of the difference between the index score for level of rule of law of country o and d ($Rule\ of\ law_o$) - $\ln(Rule\ of\ law_d)$)	Kaufmann *et al.* (2009)

Table A-5: Summary statistics

Variable	Mean	Std. Dev.	Min.	Max.	N
$\ln(C)_{od}$	3.589	0.739	0	4.369	139510
$\ln G(C_{od})$	3.568	0.779	0	4.368	139510
$\ln(W. Dist)$	7.265	0.762	5.081	9.811	139510
Contiguity	0.1	0.301	0	1	139510
Language	0.076	0.265	0	1	139510
Asymmetry	0.132	0.339	0	1	139510
Hegemon	3.706	1.657	0	7.903	128324
$\ln(GATS)_o$	4.007	0.215	2.996	4.567	139510
$\ln G(GATS)_{od}$	4.025	0.189	3.045	4.542	139510
$\ln(GDP)_o$	25.19	1.798	20.205	30.091	120344
$\ln(H/L)_o$	2.446	0.665	0.063	3.988	137032
$\ln(M/L)_o$	3.698	0.516	0.838	4.469	137032
$\ln(K/L)_o$	3.09	0.242	1.661	4.132	109095
Democracy$_o$	6.899	5.992	-9	10	116312
Reg quality$_o$	1.155	0.504	-0.599	2.058	80976
Rule of law$_o$	1.044	0.734	-1.195	2.014	80976
S.$\ln(GDP)_{od}$	51.017	2.365	42.708	57.582	118566
D.$\ln(GDP)_{od}$	-0.628	2.507	-7.36	7.023	118566
D.$\ln(H/L)_{od}$	-0.034	0.535	-2.921	2.921	137032
D.$\ln(M/L)_{od}$	0.032	0.493	-2.557	1.787	137032
D.$\ln(K/L)_{od}$	0.001	0.289	-1.64	1.195	107835
D.Democracy$_{od}$	-2.636	6.133	-19	18	116312
D.Reg quality$_{od}$	-0.096	0.699	-2.399	2.399	80976
D.Rule of law$_{od}$	-0.152	1.009	-2.778	2.778	80976

Table A-6: Correlation Tables

Variables	Hegemon	ln(GATS)$_o$	ln(GDP)$_o$	ln(H/L)$_o$	ln(M/L)$_o$	ln(K/L)$_o$	Democ$_o$	Reg q$_o$	Rule l$_o$
Hegemon	1.000								
ln(GATS)$_o$	0.010	1.000							
ln(GDP)$_o$	0.076	-0.018	1.000						
ln(H/L)$_o$	0.176	-0.076	0.162	1.000					
ln(M/L)$_o$	0.159	0.038	-0.016	0.616	1.000				
ln(K/L)$_o$	0.009	-0.015	-0.148	-0.103	-0.111	1.000			
Democ$_o$	0.177	-0.025	0.293	0.484	0.358	-0.081	1.000		
Reg q$_o$	0.034	0.206	0.312	0.512	0.017	0.030	0.294	1.000	
Rule l$_o$	0.009	0.240	0.334	0.463	-0.029	0.053	0.307	0.910	1.000

Variables	Hegemon	ln$G$(GATS)$_{od}$	S.ln(GDP)$_{od}$	D.ln(GDP)$_{od}$	D.ln(H/L)$_{od}$	D.ln(M/L)$_{od}$	D.ln(K/L)$_{od}$	D.Democ$_{od}$	D.Reg q$_{od}$	D.Rule l$_{od}$
Hegemon	1.000									
ln$G$(GATS)$_{od}$	-0.035	1.000								
S.ln(GDP)$_{od}$	-0.627	-0.045	1.000							
D.ln(GDP)$_{od}$	0.701	-0.043	0.092	1.000						
D.ln(H/L)$_{od}$	0.010	-0.009	0.039	0.073	1.000					
D.ln(M/L)$_{od}$	-0.048	0.010	-0.023	-0.054	0.203	1.000				
D.ln(K/L)$_{od}$	-0.176	0.000	-0.002	-0.237	-0.200	-0.158	1.000			
D.Democ$_{od}$	0.071	-0.024	0.089	0.211	0.200	0.080	0.008	1.000		
D.Reg q$_{od}$	0.194	-0.032	0.058	0.319	0.509	0.015	-0.093	0.491	1.000	
D.Rule l$_{od}$	0.184	-0.035	0.072	0.322	0.499	-0.017	-0.064	0.544	0.910	1.000

Table A-7: Types of Agreement

Type	Agreement
North-North	EEA, EFTA-Singapore FTA, European Union, Japan-Singapore EPA, Japan-Switzerland EPA, New Zealand-Singapore CEP, Singapore-Australia FTA, US-Australia FTA, US-Bahrain FTA, US-Singapore FTA
North-South	Australia-Chile FTA, CAFTA-DR, Canada-Chile FTA, Canada-Peru FTA, China-Singapore FTA, EFTA-Chile FTA, EFTA-Korea FTA, EFTA-Mexico FTA, EU-Albania SAA, EU-CARIFORUM States EPA, EU-Chile AA, EU-Croatia SAA, EU-FYROM SAA, EU-Mexico EPA, India-Singapore CECA, Japan-Brunei Darussalam EPA, Japan-Chile EPA, Japan-Indonesia EPA, Japan-Malaysia EPA, Japan-Mexico EPA, Japan-Philippines EPA, Japan-Thailand EPA, Japan-Viet Nam EPA, Korea-Chile FTA, Korea-Singapore FTA, NAFTA, New Zealand-China FTA, Thailand-Australia FTA, Trans-Pacific SEP, US-Chile FTA, US-Jordan FTA, US-Morocco FTA, US-Oman FTA, US-Peru TPA
South-South	ASEAN-Korea FTA, Chile-Costa Rica FTA, Chile-El Salvador FTA, Chile-Mexico FTA, China-Pakistan FTA, China-Peru FTA, Costa Rica-Mexico FTA, El Salvador-Mexico FTA, Guatemala-Mexico FTA, Honduras-Mexico FTA, Mexico-Nicaragua FTA, Panama-Chile FTA